
Coyote Valley Specific Plan DEIR Biological Resources Technical Report

SAN JOSE, CALIFORNIA

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Appendix A. Special Status Plant Species and their Potential to Occur in the Plan Area.

Appendix B. Special Status Wildlife Species and their Potential to Occur in the Plan Area.

Appendix C. Plant and Wildlife Species Observed during Field Investigations of the Plan Area

Appendix D. Calculation of Plan Area impacts to serpentine grassland as a result of nitrogen deposition.

1.0 INTRODUCTION

The Coyote Valley Specific Plan (CVSP) Area consists of two distinct planning zones, the Development Area and the Greenbelt (Figure Bio-1). The Development Area of the CVSP would ultimately be a community of up to approximately 70,000 to 80,000 residents, depending upon the number of persons per household and the actual mix of the different residential densities and typologies expected. The urban design approach for the valley focuses on the guiding principles of a sustainable, transit-oriented, walkable community, containing a mix of uses that utilize land efficiently. The Plan includes uses such as workplace, residential, retail, and mixed use development, structured/shared parking, new roadways, including a main multi-functional parkway and an extension of Bailey Avenue to the southwest towards the Almaden Valley, an internal transit system with a connection to a proposed multi-modal transit station on the west side of the existing Caltrain line, a lake, the relocated and restored Fisher Creek, an urban canal, libraries, schools, services and utilities, parks, trails, and playfields. The Coyote Valley Greenbelt (between Palm Avenue and Morgan Hill and on the east side of Coyote Creek, extending to Highway 101 between Metcalf Road and Morgan Hill), will remain as a permanent non-urban buffer between San José and Morgan Hill. To provide water for the Development Area, several water tanks are proposed for placement outside of the Plan area. In addition, a series of percolation ponds may need to be created within the Greenbelt to maintain groundwater aquifer levels at the same volume as currently exist.

This technical report analyzes potential impacts to biological resources that may occur as a result of the implementation of the CVSP. This report includes discussions of the methods of study, the biological resources that are currently present in the Plan Area, an evaluation of the “significance” of potential impacts to these biological resources based on thresholds of significance defined in the California Environmental Quality Act (CEQA) and the CEQA guidelines, and measures to mitigate for significant impacts.

2.0 REGULATORY CONTEXT

Federal, state, and local laws and regulations applicable to biological resources in the Plan Area include:

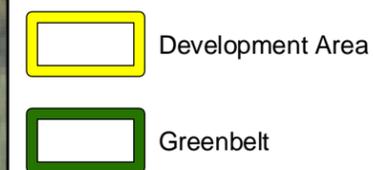
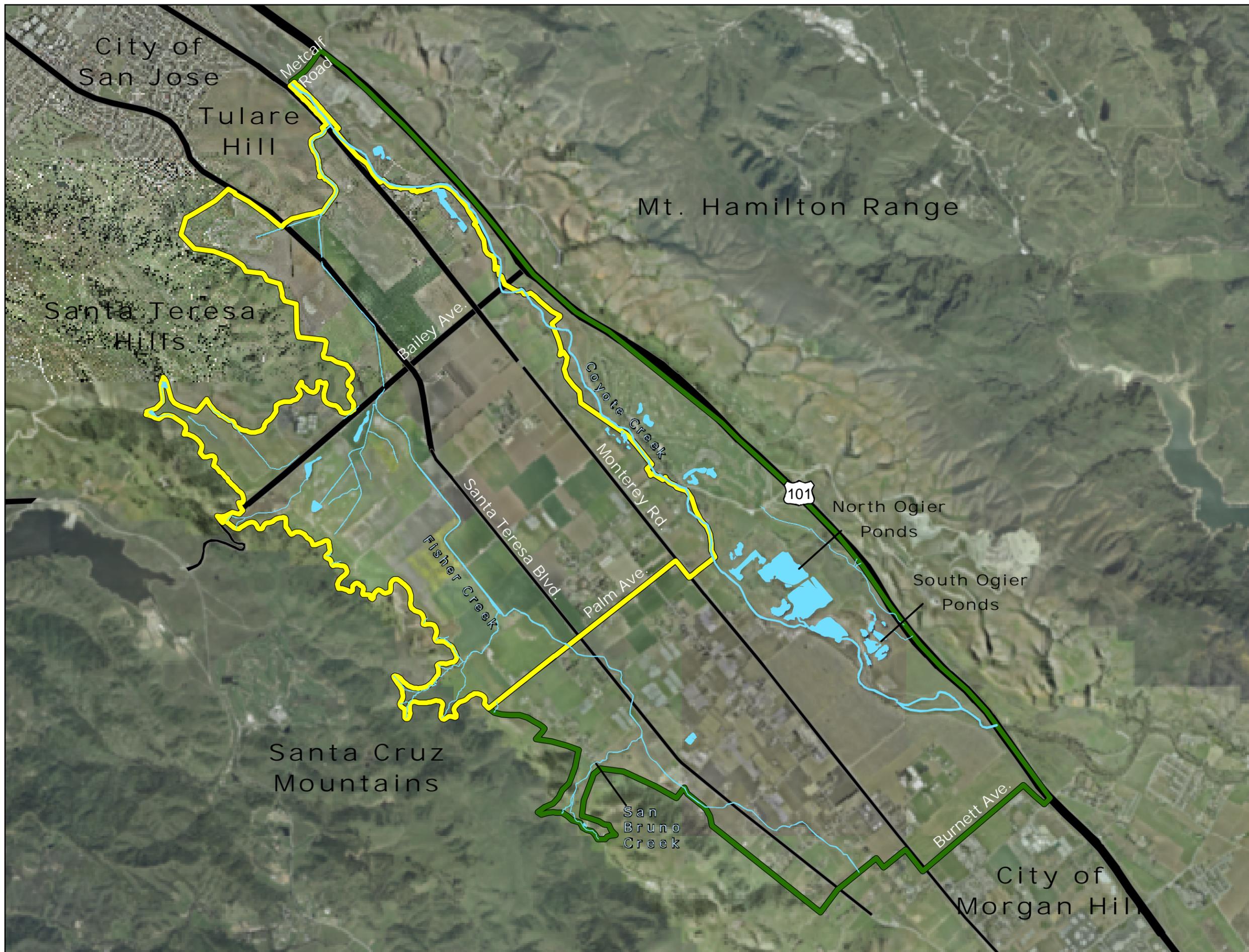
- Federal Endangered Species Act of 1973 and amendments (ESA)
- California Endangered Species Act (CESA)
- Migratory Bird Treaty Act of 1918 (MBTA)
- Section 401 and 404 of the Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)
- Porter Cologne Act
- California Department of Fish and Game Code
- City of San Jose Riparian Corridor Policy Study
- City of San Jose Municipal Code Title 13, pertaining to tree removal
- Santa Clara County Tree Protection Ordinance
- California Environmental Quality Act (CEQA)

The ESA and CESA contain provisions for the protection of plant and animal species formally listed, proposed for listing, or candidates for listing as endangered species under the acts. These acts prohibit the harassment and unauthorized take of a listed species or habitat known to support a listed species. The MBTA protects nesting migratory bird species. Under the

Coyote Valley
Specific Plan

Figure Bio-1.

Overview of the
Plan Area



Scale 1: 36,000
1 inch = 3,000 feet

MBTA, destroying active nests, eggs, and young of migratory bird species is illegal. The CESA is enforced by CDFG, the ESA and MBTA are enforced by regulations of the U.S. Fish and Wildlife Service (USFWS) and CDFG.

Section 404 of the Clean Water Act (CWA) protects “Waters of the United States” from discharge of fill material. Waters of the United States are defined broadly as waters susceptible to use in commerce (i.e. waters used for navigation, shellfish production), including interstate waters and wetlands, all other waters (intrastate water bodies, including wetlands), and their tributaries (33 CFR 328.3). Similarly, the Porter Cologne Act protects “waters of the State”, defined as “any surface water or groundwater, including saline waters, within the boundaries of the state [of California]” from discharge of fill material. The U.S. Army Corps of Engineers (Corps), San Francisco District oversees the implementation of Section 404 of the CWA in the Plan Area. The California State Water Quality Control Board (SWQCB) is responsible for the implementation of the Porter Cologne Act, through nine Regional Water Quality Control Boards. The Plan Area is within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Section 401 of the CWA requires that any project applying for a federal license or permit shall obtain a certification from the State in which the discharge originates, and that the discharge will comply with applicable effluent discharge limitations. Section 401 also requires that activities permitted under Section 404 of the CWA must obtain a certification under Section 401 before undertaking the permitted activities. The RWQCB is responsible for implementing Section 401 of the CWA.

Sections 1600-1607 of CDFG Code regulate streams and associated riparian habitat within the State of California. CDFG implements these sections of the Code through the Streambed Alteration Program. Any impacts to streams or riparian habitat in California must receive approval through a Streambed Alteration Agreement from CDFG. The City of San Jose Riparian Corridor Policy Study establishes development setbacks from preserved riparian corridors within the city limits of San Jose. CDFG is also responsible for regulating habitats designated as sensitive in the California Natural Diversity Database (CNDDDB).

The City of San Jose Municipal Code Title 13 contains provisions regulating the removal of trees that are greater than 12 inches diameter at breast height (dbh). Santa Clara County’s Tree Protection Ordinance protects trees designated as Heritage Trees by the Historical Heritage Commission’s heritage resource inventory, trees that are more than six inches dbh on parcels located in the New Almaden Historical Zoning District, and trees greater than 12 inches dbh located in zoned hillside parcels greater than three acres. The Planning Departments of the City of San Jose and Santa Clara County, respectively, are responsible for the implementation of these tree removal regulations.

CEQA requires complete review of projects within the State of California undertaken or permitted by any State agency. CEQA requires review of species and communities regulated by the above statutes, along with wildlife species listed as USFWS and CDFG Species of Special Concern, and plant species on CNPS List 1 and List 2 in the Inventory of Rare and Endangered Plants of California (CNPS 2006). CEQA also requires review of impacts to oak woodlands as of September 2004 as a result of California Senate Bill 1334.

3.0 METHODS OF STUDY

To evaluate the biological resources found or potentially occurring in the Plan Area, literature and database reviews were conducted by WRA, Inc. WRA biologists with expertise in the flora and fauna of the project area conducted field studies in the Plan Area. Previous reports based on field studies conducted by H.T. Harvey and Associates (1997, 1999, 2000) and the Santa Clara Valley Urban Runoff Pollution Prevention Program (Buchan and Randall, 2003), among others, were also reviewed and integrated into this analysis. Descriptions of the literature review, database review, and field studies that were conducted by WRA are provided below. Surveys of trees to comply with City of San Jose Municipal Code Title 13 were done as part of a separate study and are not included in this report.

3.1 Literature/Database Review

Prior to the site visits and prior to preparation of this report, literature and database searches were completed to determine documented or potential presence of special status plant and wildlife species in central Santa Clara County encompassing the entire Plan Area and beyond. Habitat suitability in the Plan Area was assessed based on a list of species generated by this literature review. The following sources were reviewed to determine which special status plant and wildlife species have been recorded from the vicinity (nine USGS quadrangles) of the Plan Area:

- California Natural Diversity Database (CNDDDB) records (CDFG 2006)
- USFWS Quadrangle Species Lists (USFWS, 2006a)
- CNPS Electronic Inventory records (CNPS 2006)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)
- Coyote Valley Research Park Draft EIR (H.T. Harvey & Associates 1999a) and other H.T. Harvey reports (1997a, 1997b, 1999b, 1999c, 1999d, 2000)
- Santa Clara Valley Urban Runoff Pollution Prevention Program (Buchan and Randall, 2003)

Potential for special status species to occur in the Plan Area was evaluated according to the following criteria:

- (1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (soils, foraging, nesting, cover, area). The species has an extremely low probability of being found on the site.
- (2) Unlikely. Some habitat components meeting the species requirements are present, however, the majority of habitat on and adjacent to the site is unsuitable. The species has a low probability of being found on the site.
- (3) Moderate Potential. Habitat components meeting the species requirements are present; however, some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

(4) High Potential. Habitat components meeting the species requirements are present and most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

5) Present. Species is observed on the site or has been recorded (i.e., CNDDDB) on the site recently.

Records within the San Jose East, Lick Observatory, Isabel Valley, Santa Teresa Hills, Morgan Hill, Mount Sizer, Loma Prieta, Mount Madonna, and Gilroy USGS quadrangles were searched for relevant known species occurrences. Appendices A and B present the special status plant and wildlife species known to occur in the vicinity of the Plan Area, their habitat requirements, and potential for occurrence within the Plan Area.

3.2 Field Investigations

Reconnaissance-level and focused field surveys have been conducted by biologists from WRA at various times between June 2003 and October 2005. Accessible portions of the Plan Area have been thoroughly investigated to determine (1) if any special status plant or wildlife species were present, (2) if existing conditions provide suitable habitat for special status plant and wildlife species, and (3) if sensitive habitats are present. A reconnaissance level survey assessing the potential occurrence of sensitive habitats and special status species was performed in portions of the Plan Area that were not accessible. Reconnaissance level surveys involved a review of aerial photography and long distance observations made from accessible portions of the Plan Area to determine the extent of potential habitat areas present. Parcels that were accessible during the field surveys are shown in Figure Bio-1. All plants, wildlife, and sensitive habitats observed during field investigations were noted.

3.2.1 Special Status Species Surveys

In June 2003 and March, April, and June 2004, rare plant surveys were conducted within accessible portions of the Development Area. The field surveys were conducted in accordance with survey guidelines adopted by the California Native Plant Society and the California Department of Fish and Game (CNPS 2001; Nelson 1987). The surveys were conducted during the blooming periods of rare plant species with the potential to occur in the accessible portions of the Development Area. All species observed were identified to the level required to determine rarity.

A protocol level California red-legged frog survey was conducted throughout accessible portions of the Development Area in Fall 2003 (WRA, 2004c). However, the survey protocols for California red-legged frog have changed since these surveys were conducted. Therefore the information obtained during the Fall 2003 California red-legged frog surveys were used only as background data. California tiger salamander larval and trapline surveys were conducted within suitable habitat in accessible portions of the Development Area between December 2003 and May 2005.

All plant and wildlife species encountered during these visits were recorded and are summarized in Appendix C.

3.2.2 Wetlands, Waters, and Riparian Habitat

A preliminary wetlands assessment was conducted in 2003 and conclusions were based primarily on the presence of wetland plant indicator species (U.S. Fish and Wildlife Service, List of Plant Species that Occur in Wetlands; Reed 1988), but also included any observed indicators of wetland hydrology or wetland soils. A jurisdictional wetlands delineation of all accessible portions of the Plan Area was conducted by WRA between December 2003 and May 2005 and a Jurisdictional Determination was granted by the Corps on March 7, 2006 (Corps File No. 28814S). The delineation was based on methods described in the Corps' 1987 delineation manual (Environmental Laboratory, 1987), and included detailed hydrology monitoring of potential wetland areas. Portions of the Plan Area that were not accessible during ground surveys were assessed for the presence of wetlands, waters and riparian areas at a reconnaissance level from a distance. Potential wetlands, waters, and riparian habitats were mapped using aerial photography based on these observations. Mapping based on aerial photography was inclusive of all areas that showed evidence of potential wetland hydrology. Since access to all portions of the Development Area was not granted, a final Jurisdictional Determination of Corps Section 404 jurisdiction within other portions of the Development Area will need to be obtained prior to development.

The banks of the drainages and streams within the Plan Area were also assessed to determine whether they supported stream-dependent woody plant species (riparian species). Streams supporting riparian vegetation were noted and width of riparian habitat estimated during the 2003 assessment (WRA, 2004a). In January 2005, riparian habitat within the Plan Area was mapped using one-meter resolution aerial photographs. Riparian habitat mapped using aerial photography was verified in the field during a subsequent site visit in January 2005.

4.0 EXISTING CONDITIONS

4.1 Plan Area Description

The 7,374-acre Plan Area is surrounded by the foothills of the Mount Hamilton Range to the east, the Santa Cruz Mountains to the west, and urban areas of the City of San Jose and City of Morgan Hill to the north and south, respectively. The Mount Hamilton Range and Santa Cruz Mountains contain large expanses of relatively open space comprised of a mosaic of habitat types. The City of San Jose and City of Morgan Hill are areas of urban and suburban style development, containing little open space. Two perennial streams, Coyote Creek and Fisher Creek, are the major waterways within the Plan Area (Figure Bio-1). Coyote Creek flows northwest through the length of the Plan Area in the Greenbelt between Monterey Road and Highway 101. Coyote Creek follows a fairly natural course through the Plan Area from Anderson Reservoir to San Francisco Bay, but has been modified in the vicinity of the Plan Area, now flowing through the Ogier Ponds within the Greenbelt, and through groundwater recharge basins north of Metcalf Road. Fisher Creek flows northwest between Santa Teresa Boulevard and the foothills of the Santa Cruz Mountains through the Greenbelt and southern portion of the Development Area. Fisher Creek turns east and crosses Santa Teresa near Tulare Hill, joining with Coyote Creek near the northern boundary of the Plan Area. Historically, Fisher Creek meandered through the valley into Laguna Seca, a floodplain area, most of which has since been drained for agricultural use. Today, Fisher Creek is extensively channelized as it passes through the agricultural lands of the Development Area.

The 3,708-acre Development Area contains rural ranches, urban housing developments, a former golf driving range, agricultural fields, industrial facilities, and commercial office development. The 3,666-acre Coyote Greenbelt includes residential and industrial development, agricultural lands, the Coyote Creek Golf Course, and Coyote Creek and associated open space corridor. These areas contain a variety of biological communities, some of which are considered sensitive and/or are able to support sensitive biological resources.

4.2 Biological Communities

Biological communities within the Plan Area include: agricultural fields, ruderal agricultural fields, developed areas, non-native grassland, coastal sage-chaparral scrub, central coast cottonwood-sycamore riparian forest, central coast riparian scrub, coastal and valley freshwater marsh, seasonal wetlands, freshwater seep, streams and ponds, serpentine grassland, coast live oak woodland, and valley oak woodland. Table 1 presents the total area of each community type present within the Plan Area. Wetland and riparian plant communities are grouped as one type in the table, but are discussed separately below.

Community	Area	Percent of Plan Area
Agricultural Fields	3,478 acres	47
Ruderal Agricultural Fields	223 acres	3
Developed Areas	2,182 acres	30
Non-native Grassland	873 acres	12
Coastal Sage-Chaparral Scrub	4 acres	<0.1
Wetlands	148 acres	2.2
Streams	70 acres 126,005 linear feet	2
Ponds	116 acres	1
Central Coast Cottonwood–Sycamore Riparian Forest	190 acres	2.6
Central Coast Riparian Scrub	34 acres	0.3
Coast Live Oak Woodland	15 acres	0.2
Valley Oak Woodland	54 acres	0.5
Serpentine Grassland	34 acres	0.4
Total	7,421 acres*	101.2%

* Difference between area of communities and area of Plan Area represents overlap between riparian communities, ponds and streams.

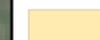
Communities were classified based on existing plant community descriptions contained in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, in some cases it is necessary to identify variants of plant community types or to describe other areas that are not referenced in the literature. These communities are described in detail below and are shown in Figure Bio-2. Non-sensitive biological communities are defined herein as communities that are not regulated by local, state, or federal laws and regulations, and are considered common within California. Sensitive biological communities are defined herein as:

- Riparian habitat and other natural communities considered sensitive or regulated by the CDFG (CDFG 2006, 1999);

Coyote Valley Specific Plan

Figure Bio-2.

Biological Communities in the Plan Area

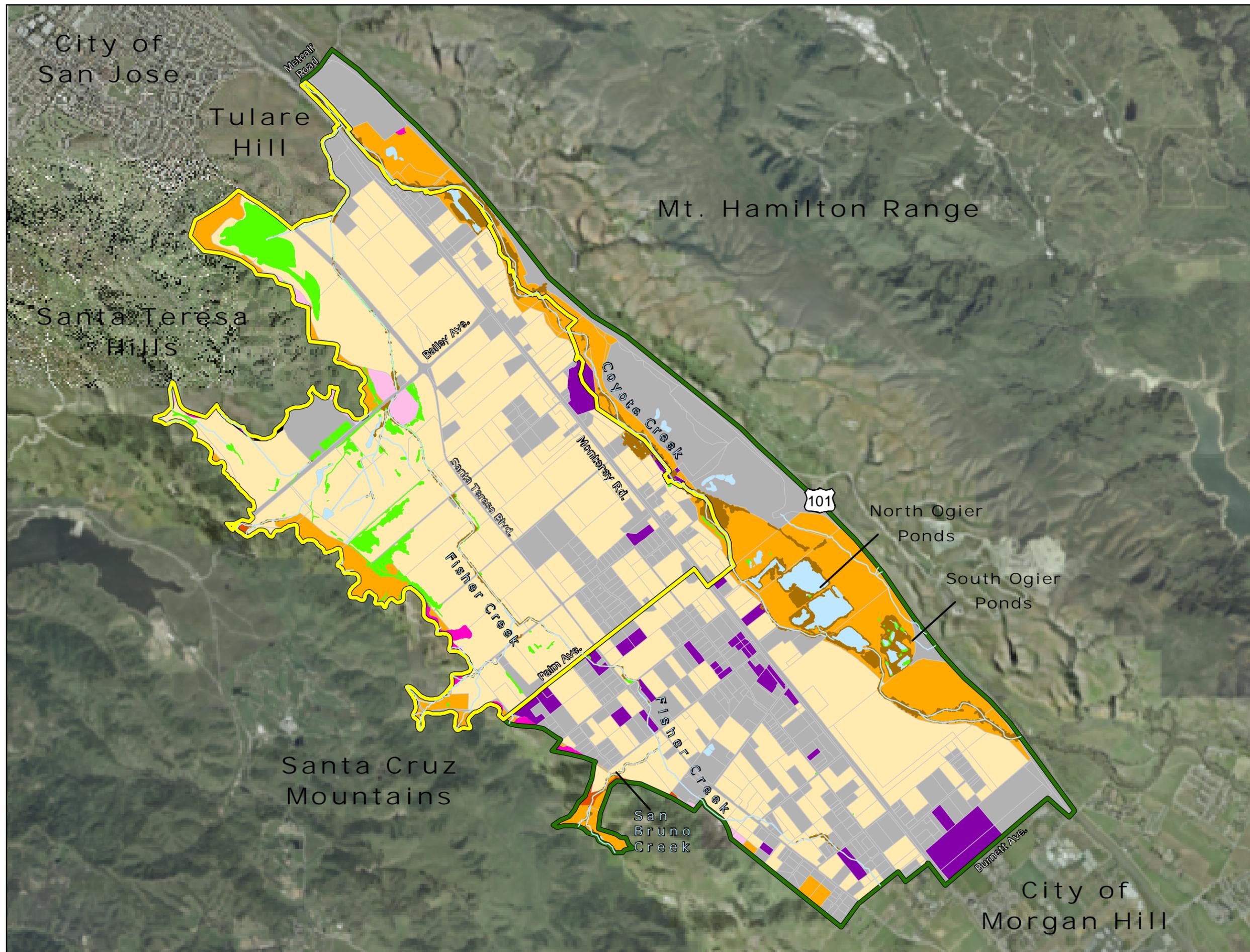
-  Agricultural Field
-  Ruderal Agricultural Field
-  Developed Area
-  Non-native Grassland
-  Coast Live Oak Woodland
-  Valley Oak Woodland
-  Coastal Sage-Chapparral Scrub
-  Serpentine Grassland
-  Wetland
-  Pond
-  Riparian
-  Stream
-  Development Area
-  Greenbelt



0 1,500 3,000 6,000 Feet

Scale 1: 36000
1 inch = 3,000 feet

Date: July 2006
Drawn By: Chris Zumwalt
File: I:\land projects\13037\gis\ArcMap\CEQA_EIR\Figures\Fig Bio-2.mxd



- Wetlands or other aquatic habitats under the jurisdiction of the Corps;
- Established resident or migratory wildlife corridors;
- Habitats and other resources protected by local policies, ordinances, or otherwise considered of local concern.

4.2.1 Non-Sensitive Biological Communities

The following biological communities are present in the Plan Area, but are not considered sensitive biological communities under local, state, or federal laws and regulations. The plant communities present on the project site provide habitat for a variety of common wildlife species. Descriptions of common wildlife species known to occur in the project area follow each plant community discussion.

Agricultural Fields

A large portion of the Plan Area, approximately 3,478 acres (47%), is comprised of agricultural fields. Although not described in Holland (1986), agricultural fields are areas that are managed for the production of agricultural crops. Most of these fields are plowed and/or disked at least once a year and planted with various crops such as horticultural flowers and trees, peppers, beans, pumpkins, hay, and orchard trees. The type of crop planted can vary depending on the location of the field, time of year, and economic factors.

Non-agricultural plant species that may be present in agricultural fields include weedy vegetation such as prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), wild radish (*Raphanus sativa*), yellow starthistle (*Centaurea solstitialis*), and Italian ryegrass (*Lolium multiflorum*). Avian species, particularly raptors such as White-tailed Kite (*Elanus leucurus*) and Red-tailed Hawk (*Buteo jamaicensis*) as well as some passerines including Loggerhead Shrike (*Lanius ludovicianus*) and Western Bluebird (*Sialia mexicana*) may occasionally forage in agricultural fields. Orchards may provide suitable foraging and nesting habitat for passerine species such as Brewer's Blackbird (*Euphagus cyanocephalus*), House Finch (*Carpodacus mexicanus*), Yellow-billed Magpie (*Pica nuttallii*), and Scrub Jay (*Aphelocoma californica*). However, agricultural fields and orchards do not generally provide suitable long-term habitat for less adaptive plant and wildlife species due to the intensive management activities involved in farming.

Ruderal Agricultural Fields

There are approximately 223 acres (3%) of ruderal agricultural fields in the Plan Area. Ruderal agricultural fields are not described in the literature, but are located in areas that have been plowed for agricultural production in the past but are not currently engaged in agricultural production. Ruderal agricultural fields tend to be dominated by weedy non-native plant species such as Italian ryegrass, wild radish, prickly lettuce, sow thistle (*Sonchus spp.*), and canary grass (*Phalaris spp.*), and these species are prevalent in ruderal agricultural fields in the Plan Area. Wildlife species present in ruderal agricultural fields are similar to those in agricultural fields. Other common wildlife species include California vole (*Microtus californicus*), and black-tailed jackrabbit (*Lepus californicus*). Ruderal agricultural fields provide some suitable foraging habitat and can provide limited nesting habitat for avian species due to reduced intensity of management. These areas are still disturbed from a biological standpoint and may continue to

be plowed occasionally and so are not ideal long-term habitats for sensitive wildlife and plant species.

Developed Areas

Approximately 2,182 acres (29%) of developed areas are present within the Plan Area. Developed areas include residential homes, office parks, private businesses, warehouses, nurseries with enclosed greenhouse space, and industrial facilities. These areas often include landscaped surroundings with exotic ornamental vegetation such as annual bluegrass (*Poa annua*), English ivy (*Hedera helix*), liquidambar (*Liquidambar styraciflua*), and English laurel (*Prunus laurocerasus*). Wildlife species which may be present include Northern Mockingbird (*Mimus polyglottos*), American Crow (*Corvus brachyrhynchos*), European Starling (*Sturnus vulgaris*), Anna's Hummingbird (*Calypte anna*), Loggerhead Shrike, house mice (*Mus musculus*), and several species of bats including Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*). Developed areas provide very limited habitat for plant and wildlife species due to high levels of human activity and landscape management.

Non-Native Grassland

There are approximately 873 acres (12%) of non-native grassland within the Plan Area. Non-native annual grassland typically occurs in open areas of valleys and foothills throughout California, usually on fine textured clay or loam soils that are somewhat poorly drained (Holland 1986). Non-native grassland is typically dominated by non-native annual grasses and forbs, along with scattered native wildflowers. Common species found in the non-native grasslands of northern and central California include wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), wild barley (*Hordeum* spp.), Italian and perennial ryegrass (*Lolium multiflorum* and *Lolium perenne*), field bindweed (*Convolvulus arvensis*), fiddleneck (*Amsinckia* spp.), and California poppy (*Eschscholzia californica*), among many other species.

Non-native grassland community areas in the Plan Area are located within and adjacent to the Coyote Creek Corridor, immediately adjacent to the Plan Area along the northern boundary, and in grazed areas along the western boundary of the Plan Area. This community is dominated by plant species such as Italian ryegrass, Mediterranean barley (*Hordeum marinum*), slender wild oat (*Avena barbata*), fiddleneck (*Amsinckia menziesii* var. *intermedia*), and soft chess (*Bromus hordeaceus*). Typical wildlife species found in non-native grassland include Western Meadowlark (*Sturnella neglecta*), western fence lizard (*Sceloporus occidentalis*), western rattlesnake (*Crotalus viridis*), California ground squirrel (*Spermophilus beecheyi*), California vole, coyote (*Canis latrans*), and raptor species such as Northern Harrier (*Circus cyaneus*), and American Kestrel (*Falco sparverius*). The Western Burrowing Owl (*Athene cunicularia hypugea*) can also occur in this community. Non-native annual grassland within the Plan Area is relatively good habitat for wildlife and plant species.

Coastal Sage–Chaparral Scrub

There are approximately four acres (<0.1%) of coastal sage-chaparral scrub within the Plan Area. Holland describes coastal sage–chaparral scrub as a “catch-all type” intermediate between coastal scrubs and chaparrals. This community contains a mix of woody chaparral species and drought tolerant sage scrub species and is comprised of a dense to sparse overstory of shrubs and sub-shrubs with non-native and native annual grassland species in the understory. Typical species in coastal sage–chaparral scrub communities in California include

chamise (*Adenostoma fasciculatum*), California sagebrush (*Artemisia californica*), wild lilac (*Ceanothus* spp.), and poison oak.

Scrub and chaparral communities within the Plan Area occur on xeric soils, usually in areas of serpentine outcrops, with relatively sparse cover by overstory species such as California sagebrush, chamise, black sage (*Salvia mellifera*), poison oak, and naked stem buckwheat (*Eriogonum nudum*). The understory is typically comprised of species found in surrounding non-native annual grasslands and serpentine grasslands. Scrub and chaparral communities are home to a wide variety of small mammals and birds including black-tailed jackrabbit, woodrats (*Neotoma* spp.), pocket mice (*Chaetopidus hispidus*), deer mice (*Peromyscus maniculatus*), California Towhee (*Pipilo crissalis*), Song Sparrow (*Melospiza melodia*), and other shrub-nesting birds. Coastal sage-chaparral scrub is found in the foothills of the Santa Cruz Mountains and in the Santa Teresa Hills along the margins of the Plan Area. Although coastal sage-chaparral scrub provides relatively good habitat for native plant and wildlife species, very little of this habitat type is present within the Development Area.

4.2.2 Wetland and Open Water Communities

This group of communities includes aquatic areas such as wetlands, creeks, streams, rivers, ponds and lakes. All of these community types are considered sensitive by CDFG (1999) and are regulated by the Corps, RWQCB, or both. Table 2 summarizes the total areas of connected and isolated wetlands and open water communities in the Plan Area. Figure Bio-2 shows the wetlands and waters (streams, rivers, ponds, and lakes) within the Plan Area.

Wetland and waters areas listed below are based on assessments and delineations performed by WRA (2005), H.T. Harvey & Associates (1999d), and HMM Engineers (Corps, 2005). The final determination of isolated and CWA Section 404 wetlands and waters is made by the Corps through issuance of a Jurisdictional Determination. A Jurisdictional Determination has been issued for accessible portions of the Plan Area. However, permission was not granted to fully delineate or assess all Plan Area parcels for the presence of wetlands and waters during the process of gathering data for this document. As such, wetland and waters areas listed in Table 2 should be considered preliminary, pending full delineations and issuance of Jurisdictional Determinations for all parcels in the Development Area.

Feature Type	Area (acres)
Wetlands	148
Streams	70 (126,005 linear feet)
Ponds	116
Total	334 (126,005 linear feet)

Coastal and Valley Freshwater Marsh

Holland (1986) describes coastal and valley freshwater marsh as occurring in quiet sites lacking significant current which are permanently flooded with fresh water and dominated by perennial emergent monocots up to five meters tall. These communities are typically dominated by

bulrush (*Scirpus spp.*), cattail, tall flatsedge (*Cyperus eragrostis*), and spikerush (*Eleocharis spp.*). Coastal and valley freshwater marsh communities within the Plan Area occur in the Ogier Ponds and in portions of Fisher and Coyote Creeks and tributaries. These areas are dominated by common tule (*Scirpus acutus*), broadleaf cattail (*Typha latifolia*), and creeping spikerush (*Eleocharis macrostachya*), with some arroyo willow along the margins.

Wildlife species that may occur in coastal and valley freshwater marsh communities include federal-listed California red-legged frog (*Rana aurora draytonii*), bullfrog (*Rana catesbeiana*), and California red-sided garter snake. The freshwater marsh communities within Coyote Creek and Fisher Creek are perennially ponded, while other freshwater marsh communities in the Plan Area typically contain ponded water from approximately December through June. Coastal and valley freshwater marsh is listed as a sensitive plant community by CDFG (1999), and is regulated as a wetland by the Corps and RWQCB.

Seasonal Wetlands

Seasonal wetland plant communities are not described in Holland (1986), but occur in swales and depressions that are inundated during the rainy season for sufficient duration to support vegetation adapted to wetland conditions. Seasonal wetlands in California are highly variable in plant composition, largely dependent on the length of ponding or inundation. They also generally lack the plant community assemblage typical of defined marshes and vernal pools. Species that typically occur in seasonal wetlands in California are Italian ryegrass, Mediterranean barley, bristly ox-tongue, flatsedge (*Cyperus spp.*), rush (*Juncus spp.*), rabbitfoot grass (*Polypogon monspeliensis*), and many other annual wetland plant species.

Seasonal wetlands are the dominant wetland community present in the Plan Area. They are scattered throughout the Plan Area, and vary considerably with regards to hydrological regime and plant composition. Almost all of the seasonal wetlands in the Development Area are located in agricultural fields and are highly disturbed due to annual plowing and other agricultural practices such as ditching. Plant species observed in seasonal wetland plant communities present in the Plan Area include Italian ryegrass, hyssop loosetrife (*Lythrum hyssopifolia*), rabbitfoot grass, seep monkey flower (*Mimulus guttatus*), brown headed rush (*Juncus phaeocephalus*), Mexican rush (*Juncus mexicanus*), and creeping spikerush. Seasonal wetlands provide food, cover, and water for over 100 species of birds. In addition, amphibian and reptile species such as the federal-listed California tiger salamander (*Ambystoma californiense*) and California red-legged frog may utilize them for foraging, cover, and dispersal. Many species of bats including vespertilionids also forage in seasonal wetlands.

Freshwater Seep

Freshwater seeps are wetlands that are permanently or seasonally inundated or saturated as a result of groundwater discharge. They are typically dominated by perennial herbs such as sedge (*Carex spp.*), spikerush (*Eleocharis spp.*), rush (*Juncus spp.*), and flatsedge (*Cyperus spp.*). Freshwater seeps are usually found in association with grasslands, and are present throughout most regions of California (Holland, 1986). Only a few freshwater seeps are present in the Plan Area, located on hillsides along the western and northern boundaries of the Development Area. Dominant plant species in these areas include seep monkey flower, rabbitfoot grass, Mexican rush, and California buttercup (*Ranunculus californicus*). Freshwater seeps can provide suitable migratory habitat for amphibian and reptile species.

Streams and Ponds

Streams and ponds, also referred to as waters, are water bodies that contain an Ordinary High Water (OHW) mark with very little cover by wetland vegetation. The OHW mark is defined by Corps regulations as: "...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." (Federal Register Vol. 51, No. 219, Part 328.3 (d). November 13, 1986). Some plant species that may be observed in streams and ponds include cattail, knotweed (*Polygonum* spp.), pondweed (*Potamogeton* spp.), and duckweed (*Lemna* spp.), but they are normally present at less than five percent areal cover.

Coyote Creek and Fisher Creek are the two major perennial streams in the Plan Area. Coyote Creek flows through the Greenbelt along the eastern portion of the Plan Area, and is included as part of Santa Clara County's Coyote Creek Parkway system. Also within Coyote Creek are several basins known as the Ogier Ponds. These ponds were formed as a result of quarry activity in the area, but have now become integrated into the Coyote Creek channel. A remnant channel for Coyote Creek is still present south of the Ogier Ponds. Fisher Creek flows through agricultural fields in the central portion of the Plan Area. Fisher Creek has been significantly altered over the past 150 years by agricultural activities. Historical maps show that Fisher Creek has been moved to the east and channelized to drain and cordon off agricultural fields (USGS 1917, 1940). Several ephemeral and intermittent streams tributary to Fisher Creek are present in the western portion of the Plan Area.

Coyote Creek and Fisher Creek, as well as stock ponds and small reservoirs located within and directly adjacent to the Plan Area, provide suitable habitat for a wide variety of semi-aquatic to aquatic wildlife, waterfowl, and plant species. Typical aquatic wildlife species include common fishes such as California roach (*Hesperoleucus symmetricus*), prickly sculpin (*Cottus asper*), goldfish (*Carassius auratus*), bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), and green sunfish (*Lepomis cyanellus*), and Louisiana red-swamp crayfish (*Procambarus clarkii*). Western pond turtle (*Clemmys marmorata*) and steelhead (*Oncorhynchus mykiss*) have also been documented to occur in Coyote Creek (H.T. Harvey & Associates 1999a, Buchan and Randall, 2003). Typical aquatic birds may include Pied-billed Grebe (*Podilymbus podiceps*), Wood Duck (*Aix sponsa*), Mallard (*Anas platyrhynchos*), Black-crowned Night Heron (*Nycticorax nycticorax*), American Coot (*Fulica americana*), and Belted Kingfisher (*Ceryle alcyon*).

4.2.3 Riparian Communities

Two types of riparian communities occur in the Plan Area: central coast cottonwood – sycamore riparian forest and central coast riparian scrub. Both of these communities are considered sensitive by CDFG (1999) and are regulated through the Streambed Alteration Program. Approximately 224 acres of riparian communities (3%) are present within the Plan Area as described below and shown in Figure Bio-2.

Central Coast Cottonwood–Sycamore Riparian Forest

Central coast cottonwood–sycamore riparian forests are moderately closed canopied broadleaf riparian forests dominated by western sycamore (*Platanus racemosa*) and Fremont cottonwood

(*Populus fremontii* ssp. *fremontii*) (Holland, 1986). Understories are typically mixed thickets of shrubby willows (*Salix* spp.) and coyote brush (*Baccharis pilularis*). Approximately 190 acres of this community are present in the Plan Area surrounding Coyote Creek in the Greenbelt. Plant species found in this habitat type along Coyote Creek include white alder (*Alnus rhombifolia*), Fremont cottonwood, western sycamore (*Platanus racemosa*), arroyo willow (*Salix lasiolepis*), California bulrush (*Scirpus californicus*), narrowleaf cattail (*Typha angustifolia*), and coyote brush. This productive biological community also supports a large, diverse number of wildlife species including numerous amphibian and reptile species such as Pacific treefrog (*Pseudacris regilla*), California red-sided garter snake (*Thamnophis sirtalis infernalis*), and numerous small birds and mammals such as House Wren (*Troglodytes aedon*), and the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Central coast cottonwood sycamore riparian forest is regulated by CDFG through the Streambed Alteration Program.

Central Coast Riparian Scrub

Holland (1986) describes central coast riparian scrub as a scrubby streamside thicket varying from open to impenetrable, dominated by any of several species of willow and coyote brush. Approximately 34 acres of central coast riparian scrub are present in the Plan Area along Fisher Creek and its tributaries in the Greenbelt and Development Area. Central coast riparian scrub in the Plan Area is dominated by arroyo willow, coyote brush, some valley oaks, Italian thistle, poison hemlock (*Conium maculatum*), and non-native annual grasses. Similar to central coast cottonwood–sycamore forest, central coast riparian scrub supports a large community of wildlife species, such as those listed above. Fewer plant species are present due to the high cover by willows. This community is regulated by CDFG through the Streambed Alteration Program.

4.2.4 Other Sensitive Biological Communities

Serpentine Grassland

There are approximately 34 acres (0.4%) of serpentine grassland within the Plan Area. Serpentine grassland consists of relatively open areas dominated by native and non-native grasses underlain by serpentine soils. Described in Holland as serpentine bunchgrass, serpentine grassland in the San Francisco Bay Area is more often dominated by non-native annual grasses together with native and non-native grasses and forbs such as soft chess, Italian ryegrass, California poppy, dwarf plantain (*Plantago erecta*), Indian paintbrush (*Castilleja* spp.), and fiddleneck. Typical wildlife species found in serpentine grassland would include those found in non-native grassland such as western fence lizard, western rattlesnake, California ground squirrel, California vole, coyote, Western Meadowlark, and American Kestrel. This habitat type in the Santa Clara Valley also contains a variety of sensitive plant and animal species including the Bay checkerspot butterfly (*Euphydryas editha bayensis*). Only small fragmented areas of serpentine grassland exist within the western portion of the Plan Area, however, abundant serpentine grassland is present on Coyote Ridge, in the Mount Hamilton Range. Additional serpentine grassland areas are present in the foothills of the Santa Cruz Mountains just west of the Plan Area and on Tulare Hill and the Santa Teresa Hills northwest of the Development Area.

Coast Live Oak Woodland

There are approximately 15 acres (0.2%) of coast live oak woodland within the Plan Area. Coast live oak woodland is comprised of dense stands of coast live, valley, and blue oaks

(*Quercus douglasii*), and often occurs on slopes greater than ten percent and in topographic swales on hillsides. The understory consists primarily of non-native grasses such as Italian ryegrass, wild oats, and brome grasses, weedy forbs including Italian thistle and hedge parsley (*Torilis arvensis*), and associated woodland tree and shrub species such as California buckeye (*Aesculus californica*), poison oak (*Toxicodendron diversilobum*), California bay (*Umbellularia californica*) and toyon (*Heteromeles arbutifolia*). Oak woodland provides nesting and foraging habitat for numerous wildlife species including over 100 species of birds. Deer, squirrels, woodpeckers, quail, and turkeys are dependent on acorns as a primary food source. Many bat species are found primarily in coast live oak woodland including the pallid bat (*Antrozous pallidus*), fringed myotis (*Myotis thysanodes*), and Mexican free-tailed bat. Live oak woodland in the Plan Area is located primarily in the foothills of the Santa Cruz Mountains, extending into small portions of the western edge of the Plan Area. Potential impacts to oak woodlands are required to be examined as part of the CEQA process per California Senate Bill 1334.

Valley Oak Woodland

There are approximately 54 acres (0.5%) of valley oak woodland within the Plan Area. Valley oak woodland typically forms in areas of deep, well-drained alluvial soils, usually in valley bottoms. Valley oak is typically the only tree species in the overstory, with grassland species growing in the understory (Holland 1986). This community can vary between dense canopied woodland and open canopied savannah. Most of the valley oak woodland in the Plan Area is open canopied savannah. Valley oak (*Quercus lobata*) is typically the only tree present in the overstory of valley oak woodland, with grassland and sub-shrub species such as poison oak, Italian ryegrass, and wild oats in the understory. In the Plan Area, valley oak woodland often occurs as relatively open canopied areas on zero to ten percent slopes adjacent to denser areas of live oak woodland.

Valley oak woodland provides food, cover, and nesting habitat for numerous avian species including Red-shouldered Hawk (*Buteo lineatus*), California Quail (*Callipepla californica*), Oak Titmouse (*Baeolophus inornatus*), Bushtit (*Psaltriparus minimus*), and Acorn Woodpecker (*Melanerpes formicivorus*). A variety of mammals including mule deer (*Odocoileus hemionus*), fox squirrel (*Sciurus niger*), and western gray squirrel (*Sciurus griseus*), also depend on valley oaks for food and cover. The Plan Area has several areas of valley oak woodland in the foothills of the Santa Cruz Mountains, in scattered locations adjacent to Coyote Creek in the Greenbelt, and along Bailey Avenue in the Development Area. Valley oak woodland is considered a sensitive plant community by CDFG (1999), and potential impacts to oak woodlands are required to be examined as part of the CEQA process per California Senate Bill 1334.

4.3 Special Status Species

For the purposes of this report, “special-status” refers to those species that meet one or more of the following criteria:

- Plant and animal species listed by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) as Threatened or Endangered; proposed for listing as Threatened or Endangered; or as a candidate for listing as Threatened or Endangered.
- Plant and animal species considered as “endangered, rare or threatened” as defined by section 15380 of the CEQA Guidelines. Section 15380(b) states that a species of

animal or plant is “endangered” when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors. A species is “rare” when either “(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) the species is likely to become endangered within the foreseeable future throughout all or a portion of its range and may be considered ‘threatened’ as that term is used in the Federal Endangered Species Act” (ESA).

- Plants included on Lists 1, 2, or 3 of the CNPS Inventory of Rare and Endangered Plants of California (CNPS, 2006). These species are included because the CNPS is an authority recognized by the CDFG on the status of rare plant species in California, and because the criteria for placement on List 1 or List 2 are similar to criteria that CDFG and USFWS use for species considered as candidates for listing or that are already listed as Threatened or Endangered. List 3 species are a review list to provide additional information to help determine rarity (CNPS, 2006).
- Animal species designated as “Species of Special Concern” or “Fully Protected” by the CDFG, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and sensitive species included in USFWS Recovery Plans are considered special status species. Although California and USFWS species of concern generally have no special legal status, they are given special consideration under CEQA.
- Species of Local Concern (SLC) are also given special consideration under CEQA and are considered special status species in this report.
- Bats designated as “High Priority” by the Western Bat Working Group (WBWG). Although these species have no legal status under the ESA, the USFWS recommends their protection as their populations are declining and they could be listed as Threatened or Endangered (under ESA) in the future.

Several special status plant and wildlife species are known to occur within or adjacent to the Plan Area. Most of the known occurrences and suitable habitat for special status plant and wildlife species are located outside of the Plan Area. A relatively small number of special status plant and wildlife species are known to occur within the Plan Area. However, all special status plant and wildlife species that occur, or have the potential to occur, within and directly adjacent to the Plan Area are discussed below.

4.3.1 Special Status Plant Species

The majority of the Plan Area is comprised of agricultural and developed land, and thus does not provide suitable habitat for most rare plant species. Only one special status plant species was observed within the Plan Area during assessments and surveys. An additional nine (9) special status plant species are documented to occur directly adjacent to the Plan Area, and four (4) special status plant species are known to occur elsewhere in Santa Clara County and have habitat requirements similar to habitats that occur within the Plan Area. Special status plant surveys were performed in parcels that were accessible at the time the surveys were conducted. Habitat present in inaccessible parcels was evaluated for the potential to support special status plant species based on assessments and the most current species occurrence records. All special status plant species that have been documented to occur in the project vicinity are identified in Appendix A, along with their regulatory status, habitat requirements, flowering period, and potential to occur on the site. Figure Bio-3 shows the approximate locations of special status plant species known to occur within and adjacent to the Plan Area.

4.3.1.1 *Special Status Plant Species Observed or Documented within the Plan Area*

Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*). CNPS List 1B Species. Mt. Hamilton thistle is a perennial herb that typically occurs in chaparral, cismontane woodland, and serpentine seeps between 100 and 380 meters in elevation. The species is also known to occur in drainages in areas of serpentine soils. It blooms between February and October. A small population of Mt. Hamilton thistle was observed in May 2003 growing in a small ephemeral drainage along the eastern end of the Greenbelt, south of the Ogier Ponds near the former Coyote Creek bypass channel (Figure Bio-3).

4.3.1.2 *Special Status Plant Species Documented Adjacent to the Plan Area*

Coyote ceanothus (*Ceanothus ferrisae*). CNPS List 1B Species, Federal Endangered. Coyote ceanothus is a perennial evergreen shrub that typically occurs in chaparral, coastal scrub, and valley and foothill grassland, often on serpentine soils at elevations between 120 and 460 meters. It blooms from January to May. Only five occurrences of this species are known, all of which are located in the hills on either side of the southernmost end of the Greenbelt. All of these occurrences are located in serpentine chaparral habitat, which is present in many areas of the hills surrounding the Plan Area, but is not present within the Plan Area. This species was not observed during protocol level rare plant surveys, and was determined not to be present in the Plan Area.

Santa Clara Valley dudleya (*Dudleya setchellii*). CNPS List 1B Species, Federal Endangered. Santa Clara Valley dudleya is a perennial herb that typically grows on rocky serpentine outcrops in valley and foothill grassland at elevations between 60 and 455 meters. It blooms from April to June. There are many known occurrences of this species directly adjacent to the Plan Area in the foothills of the Santa Cruz Mountains and Mt. Hamilton Range. All local occurrences are located on rocky serpentine outcrops on hillsides and ridges, habitat types that are not found within the Plan Area. This species was not observed during protocol level rare plant surveys of accessible parcels in the Plan Area, and is not likely to occur within the Plan Area. However, a new occurrence of Santa Clara Valley dudleya was located by WRA botanists just outside of the Plan Area in the foothills of the Santa Cruz Mountains. A total of approximately 200-300 plants were found at this location growing in rocky serpentine outcrops (Figure Bio-3).

Fragrant fritillary (*Fritillaria liliacea*). CNPS List 1B Species. Fragrant fritillary is a perennial bulbiferous herb that typically occurs in cismontane woodland, coastal prairie and scrub, and valley and foothill grassland, often on serpentine and sometimes along vernal pool margins at elevations between 3 and 410 meters. It blooms between February and April, often for as little as one or two weeks in duration. Many occurrences of this species are located in the hills immediately west and immediately east of the Plan Area. Relatively undisturbed grassland areas in the hills immediately west of the Plan Area may contain suitable habitat for this species, but it is unlikely to occur in the Plan Area due to the amount of disturbance.

Loma Prieta hoita (*Hoita strobilina*). CNPS List 1B Species. Loma Prieta hoita is a perennial herb that typically occurs in chaparral, cismontane woodland, and riparian woodland, usually on serpentine soils at elevations between 30 and 860 meters. It blooms from May to October. Occurrences of this species are located east of Highway 101 north of the Coyote

Coyote Valley
Specific Plan

Figure Bio-3.

Approximate
Locations of
Special Status Plant
Species within and
adjacent to the
Plan Area

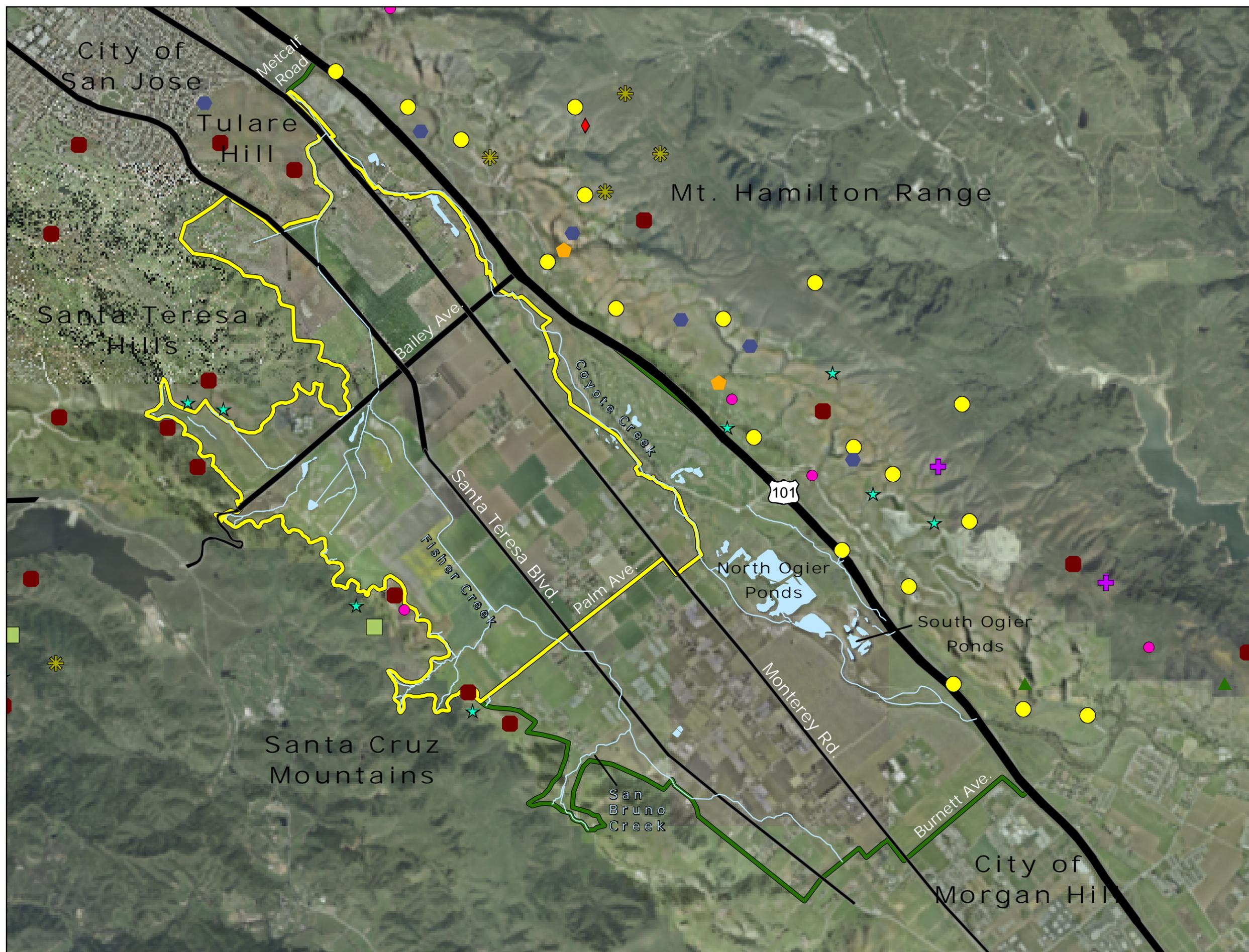
Special Status Plant Species

-  arcuate bush mallow
-  coyote ceanothus
-  fragrant fritillary
-  Hall's bush mallow
-  Loma Prieta hoita
-  Metcalf Canyon jewel-flower
-  most beautiful jewel-flower
-  Mt. Hamilton thistle
-  Santa Clara Valley dudleya
-  smooth lessingia
-  Tiburon Indian paintbrush
-  Development Area
-  Greenbelt



Scale 1: 36000
1 inch = 3,000 feet

Date: July 2006
Drawn By: Chris Zumwalt
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Creek Golf Course and in the hills approximately two miles north of the IBM campus. This species could occur in riparian areas on the Coyote Creek corridor. However all of the local occurrences are on serpentine hillsides in communities that are not present in the Plan Area. Therefore, this species is not likely to occur in the Plan Area.

Smooth lessingia (*Lessingia micradenia* var. *glabrata*). CNPS List 1B Species. Smooth lessingia is an annual herb that typically occurs in chaparral and cismontane woodland on serpentine soils at elevations between 120 and 420 meters. It blooms from July through November. Many occurrences of this species are located on the hillsides directly adjacent to the Plan Area. Serpentine alluvium along the eastern boundary of the Greenbelt and the western boundary of the Development Area may provide suitable habitat for this species. However, it is not likely that this species is present in the Plan Area.

Arcuate bush mallow (*Malcothamnus arcuatus*). CNPS List 1B Species. Arcuate bush mallow is a perennial evergreen shrub that typically occurs in chaparral and cismontane woodland at elevations between 15 and 355 meters. It blooms from April through September. The only known occurrence of this species adjacent to the Plan Area was last observed in 1937 in the hills east of Highway 101. It is not likely to occur in the Plan Area.

Hall's bush mallow (*Malacothamnus hallii*). CNPS List 1B Species. Hall's bush mallow is a perennial evergreen shrub that typically occurs in chaparral and coastal scrub at elevations between 10 and 760 meters. The species is also known to occur on serpentine outcrops, along drainages, and on road cuts. It blooms from May to September. Nearby occurrences of this species are located along Metcalf Canyon Road, Madrone Road and in the foothills of the Santa Cruz Mountains. However, this species was not observed in the Plan Area during any of the assessments and surveys, and is not expected to be present in the Plan Area.

Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*). CNPS List 1B Species, Federal Endangered. Metcalf Canyon jewelflower is an annual herb that typically occurs on rocky serpentine outcrops and slopes in valley and foothill grassland at elevations between 45-800 meters. It blooms between April and June. This species is known to occur in the hills just east of Highway 101. All local occurrences are on hilltops and hillsides in serpentine outcrops and grasslands, which is a habitat type that is not present in the Plan Area. This species was not observed during protocol-level rare plant surveys of parcels with suitable habitat in the Plan Area, but has documented occurrences in the foothills of the Hamilton Range east of Highway 101. It is not expected to be present in the Plan Area.

Most-beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus*). CNPS List 1B Species. Most-beautiful jewelflower is an annual herb that typically grows in chaparral, cismontane woodland, and valley and foothill grassland with serpentine soils at elevations between 120 and 1,000 meters. It blooms from April to June. Most-beautiful jewelflower is closely related to Metcalf Canyon jewelflower and is similar in growth form and habitat. Most-beautiful jewelflower occurs almost exclusively on hilltops, hillsides, and road cuts on serpentine slopes. Known occurrences of this species are located in the foothills of the Mount Hamilton Range east of Highway 101, in the foothills of the Santa Cruz Mountains along the western boundary of the Plan Area, and in the hills north of the Plan Area. However, this species was not observed in the Plan Area during protocol-level rare plant surveys of accessible parcels and is unlikely to occur in the Plan Area.

4.3.1.3 *Special Status Plant Species that Occur Elsewhere in Santa Clara County with Potential to Occur within or adjacent to the Plan Area.*

Bent flowered fiddleneck (*Amsinckia lunaris*). CNPS List 1B Species. Bent flowered fiddleneck is an annual herb that typically grows in coastal bluff scrub, cismontane woodland, and valley and foothill grassland plant communities at elevations between 3 and 500 meters. It blooms from March to June. Occurrence records for this species indicate that it may occur in grassland areas adjacent to coyote brush scrub habitat and adjacent to or within oak woodlands. Such habitat is present in the Coyote Creek corridor near the Ogier Ponds and along the hills near the western portion of Bailey Avenue within the Plan Area.

Big scale balsamroot (*Balsamorhiza macrolepsis* var. *macrolepsis*). CNPS List 1B Species. Big scale balsamroot is a perennial herb that typically occurs in chaparral, cismontane woodland and valley and foothill grassland habitats at elevations between 90 and 1400 meters. It blooms from March to June. Species occurrence records indicate that this species is present just west of the Coyote Lake Dam and near the confluence of Silver Creek and Coyote Creek, and can occur in vernal moist areas on a variety of soil types. Riparian scrub and grassland habitat along the Coyote Creek corridor and in the hills near the western portion of Bailey Avenue within the Plan Area may provide suitable habitat for this species.

Bristly sedge (*Carex comosa*). CNPS List 2 Species. Bristly sedge is a perennial rhizomatous herb that typically occurs in coastal prairie, valley and foothill grassland, and in marshes and swamps along lake margins at elevations between 0 and 625 meters. It blooms from May to September. The margins of the Ogier Ponds in the Coyote Creek corridor may provide suitable habitat for this species.

Woolly-headed lessingia (*Lessingia hololueca*). CNPS List 3 Species. Woolly-headed lessingia is an annual herb that typically occurs in broadleaf upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland on clay and serpentine. It occurs at elevations from 15 to 305 meters and blooms between June and October. Areas of non-native grassland on clay soils are present along the western margins of the Plan Area. Although these areas are somewhat disturbed, they may still contain suitable habitat for this species, but plant surveys conducted in these areas determined that this species is not present in the Plan Area.

4.3.2 **Special Status Wildlife Species**

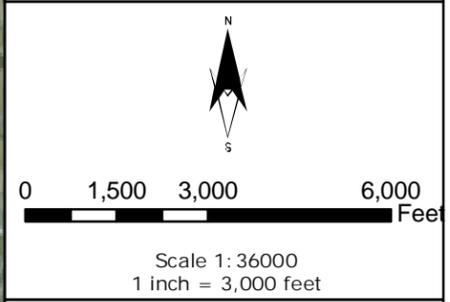
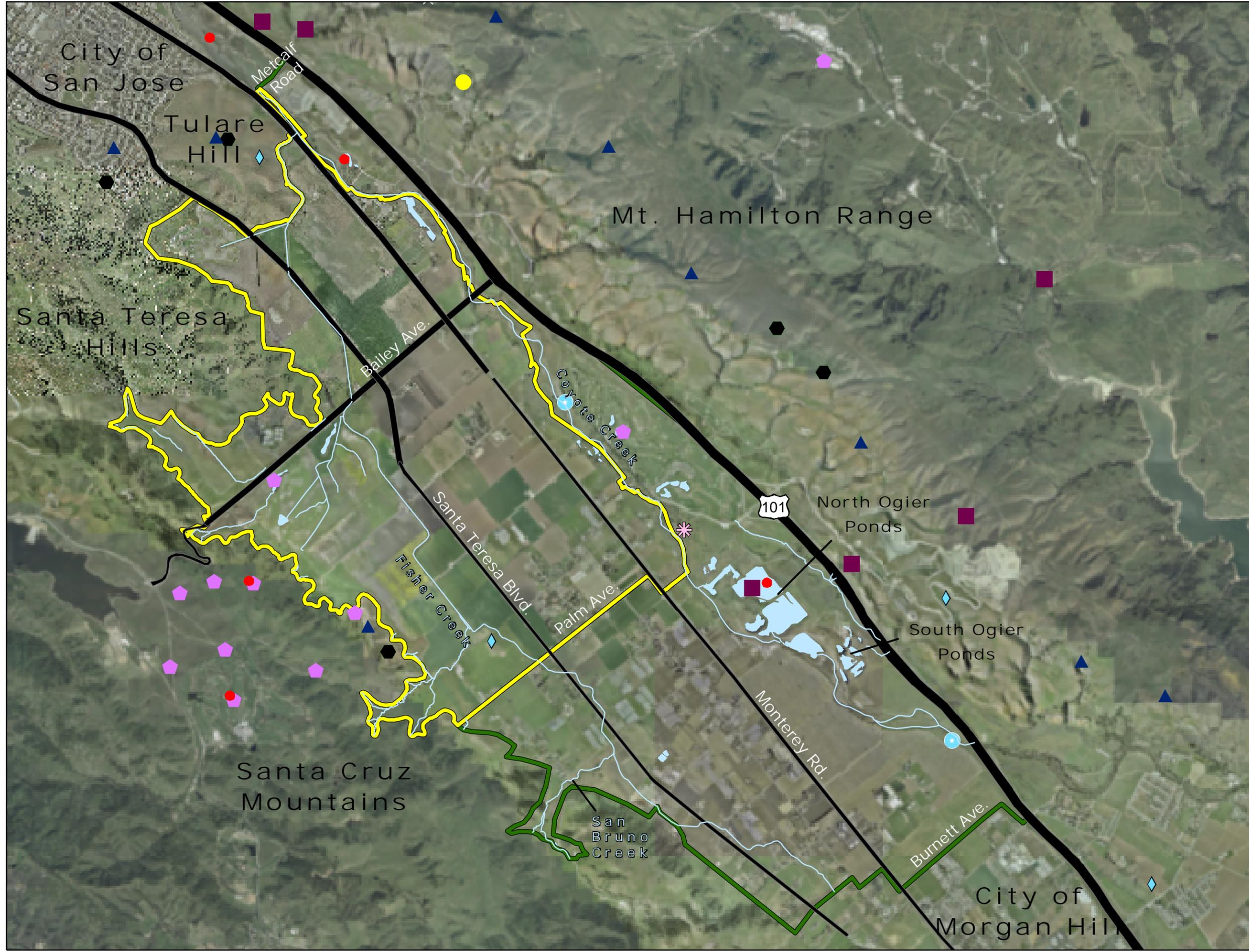
A total of sixteen (16) special status wildlife species are documented to occur within the Plan Area, five (5) species have known occurrences adjacent to the Plan Area, and seventeen (17) species are known to occur elsewhere in Santa Clara County and have the potential to occur within or adjacent to the Plan Area. Several species with protected rookeries or only nesting habitat were documented foraging in the Plan Area. These species are described as having the potential to occur or potential to nest in the Plan Area, but rookery sites may not have been documented within the Plan Area. Figure Bio-4 shows the approximate locations of special status wildlife species known to occur within or adjacent to the Plan Area. Figure Bio-5 shows areas of critical habitat and proposed critical habitat within and adjacent to the Plan Area. All special status wildlife species that have been documented to occur in the project vicinity are identified in Appendix B, along with their regulatory status, habitat requirements, flowering period, and potential to occur on the site.

Coyote Valley Specific Plan

Figure Bio-4.

Approximate Locations of Special Status Wildlife Species within and adjacent to the Plan Area

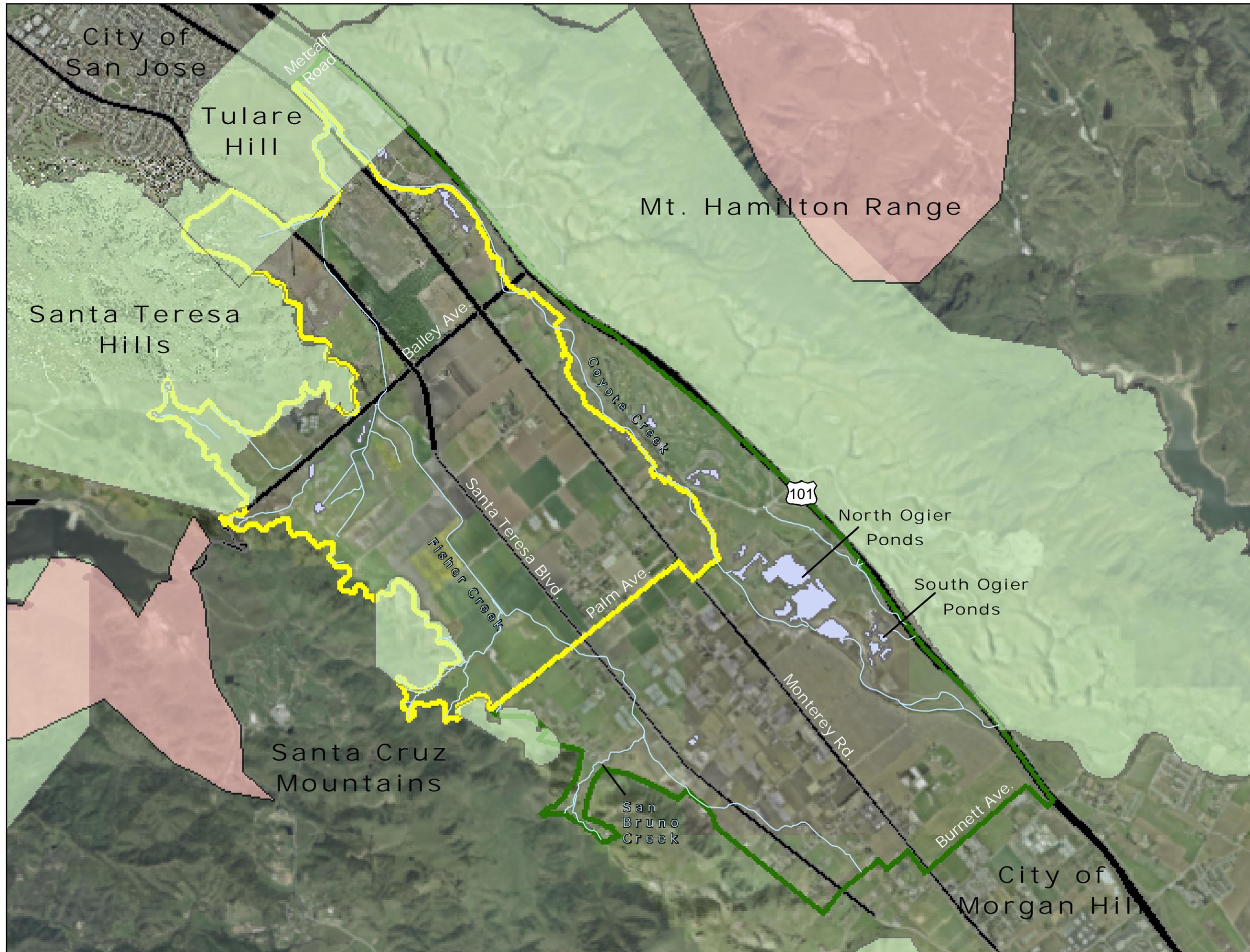
- Special Status Wildlife Species**
- ★ Hom's micro-blind harvestman
 - ▲ Bay checkerspot butterfly
 - ◆ Western Burrowing Owl
 - ✚ Foothill yellow-legged frog
 - ✱ Great Blue Heron
 - Western pond turtle
 - ◆ California tiger salamander
 - Opler's longhorn moth
 - San Joaquin kit fox
 - California red-legged frog
 - ★ Central California coast steelhead
 - Stream
 - Pond
 - Development Area
 - Greenbelt



Coyote Valley Specific Plan

Figure Bio-5.

Critical Habitat and Proposed Critical Habitat Designations within and adjacent to the Plan Area



Critical Habitat

-  Bay Checkerspot Butterfly
-  California Tiger Salamander (proposed critical habitat)
-  Development Area
-  Greenbelt



0 1,500 3,000 6,000 Feet

Scale 1: 36000
1 inch = 3,000 feet

4.3.2.1 *Special Status Wildlife Species Observed or Documented Within the Plan Area*

Central California coastal steelhead (*Oncorhynchus mykiss*), Federal Threatened, CDFG Species of Special Concern. This steelhead evolutionarily significant unit (ESU) is known to occur in Coyote Creek within the Greenbelt. Recent surveys of Coyote Creek for the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) detected steelhead upstream and downstream from Metcalf Dam (Buchan and Randall, 2003). While some areas of Coyote Creek may be better suited for spawning than others, the entire creek is considered occupied by steelhead. Although Fisher Creek is connected to Coyote Creek at the north end of the Plan Area, steelhead are not known nor expected to occur within Fisher Creek. The streambed of Fisher Creek is comprised of fine sediment rather than gravel substrate and a two-foot high barrier separates this waterway from Coyote Creek (H.T. Harvey & Associates, 1999a), making Fisher Creek inadequate habitat for steelhead. Coyote Creek is considered critical habitat for steelhead (USFWS, 2000).

California red-legged frog (*Rana aurora draytonii*), Federal Threatened, CDFG Species of Special Concern. California red-legged frog (CRLF) is known to occur throughout the foothills of Santa Clara County. Suitable habitat for CRLF includes ponds, streams, freshwater seeps, and freshwater marsh communities. According to the CNDDDB, CRLF was documented breeding in the Plan Area in the South Ogier Ponds in 2003 (CDFG, 2006). Adjacent to the Plan Area, the nearest documented population of CRLF is 0.25 miles east of the Plan Area, northeast of the Coyote Creek Golf Club in the Mount Hamilton Range, in a mitigation pond and wetland. There are twelve records of red-legged frog occurrences within five miles of the Plan Area of which eight are within 2.5 miles of the Plan Area. Most of the known occurrences are in the Mount Hamilton Range and the Santa Cruz Mountains on either side of the Plan Area. Specific occurrences, known breeding sites, and areas suggested for surveys are discussed in the *California Red-legged Frog Habitat Assessment Report* prepared by WRA (2004b).

Protocol-level California red-legged frog surveys performed in accessible portions of the Plan Area in Fall 2003 found no red-legged frogs in any of the potential breeding habitat locations identified during the frog assessment. The results of this survey are discussed in the *California Red-legged Frog Survey Report* prepared by WRA (2004c). However, recent documented occurrences (CNDDDB, 2005) in the South Ogier Ponds and a cattail pond just south of the Metcalf PG&E substation in the Greenbelt suggest these areas remain potential habitat for CRLF. Potential California red-legged frog habitat in inaccessible portions of the Plan Area includes two ponds and one wetland located north of Bailey Avenue adjacent to the Santa Teresa Hills, three ponds immediately south of Bailey Avenue, water hazards at the Coyote Creek Golf Club, and one pond located in the San Bruno Creek watershed at the base of the Santa Cruz Mountains. The north Ogier Ponds and Coyote Creek are very low quality breeding habitat due to the presence of non-native predators including predatory fish. The Plan Area is not within designated critical habitat for CRLF (USFWS, 2006b)

California tiger salamander (*Ambystoma californiense*), Federal Threatened, CDFG Species of Special Concern. California tiger salamander (CTS) is documented to occur within the Development Area and Greenbelt. CTS breed in seasonally ponded areas such as ponds, slower moving streams, and freshwater marsh communities. CTS larvae hatch and develop within the aquatic breeding habitat, then metamorphosize and move out of the ponded areas, occupying upland areas surrounding a breeding pool as juveniles and adults. CTS use upland areas containing ground squirrel burrows or similar refugia where the soil atmosphere remains moist to survive the dry summer months. Little is known about dispersal of juvenile CTS, but

juveniles have been found as far as 1.5 kilometers from breeding sites (Austin and Shaffer 1992, Jennings and Hayes 1994). CNDDDB records indicate CTS occurrences in ponds south of Bailey Avenue and west of Santa Teresa Boulevard (1998), in ponds of the Coyote Creek Golf Course (1996), and in the foothills of the Santa Cruz Mountains along the southwest boundary of the Plan Area (1997, 1998). Although the occurrence south of Bailey Avenue is considered extirpated by CDFG, the occurrences at Coyote Creek Golf Course and along the southwest boundary of the Plan Area are presumed to be extant. WRA biologists confirmed the presence of CTS in one stock pond just outside of the western boundary of the Development Area at the base of the Santa Cruz Mountains during surveys in December 2003 and January 2004 (WRA, 2004e). Burrows on the stock pond dam face on the edge of the Development Area and the surrounding hills were determined to be CTS aestivation habitat.

Although possibly extirpated from the valley floor (H.T. Harvey and Associates, 1999b), suitable breeding and aestivation habitat for CTS are still present in Fisher Creek, its tributaries, in stock ponds within the Plan Area, and in stock ponds and surrounding areas in the adjacent foothills of the Santa Cruz Mountains. However, intense farming practices and urban development minimizes the value of most of the potential CTS habitat within the Development Area. Other potential breeding habitat for CTS includes the wetlands and ponds north of Bailey Avenue and south of Santa Teresa in the Development Area, an unnamed tributary to Fisher Creek north of Palm Avenue in the Development Area, and in San Bruno Creek in the Greenbelt. The ponds north of Bailey Avenue near the IBM campus contain mosquito fish, a known predator of CTS larvae, and are therefore less suitable than the other areas. Several other areas including the Ogier Ponds and golf course water hazards were visited during the 2003 assessment (WRA, 2004d). Due to the presence and abundance of non-native predators and the lack of migration corridors, these ponds are not considered suitable breeding habitat. Specific CTS occurrences, known breeding sites, and surveyed areas are discussed in the *California Tiger Salamander Survey Report* prepared by WRA (2004e).

Western pond turtle (*Clemmys marmorata*), CDFG Species of Special Concern. Western pond turtles were observed in a pond just south of the PG&E Metcalf substation in the northeast portion of the Plan Area in September 2003 (WRA, 2004a). CNDDDB (CDFG 2006) lists two other occurrences of this species in the Plan Area including an occurrence north of the Greenbelt in the Metcalf percolation ponds (1998) and in the south Ogier Ponds (2003) within the Greenbelt. Data compiled by H.T. Harvey & Associates (1999c) indicate that western pond turtles occur along Coyote Creek within the Plan Area, and in stock ponds west of the Plan Area. Suitable habitat for the western pond turtle exists in all open water aquatic habitat within the Plan Area and in suitable adjacent upland oviposition habitat, which consists of most undisturbed upland habitats within 200 meters of aquatic habitat.

Great Blue Heron (*Ardea alba*). Species of Local Concern, Rookery sites are considered sensitive by CDFG. The Great Blue Heron can be found in freshwater and brackish marshes, lakes, and rivers. Riparian communities along Coyote Creek in the Plan Area provide secluded wooded areas suitable for a Great Blue Heron nesting colony. A nesting colony of up to five nests is known from 1991 just north of the percolation ponds in the Greenbelt, in a large sycamore tree surrounded by other riparian vegetation (CNDDDB 2006). During June and July 2003 site visits, suitable heron nesting habitat was found in secluded riparian areas along Coyote Creek (WRA, 2004a). Great Blue Herons were observed foraging in ponds and freshwater marsh communities along Coyote Creek and it is highly likely that the Great Blue Heron nests along this riparian corridor.

White-Tailed Kite (*Elanus leucurus*), CDFG Fully Protected Species. The White-tailed Kite is common to the Coyote Valley and breeding habitat is present throughout the Plan Area. Several White-tailed Kites, including one juvenile bird, were observed soaring over agricultural fields during the biological assessment of the Plan Area (WRA, 2004a). Kites likely nest in the valley oak woodland and riparian communities within the Plan Area, and forage in the nearby grasslands and agricultural fields.

Northern Harrier (*Circus cyaneus*), CDFG Species of Special Concern, Species of Local Concern. A Northern Harrier was observed in an agricultural field in the Development Area in July 2003 (WRA, 2004a). Northern Harriers inhabit prairies, savannahs, wet meadows, and agricultural fields where nesting occurs on the ground (Ehrlich et al. 1988). Suitable breeding and foraging habitat is available throughout the Plan Area in undisturbed agricultural, grassland, and open canopied oak woodland habitats.

Golden Eagle (*Aquila chrysaetos*), CDFG Species of Special Concern, CDFG Fully Protected Species, Species of Local Concern. Golden Eagles are known to be present in the vicinity of the Plan Area and have been observed foraging over the Development Area. CNDDDB records show that in 1989 a pair of Golden Eagles nested in a transmission tower approximately 2.5 miles west the Plan Area, north of Calero Reservoir dam. In addition, WRA observed a pair of Golden Eagles soaring over the southern portion of the Plan Area in September 2003 (WRA, 2004a). Suitable foraging habitat is available in the annual grassland, open canopied valley oak woodland, and agricultural communities within and adjacent to the Plan Area. Breeding habitat, although limited and low quality, is available within the Plan Area in tall trees and transmission towers along Coyote Creek and at various locations in the annual grassland, valley oak woodland, and agricultural areas, but most of these areas are unlikely to be used because of continual disturbances from nearby urban development. No nests are known to occur within ¼ mile of the Development Area.

Long-Billed Curlew (*Numenius americanus*), CDFG Species of Special Concern, USFWS Bird of Conservation Concern. The Long-billed Curlew is an expected winter visitor to the Coyote Valley region and has been observed in the north portion of the Development Area (H.T. Harvey & Associates, 1999a). The Long-billed Curlew nests in wet meadow habitat in northeastern California and Oregon, and is thus not expected to nest in the Plan Area, but wintering birds forage in the annual grasslands, freshwater marshes, and agricultural fields throughout the site.

Western Burrowing Owl (*Athene cunicularia hypugea*), CDFG Species of Special Concern, USFWS Bird of Conservation Concern, Species of Local Concern. Between 2003 and 2005, WRA biologists observed burrowing owls approximately 1/4 mile west of the Plan Area near Calero Reservoir; an individual immediately west of the Development Area at the base of the Santa Cruz Mountains, and a nesting pair within the Development Area on the north side of Palm Avenue west of Fisher Creek (WRA, 2004a). H.T. Harvey & Associates (1999a) reported observing four burrowing owls near burrows south of Bailey Avenue in the Development Area. Although there are no CNDDDB records of Western Burrowing Owl occurrences within the Plan Area, they are documented in the foothills surrounding the Plan Area in the Mount Hamilton Range, Tulare Hill, in urban areas of San Jose, and in Morgan Hill (CDFG, 2006). Potential foraging habitat is present throughout the Plan Area.

It is very likely that burrowing owls currently use other locations in the Plan Area for foraging, nesting, and wintering. Burrowing owls have been known to nest in debris piles, roadside and agricultural ditches, golf courses, and airports (Ehrlich et al., 1988). There are several locations

in annual grasslands, ruderal agricultural fields, agricultural fields and developed land in the Plan Area where concentrations of ground squirrel burrows provide suitable nesting habitat. Burrowing owls could potentially use almost any undeveloped habitat type within the Plan Area. While burrowing owls are not typically found in riparian thickets or in densely urban areas, owls may forage or use burrows along the edges of buildings or greenhouses and along the edges of riparian habitats throughout the Plan Area.

California Thrasher (*Toxostoma redivivum*), Species of Local Concern. The California Thrasher was observed in the Greenbelt in July 2003 near Coyote Creek (WRA, 2004a). This species occupies moderate to densely vegetated chaparral habitats and less commonly, extensive riparian habitat thickets in central coast riparian scrub. Suitable habitat for nesting is present in the Plan Area in areas along Fisher Creek, San Bruno Creek, Coyote Creek, and northwest of the Development Area on Tulare Hill and in the Santa Teresa Hills.

Loggerhead Shrike (*Lanius ludovicianus*), CDFG Species of Special Concern, USFWS Bird of Conservation Concern, Species of Local Concern. The Loggerhead Shrike has been observed in agricultural fields, developed land, and annual grasslands throughout the Plan Area (WRA, 2004a). The Loggerhead Shrike prefers areas with scattered shrubs, trees, posts, fences, utility lines, or other perches such as occur in annual grassland and valley oak woodland communities within the Plan Area. This species typically nests in densely vegetated, isolated trees and shrubs. These habitat types are present throughout the Plan Area and it is assumed that Loggerhead Shrikes breed on site.

Yellow Warbler (*Dendroica petechia brewsteri*), CDFG Species of Special Concern, Species of Local Concern. H.T. Harvey & Associates reports that Yellow Warblers have been confirmed breeding along Coyote Creek and that a Yellow Warbler was observed in the north portion of the Development Area in 1998 (1999a). Yellow Warblers occupy riparian communities. The entire riparian corridors of Coyote Creek and Fisher Creek should be considered potential breeding habitat for this species. It is expected that Yellow Warblers continue to breed and migrate throughout the Plan Area.

Tricolored Blackbird (*Agelaius tricolor*), CDFG Species of Special Concern, USFWS Bird of Conservation Concern, Species of Local Concern. Tricolored Blackbird nests over or near fresh water in dense cattails and tules, or in thickets of willow, blackberry, wild rose, or other tall herbaceous plant species. This species will forage in annual grassland and agricultural fields for insects and seeds. Suitable nesting habitat is found along Coyote Creek as well as in a large cattail lined stock pond west of the Plan Area in the Santa Cruz Mountains. This species has been documented to occur in the Ogier Ponds in 2002 (CNDDDB 2006).

Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*), CDFG Species of Special Concern USFWS Bird of Conservation Concern, Species of Local Concern. This subspecies of the Common Yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, and brackish and saltwater marshes. Their breeding range extends to Tomales Bay in the north, Carquinez Strait to the east and Santa Cruz County to the south (Grinnell and Miller 1944). Saltmarsh Common Yellowthroats were observed by WRA along Coyote Creek at two different locations. In both cases the birds were singing males, which indicates that breeding is likely taking place. Riparian vegetation along Fisher Creek also provides suitable breeding habitat for the Saltmarsh Common Yellowthroat.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). CDFG Species of Special Concern. Active nests of the San Francisco dusky-footed woodrat were observed along Coyote Creek in June 2003 (WRA, 2004a). This species is also known to occur along Fisher Creek (H.T. Harvey & Associates, 1999a) and is expected to be present in all riparian habitats within the Plan Area.

4.3.2.2 *Special Status Wildlife Species with Documented Occurrences Adjacent to the Plan Area.*

Hom's microblind harvestman (*Microcina homi*), Jung's microblind harvestman (*Microcina juni*), Edgewood blind harvestman (*Calicina minor*) USFWS Recovery Plan (No Status). Harvestmen are arachnids, in the order Opiliones, commonly referred to as "daddy-long-legs". Generally, harvestmen require a moist environment, usually found in damp shaded areas in and around vegetation, under rocks, in leaf litter, and in caves, but can endure xeric conditions. These three species are found in open grassland habitat, typically under medium to large serpentine rocks in undisturbed soil.

There are two occurrences of Edgewood blind harvestman within three miles of the Plan Area, in the Santa Teresa foothills west of Coyote Valley and one occurrence approximately 1.5 miles south of the Plan Area. Suitable serpentine rock habitat also exists west of the Plan Area in the Santa Cruz Mountains, and may provide suitable habitat for Edgewood blind harvestmen and both *Microcina* species.

Opler's longhorn moth (*Adela oplerella*). USFWS Recovery Plan (No Status). Opler's longhorn moth is known from 18 sites extending along the west side of San Francisco Bay from five miles southeast of Nicasio in Marin County south to the Gilroy area of Santa Clara County. Opler's longhorn moth inhabits serpentine grasslands similar to that of the bay checkerspot butterfly. This moth is dependent on their larval food plant cream cups (*Platystemon californicus*). Serpentine soil habitat on the western edge of the Development Area and in the hills to the north and east provide suitable habitat for this species. Documented occurrences border the Plan Area in the foothills of the Santa Cruz Mountains, Tulare Hill, and two occurrences in the Mount Hamilton Range.

Bay checkerspot butterfly (*Euphydryas editha bayensis*), Federal Threatened. Bay checkerspot butterflies (BCB) occur in serpentine grasslands that contain the larval host plant dwarf plantain (*Plantago erecta*), secondary host plants Indian paintbrush (*Castilleja densiflora* or *Castilleja exserta*), and butterfly nectar plant species such as fiddleneck (USFWS, 1998). BCB have been documented in the foothills of the Santa Cruz Mountains west of the Development Area (USFWS 2001a); on Tulare Hill, just north of the Development Area; and in great numbers on serpentine hillsides of the Mount Hamilton Range, approximately one mile east of the Plan Area (CDFG, 2006). The U.S. Fish and Wildlife Service designated critical habitat for the BCB in 2001 (USFWS 2001a). Seven critical habitat units directly surround the Plan Area; Kalana Hills (in the Santa Cruz Mountains) Kirby (in the Mount Hamilton Range), Morgan Hill, Metcalf, Tulare Hill, Santa Teresa Hills, and San Vicente (Calero Reservoir area). Six of these seven units surround the Plan Area, and a few small portions of the critical habitat units are within the Plan Area boundaries (Figure Bio-5). However, these areas consist of developed land and agricultural fields, and do not contain butterfly larval host plants or adult butterfly nectar plants. No suitable habitat for the butterfly exists in the critical habitat areas within the Plan Area.

Foothill yellow-legged frog (*Rana boylei*). CDFG Species of Special Concern. Foothill yellow-legged frogs require shaded, shallow streams with riffles and cobble-sized rocky substrate (Hayes and Jennings, 1988). The rocky substrate provides egg attachment sites and refuge for larvae, post-metamorphs, and adults. The foothill yellow-legged frog is infrequent or absent in habitats where introduced aquatic predators (non-native fish and bullfrogs) are present (Jennings and Hayes, 1994; Kupferberg, 1984). This species is known to occur in the foothills of the Santa Cruz Mountains southwest of the Calero Reservoir. Optimal habitat is not present within the Plan Area.

Least Bell's Vireo (*Vireo bellii pusillus*), Federal Endangered, State Endangered. The Least Bell's Vireo was reportedly observed along Coyote Creek in June 2006 near the Coyote Creek Golf Course (Mike Thomas, pers. comm.). This species occupies early to mid-succession densely foliated riparian habitat characterized by willows (*Salix* spp.), and a dense understory. Nests are typically placed within one meter of the ground. The nesting period for Least Bell's Vireo is from mid-March to late September. Suitable nesting habitat for the Least Bell's Vireo is present throughout the Coyote Creek floodplain and in areas along Fisher Creek where willows form dense riparian thickets.

American badger (*Taxidea taxus*). CDFG Species of Special Concern. American badgers reportedly occur on Tulare Hill, in the northern portion of the Plan Area (CBI, 2006). American badgers are relatively common in drier open stages of most habitats with friable or sandy soils. Badgers dig burrows or reuse old squirrel burrows for cover. Suitable habitat for badgers is present throughout the Coyote Creek floodplain and surrounding foothills to the east and west of the Plan Area. Badgers may be present in other parts of the Plan Area where suitable ground squirrel burrows are present. Disked agricultural land and residential properties does not provide suitable habitat for this species.

San Joaquin kit fox (*Vulpes macrotis mutica*), Federal Endangered, State Threatened. San Joaquin kit fox is found in annual grasslands or grassy open areas with scattered shrubby vegetation such as coastal sage chaparral communities (USFWS, 1983). Loose-textured sandy soils for burrowing and a suitable prey base are required. Two kit foxes were documented seven miles east of the Plan Area in 1975 (CDFG, 2006). However, Highway 101 acts as a significant barrier between the Plan Area and any movement by kit foxes from the east. The Plan Area is outside the known range of the San Joaquin kit fox.

4.3.2.3 *Special Status Wildlife Species Known to Occur Elsewhere in Santa Clara County with Potential to Occur within or adjacent to the Plan Area.*

Double-Crested Cormorant (*Phalacrocorax auritus*) (rookery). CDFG Species of Special Concern, Species of Local Concern. A year-round resident of the entire coast of California, Double-crested Cormorant nests and forages in inland lakes and fresh, salt and estuarine waters. Colonial nesters, breeding sites are always located beside the water on islands or on wide rock ledges, cliffs, and rugged slopes or in tall trees or snags in riparian areas. Although no rookery sites are known within or adjacent to the Plan Area, Double-crested Cormorants were observed in the north Ogier Ponds in the Plan Area during an August 2005 site visit. Potential rookery sites are present in the tall trees lining the ponds although no nests were seen. Although this species was observed on site, there is only a moderate potential for a nesting colony to occur in the Greenbelt.

Snowy Egret (*Egretta thula*) (rookery). Species of Local Concern. Snowy Egret is widespread along shores of fresh and saline marshes, ponds, slow-moving rivers, irrigation

ditches, and agricultural fields. This species feeds on small fish, crustaceans, and large insects. Colonial nesting occurs in low trees or wetland vegetation, sometimes in mixed colonies of wading birds. Suitable foraging habitat is found throughout the Plan Area and potential nesting habitat is present in riparian areas along Coyote Creek. Although no known rookery sites are present within or adjacent to the Plan Area, individual Snowy Egrets were observed in the Plan Area during the site visit. No rookery sites were observed. However, there is a moderate potential for this species to nest in the Greenbelt.

American Bittern (*Botaurus lentiginosus*) Species of Local Concern. The American bittern occurs in fresh emergent wetlands, often hiding, resting, and roosting solitarily amidst tall, dense, emergent vegetation, on ground, or near ground on logs, stumps, or on emergent plants. Their nest is a platform of matted emergent aquatics usually in shallow water, but sometimes floating, or on the ground. There is a moderate to high potential for this species to nest in the Greenbelt or along Fisher Creek.

Cooper's Hawk (*Accipter cooperii*). CDFG Species of Special Concern, Species of Local Concern. Cooper's Hawk inhabits woodland areas in dense stands of live oak woodland, riparian communities, and other forest communities near water. Nests are built in deciduous trees in densely canopied stands of trees near open water. Cooper's Hawk is known to occur in Santa Clara County; however there are no documented occurrences within ten miles of the Plan Area. Suitable nesting habitat is present in the central coast sycamore riparian forest along Coyote Creek in the Plan Area and there is a high potential for the species to occur.

Prairie Falcon (*Falco mexicanus*). CDFG Species of Special Concern, USFWS Bird of Conservation Concern, Species of Local Concern. Prairie Falcon inhabits dry, open terrain such as annual grasslands or agricultural fields and hunts for birds and small mammals on the wing. Nests are built on cliff ledges or crevices facing open habitat. This species is expected to forage within the Plan Area, but no suitable nesting habitat is available.

Short-Eared Owl (*Asio flammeus*). CDFG Species of Special Concern, Species of Local Concern. This medium sized owl breeds and forages in areas where the nest can be concealed by low, dense vegetation, such as in prairies, annual and perennial grasslands, meadows, saline and freshwater marshes, irrigated lands, and sometimes in open canopied valley oak woodlands. Short-Eared Owl is known to be nomadic until an area with a high population of rodents is located. Suitable annual grassland habitat is present immediately west of the Plan Area, where grazing is minimal or removed. Grassland and marsh habitats within the Plan Area lack suitable cover due to grazing and agricultural activities and are therefore not suitable for this species.

Costa's Hummingbird (*Calypte costae*). Species of Local Concern. Costa's Hummingbird, a summer migrant, inhabits environments that provide flower nectar and insects such as desert scrub, valley foothill/desert riparian areas, coastal scrub, and sage-chaparral communities. Nests are built in a variety of trees, shrubs, cacti and woody forbs, sometimes close to a water source. Suitable sage-chaparral habitat is present in the Greenbelt along San Bruno Creek, north of the Development Area near Tulare Hill and the Santa Teresa Hills, and in the central coastal riparian scrub areas along Fisher Creek.

Allen's Hummingbird (*Selasphorus sasin*). Species of Local Concern This summer migrant is common along most of the California coast. Breeders are most common in coastal scrub, woodland, and riparian habitats. Migrants will use a variety of habitats and distribution is highly

dependent on nectar sources. Allen's Hummingbird may nest in or migrate in sage-chaparral, oak woodland and riparian communities within and adjacent to the Plan Area.

Lewis' Woodpecker (*Melanerpes lewis*). **USFWS Bird of Conservation Concern. Species of Concern.** An uncommon, but local resident, Lewis' Woodpecker requires open habitat with scattered trees and snags with cavities. Nest cavities are excavated in a snag or the dead part of a live tree, usually in an oak, sycamore, cottonwood, or conifer. Suitable oak woodland habitat is found in and adjacent to the western portions of the Plan Area.

California Horned Lark (*Eremophila alpestris actia*). **CDFG Species of Special Concern, Species of Local Concern.** California Horned Lark is a resident of open habitats such as annual grasslands and agricultural fields. The sub-species *E. a. actia* is a small population of resident horned larks, which breed in coastal and inland regions from Sonoma County to San Diego. This species of special concern prefers "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats, but will also be found in agricultural and grazed habitats. California Horned Larks may be present in the annual grassland, agricultural fields, and ruderal agricultural fields within and adjacent to the Plan Area.

Yellow-breasted Chat (*Icteria virens*), **CDFG Species of Special Concern, Species of Local Concern.** Yellow-breasted Chats are large warblers that are found in dense, brushy thickets and tangles near water, and thick understory in riparian woodland. Potential habitat occurs in the riparian habitat along Coyote Creek.

Bell's Sage Sparrow (*Amphispiza belli belli*). **CDFG Species of Special Concern, USFWS Bird of Conservation Concern, Species of Local Concern.** This species occurs only in the coastal sage and chaparral communities on the coast from northern California to Baja California. Bell's Sage Sparrow is associated with coastal sage scrub and dry chaparral in interior foothills. They prefer semi-open chaparral (young or recently burned stands) or bare ground for foraging, but may use dense stands for cover. Bell's Sage Sparrow breeds from late March to mid-August, by building a nest on the ground or in a low shrub. This species may be present in sage-chaparral communities within and adjacent to the Plan Area. The most likely area for this species to occur is adjacent to the Plan Area in the Santa Cruz Mountains.

Lawrence's Goldfinch (*Carduelis lawrencei*). **USFWS Bird of Conservation Concern. Species of Local Concern.** This species inhabits oak woodlands, chaparral, and riparian woodlands, but requires nearby herbaceous habitats for feeding. Their diet consists mainly of seeds from forbs or shrubs and nesting occurs in dense foliage of trees and shrubs. Lawrence's Goldfinch may be present within the Plan Area along Coyote Creek and in the sage-chaparral communities north and west of the Plan Area.

Coast horned lizard (*Phrynosoma coronatum frontale*). **CDFG Species of Special Concern.** Coast horned lizard occurs in several habitat types including areas of exposed gravelly-sandy substrate with scattered shrubs, clearings in riparian communities, sage-chaparral communities, and annual grassland. This lizard prefers sand areas, washes, floodplains and wind-blown deposits. Beetles, ants, and other seasonally abundant insects are the Coast horned lizards main food source. This species is known to be present in Santa Clara County and may occur in undisturbed portions of the Plan Area that contain suitable habitat. More favorable habitat exists in the hills west of the Plan Area.

Fringed myotis (*Myotis thysanodes*). **WBWG High Priority.** The fringed myotis is found in a wide range of habitats throughout much of California from sea level to 6,000 feet elevation. Day

and night roost sites are typically in mines, caves, and buildings. This bat forages over water, typically reservoirs such as Calero, ponds and early successional streams, and may forage over Coyote Creek. Large hollows in trees along Coyote Creek and valley oak woodland habitat throughout the Plan Area are potential roosting sites.

Yuma myotis (*Myotis yumanensis*). WBWG High Priority. Yuma myotis is a bat found throughout most of California at lower elevations in a wide variety of habitats. Day roosts are found in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges or other man-made structures. Suitable day and night roost habitats were observed in valley oak woodland and developed land throughout the Plan Area. Large trees along Coyote Creek may be inhabited by Yuma myotis. In addition to natural habitat, there are many bridges, old barns, houses, and greenhouses in the Plan Area, which may be used by this bat species.

Pallid bat (*Antrozous pallidus*). CDFG Species of Special Concern. This species occupies a variety of habitats including low elevation annual and perennial grasslands, shrublands, valley oak woodland, and forests. The pallid bat typically roosts in rock outcrops, mines, caves, hollow trees, buildings, and bridges. Rock outcrops and crevices found immediately north of the Development Area in the Santa Teresa Hills may provide roost habitat. Recent research suggests a high reliance on tree roosts particularly in oak savanna. Large hollows in trees along Coyote Creek and in valley oak woodland areas throughout the Plan Area are also potential roosting sites. The pallid bat forages on arthropods typically close to the roost site.

4.4 Wildlife Movement within the Plan Area

Wildlife movement between suitable habitat areas can occur via landscape linkages, referred to as wildlife movement corridors. However, natural characteristics, such as topography or changes in vegetation, and human activities, such as urbanization and road development, can affect the ability of wildlife species to move through these corridors. Natural or man-made barriers that restrict or prevent wildlife movement between areas of suitable habitat (i.e. core habitat areas) can have lasting effects on genetic exchange and the long term sustainability of wildlife populations, sometimes resulting in species extinction or the development of new species or sub-species. The presence of barriers to wildlife movement, whether natural or man-made, can result in the isolation of wildlife populations and the fragmentation of core habitat areas. Loss of habitat connectivity has been implicated in the reduction of species diversity and as a contributing factor to species extinctions (Hilty, et al. 2006).

Wildlife movement corridors can reduce the effects of habitat fragmentation by allowing animals to move between core habitats, replenishing depleted populations, maintaining diversity in the gene pool, and contributing to plant diversity by transporting seed and pollen. Corridors also provide escape routes from fire, predators and human disturbances, and serve as travel pathways for accessing food, water, and mates. Wildlife movement can also have negative effects, such as facilitation of the passage of disease, introduction of invasive species, introduction of “poorly” suited genes, and increased predation on depleted populations. However, the benefits of increased wildlife movement are generally accepted as outweighing these potential negative impacts.

Structural components of wildlife movement corridors can differ depending on the habitat requirements, life histories, size and movement mechanism of different species. For this reason, corridors are often characterized based on their suitability for “umbrella species”,

species whose habitat requirements, size, and movement mechanisms encompass those of many other species. Above all, wildlife corridors must function as corridors, linking two areas of core habitat (Hilty, et al. 2006). Wildlife movement corridors in the Plan Area are discussed in the sections below based on the requirements of different groups of wildlife species.

4.4.1 Terrestrial Wildlife Movement Corridors in the Plan Area

Terrestrial species typically use areas of open space or sparse development containing few barriers for movement between core habitat areas. Suitable cover from predators is also an important aspect of wildlife corridors for many terrestrial species. If barriers to movement are present, passages through the barriers must be present in order for terrestrial species to use the corridor. Large mammals, such as mountain lion (*Puma concolor*), require passages that are large enough to accommodate larger body sizes. Smaller wildlife species, such as American badger, can use culverts and other smaller passages. Other aspects of land use, including agricultural activity and proximity to developed areas, can also reduce the amount of movement that occurs through a corridor. Under current conditions, there are a number of barriers that may restrict the movement of terrestrial wildlife species within and through the Plan Area (Figure Bio-6). These barriers include agricultural activities, major highways and roads, rail lines, existing development such as industrial, commercial, and residential areas, and natural barriers such as Coyote Creek. Existing roads present barriers to terrestrial wildlife, and the removal of natural vegetation by agricultural activities has reduced suitable cover or disrupted the land surface.

Terrestrial wildlife movement in the north-south direction, particularly along Coyote Creek and Fisher Creek, is less restricted due to the presence of aquatic and riparian areas along these creeks. However, the presence of major areas of developed land to the north (San Jose) and to the south (Morgan Hill) limit the regional significance of north-south movement through the Plan Area. These developed areas prevent or greatly inhibit the movement of terrestrial wildlife species between core habitat areas to the north and to the south. Although some north-south movement within the Plan Area may enable access to other undeveloped areas on the east and west sides of the valley, these developed areas prevent the Plan Area from functioning as a significant north-south wildlife corridor on a regional scale.

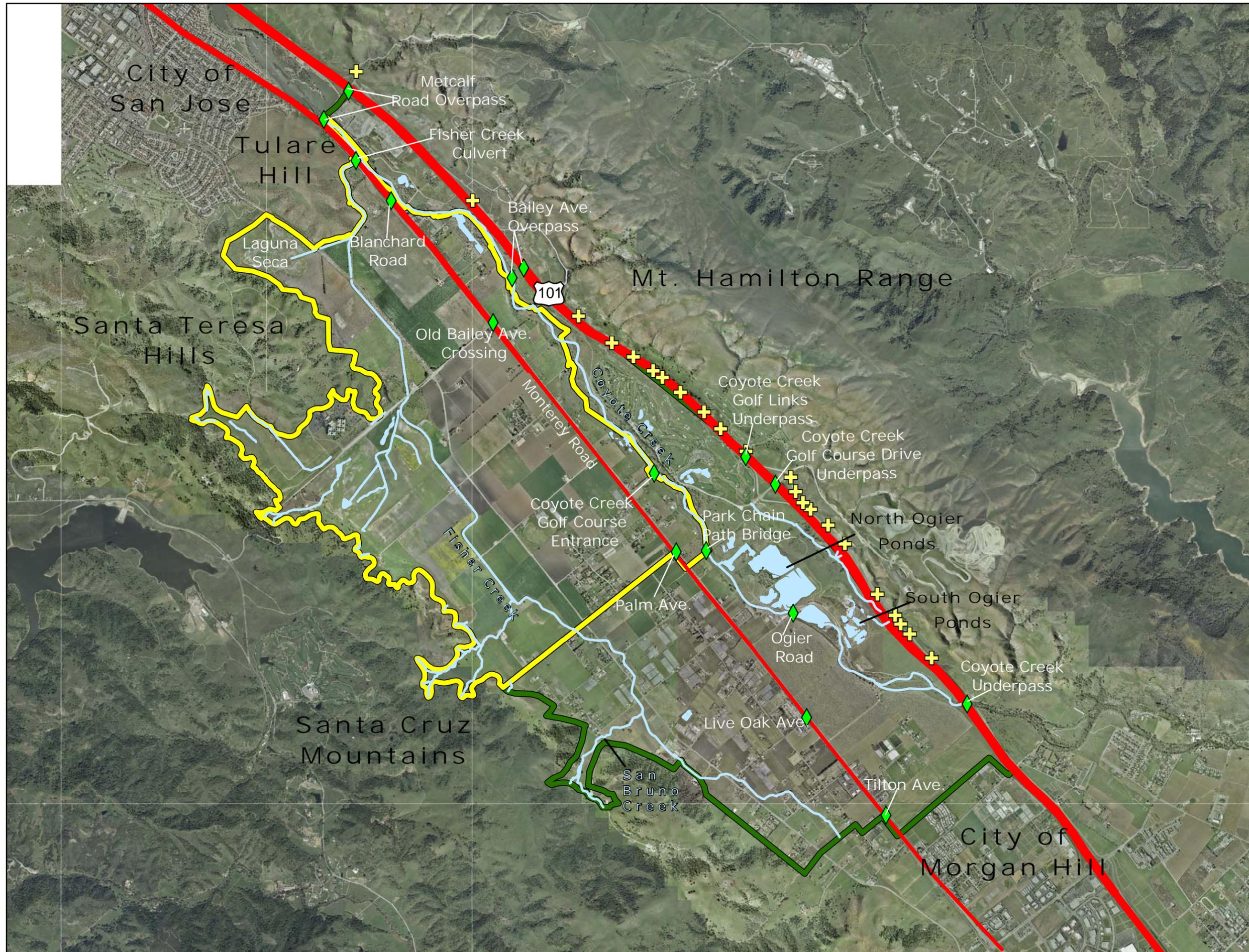
Unlike the urbanized areas to the north and south, extensive areas containing a mosaic of relatively undeveloped habitat that can serve as core areas for wildlife species are present to the east and west of the Plan Area. To the east is the Mount Hamilton Range, part of the larger Diablo Range, and to the west are the Santa Cruz Mountains, part of the larger Coast Range. The Plan Area has been identified as a key regional linkage for wildlife movement between the Diablo Range and Santa Cruz Mountains (Thorne, 2002, 2006). Due to the close proximity of these two mountain ranges in the vicinity of the Plan Area, and development in the region outside of the Plan Area, there are very few other areas on a regional scale that offer a viable connection between the Diablo Range and the Santa Cruz Mountains.

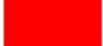
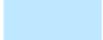
However, there are several existing barriers that affect the east-west movement of terrestrial wildlife across the Plan Area. Existing cross-valley corridor barriers include Highway 101, Monterey Road, and in some cases Coyote Creek. Highway 101, located immediately outside of the Plan Area boundary, is the most significant of these barriers. In addition to the heavy traffic along Highway 101, the northbound and southbound lanes (each having up to four lanes of traffic) differ in elevation by approximately 12 feet, and are separated by a median that is approximately 20 feet wide, resulting in the existence of a steep slope between the two

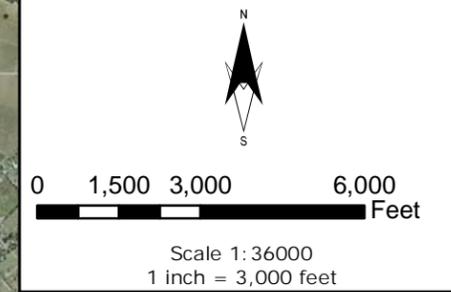
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Figure Bio-6.

Major Barriers and Passages for Wildlife Species in the Plan Area



-  Major Barriers
-  Potential Wildlife Passage
-  Culverts Along Highway 101
-  Streams and Ponds
-  Development Area
-  Greenbelt



directions. In addition, a vehicle crash wall approximately five feet tall is present at the top of the slope in the median. To cross this barrier, terrestrial wildlife would need to negotiate heavy traffic on both sides of a five foot wall that drops off to a steeper than 2:1 slope. Within the Plan Area, Monterey Road presents another major barrier to terrestrial wildlife movement. Monterey Road is a four lane roadway with a six-foot high concrete and fence barrier separating the northbound and southbound lanes of traffic. Some stretches of Coyote Creek containing deep water may also present a seasonal barrier to east-west movement of terrestrial wildlife. A retaining wall along Monterey Road at Tulare Hill also presents a barrier to wildlife movement between Tulare Hill and Coyote Creek. The PG&E substation near Metcalf Road in the northeastern Greenbelt also presents a partial barrier to both east-west and north-south wildlife movement.

Only limited options exist for east-west terrestrial wildlife movement across these barriers (Figure Bio-6). Numerous culverts are present along Highway 101 that could provide passage for smaller wildlife species, such as the American badger. Although many of these culverts are built along a steep grade, some, particularly adjacent to the northern portion of the Plan Area, are not as steep and could provide passage for smaller species. For larger wildlife species, such as deer and mountain lion, there are only three significant passages across 101. The largest of these crossings is just outside the southern half of the Greenbelt, where Coyote Creek passes underneath Highway 101. This crossing offers the cover of the Coyote Creek riparian corridor and is not associated with developed areas. The other two crossings are at the Coyote Creek Golf Course in the Greenbelt: the Coyote Creek Golf Course exit, which passes beneath Highway 101, and one golf cart crossing underneath Highway 101.

Along Monterey Highway, breaks in the six-foot high barrier that could allow terrestrial wildlife passage occur at intersections with Bailey Avenue, Blanchard Road, Palm Avenue, Live Oak Avenue, and Tilton/Burnett Avenue (Figure Bio-6). Many of these passages connect to developed areas that severely restrict further wildlife movement. The only unrestricted paths across Live Oak Avenue and Palm Avenue are to the south of these intersections, in the Greenbelt. Development and fences restrict movement to the north of these crossings. The Blanchard Road crossing is restricted by the MEC and residential development, but the Coyote Creek riparian corridor is also directly adjacent to Monterey Road in the area. Although limited by the presence of a steep drop and limited overhead, the culvert beneath Monterey Highway at Fisher Creek offers another potential undercrossing for large and small terrestrial wildlife species.

Existing structures at various points across Coyote Creek could facilitate terrestrial wildlife crossing, including Ogier Road, the entrance to the Coyote Creek Golf Course from Monterey Road, and the Coyote Creek Park Chain bike path crossing (Figure Bio-6). Overpasses above Highway 101 at Bailey Avenue and Metcalf Road also offer potential passage, but are well lit overnight, contain no cover from predators, and have restricted entry and exit points. These features reduce the value of the Metcalf Road and Bailey Avenue overpasses as wildlife movement corridors. The Metcalf Road overpass is also fenced on both sides along most of its length, is adjacent to the additional barrier presented by the PG&E substation, and ends at the retaining wall that separates Monterey Road from Tulare Hill.

No truly barrier-free wildlife corridors for terrestrial species currently exist in the Plan Area. Despite the existence of significant barriers, there is evidence of some wildlife movement through corridors in the Plan Area. The Tulare Hill area has also been identified as a viable corridor for the passage of American badgers from the Mount Hamilton Range to the Santa Cruz Mountains (Tanya Diamond, pers comm.). Badger burrows have also been observed on

Tulare Hill (Jessie Quinn, pers. comm., Conservation Biology Institute, 2006). In addition, there is evidence that tule elk (*Cervus nannodes*) have begun to use the Tulare Hill area as a movement corridor from the Diablo range to the Santa Cruz Mountains (Henry Coletto pers. comm.). There are also numerous records of mountain lion kills at the Coyote Creek Golf Course underpass (Dave Johnston, pers. comm.). The following areas offer potential passages for the movement of terrestrial wildlife species through the Plan Area:

- For north-south movement: Coyote Creek corridor and Fisher Creek corridor; agricultural fields and other undeveloped areas in the Greenbelt and Development Area; drainage ditches and culverts interspersed throughout the Plan Area.
- For west-east/east-west movement: Coyote Creek crossing at Highway 101; Coyote Creek Golf Course underpasses at Highway 101; Crossings of Monterey Road at Live Oak Avenue in the Greenbelt, the Greenbelt side of Palm Avenue, Blanchard Road, and the Old Bailey Avenue; agricultural fields and other undeveloped areas up to Monterey Road and Highway 101; small culverts and drainage ditches throughout the Plan Area for small mammals, reptiles, and amphibians.

The two areas that are most likely to support the movement of terrestrial wildlife species are the Greenbelt and Tulare Hill/Laguna Seca area. The Greenbelt contains a passage beneath Highway 101 via the Coyote Creek overpass and two undercrossings at the Coyote Creek Golf Course. Two passages across Monterey Road, Live Oak Avenue and Palm Avenue, are present relatively close to the Highway 101 crossings. Areas in the Greenbelt that are west of these crossing points are relatively free of major barriers, although some developed areas and roadways are present. In the northern portion of the Plan Area, the Tulare Hill-Laguna Seca area offers a relatively short route from the Coyote Creek Corridor to the Santa Teresa Hills and Santa Cruz Mountains, and also contains natural habitat adjacent to Fisher Creek. Terrestrial wildlife species can currently cross Monterey Road at Bailey Avenue, Blanchard Road, and through the Fisher Creek culvert. However, the Coyote Creek Golf Course crossing of Highway 101 is two to three miles from these points, and larger terrestrial wildlife species would need to travel this distance in order to reach a safe crossing of Highway 101, or cross Highway 101 via the road overpasses at Bailey Avenue and Metcalf Road.

4.4.2 Reptile and Amphibian Movement in the Plan Area

Reptile and amphibian species, such as CTS and CRLF, are not known to require specific habitat components in movement corridors, but they do require the presence of suitable habitat within close proximity in order to move successfully between core habitat areas (Trenham, 2001, Bulger, et al. 2003). The amount of time required for reptiles and amphibians to successfully travel between core habitat areas means that the corridors need to be relatively undisturbed and barrier free, or contain suitable habitat areas spaced at distances that are reachable. Lack of cover in areas between core habitats for reptiles and amphibians can increase the potential for predation, and the presence of roads can increase the potential that an individual will not be successful in an attempt to move to a core habitat area.

Movement of reptile and amphibian species across most of the Plan Area is restricted by the limited availability of suitable habitat, lack of cover, and presence of roads. Aquatic habitat known to support CTS is present on both sides of the Plan Area, and CRLF is known to occur in the Ogier Ponds in the Greenbelt. These occupied habitat areas are approximately two miles apart, which is the furthest dispersal distance known to be traveled by CTS, and further than the

dispersal distance traveled by CRLF (USFWS, 2005, 2006b). The land between these occupied habitats consists of plowed agricultural fields, developed land, highways, and other roadways. These land uses and barriers are not very compatible with the successful movement of most reptile and amphibian species. Monterey Road and Highway 101 are major barriers to the passage of reptile and amphibian species. The railroad and portions of Coyote Creek also present barriers to reptile and amphibian species movement. Although some culverts exist beneath these barriers, the movement of reptiles and amphibians over dry land seems to be random (Trenham 2001, Bulger et al. 2003), and there is only a small chance that an individual would be able to find the existing culverts. These factors suggest that cross valley movement by amphibians and reptiles in the Plan Area is not likely to occur regularly under current conditions.

However, a limited amount of dispersal does likely occur between areas of suitable breeding habitat on each side of the valley. Existing aquatic corridors such as Fisher Creek and Coyote Creek may facilitate this movement. Another potential source of movement for reptiles and amphibians are predatory birds, which may occasionally lose their prey while in flight.

4.4.3 Aquatic Species Movement through the Plan Area

There is often no difference between core habitat areas and movement corridors for fully aquatic species. These species require water in order to live and move. However, some fully aquatic species, such as the anadromous steelhead, do use streams as corridors that link core habitat areas. These corridors need not have the structure of core habitat areas in the ocean or in spawning areas, but do need to be free of major barriers, or contain passages around barriers, in order to function as corridors. The barriers to fish passage in and through the Plan Area are the Metcalf Percolation Ponds just north of the Plan Area and the Ogier Ponds in the Greenbelt (Buchan and Randall, 2003). Although these barriers are not impassable, they do contain predatory fish species and raise the water temperature in downstream reaches of Coyote Creek. These ponds also contain culverts at inlets and/or outlets, which may also serve as barriers to fish passage during very high or very low flows. Despite these barriers, steelhead are known to be present in Coyote Creek. As discussed in Section 4.3 above, Fisher Creek does not contain very high quality habitat for steelhead or other native migratory fish species due to low flow conditions during the summer months and poor water quality as a result of agricultural activity. These poor habitat conditions and lack of connectivity to suitable spawning habitat make Fisher Creek in its current condition unsuitable for use by fish species as a movement corridor.

4.4.4 Movement of Flying Species through the Plan Area

Pollinators, seed dispersers, and other flying species such as birds, bats, and insects, including the Bay checkerspot butterfly, use large patches of high value nesting or foraging habitat often associated with water for movement and dispersal corridors (Adams and Dove, 1989). These patches do not need to be directly connected to be suitable for use in movement between core habitat areas. Existing long-term high value habitat for resident birds and insects or “stepping stone” dispersal areas within the Plan Area include:

- Coyote Creek riparian zone and open water aquatic habitats;
- Fisher Creek riparian zone and open water aquatic habitats; and

- Serpentine grassland on Coyote Ridge, Tulare Hill and foothills of the Santa Cruz Mountains.

These areas are likely to provide movement and dispersal corridors for flying wildlife species. Barriers that prevent movement of terrestrial species do not typically affect flying wildlife species. Flying wildlife species are, however, affected by large areas of developed land that occur in the absence of stepping stone dispersal areas, and can be affected by heavy traffic use. However, Bay checkerspot butterflies have been shown to be able to successfully move across the heavy traffic on Interstate 280 at the Edgewood Preserve (Sisk 1992).

4.5 Bailey Over the Hill Alignment Area

Existing biological communities and special status species present in the Bailey Over the Hill (BOH) alignment areas are discussed briefly below. For full descriptions of biological communities and special status species that also occur in the Plan Area, refer to Sections 4.2 and 4.3 above. The analysis of the BOH alignment area is based on biological features present to the edge of the cut-and-fill areas of BOH Alternatives A, B, C, D, and E and the preliminary proposed right of way of the revised McKean-Almaden Expressway alignment (Figure Bio-7).

4.5.1 Biological Communities

Biological communities present in the BOH alignment area include:

- Agricultural fields
- Developed areas
- Non-native grassland
- Coast live oak woodland
- Central coast cottonwood - sycamore riparian forest
- Coastal and valley freshwater marsh
- Seasonal wetland
- Freshwater seep
- Streams
- Serpentine grassland
- Valley oak woodland

The BOH alignment area consists mostly of non-native annual grassland and developed areas. Seasonal wetlands, freshwater seeps, streams, and riparian areas are interspersed amongst the grasslands and developed areas. Some of the streams and the freshwater marsh area appeared to be man made or natural features that have been altered by agriculture and development. Sensitive biological communities present in the alignment area include coast live oak woodland, serpentine grassland, a few small streams, and Arroyo Calero Creek and its associated riparian areas along McKean Road. Common plant and wildlife species listed in the descriptions of biological communities in Section 4.2.1 are also found in these communities within the BOH alignment area.

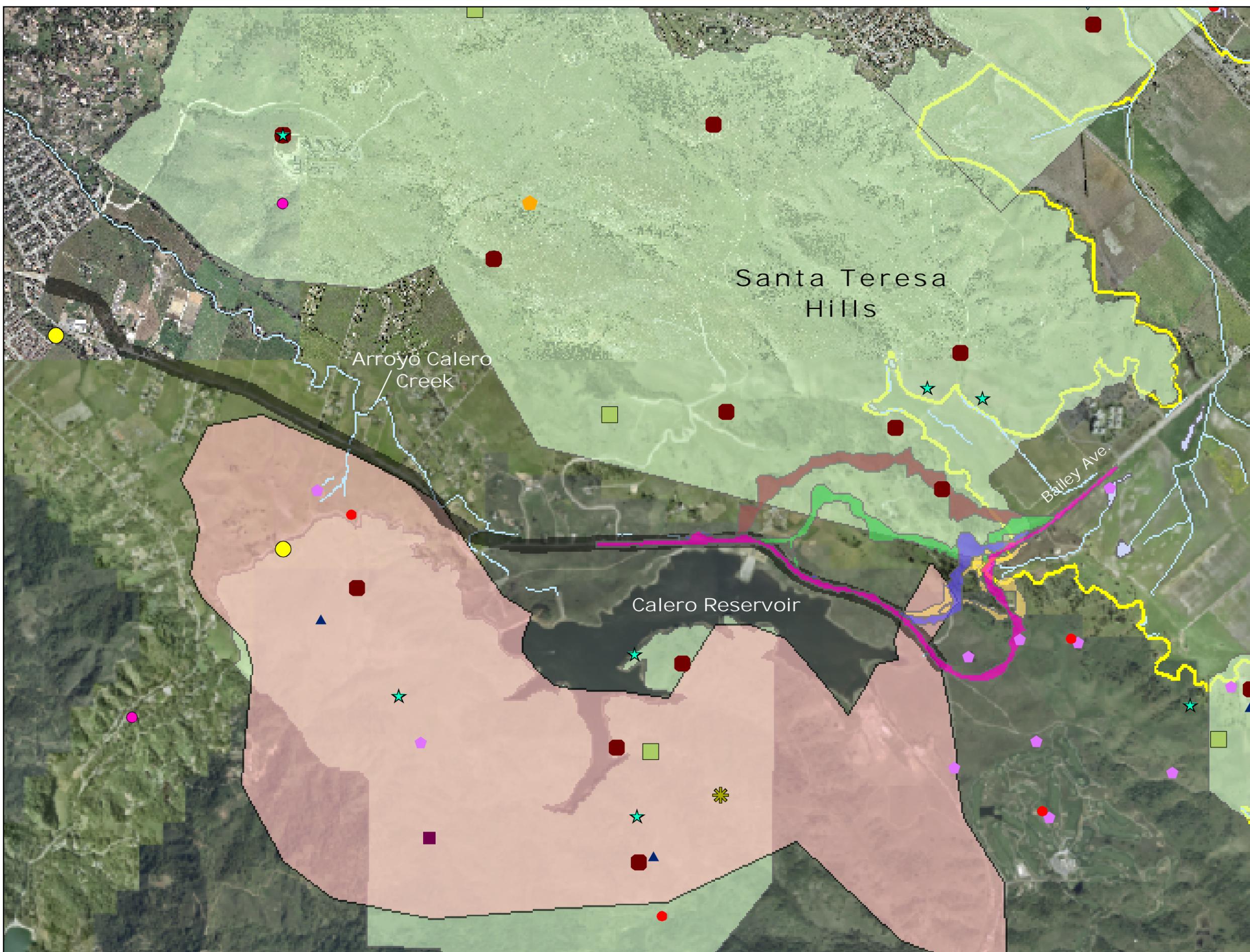
4.5.2 Special Status Species

There are eleven (11) special status plant species and twenty-eight (28) special status wildlife species that are known to occur within, adjacent to, or have the potential to occur within the

Coyote Valley
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Figure Bio-7.

BOH Alignment
Corridor



- fragrant fritillary
 - Hall's bush mallow
 - Loma Prieta hoita
 - most beautiful jewel-flower
 - Mt. Hamilton thistle
 - Santa Clara Valley dudleya
 - smooth lessingia
 - Bay checkerspot butterfly
 - Western Burrowing Owl
 - western pond turtle
 - California tiger salamander
 - California red-legged frog
- Critical Habitat**
- Bay Checkerspot Butterfly
 - California Tiger Salamander (proposed)
 - Streams
- Bailey Over the Hill Alternatives**
- Alternative A
 - Alternative B
 - Alternative C
 - Alternative D
 - Alternative E
 - McKean Road Alignment
 - CVSP Development Area



0 1,000 2,000 4,000 Feet

Scale 1: 24,000
1 inch = 2,000 feet

BOH alignment area. Special status plant and wildlife species that occur within, adjacent to or have the potential to occur within the corridor area are listed below.

4.5.2.1 *Special Status Plant Species*

Only one special status plant species, Santa Clara Valley dudleya, is known to occur within the BOH alignment area (Figure Bio-7). This occurrence is located within the alignment of BOH Alternative A. This species was observed in the location of the mapped CNDDDB occurrence during surveys of portions of the BOH alignment area. No other rare plant species were observed during assessment level surveys of the BOH alignment area. However, no protocol level rare plant surveys have been performed throughout most of the alignment area. Special status plant species that have the potential to occur in the BOH alignment area include:

- bent flowered fiddleneck
- big scale balsamroot
- bristly sedge
- Mt. Hamilton thistle
- fragrant fritillary
- Loma Prieta hoita
- smooth lessingia
- Hall's bush mallow
- Metcalf Canyon jewelflower
- most-beautiful jewelflower

The above species have habitat requirements that occur in biological communities present in the BOH alignment area, and are known to occur adjacent to the corridors or in similar habitat elsewhere in Santa Clara County.

4.5.2.2 *Special Status Wildlife Species*

Only one special status wildlife species, the California tiger salamander, is known to occur within the BOH alignment area (Figure Bio-7). CTS are known to occur in one pond within BOH Alternative D, and one pond within 300 feet of BOH Alternative D. One of these occurrences is also within approximately 550 feet of BOH Alternative E. The existing Bailey Avenue is within 550 and 650 feet of the CTS occurrences.

In addition to known wildlife species occurrences, critical habitat for the Bay checkerspot butterfly, and critical habitat for the California tiger salamander are present within the BOH alignment area (Figure Bio-7). Portions of each of the BOH Alternatives pass through a small area of critical habitat for the Bay checkerspot butterfly adjacent to the existing Bailey Avenue. BOH Alternatives A and B pass through larger portions of Bay checkerspot butterfly critical habitat north of the existing Bailey Avenue. Portions of BOH Alternative C, D, and E pass through CTS critical habitat, and a small portion of the alignment area passes through CTS critical habitat northwest of Calero Reservoir. The existing McKean Road also passes through the same area of CTS critical habitat just as the road turns north.

Special status wildlife species with the potential to occur in the BOH alignment area, or that are known to occur on areas adjacent to the BOH alignment area or in similar habitat elsewhere in Santa Clara County include:

- California tiger salamander
- California red-legged frog
- western pond turtle
- White-tailed Kite
- Northern Harrier
- Western Burrowing Owl
- California Thrasher
- Least Bell's Vireo
- Loggerhead Shrike
- San Francisco dusky-footed woodrat
- Opler's longhorn moth
- Bay checkerspot butterfly
- Golden Eagle
- Tricolored Blackbird
- foothill yellow-legged frog
- Double-crested Cormorant
- Prairie Falcon
- Short-eared Owl
- Costa's Hummingbird
- Allen's Hummingbird
- Lewis' Woodpecker
- California Horned Lark
- Bell's Sage Sparrow
- fringed myotis bat
- long-legged myotis
- Yuma myotis
- pallid bat
- American badger

The species listed above have habitat requirements that are present in biological communities in the BOH alignment area.

5.0 POTENTIAL IMPACTS TO BIOLOGICAL RESOURCES

The following sections contain information regarding potential direct impacts to the existing biological resources within the Plan Area, potential indirect impacts that may occur to areas adjacent to the Plan Area as a result of the Plan, and methods used to evaluate the significance of these impacts under CEQA.

5.1 Thresholds of Significance

Evaluation of impacts to wildlife resources considers the magnitude of impact, the rarity of the resource, and susceptibility of the resource to impacts. All impacts that are defined in Section 15065 of the CEQA Guidelines as significant have been designated as significant in this EIR. For the purposes of this project, a biological resources impact is considered significant if the project would:

- 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;
- cause a fish or wildlife population to drop below self-sustaining levels;
- restrict the range of any special status species;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations;
- 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;
- 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;
- adversely affect species under the protection of the Migratory Bird Treaty Act (burrowing owls, nesting raptors, passerines); or
- conflict with any local ordinances protecting biological resources, such as a tree preservation ordinance.

A species that is listed will also be considered rare or endangered if it can be shown to meet the following criteria (CEQA Guidelines 15380):

1. When its survival and reproduction in the wild are in immediate jeopardy from one or more causes;
2. It is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens;
3. It is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

These significance criteria were applied to the biological communities, plant species, and wildlife species within the Plan Area in order to evaluate the significance of impacts associated with development in the Plan Area.

5.2 Impacts to Biological Communities

Impacts to biological communities are summarized in Table 3. Impacts to biological communities have been separated into Restoration Impacts and Development Impacts in this analysis. Development impacts are impacts due to the construction of roads, public parks, other public facilities, workplaces, and housing. Restoration impacts are biological communities that will be impacted by the construction of the restored Fisher Creek corridor. The restoration of Fisher Creek to its historical stream course is a major component of the Plan and is considered a long term benefit to biological resources in the Plan Area. The realigned Fisher Creek will contain improved habitat for native wildlife species and will improve upon the functions and values of Fisher Creek in its current configuration. The current Fisher Creek corridor is not very wide and is surrounded by plowed agricultural fields that contribute to poor water quality conditions within the creek corridor. Impacts to biological communities that occur as a result of the restoration of Fisher Creek will result in long term benefits to biological resources in the Plan Area because habitats in the restored Fisher Creek corridor will contain higher functions and values than the currently exist. Areas not impacted by development in the Plan Area are

categorized as “Avoided” in Table 3. Figure Bio-8 shows impacts to biological communities in the Plan Area.

Table 3. Summary of Direct Impacts to Biological Communities in the Plan Area.

Community	Development Impacts	Restoration Impacts	Total Impacts	Total Avoided
Agricultural Fields	2,353 acres	100 acres	2,453 acres	1,025 acres
Ruderal Agricultural Fields	40 acres	0 acres	40 acres	183 acres
Developed Areas	699 acres	4 acres	703 acres	1,479 acres
Non-native Grassland	199 acres	3 acres	202 acres	671 acres
Coastal Sage-Chaparral Scrub	4 acres	0 acres	4 acres	0 acres
Wetlands	125 acres*	12 acres	137 acres*	11 acres
Streams	5 acres (26,083 linear feet)	13 acres (24,096 linear feet)	18 acres (50,179 linear feet)	52 acres (75,826 linear feet)
Ponds	8 acres	<1 acre	8 acres	108 acres
Central Coast Cottonwood–Sycamore Riparian Forest	3 acres	0 acres	3 acres	187 acres
Central Coast Riparian Scrub	4 acres	21 acres	25 acres	9 acres
Coast Live Oak Woodland	5 acres	0 acres	5 acres	10 acres
Valley Oak Woodland	32 acres	3 acres	35 acres	19 acres
Serpentine Grassland	21 acres	2 acres	23 acres	11 acres
Total	3,498 acres	158 acres	3,656 acres	3,765 acres

*Includes 79 acres of impacts to Laguna Seca Flood Storage Basin, which are already permitted.

5.2.1 Non-Sensitive Biological Communities

Implementation of the Plan would result in the conversion of 2,353 acres of agricultural fields, 40 acres of ruderal agricultural fields, 199 acres of non-native grassland, and 4 acres of coastal chaparral sage scrub to developed land. In addition, 100 acres of agricultural fields, 4 acres of developed area, and 3 acres of non-native grassland would be converted to areas containing a mix of wetland, riparian, and open water communities along the restored Fisher Creek. As discussed in Section 4.2.1 of this report, agricultural fields and ruderal agricultural fields are relatively disturbed habitats that may provide some foraging habitat for wildlife species, but are not very good long-term habitat for native plant or wildlife species. Therefore, the conversion of these areas to developed land and restored land would not be a significant impact to biological resources. The conversion of agricultural fields, developed areas, and non-native grassland to the restored Fisher Creek corridor is an improvement on the value of these areas for plant and wildlife species.

The conversion of non-native grassland and coastal sage chaparral scrub to developed land is also not considered a significant impact to biological resources. Although these areas do provide some quality habitat for plant and wildlife species, including some special status species, the communities themselves are not protected by any state, federal, or local policies. The proximity of the impacted communities to disturbed and developed land also decreases their value as habitat for plant and wildlife species. In addition, these communities are locally

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Figure Bio-8.

Impacted and
Preserved Biological
Communities in the
Plan Area

Impacted Biological Communities

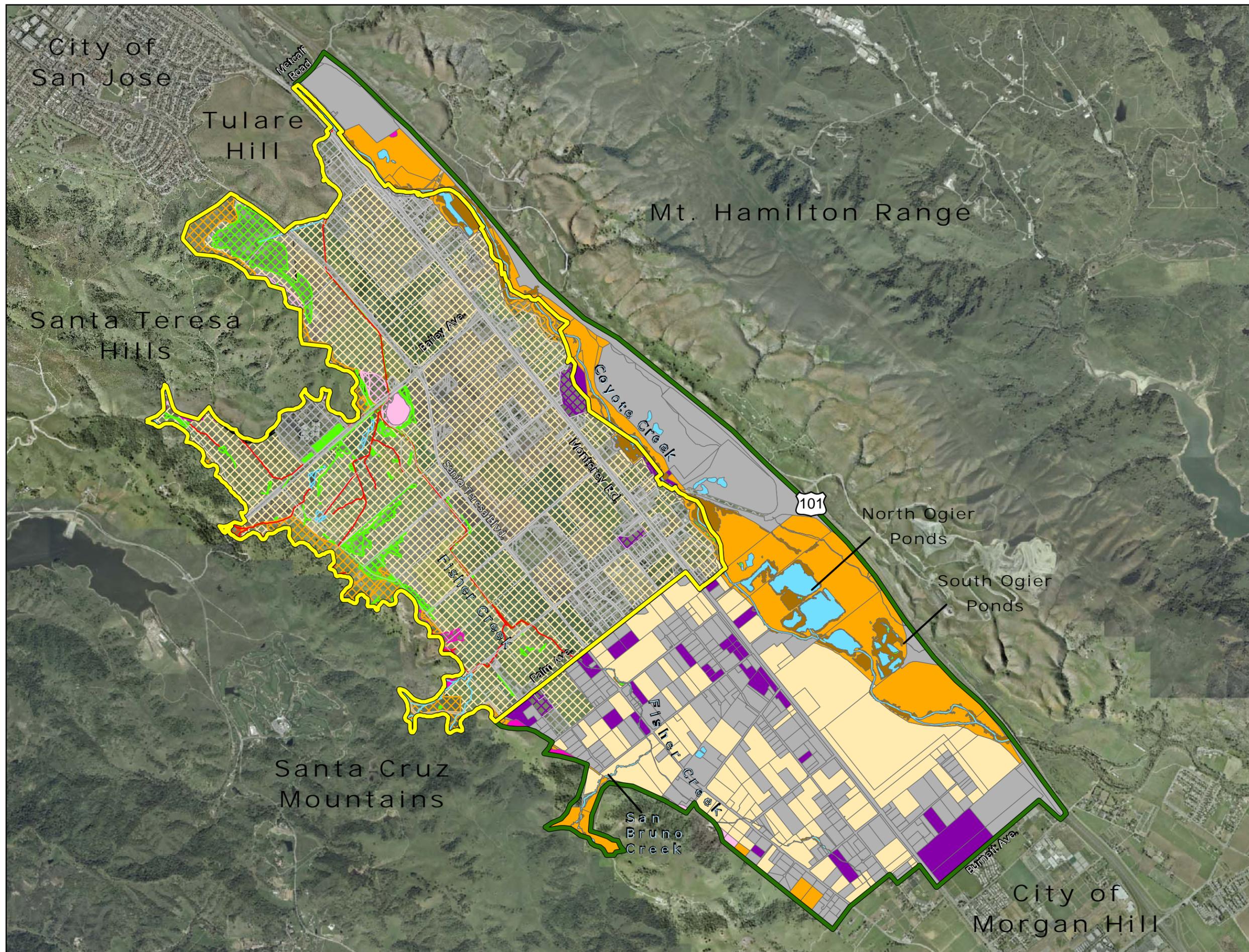
-  Agricultural Field
-  Ruderal Agricultural Field
-  Developed Area
-  Non-native Grassland
-  Live Oak Woodland
-  Valley Oak Woodland
-  Coastal Sage-Chapparral Scrub
-  Wetlands
-  Serpentine Soil
-  Riparian
-  Ponds
-  Waters

Preserved Biological Communities

-  Agricultural Field
-  Ruderal Agricultural Field
-  Developed Area
-  Non-native Grassland
-  Valley Oak Woodland
-  Serpentine Grassland
-  Riparian
-  Wetland
-  Pond
-  Stream
-  Development Area
-  Greenbelt



Scale 1: 36000
1 inch = 3,000 feet



abundant in the Greenbelt, Santa Cruz Mountains, and Mt. Hamilton Range. Potential impacts to special status plant and wildlife species that are known or have the potential to be present in or adjacent to non-native grassland and coastal sage chaparral communities are discussed separately in Section 5.3 below.

5.2.2 Wetland and Open Water Communities

Approximately 5 acres (26,083 linear feet) of streams, 8 acres of ponds, and 125 acres of wetland communities would be converted to developed land or flood storage as a result of implementation of the CVSP. A total of 79 acres of these impacts to wetlands will be temporary impacts due to the excavation of the Laguna Seca flood storage basin west of Santa Teresa Boulevard in the northern portion of the Development Area. Permits for the construction of the Laguna Seca flood storage basin have already been obtained (Corps File No. 29709S). Approximately 13 acres (24,096 linear feet) of streams, less than one acre of one agricultural pond, and 12 acres of wetland communities would be impacted during the restoration of Fisher Creek. Approximately 52 acres (76,007 linear feet) of streams, 108 acres of ponds, and 12 acres of known wetland communities would not be impacted as part of the Plan. Table 4 contains a summary of wetland and open water communities impacted and avoided by the Plan.

The exact area of wetland and stream communities present in the Greenbelt is not known, and the Plan may avoid a greater area of these communities as part of the Greenbelt than is indicated in Tables 3 and 4. Most of the wetlands impacted by the Plan are located in farmed agricultural fields and therefore have decreased functions and values compared to non-farmed wetlands due to the high frequency and intensity of disturbance. Despite the low habitat value of much of the impacted wetland and open water community areas, they are still considered sensitive biological communities, and the impacts would therefore be significant.

Feature Type	Development Impacts	Restoration Impacts	Total Impacted	Total Avoided
Wetlands	125 acres	12 acres	137 acres	11 acres
Streams	5 acres (26,083 linear feet)	13 acres (24,096 linear feet)	18 acres (50,179 linear feet)	52 acres (75,826 linear feet)
Ponds	8 acres	<1 acre	8 acres	108 acres
Total	138 acres (26,083 linear feet)	25 acres (24,096 linear feet)	163 acres (50,179 linear feet)	171 acres (75,826 linear feet)

In addition to direct impacts due to the placement of fill, indirect impacts may occur to wetlands, ponds and streams as a result of potential introduction of non-native invasive species, such as arundo (*Arundo donax*) and blue gum eucalyptus (*Eucalyptus globulus*), from landscaping and discharge of water into Fisher Creek. Introduction of non-native invasive species into these communities would result in a decrease in functions and values, and could lead to conversion to upland habitats if certain invasive species are left uncontrolled. The introduction of non-native invasive species into wetlands, ponds, and streams in the Plan Area and adjacent to the Plan Area would be a potentially significant impact. Due to the low lying topography of the Plan Area,

intensity of development, locations of the wetlands, and buffer distance from the Coyote Creek riparian corridor, no significant indirect impacts are expected to occur to avoided wetlands as a result of hydrological changes in the valley. Under the current Plan, wetlands are either directly impacted or avoided and separated from the Development Area by a sufficient buffer distance to avoid indirect hydrological impacts.

Other potentially significant impacts may occur to wetlands, ponds and streams in the Greenbelt from the construction of groundwater percolation basins and construction of two bridges over Coyote Creek to connect the Development Area to Highway 101. The locations and hydrology of the percolation ponds have not yet been fully determined. However, potentially significant impacts to wetlands, ponds and streams may occur if the percolation basins are placed where these communities occur. Although the percolation ponds will not outlet directly to Fisher Creek, there is also potential for the spread of non-native invasive species from these ponds into Fisher Creek and other avoided aquatic communities as discussed above. Impacts due to the construction of the two bridge crossings in the Greenbelt include permanent impacts due to the potential placement of bridge piles in Coyote Creek or filling of wetland habitat present, and temporary impacts due to presence of equipment within and adjacent to Coyote Creek during construction.

Impact 1: Placement of fill in 137 acres of wetlands, 18 acres (50,179 linear feet) of streams, and 8 acres of ponds would be a significant impact.

Impact 2: Potential introduction of non-native invasive species to avoided wetlands, ponds, and streams within and adjacent to the Plan Area would be a significant impact.

Impact 3: Potential loss of wetlands, ponds, and streams from construction of groundwater percolation ponds in the Greenbelt would be a significant impact.

Impact 4: Potential permanent loss of wetlands and streams and other temporary construction related impacts due to the construction of connections to Highway 101 in the Greenbelt would be a significant impact.

5.2.3 Riparian Communities

A total of 3 acres of central coast cottonwood–sycamore riparian forest and 4 acres of central coast riparian scrub would be converted to developed land under the Plan. In addition, 21 acres of central coast riparian scrub would be impacted by the restoration of Fisher Creek. The riparian area surrounding Coyote Creek will be preserved within the 100-foot riparian setback in accordance with the City of San Jose’s Riparian Corridor Policy Study. Most impacts to riparian communities will occur during the restoration of Fisher Creek, which, when completed, will provide better quality habitat than currently exists along the Fisher Creek corridor. In addition, there will be impacts to Coyote Creek riparian habitat from construction of the two Highway 101 connections. In total, 28 acres of riparian communities will be impacted by the Plan, and 196 acres of riparian communities will be avoided. The impact to 28 acres of riparian communities is considered potentially significant.

Impact 5: Impacts to 28 acres of riparian communities would be a significant impact.

5.2.4 Direct Impacts to Other Sensitive Biological Communities

Other sensitive biological communities identified in the Plan Area include coast live oak woodland, valley oak woodland, and serpentine grassland. Approximately 5 acres of coast live oak woodland, 32 acres of valley oak woodland, and 21 acres of serpentine grassland would be converted to developed land as a result of the Plan. An additional 3 acres of valley oak woodland and 2 acres of serpentine grassland would be impacted during the restoration of Fisher Creek. Approximately 10 acres of coast live oak woodland, 19 acres of valley oak woodland, and 11 acres of serpentine grassland would be avoided. In total, 5 acres of coast live oak woodland, 35 acres of valley oak woodland, and 23 acres of serpentine grassland would be impacted by the Plan. This is a potentially significant impact.

Other potential impacts to these sensitive biological communities may occur as a result of the placement of water tanks in the Santa Cruz Mountains west of the Development Area. Although the exact locations of the water tanks have not yet been determined, there is potential for impacts to occur to serpentine grassland, valley oak woodland and coast live oak woodland communities. This would be a potentially significant impact.

Impact 6: Impacts to 5 acres of coast live oak woodland, 35 acres of valley oak woodland, and 23 acres of serpentine grassland would be a significant impact.

Impact 7: Potential impacts to serpentine grassland, valley oak woodland and coast live oak woodland communities by construction of water tanks west of the Development Area would be a significant impact.

5.2.5 Indirect Impacts to Serpentine Grasslands from Nitrogen Deposition

Indirect impacts may occur to serpentine grasslands in the foothills of the Santa Cruz Mountains, Santa Teresa Hills, Tulare Hill, and Coyote Ridge (in the Mount Hamilton Range) due to increased nitrogen emissions from the Plan Area at project build-out. Serpentine grasslands are known to contain very low levels of several important nutrients for plant species, including nitrogen. These low nutrient levels, and the presence of several elements that are toxic to many plant species, contribute to the presence of many unique plants that grow mainly on serpentine soils, some of which occur only in Santa Clara County. Some of these plant species are known to support special status wildlife species, including the federal endangered Bay checkerspot butterfly. Serpentine grasslands are also identified as a sensitive community by CDFG (CDFG, 2006). Therefore, any impacts that may occur to this community as a result of Plan implementation would be significant.

Implementation of the Plan would result in increased air pollutant emissions from traffic and other industrial and non-industrial sources. Emissions from these sources are known to increase airborne nitrogen, and a certain amount of that airborne nitrogen is converted through a chemical process into forms that can fall to the earth as depositional nitrogen. It has been shown that increased nitrogen in serpentine soils can favor the growth of non-native annual grasses over native serpentine species (Weiss, 1999). These non-native species, if left unmanaged, can overtake the native serpentine species, including dwarf plantain, the host plant for the Bay checkerspot butterfly. This could result in an impact to serpentine grassland habitat.

The methods and assumptions used in the analysis of nitrogen deposition impacts for the Plan Area are based on an endangered species consultation issued by USFWS (2001b) for the

Coyote Valley Research Park (CVRP) and Metcalf Energy Center (MEC). The CVRP, a campus style office/industrial complex, was proposed for development in the northern portion of the Plan Area. The MEC is a natural gas power plant that has been constructed in the northeast corner of the CVSP Development Area. A major component of the total emissions from the MEC is nitrogen in the form of nitrous oxides (NOx) and ammonia. The primary source of NOx for the CVRP was in the form of emissions from increased traffic associated with the development.

Based largely on the research performed by Weiss (1999), the USFWS consultation concluded that increased nitrogen emissions from the CVRP and MEC would result in increased nitrogen deposition in serpentine grasslands on Tulare Hill and Coyote Ridge. The USFWS also concluded that this increase in nitrogen deposition would result in impacts to serpentine grasslands, and therefore Bay checkerspot butterfly habitat on Tulare Hill and Coyote Ridge. The impacts to serpentine habitat from MEC and CVRP were quantified based on modeling of the potential movement and deposition of MEC nitrogen emissions (CH2MHill, 2000). The USFWS determined the impacts and mitigation for CVRP by comparing CVRP nitrogen emissions to nitrogen emissions from MEC.

The modeling performed for MEC and the impacts and mitigation calculations performed by USFWS contain several assumptions regarding the nature and behavior of nitrogen emissions and nitrogen deposition. These assumptions result in very conservative over-estimates of the amount of nitrogen deposition that may actually take place as a result of MEC and CVRP emissions. Because the analysis of nitrogen deposition used for the Plan Area is based on the MEC and CVRP analysis, it is important to note some of these worst-case assumptions:

- 1.) The USFWS consultation and MEC nitrogen deposition modeling assume that 100% of NOx emissions would be completely and immediately converted to depositional nitrogen that would then be deposited on the adjacent hillsides. In reality, NOx released into the atmosphere must undergo a complex set of chemical reactions before it is converted to depositional nitrogen (CH2MHill, 2000) and only a portion of the gaseous nitrogen emitted is converted. The assumption that 100% of the NOx emissions are immediately converted to depositional nitrogen greatly increases modeled deposition rates. Prevailing wind patterns (northwesterly winds) are likely to transport NOx emitted from the Plan Area far to the east, likely resulting in nitrogen deposition in the Central Valley of California, rather than the Santa Clara Valley (CH2MHill, 2000, Don Ballanti, pers. comm., Edith Allen, pers. comm.). Most of the nitrogen deposition currently occurring in the serpentine hills around the Plan Area is likely to be a result of the conversion of nitrogen emissions generated in the greater Bay Area, northwest of the Plan Area (CH2MHill 2000, Don Ballanti, pers. comm.).
- 2.) The methods used in the USFWS consultation do not account for technical advancements that are anticipated to reduce future regional NOx emissions. Improvements to engine emissions that occurred between 1993 and 1999 resulted in a 15-17% decrease in depositional nitrogen (Calpine/Bechtel 2000). The latest available forecasts of Santa Clara County NOx emissions expect county-wide emissions to decline from 188.3 tons/day in 2005 to 60.9 tons per day in 2020, a 68% reduction in 15 years (BAAQMD 2006). The analysis of nitrogen deposition performed for the CVRP does not account for these future improvements.
- 3.) The analysis assumes that emissions and depositional impacts from indirect sources would be proportional in size and deposition pattern to that determined for the MEC,

which is a point source. This is clearly a worst-case assumption, as the emissions from the CVRP and Plan Area occur as area sources (such as on-site combustion of natural gas for heating) and as mobile sources (vehicles both on and off-site). These types of sources occur over a large area and therefore result in reduced concentrations and more complex deposition patterns compared to a single point source such as the MEC. There are many difficulties associated with modeling nitrogen concentrations associated with an indirect source, and there is disagreement among experts as to the best method for modeling these distribution patterns. MEC is located in the northeast corner of the Plan Area. Using the modeling done as part of the analysis of nitrogen deposition for MEC represents a worst-case, conservative means of estimating the amount and distribution of nitrogen deposition.

- 4.) The analysis assumes that the existing nitrogen deposition in the serpentine grasslands surrounding the Plan Area is already above levels required to result in impacts to serpentine grassland communities. The amount of nitrogen deposition in serpentine grasslands that would affect change in habitat structure has yet to be established through scientific study. Therefore, no threshold of significance has been established for nitrogen emissions and deposition.

To calculate the serpentine grassland impacts for CVRP emissions, the NO_x emissions from CVRP were compared to the NO_x emissions from MEC¹. This comparison was used to calculate an estimated increase in nitrogen deposition that may occur as a result of the CVRP. The estimated increase in nitrogen deposition from CVRP was compared to the area of serpentine affected by the increased deposition as determined by the modeling that was done for the MEC. Based on these calculations, a similar analysis was prepared to analyze potential impacts to serpentine grasslands due to increased nitrogen emissions from the Plan Area. Appendix D contains a description of various methods that could be used to determine Plan Area impacts to serpentine grassland areas as a result of nitrogen emissions.

The impact of nitrogen emissions associated with the Plan Area at build-out can be estimated by comparing projected nitrogen emissions from the Plan Area with the nitrogen emissions from CVRP. Total nitrogen emissions from CVRP were estimated to be 1,271 pounds per day (USFWS, 2001b). Nitrogen emissions associated with the Plan Area at build-out are estimated to be 848 pounds per day (Ballanti, 2006)², or 66.7% of the nitrogen emissions from CVRP. The

¹ The emissions from CVRP were compared to the MEC emissions of NO_x. However, the comparison did not include MEC emissions of ammonia. The modeling that was performed to determine MEC nitrogen deposition accounted for nitrogen sources from NO_x and ammonia (CH2MHill 2000, Calpine/Bechtel 2000). Comparing CVRP emissions with MEC NO_x emissions, but not including MEC ammonia emissions results in an overestimate of the impacts associated with CVRP. The nitrogen emitted from MEC as NO_x accounts for only half of the total nitrogen emissions from MEC, and therefore only accounts for half of the total nitrogen deposition determined by the MEC modeling. If CVRP emissions were compared with total MEC nitrogen emissions, the area of impact calculated for CVRP would be 115 acres. This lower result more accurately reflects the nitrogen deposition from CVRP based on the modeling done for MEC. Despite this overestimate, the analysis of impacts for the Plan Area is determined based on the impacts and mitigation required for CVRP in the USFWS consultation, and does not adjust for this miscalculation.

² Plan Area nitrogen emissions were determined based on traffic and other sources within the Plan Area, as well as increased regional traffic that would occur as a result of Plan implementation. The method used to calculate the impacts and mitigation for CVRP use a multiplier of 2 to account for "additional

area of serpentine grassland impacted by CVRP was calculated to be 223 acres³ (USFWS 2001b, MEC 2000, Chris Nagano, pers. comm.). Under the worst-case assumption that the deposition patterns modeled for MEC (a point source) and applied to CVRP are applicable to the Plan Area (an area source), the estimated impact to serpentine grassland as a result of nitrogen emissions from the Plan Area is 149 acres (66.7% of 223 acres). This estimate may be adjusted based on the best available information if future advances in the science of modeling the deposition patterns of NOx become available.

According to the precedent set forth in the USFWS endangered species consultation (2001b), any additional input of depositional nitrogen on serpentine areas surrounding the Plan Area constitutes an impact to serpentine habitat and the special status species that inhabit serpentine grassland areas. Therefore, the potential impact to 149 acres of serpentine grassland habitat as a result of Plan implementation is a significant impact.

Impact 8: Potential for indirect impacts to 149 acres of serpentine grassland in the foothills of the Santa Cruz Mountains, Santa Teresa Hills, Tulare Hill, and Coyote Ridge as a result of increased nitrogen emissions in the Plan Area.

5.3 Impacts to Special Status Species

The following sections examine potential impacts to special status plant and wildlife species that may occur directly or indirectly as a result of the Plan. Direct impacts include habitat loss or potential direct take of species known to occur within the Plan Area as a result of development in the Development Area. Indirect impacts are those impacts that may occur to species within or adjacent to the Plan Area as a result of increased traffic, noise, or other effects of increased human presence in the Plan Area. Impacts to species that occur elsewhere in Santa Clara County and have the potential to occur in the Plan Area are also discussed.

5.3.1 Special Status Plant Species

Much of the habitat for special status plant species known to occur or with the potential to occur in the Plan Area is within the Greenbelt. The Development Area contains only limited habitat for special status plant species. Implementation of the Plan may cause potentially significant impacts to eight special status plant species. Potential impacts to special status plant species are discussed below.

5.3.1.1 *Special Status Plant Species Observed or Documented within the Plan Area*

Mount Hamilton thistle is the only special status plant species known to occur in the Plan Area. No impacts are expected to occur to Mount Hamilton thistle as a result of the Plan. The only

sources of nitrogen reasonably likely to occur from CVRP” that may not have been accounted for in the modeling of CVRP air quality. This multiplier is not based on scientific analysis or modeling of regional traffic, and is used by USFWS to account for regional nitrogen emissions that may occur as a result of CVRP. The air quality modeling that was performed for the Plan Area accounted for regional trips that may occur as a result of Plan implementation and therefore does account for regional emissions of nitrogen that would occur as a result of Plan implementation.

³Mitigation was required at a 3:1 ratio of preserved to impacted serpentine grassland area. Total mitigation required for CVRP was 669 acres, therefore the total impact was 223 acres.

known occurrence in the Plan Area is in the Greenbelt and all other areas containing potential habitat for this species within the Development Area have been surveyed. In addition, no indirect impacts to this species are expected to occur as a result of Plan implementation. Mount Hamilton thistle typically occurs in and along perennial stream channels in serpentine grassland. These areas will not be directly impacted by development in the Plan Area. Since Mount Hamilton thistle occurs primarily in streams in serpentine soils, it is not likely to be affected by increased nitrogen deposition because non-native annual grasses are not as prevalent in these areas. Mount Hamilton thistle is known to be able to withstand increases in nitrogen, such as at the Ranch on Silver Creek Golf Course⁴.

5.3.1.2 Special Status Plant Species Documented adjacent to the Plan Area

Nine special status plant species are documented to occur directly adjacent to the Plan Area. None of these species are likely to occur within the Plan Area as determined by assessments and surveys. However, potential indirect impacts may occur to five of these species: Santa Clara Valley dudleya, fragrant fritillary, smooth lessingia, Metcalf Canyon jewelflower, and most-beautiful jewelflower, as a result of increased traffic and industrial activity leading to nitrogen deposition in serpentine grasslands to the east, north, and west of the Plan Area. These are all herbaceous species that occur in serpentine grassland adjacent to the Plan Area.

Increased traffic is known to increase airborne nitrogen, and this increase in nitrogen may affect species assemblages in serpentine grassland due to increased nitrogen deposition as described above in Section 5.2.5. The potential change in species assemblage is not likely to significantly affect special status shrubs known to occur in serpentine areas adjacent to the Plan Area. All of the special status shrubs that occur in areas adjacent to the Plan Area occur in chaparral scrub and riparian communities. Non-native grasses are not prevalent in these communities, so species within these communities are not likely to be affected by the increased growth of non-native grasses due to nitrogen deposition. However, an increase in non-native grassland species due to nitrogen deposition may have potentially significant impacts on herbaceous special status serpentine grassland species.

Impact 9: Potential loss of habitat for herbaceous special status serpentine grassland species as a result of increased nitrogen deposition would be a significant impact.

5.3.1.3 Special Status Plant Species that Occur Elsewhere in Santa Clara County and have the Potential to Occur within or adjacent to the Plan Area.

Four special status plant species are known to occur elsewhere in Santa Clara County and have the potential to occur adjacent to the Plan Area or in portions of the Plan Area that have not been surveyed for special status plant species prior to publishing this report. Two of these special status plant species; bent flowered fiddleneck and big scale balsamroot, have the potential to occur within the Development Area. Although surveys for these species have been performed in portions of the Development Area (WRA, 2004f), access to all suitable habitat areas was not available when the surveys were performed. If these species do occur in the

⁴ Beginning in 2001, WRA has conducted annual monitoring of the Mt. Hamilton thistle population in a stream that includes runoff from The Ranch on Silver Creek Golf Course. Golf courses can be significant sources of nitrogen due to runoff from fertilizers. Although populations of Mt. Hamilton thistle at The Ranch on Silver Creek Golf Course site have shifted since project grading and inception of the golf course, the size of the population has been stable for the past three years and individuals are now present in some locations where the species was not previously present.

Development Area, implementation of the Plan would result in potentially significant impacts to these species due to habitat loss and potential take of individuals. No impacts are expected to bristly sedge because the only suitable habitat for this species is in the Ogier Ponds in the Greenbelt. Bristly sedge is not likely to occur in the Development Area.

There is also potential for all four of these species to occur in areas adjacent to the Plan Area. If these species occur adjacent to the Plan Area, potential impacts may occur to these species due to nitrogen deposition as discussed in Section 5.3.1.2. Potential impacts of increased nitrogen deposition to these species, if they occur adjacent to the Plan Area, are potentially significant.

Impact 10: Potential loss of habitat and take of bent flowered fiddleneck and big scale balsamroot, if they occur in the Development Area, would be a significant impact.

Potential indirect impacts to special status plant species with the potential to occur within or adjacent to the Plan Area are incorporated in Impact 9.

5.3.2 Impacts to Special Status Wildlife Species

Potential impacts to special status wildlife species related to development in the Plan Area include direct habitat loss, potential take of species, indirect habitat loss due to vegetation removal for construction and development activities, changes in habitat quality due to increased human presence, and loss or degradation of sensitive habitat. Implementation of the Plan may result in potentially significant impacts to special status wildlife species within or adjacent to the Plan Area. Potential impacts to special status wildlife species are discussed below.

5.3.2.1 Special Status Wildlife Species Observed or Documented Within the Plan Area

No significant impacts are likely to occur to the following species observed or documented to occur within the Plan Area: Great Blue Heron, Long-billed Curlew, and Tricolored Blackbird. Great Blue Heron rookery sites have been documented to occur in riparian areas associated with Coyote Creek. Tricolored blackbirds typically nest as colonies in emergent wetlands associated with riparian areas, and have been observed in the Ogier Ponds in the Greenbelt. Coyote Creek and the Ogier Ponds will be preserved within the Greenbelt and therefore no impacts will occur to these species. Habitat for these species is not proposed to be impacted by the percolation ponds or Highway 101 connections, so no significant direct or indirect impacts are expected to occur to these species. The Long-billed Curlew only occurs in the Plan Area during the winter season, not during the nesting season. All three of these species are known to occur in and near urban areas. Therefore, no significant impacts will occur to this species.

Central California coastal steelhead (steelhead). Potential impacts to steelhead in Coyote Creek within the Greenbelt may result from construction of the two new bridges above Coyote Creek as part of the Highway 101 connections. These interchanges may necessitate the placement of bridge supports within the Coyote Creek creekbed. If it is necessary to place bridge supports in Coyote Creek, it may result in direct mortality to adult and juvenile steelhead from acoustic disturbance or direct take of individuals. In addition, presence of piles within the creekbed of Coyote Creek and presence of the overpasses may result in impacts to the quality of habitat for steelhead in areas surrounding the bridge crossings.

Impact 11: Construction of the Highway 101 interchanges above Coyote Creek may result in direct mortality to adult or juvenile steelhead, and may result in long term localized habitat degradation if it is necessary to place bridge supports in the creekbed. Temporary habitat degradation may also result from bridge construction as a result of vegetation removal and construction related noise and debris. These would be significant impacts to steelhead.

California Red-legged Frog (CRLF). Although protocol level surveys conducted in accessible portions of the Plan Area during 2003 found no occurrences of CRLF, potential habitat is present in wetlands, ponds, and streams within the Development Area and throughout the Greenbelt. The only known occurrence of CRLF in the Plan Area is in the Greenbelt, and will not be impacted by development in the Plan Area. If CRLF are present in the Development Area, fill placed in suitable aquatic habitat would result in loss of habitat and potential incidental take of individuals. This constitutes a potentially significant impact to CRLF. Construction of two bridges above Coyote Creek as part of the Highway 101 connections may result in direct mortality of CRLF through placement of bridge supports in Coyote Creek, if necessary, and other construction related activities. This is a potentially significant impact to CRLF.

Development of upland habitat surrounding aquatic habitat containing CRLF would also be a significant impact. Upland habitat for CRLF is defined as natural areas containing food and shelter for CRLF within approximately 200 feet of essential aquatic habitat (USFWS 2005). High value upland habitat is vegetated, undeveloped open space containing natural structures such as small mammal burrows and riparian habitat, or manmade structures such as water troughs, abandoned sheds, or haystacks. Upland areas containing manmade features, disked fields, or agricultural fields are considered moderate value upland habitat. Low value upland habitat may contain features such as roadways (two-lane or less), railroad tracks, or buildings. Barriers to movement within upland habitat include residential or industrial developments, highways or multi-lane roadways lacking culverts or overpasses, or other impassable features. The size of the suitable upland habitat surrounding essential CRLF aquatic habitat may be a shorter distance than 200 feet if low or moderate habitat is present (USFWS 2006b). Development within upland habitat surrounding occupied CRLF habitat is considered a potentially significant impact.

Development in the Plan Area may also impede CRLF dispersal by placement of fill in drainages, widening of roadways, and development of areas between two or more essential aquatic habitats. According to USFWS, dispersal habitat is defined as barrier-free aquatic, upland, and wetland or other non-breeding aquatic habitat that connects two or more breeding habitats within 0.7 miles (approximately 1.2 kilometers). Barriers can include large roadways, buildings, and other such structures placed between two or more breeding habitats. Agricultural lands, vineyards, pastures, two-lane roadways, or roadways with culverts or overpasses do not constitute barriers. Disturbance of CRLF dispersal habitat is considered a potentially significant impact.

Other potential impacts to CRLF include increased traffic, alteration of hydrology and water quality in neighboring habitats, potential introduction of predatory non-native species, such as mosquito fish, increased high intensity lighting from streets, and increased harassment by people and pets. Expansion and construction of new roads along with increased traffic may increase vehicular mortality to CRLF individuals. Changes to the hydrology of the Plan Area post construction, increased sedimentation during construction, and input of other substances such as oil and gasoline into streams or wetlands during and after construction may reduce water quality in aquatic habitat containing CRLF. Proposed overflow from the Focal Lake into

Fisher Creek could degrade water quality in CRLF habitat areas and result in the dispersal of predatory non-native fish, amphibians, and crustaceans, which are considered threats to CRLF. Increased human presence in the Plan Area may increase harassment and predation of CRLF individuals by humans, unleashed pets, and urban wildlife such as raccoons. These constitute potentially significant impacts to CRLF.

Impact 12: Fill placed in aquatic habitat containing special status species and development of surrounding upland and dispersal habitat would be a significant impact.

Impact 13: Construction of two bridges above Coyote Creek as part of the Highway 101 connections may result in direct mortality to in-stream special status species if it is necessary to place bridge supports in the creekbed. This would be a significant impact.

Impact 14: Construction related discharge of sediment or other pollutants into surface waters or aquatic habitats would be a significant impact to any special status aquatic species present.

Impact 15: Altered hydrology and decreased water quality due to urbanization may affect or reduce suitable habitat for special status aquatic species resulting in a significant impact.

Impact 16: Potential introduction of predatory non-native species into aquatic habitat occupied by special status wildlife species would be a significant impact.

Impact 17: Increased human and pet activity within and adjacent to habitat occupied by special status species would be a significant impact.

Impact 18: Increased traffic and/or wider roads within dispersal habitat may lead to increased take of special status species, resulting in a significant impact.

Impact 19: Increased high intensity night lighting for street, residential, and industrial development may result in disturbance to movement and behavior and is therefore a significant impact.

California Tiger Salamander (CTS). CTS are known to occur in the Greenbelt and immediately adjacent to the Development Area in the Santa Cruz Mountains. Potential habitat for this species is also present in Fisher Creek, its tributaries, and in stock ponds within the Plan Area. While the Plan Area is not within designated critical habitat for CTS, areas that support populations, but are outside of critical habitat designation remain subject to conservation actions implemented under Section 7(a)(1) of the ESA and to the regulatory protections afforded by Section 7(a)(2) jeopardy standard (USFWS 2005).

Fill placed in aquatic habitat containing CTS would result in loss of breeding habitat and potential incidental take of individuals. In addition, fill placed in adjacent upland aestivation and dispersal habitat is considered a potentially significant impact. Undisturbed upland habitat containing small mammal burrows or other underground habitat within 2,200 feet of aquatic habitat containing CTS is considered CTS dispersal and aestivation habitat (USFWS 2005). Similar to CRLF, the area of suitable dispersal and aestivation habitat for CTS may be reduced if barriers to dispersal or areas of intense disturbance, such as agricultural fields, are present.

Other potential impacts to CTS include increased traffic, alteration of hydrology and water quality in neighboring habitats, potential introduction of predatory non-native species, increased nighttime lighting, and increased harassment by people and pets. Expansion and construction of new roads along with increased traffic may increase vehicular-mortality to CTS individuals. Changes to the hydrology of the Plan Area post construction, increased sedimentation during construction, and input of other substances such as oil and gasoline into streams or wetlands during and after construction may reduce water quality in aquatic habitat containing CTS. Proposed overflow from the Focal Lake into Fisher Creek could result in the dispersal of predatory non-native fish, amphibians, and crustaceans, which are considered threats to CTS. Increased human presence in the Plan Area may increase harassment and predation of CTS individuals by humans, unleashed pets, and urban wildlife such as raccoons. These constitute potentially significant impacts to CTS.

Significant impacts to CTS are included in Impacts 12, 14, 15, 16, 17, 18, and 19.

Western Pond Turtle (WPT). WPT is known to occur in ponds in the Greenbelt and west of the Plan Area. Other suitable habitat is present in the Plan Area but has not been surveyed. Fill placed in aquatic habitat containing WPT is considered a direct impact and may result in direct mortality. Removal of upland ovipositioning (breeding) sites is considered an indirect impact. Removal or reduction in ovipositioning sites has consequential effects on the reproductive success of the species and is a potentially significant impact. Fill placed in ponds containing WPT, and development of surrounding ovipositioning sites, are potentially significant impacts.

Other indirect impacts to WPT which may result in habitat degradation include reduced water quality resulting from unregulated discharge of contaminants or sediment from development; alteration of hydrology in avoided streams, in-stream pools, and ponds by diversion of runoff from developed areas; increased disturbance and/or predation from pets; increased nighttime lighting; and expansion and construction of new roads adjacent to or between aquatic habitat and oviposition sites which may also indirectly result in take.

Impact 20: Development or disturbance of oviposition sites for western pond turtle would be a significant impact.

Other significant impacts to WPT are included in Impacts 12, 13, 14, 15, 16, 17, 18, and 19.

San Francisco Dusky-Footed Woodrat. San Francisco dusky-footed woodrats are typically found in riparian habitats, and are documented to occur along Coyote Creek, Fisher Creek, and their tributaries. Removal of riparian or woodland habitat along Fisher Creek will likely result in direct impacts to individuals and reduction in dispersal habitat. Indirect impacts include removal or disturbance to nesting habitat, and increased disturbance from pets. However, this species is common and widely distributed throughout the area and the loss of some individuals as a result of habitat removal would have a negligible impact on the populations of species throughout the region. Therefore, the potential clearing of habitat in the construction area is considered adverse but less than significant.

Western Burrowing Owl (BUOW). BUOW have been observed at two locations within the Development Area and are widely documented in the surrounding foothills. Suitable burrow site habitat is present throughout the Plan Area where concentrations of small mammal burrows are found, particularly in grassland, agricultural, ruderal, and developed habitat. Development or other construction-related activities in occupied BUOW habitat during the nesting and wintering season may result in direct mortality from vehicle or equipment strikes with foraging birds and fill

or occlusion of occupied breeding or wintering burrow sites. This is a potentially significant impact. Other potentially significant impacts to BUOW include increased predation from unleashed pets, increased nighttime lighting and nest abandonment due to noise or other human disturbances such as traffic.

Impact 21: Take of Western Burrowing Owl individuals resulting from construction-related activities, and filling of occupied breeding or wintering burrow sites would be a significant impact.

Other significant impacts to BUOW are included in Impacts 17, 18, and 19.

Golden Eagle. Golden Eagles have been observed foraging in the Development Area. Suitable nesting habitat is limited within and adjacent to the Plan Area. Permanent impacts to potential eagle foraging habitat in the Plan Area would occur as a result of project implementation. However, due to the lack of quality nesting habitat within the Plan Area, the loss of foraging habitat is expected to be adverse, but less than significant. Although no nests are known to be present within ¼ mile of the Plan Area, if Golden Eagles nest within one-quarter mile of the Development Area, disturbance to nesting eagles during the breeding season (typically February 1 to July 1) could occur as a result of increased human activity and use of heavy equipment during construction. This could result in nest abandonment or poor reproductive success and is a potentially significant impact. Although Golden Eagle has been observed foraging in the Plan Area, the loss of foraging habitat for this species would be less than significant due to the abundance of suitable nearby foraging habitat and the ability of this species to forage over a wide area.

Impact 22: Disturbance related to construction activity within one-quarter mile of an active or historic Golden Eagle nest site would be a significant impact.

Nesting Special Status Avian Species. Special status avian species known to occur within the Plan Area and subject to impacts from Plan implementation include White-tailed Kite, Northern Harrier, Loggerhead Shrike, California Thrasher, Yellow Warbler, and Saltmarsh Common Yellowthroat. These species may use trees, shrubs, man-made structures or the ground for nesting habitat. Permanent impacts to potential nesting habitat on or adjacent to the Development Area could occur during construction, as a result of tree and shrub removal, removal of riparian habitat, ground disturbance, equipment movement, increased nighttime lighting, or by direct mortality. However, these habitats will largely be replaced by planting performed as part of the Plan, and there is an abundance of available nesting habitat in surrounding areas. Therefore this impact is considered adverse but not significant. In addition, disruption of potentially nesting special status avian species could occur as a result of increased nighttime lighting during the breeding season (typically March 1 to August 31). This would be a significant impact. Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success, which would be considered a significant impact.

Impact 23: Impacts to special status bird species during the breeding season due to construction related disturbance would be a significant impact.

Other significant impacts to nesting special status avian species are included in Impact 19.

Other Breeding Birds. There are several common avian species known to occur within the Plan Area that may be subject to impacts from Plan implementation, including common raptor

species such as Red-tailed Hawk, Red-shouldered Hawk, and American Kestrel. Breeding birds may use trees, shrubs, man made structures or the ground for nesting habitat. Permanent impacts to potential avian nesting habitat on or adjacent to the Development Area could occur during construction, as a result of tree and shrub removal, removal of riparian habitat, ground disturbance, equipment movement, or by direct mortality. However, due to the abundance of available nesting habitat in surrounding areas, this is not a significant impact for most species. Some species such as Western Bluebird may be adversely affected. However, these habitats will largely be replaced by planting performed as part of the Plan, and there is an abundance of available nesting habitat in surrounding areas. Therefore this impact is considered adverse but not significant. In addition, disruption of nesting avian species could occur as a result of increased nighttime lighting during the breeding season (typically March 1 to August 31). Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success. As outlined in the Migratory Bird Treaty Act, an impact to breeding birds and their active nest, eggs, and/or young is considered a significant impact.

Impact 24: Direct mortality or disturbance to nesting common bird species due to construction related activities would be a significant impact.

Other significant impacts to breeding birds are included in Impact 19.

5.3.2.2 Special Status Wildlife Species with Documented Occurrences Adjacent to the Plan Area.

No significant impacts are likely to occur to San Joaquin kit fox. The most recent documented occurrence of San Joaquin kit fox in the vicinity of the Plan Area was in 1975 east of Highway 101, which is a significant dispersal barrier. Although San Joaquin kit fox may occasionally occur in the hills east of the Plan Area, there are not expected to be any impacts to its habitat as a result of the Plan, and it is extremely unlikely to be present in the Plan Area. Potentially significant impacts that may occur to other wildlife species that have been documented adjacent to the Plan Area are discussed below.

Foothill yellow-legged frog (FYLF). FYLF is known to occur in the foothill streams adjacent to Coyote Valley (CDFG 2006). Although optimal habitat is not present within the Plan Area, FYLF may rarely occur in Coyote Creek, and may occur in open canopied areas in the southern end of the Greenbelt. If FYLF are present in the Development Area, construction of the two bridges above Coyote Creek as part of the Highway 101 connections may result in direct mortality if it is necessary to place bridge supports in Coyote Creek. This is a potentially significant impact.

Significant impacts to FYLF, if present in the Plan Area are included in Impact 13.

Bay checkerspot butterfly (BCB). BCB is known to occur in the serpentine grassland in the Mount Hamilton Range, Tulare Hill, and foothills of the Santa Cruz Mountains. Habitat for BCB contains an abundance of dwarf plantain, Indian paintbrush, owl's clover, and other nectar plant species. Increased nitrogen emissions as a result of development in the Plan Area may result in a shift in plant composition, which could affect the abundance of dwarf plantain, Indian paintbrush, and many of the BCB nectar plant species as explained in Section 5.2.5. This potential reduction of host and nectar plant species abundance directly affects the population size of BCB. Reduced abundance of host and nectar plants as a result of increased nitrogen deposition is therefore considered a potentially significant impact to BCB.

In addition, several small areas of BCB critical habitat would also be impacted by the Plan. However, the impacted critical habitat areas are located on developed land and agricultural fields, which do not contain BCB host or nectar plant species. Therefore, the development of these areas will not affect the continued survival of BCB and are less than significant.

Impact 25: Potential indirect effects of increased nitrogen deposition in habitat for special status invertebrate species would be a significant impact.

Other Special Status Invertebrate Species. Hom's microblind harvestman, Jung's microblind harvestman, Edgewood blind harvestman, and Opler's longhorn moth (OPLM) also inhabit serpentine grassland communities. Increased nitrogen deposition from traffic and industrial emissions due to development in the Plan Area may impact the host plants for sensitive invertebrate species. Increased nitrogen emissions as a result of development in the Plan Area may result in a shift in plant composition, which could affect the abundance host plant species for special status invertebrates as explained in Section 5.2.5. . Changes in plant species abundance and diversity, and changes in soil chemistry could impact the three species of harvestman. Although little is known about their ecology, the fact they are associated with serpentine habitats suggests that some element of their life history is tied to this community. The potential community shift could also affect the abundance of cream cups (*Platystemon californicus*), the host plant for OPLM. The reduction of host and nectar plant abundance directly affects the population size of OPLM. Reduced abundance of host and nectar plants as a result of increased nitrogen deposition is therefore considered a potentially significant impact to OPLM, Hom's microblind harvestman, Jung's microblind harvestman, and Edgewood blind harvestman.

Significant impacts to special status invertebrate species are included in Impact 25.

5.3.2.3 Special Status Wildlife Species Known to Occur Elsewhere in Santa Clara County with Potential to Occur within or adjacent to the Plan Area.

Due to the absence of suitable ungrazed annual grassland habitat in the Development Area, no significant impact is expected to occur to the Short-eared Owl. Potentially significant impacts that may occur to other wildlife species known to occur elsewhere in Santa Clara County with potential to occur within or adjacent to the Plan Area are discussed below.

Nesting Special Status Avian Species. Special status avian species including Least Bell's Vireo, Double-crested Cormorant, Snowy Egret, American Bittern, Cooper's Hawk, Prairie Falcon, Costa's Hummingbird, Allen's Hummingbird, Lewis' Woodpecker, California Horned Lark, Yellow-breasted Chat, Lawrence's Goldfinch, and Bell's Sage Sparrow may use trees, shrubs, snags, man-made structures or the ground for nesting habitat. Suitable habitat for these species known to occur in Santa Clara County is present within the Development Area. Permanent impacts to potential nesting habitat on or adjacent to the Development Area could occur during construction, as a result of tree and shrub removal, removal of riparian vegetation, ground disturbance, equipment movement, or by direct mortality if these species are nesting in the Development Area during construction. However, these habitats will largely be replaced by planting performed as part of the Plan, and there is an abundance of available nesting habitat in surrounding areas. Therefore this impact is considered adverse but not significant. In addition, disruption of potentially nesting special status avian species could occur as a result of increased nighttime lighting during the breeding season (typically March 1 to August 31). Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success, which would be considered a potentially significant impact.

Significant Impacts to nesting special status avian species are included in Impact 19 and 24.

Coast Horned Lizard. Suitable habitat for Coast horned lizard is present in the Santa Teresa foothills adjacent to the Plan Area and may be present in undisturbed portions of the northern portion of the Plan Area containing areas of exposed gravelly-sandy substrate with scattered shrubs. If the Coast horned lizard occurs within or adjacent to the Plan Area, construction activities that affect habitat for this species may result in loss of habitat or direct mortality. This is a potentially significant impact.

Impact 26: Removal of occupied Coast horned lizard habitat, if present in the Development Area, would be a significant impact.

American Badger. Suitable habitat for American Badger is present throughout the Coyote Creek floodplain and foothills adjacent to the Plan Area. Other portions of the Plan Area containing suitable ground squirrel burrows or sandy or loamy soils may also provide suitable habitat. If the American Badger occurs within or adjacent to the Plan Area, construction activities that affect habitat for this species, may result in loss of habitat or direct mortality. This is a potentially significant impact. The increased human presence in the Plan Area following development may also affect the ability of this species to persist on Tulare Hill. However, most of Tulare Hill will be surrounded by open space and the ability for badgers to move between Tulare Hill, the Santa Teresa Hills, and the Mount Hamilton Range will not be affected by the Plan. Therefore impacts to American badger due to increased human presence are considered adverse but not significant. However, increased nighttime lighting may affect the behavior and movement of American badger, which would be a significant impact.

Impact 27: Removal of occupied American Badger habitat, if present in the Development Area, would be a significant impact.

Other significant impacts to American Badger are included in Impact 19.

Special Status Bat Species. Although special status bat species including fringed myotis, Yuma myotis, and pallid bat are not known to be present in the Development Area, roosting and foraging habitats for these species are present. These special status bat species typically use buildings, trees, bridges, and rock crevices for roost habitat. Foraging habitat is present over most upland and aquatic habitats. Construction activities may result in the removal or disturbance of hibernation or maternal roost sites, if they are present in the Development Area, due to noise or human intrusion. This constitutes a potentially significant impact as it may result in direct mortality and reduction in reproductive success. Because these species are able to travel great distances to forage, impacts to foraging habitats are considered less than significant.

Impact 28: Removal or disturbance of special status bat hibernation and maternal roosting colonies, if present in the Plan Area, would be a significant impact.

Other significant impacts to bats are included in Impact 19.

5.4 Impacts to Wildlife Movement within the Plan Area

Removal of riparian vegetation surrounding the existing Fisher Creek during its restoration may temporarily impact movement and dispersal corridors for flying wildlife species. However, this would not be a significant impact to wildlife movement due to the presence of riparian vegetation at Coyote Creek, the short length of portions of Fisher Creek proposed for restoration, and the current narrow width and dense vegetative growth in the corridor. The continued presence of riparian vegetation along Fisher Creek in its current configuration is not necessary to support movement of flying wildlife species, and the riparian vegetation removed during the restoration of Fisher Creek will be replaced.

Impacts due to the construction of the bridges over Coyote Creek may cause temporary impacts to the Coyote Creek migratory corridor which may be significant if construction occurs during key periods of breeding and migration for aquatic species, as discussed in Section 5.3.2.1. Implementation of the CVSP would result in some loss to dispersal corridors for aquatic species, as indicated above in Section 5.3.2. In addition, indirect nitrogen deposition impacts to serpentine grassland adjacent to the Plan Area may also affect “stepping stone” dispersal corridors for BCB. These are potentially significant impacts that are integrated into impacts discussed in Sections 5.3.1 and 5.3.2.

Despite the existence of several major barriers to the movement of terrestrial wildlife species in the Plan Area, there is evidence that some movement may also occur across the Tulare Hill area. Additional terrestrial wildlife movement may also occur in non-native grassland and agricultural fields in the Greenbelt. No major development is proposed by the Plan in these areas. Movement along the Coyote Creek corridor will not be affected because Coyote Creek will be avoided with the exception of two bridges. The Tulare Hill corridor will also remain largely undeveloped, containing the Laguna Seca Flood Storage Basin, restored Fisher Creek corridor, and some ballfields. The restored Fisher Creek corridor will provide additional opportunities for wildlife movement within the Plan Area due to the planned increase in riparian corridor width. In addition, no construction would occur within 100 feet of the top of bank of either creek, except for the two bridges crossing above Coyote Creek. The preservation of the Greenbelt as part of the Plan would be beneficial to the preservation of wildlife movement corridors. Although a small amount of occasional inter-valley movement in the central portions of the Plan Area may be affected, existing corridors in the Greenbelt and Tulare Hill areas will not be developed.

Development of the Plan Area will result in increased traffic along Monterey Road and Santa Teresa Boulevard, particularly at night. This may reduce the viability of some potential east-west wildlife movement corridors in the Plan Area. In addition, the presence of domestic animals and increased night lighting in the Development Area may affect the use of wildlife corridors in the Plan Area. These would be significant impacts.

Impact 28: Potential disruption of wildlife movement corridors due to increased traffic along Monterey Road and Santa Teresa Boulevard, increased night lighting, and the presence of domestic animals.

Other potential impacts to movement and dispersal corridors for aquatic and flying wildlife species are included in Impacts 1, 5, 13, 14, 15, 16, 17, 18, 19, and 25.

5.5 Impacts to Bailey Over the Hill Alignment Area

The analysis of impacts in the BOH alignment area is based on biological resources present to the edge of the cut-and-fill areas of BOH Alternatives A, B, C, D, and E and the preliminary proposed right of way of the revised McKean-Almaden Expressway alignment. Impacts described below are based on a preliminary analysis of features present in the BOH alignment area, and do not quantify the potential impacts to these resources.

5.5.1 Biological Communities

Potentially significant impacts could occur to the following biological communities in the BOH alignment area as a result of project implementation:

- Central coast cottonwood - sycamore riparian forest
- Coastal and valley freshwater marsh
- Seasonal wetland
- Streams
- Serpentine grassland
- Coast live oak woodland
- Valley oak woodland

The potential impacts to central coast cottonwood sycamore riparian forest are located along Arroyo Calero Creek where the current alignment of McKean Road changes from an east-west direction to a north-south direction. Most of the potential impacts to seasonal wetland, freshwater marsh, and freshwater seep communities occur along McKean Road between its intersection with Bailey Avenue and the intersection with Harry Road. Additional impacts to seasonal wetland communities occur within BOH alignments B, C, and A. The BOH alignment area would contain approximately three stream crossings between the intersection of Bailey Avenue and McKean Road and the intersection of McKean Road and Harry Road. BOH alignment alternatives A, B, and C would not contain any stream crossings, alignment D would likely necessitate the filling or culverting of large portions of one small stream, and Alternative E would contain two stream crossings. BOH alternatives A, B, C, and E may result in potential impacts to serpentine grassland. Potential impacts to coast live oak woodland and valley oak woodland would occur as part of all five BOH alternatives, with some additional impacts occurring between the intersection of Bailey Avenue and McKean Road, and McKean Road and Harry Road. The majority of these impacts would occur in coast live oak woodland communities. Alternatives A and E would result in the most impacts to oak woodland communities, and Alternative A would impact the least amount of oak woodland. Alternatives C and D would impact a moderate amount of oak woodland. Impacts to sensitive biological communities listed above as a result of the BOH alignment area would be potentially significant.

Impact 30: Impacts to sensitive biological communities that may occur in the BOH alignment area would be significant.

5.5.2 Special Status Species

Special status plant and wildlife species that occur within, adjacent to, or have the potential to occur within the BOH corridor area, and could be significantly impacted by the project, are discussed below.

5.5.2.1 *Special Status Plant Species*

Only one special status plant species, Santa Clara Valley dudleya, is known to occur within the BOH alignment area. Potentially significant impacts could occur to this species with the implementation of BOH Alternative A. Potentially significant impacts could also occur to the following special status plant species if they occur in the BOH alignment area:

- bent flowered fiddleneck
- big scale balsamroot
- bristly sedge
- Mt. Hamilton thistle
- fragrant fritillary
- Loma Prieta hoita
- smooth lessingia
- Hall's bush mallow
- Metcalf Canyon jewelflower
- most-beautiful jewelflower

If any special status plant species occurs in the BOH alignment area, the potential exists for take of habitat occupied by special status plant species.

Impact 31: Impacts to special status plant species that may occur within the BOH alignment corridor would be significant.

5.5.2.2 *Special Status Wildlife Species*

Only one special status wildlife species, California tiger salamander, is known to occur within the BOH alignment area. Potential impacts to CTS breeding habitat could occur with the implementation of BOH Alternative D. Other BOH alternatives could have potentially significant impacts on CTS dispersal and aestivation habitat. Additional potential impacts to CTS dispersal and aestivation habitat could also occur along portions of McKean Road that would be relocated. In addition, CTS critical habitat would be impacted by BOH Alternatives C, D, and E, and a small portion of the BOH alignment area northwest of Calero Reservoir. Impacts to critical habitat for CTS would be potentially significant.

All of the BOH alternatives pass through critical habitat for bay checkerspot butterfly. The greatest impact to BCB habitat would be in BOH Alternatives A and B. Impacts to critical habitat for BCB would be potentially significant.

In addition, potentially significant impacts could also occur to the following special status wildlife species, if they are present in the BOH alignment area:

- California tiger salamander
- California red-legged frog
- Western pond turtle
- White-tailed Kite
- Northern Harrier
- Western Burrowing Owl
- California Thrasher

- Least Bell's Vireo
- Loggerhead Shrike
- San Francisco dusky-footed woodrat
- Opler's longhorn moth
- Bay checkerspot butterfly
- Golden Eagle
- Tricolored Blackbird
- foothill yellow-legged frog
- Double-crested Cormorant
- Prairie Falcon
- Short-eared Owl
- Costa's Hummingbird
- Allen's Hummingbird
- Lewis' Woodpecker
- California Horned Lark
- Bell's Sage Sparrow
- fringed myotis bat
- long-legged myotis
- Yuma myotis
- pallid bat
- American badger

These species could be impacted by direct take of individuals, or through impacts to habitat they occupy or utilize.

Impact 32: Potential impacts to special status wildlife species or critical habitat that may occur in the BOH alignment corridor would be significant.

6.0 MITIGATION MEASURES FOR IMPACTS TO BIOLOGICAL RESOURCES

The following sections discuss mitigation measures designed to reduce potentially significant impacts to biological resources to a less than significant level. Mitigation measures contained below are based on current regulatory policies and guidelines, as well as appropriate actions needed to offset potential impacts to biological resources as a result of implementation of the Plan. Preparation of mitigation plans required in measures listed below may be combined where applicable. Mitigation measures are numbered to correspond to each applicable significant impact. Plans required by the mitigation measures described below may be combined into an overall Resource Management Plan (RMP). The RMP will contain a comprehensive description of the methods used to implement and monitor the mitigation measures described below.

6.1 Mitigation for Impacts to Biological Communities

Table 5 shows potentially significant impacts and mitigation for biological communities in the Plan Area.

Community Type	Impact Type	Total Impacts	Mitigation Ratio ¹	Area of Mitigation Required ¹
Wetlands	Development	45 acres	1:1	45 acres
	Restoration	12 acres	1:1	12 acres
	Permitted Flood Storage Basin ²	79 acres	NA ²	NA ²
Streams	Development	5 acres (26,082 linear feet)	1:1	5 acres 26,082 linear feet
	Restoration	13 acres (24,096 linear feet)	1:1	13 acres 24,096 linear feet
Ponds	Development	8 acres	1:1	8 acres
	Restoration	<1 acre	1:1	0 acres ³
Central Coast Cottonwood-Sycamore Riparian Forest	Development	3 acres	3:1	9 acres
	Restoration	0 acres	1:1	0 acres
Central Coast Riparian Scrub	Development	4 acres	3:1	12 acres
	Restoration	21 acres	1:1	21 acres
Coast Live Oak Woodland	Development	5 acres	2:1	10 acres
	Restoration	0 acres	1:1	0 acres
Valley Oak Woodland	Development	32 acres	2:1	64 acres
	Restoration	3 acres	1:1	3 acres
Serpentine Grassland	Development	21 acres	2:1	42 acres ⁴
	Restoration	2 acres	2:1	4 acres ⁴
	Nitrogen Deposition	149 acres ⁵	3:1	447 acres ⁴

¹ Assuming on-site mitigation within the Plan Area.

² Laguna Seca Flood Storage Basin is considered by the Corps to be a self-mitigating impact that requires no mitigation.

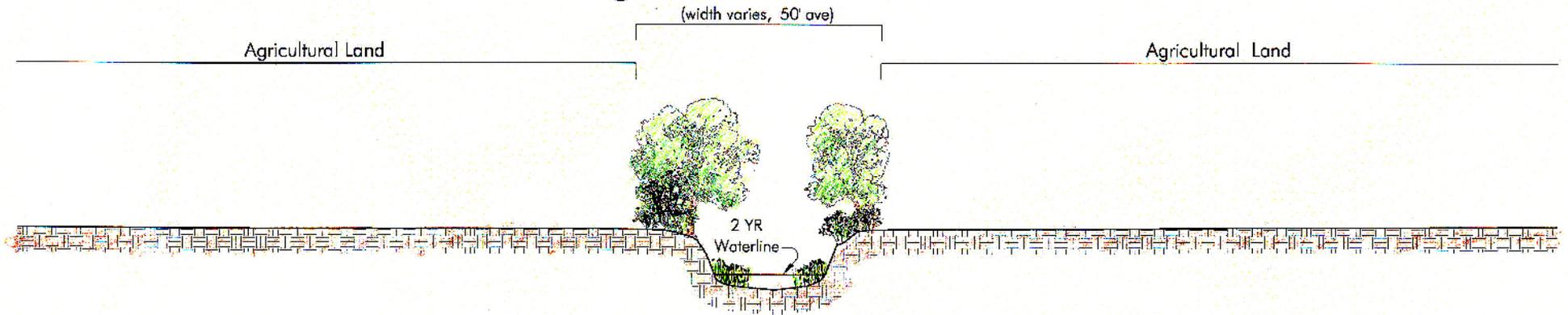
³ Mitigation for restoration impacts to ponds is incorporated in mitigation for development impacts.

⁴ Area to be preserved off-site; assumes serpentine grassland adjacent to the Plan Area will be preserved.

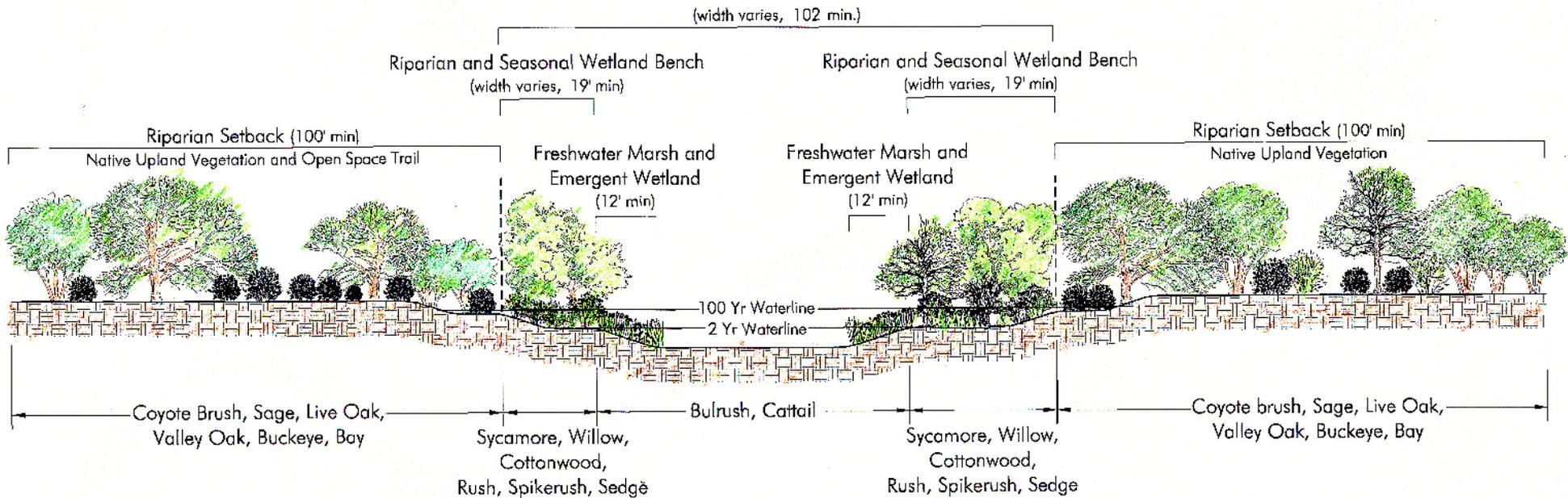
⁵ Estimated based on relative emissions of nitrogen from CVRP compared to Plan Area.

Figure Bio-9 shows impacts to biological communities as a result of the Plan. Mitigation ratios for biological communities are based on the quality of habitat present, type of impact (restoration or development), and mitigation ratios required or commonly assessed under applicable policies, laws, and regulations. Mitigation ratios and additional mitigation measures for each biological community are discussed below.

Existing Fisher Creek Corridor



Restored Fisher Creek Corridor



Coyote Valley Specific Plan

Figure Bio-9. Existing and Restored Fisher Creek Cross Sections



6.1.1 Wetland and Open Water Communities

As discussed in Section 5.2.2, implementation of the Plan would result in placement of fill into approximately 136 acres of wetlands, 18 acres (50,178 linear feet) of streams, and 8 acres of ponds. Temporary development impacts to 79 acres of wetlands in the Laguna Seca flood storage basin have already been permitted by the Corps (Corps File No. 29709S). The Corps has determined that excavation of the Laguna Seca flood storage basin will be self mitigating, and may in fact result in a potential increase of 60 acres of wetland habitat in the area (Corps, 2005). Therefore, no mitigation is required for impacts to 79 acres of wetlands in the Laguna Seca flood storage basin area.

The majority of the mitigation for impacts to wetlands, streams and ponds are planned to be accomplished within the restored Fisher Creek corridor. A representative cross-section of the restored Fisher Creek is shown in Figure Bio-9. The width of each of the areas shown in this figure varies throughout the restored Fisher Creek corridor. Areas within the freshwater marsh and emergent wetland slope and riparian and seasonal wetland bench will be used for wetland mitigation. Seasonal wetlands may also be created within the 100-foot riparian setback. Areas below the freshwater and emergent marsh area will be used as mitigation for impacts to streams. Ponds may be created within the riparian and seasonal wetland bench, or 100-foot riparian setback.

In addition to direct impacts due to the placement of fill in wetlands, streams, and ponds, indirect impacts may occur to these communities from the introduction of non-native invasive species, and potential direct and indirect impacts may occur as a result of construction of percolation ponds in the Greenbelt. Implementation of the following mitigation measures will bring the impacts to wetlands, streams, and ponds to a less than significant level.

Mitigation Measure 1a: To mitigate for fill placed in wetlands, creation of wetlands at a 1:1 ratio, created to filled acreage, within the Plan Area shall be implemented as part of the Plan RMP or Wetland Mitigation and Monitoring Plan, or similar document. Mitigation wetlands shall be created concurrent with or prior to filling of existing wetlands. The Plan shall specify the use of locally native wetland plant species, quantities for planting, irrigation and maintenance requirements, performance criteria, and annual monitoring methods for a five-year period. As much of the created wetland acreage as possible shall be created within the restored Fisher Creek corridor. If some portion of the wetland creation cannot be accomplished within the restored Fisher Creek corridor, suitable areas in the Greenbelt should be used. If wetland mitigation cannot be accomplished in the Plan Area, off-site creation of wetlands will be performed at a minimum of a 2:1 ratio, created to impacted wetlands. In addition, a Section 404 Individual or Nationwide Permit must be obtained from the Corps, and Section 401 Water Quality Certification must be obtained from the RWQCB prior to the placement of any fill in wetlands. If a jurisdictional determination from the Corps has not been issued for an area proposed for development in the Plan Area, one must be obtained through submission of a Section 404 jurisdictional wetland delineation report to the Corps prior to issuance of the above permits.

The majority of development impacts to wetlands in the Plan Area are impacts to degraded farmed wetlands that have little value as wildlife species habitat or scenic resources. The primary value of these wetlands is in flood retention and water quality improvement. These values will be maintained or improved in the wetlands created within the restored Fisher Creek

corridor, and little temporal loss of the existing limited wetland values is expected, so mitigation at a 1:1 ratio within the restored Fisher Creek corridor or Greenbelt is adequate to compensate for these impacts. Impacts to wetlands that occur as a result of the restoration of Fisher Creek are considered self-mitigating and will be re-created within the restored Fisher Creek corridor at a 1:1 ratio.

Mitigation Measure 1b: To mitigate for fill placed in streams, creation of streams at a 1:1 ratio, created to impacted stream acreage and length, within the Plan Area shall be implemented as part of the Plan RMP, Stream Mitigation and Monitoring Plan, or similar document. As much of the stream mitigation as possible shall be created within the restored Fisher Creek corridor or as tributaries to the restored Fisher Creek corridor. Created streams within the Plan Area shall be designed to incorporate natural stream characteristics such as meanders, and pool and riffle complexes. If stream acreage and length cannot be replaced within the restored Fisher Creek corridor, planting of riparian vegetation along Coyote Creek or Fisher Creek within the Greenbelt at a 2:1 ratio, planted riparian length and/or area to impacted length and/or area should be performed where possible. If mitigation for stream acreage and length cannot be replaced within the restored Fisher Creek corridor or Greenbelt, off-site mitigation shall be accomplished by preservation of existing stream area and length at a 10:1 ratio, restoration and preservation of off-site stream area and length at a 3:1 ratio, or some combination of the two. Restoration of off-site streams may be accomplished through in-bed stream improvements, planting of riparian vegetation along a given length of stream, or other appropriate restoration activities. In addition, a Section 404 Individual or Nationwide Permit must be obtained from the Corps, a Section 401 Water Quality Certification must be obtained from the RWQCB, and a Section 1602 Lake and Streambed Alteration Agreement must be obtained from the CDFG prior to impacting existing streams. If a jurisdictional determination from the Corps has not been issued for an area proposed for development, one must be obtained prior to obtaining the above permits by submitting a delineation of wetlands and waters to the Corps.

Impacts to streams as a result of restoration of Fisher Creek are considered self-mitigating as they will be replaced by the restored Fisher Creek with improved functions and values. Therefore, mitigation for restoration impacts to streams at a 1:1 ratio created acreage and linear feet to impacted acreage and length is adequate. The majority of development impacts to streams in the Plan Area occur to agricultural ditches that are between 1 and 3 feet in width. These ditches provide little habitat value and contribute to poor water quality within the existing Fisher Creek. Therefore, mitigation at a 1:1 ratio within the restored Fisher Creek corridor or tributaries, or off-site mitigation as described above are adequate to compensate for these impacts.

Mitigation Measure 1c: To mitigate for fill placed in ponds, creation of ponds at a 1:1 ratio, created to impacted acreage, within the Plan Area shall be implemented as part of the Plan RMP or Wetland and/or Stream Mitigation Plan. Creation of ponds at a 1:1 ratio may be accomplished within the restored Fisher Creek corridor or within the Greenbelt. If mitigation for loss of ponds cannot be accomplished within the Plan Area, ponds shall be created off-site at a 2:1 ratio to reduce the impacts to ponds within the Plan Area to a level that is less than significant. If pond creation is not feasible off-site or on-site, planting of riparian vegetation at a 3:1 ratio, planted acreage to impacted acreage, or other appropriate aquatic restoration activities will be implemented. In addition, an Individual or Nationwide Permit must be obtained from the Corps, a Water Quality Certification must be obtained from the RWQCB, and a Lake and Streambed Alteration Agreement must be obtained from the CDFG prior to impacting existing ponds. If a jurisdictional determination from the Corps has not been issued for an area

proposed for development, one must be obtained prior to obtaining the above permits by submitting a delineation of wetlands and waters to the Corps.

Mitigation Measure 2: An Invasive Species Control Plan shall be prepared or incorporated into the Plan RMP. The Plan will contain provisions to prevent the potential introduction of non-native invasive plant species to avoided wetlands, streams, and ponds within and adjacent to the Plan Area, all aquatic features, including stormwater canals and the Focal Lake. The Plan shall require that steps are taken in the design and operation of these aquatic features to minimize the ability for invasive species to colonize these areas, and that monitoring of all aquatic areas within the Development Area for the presence of non-native invasive species occur at a minimum of annual intervals. If non-native invasive species are found within aquatic features of the Development Area, they must be removed or controlled using the best available techniques. Consideration shall also be given to adoption of an ordinance or similar policy prohibiting the use of known non-native invasive plant species in landscaping within the Development Area. In addition, literature should be distributed to homeowners within the Development Area, informing them of known non-native invasive species commonly used in landscaping and encouraging the use of native species.

Mitigation Measure 3: To prevent impacts to wetlands, streams, and ponds from the creation of groundwater percolation ponds in the Greenbelt, a delineation of wetlands and waters in areas being considered for creation of the ponds shall be performed. Where possible, the percolation ponds will be placed in areas where no existing wetlands, streams, or ponds will be impacted. If the impacts to wetlands, streams, or ponds cannot be avoided in the construction of the groundwater percolation ponds, any impacts will be subject to the provisions of Mitigation Measures 1a, 1b, and 1c. To control water quality impacts and potential introduction of non-native species, the groundwater percolation ponds will not be planned in areas where they will outlet to Fisher Creek or Coyote Creek.

Mitigation Measure 4: To prevent impacts to wetlands and streams due to construction of Highway 101 connections in the Greenbelt, a delineation of wetlands and waters shall be conducted in areas proposed for construction. Where possible, impacts to wetlands and streams will be avoided by placing bridge piles outside of jurisdictional waters and avoiding wetland areas during road construction. If the impacts to wetlands and streams cannot be avoided in the construction of the Highway 101 connections, any impacts shall be subject to the provisions of Mitigation Measures 1a, 1b, and 1c. In addition, BMPs such as silt fencing and timing of construction shall be implemented as part of the RMP or Stream Mitigation and Monitoring Plan to reduce potential temporary construction related impacts to Coyote Creek to a level that is less than significant.

6.1.2 Riparian Communities

As discussed in Section 5.2.3, approximately 3 acres of central coast cottonwood-sycamore riparian forest and 4 acres of central coast riparian scrub would be impacted by development in the Plan Area. In addition, approximately 21 acres of central coast riparian scrub along Fisher Creek would be impacted by the restoration of Fisher Creek. Implementation of the following mitigation measure will reduce potential impacts to riparian communities to a less than significant level.

Mitigation Measure 5: To mitigate for impacts to riparian areas, creation of riparian habitat at a minimum of a 1:1 ratio for restoration impacts and 3:1 for development impacts, created to

impacted acreage, within the Plan Area shall be implemented as part of the Plan RMP, Riparian Mitigation and Monitoring Plan, or similar document. The Plan shall specify the use of locally native, riparian plant species, quantities for planting, irrigation and maintenance requirements, performance criteria, and annual monitoring methods for a ten-year monitoring period. Use of locally native plant species is important to maintain or improve the existing habitat structure and genetic integrity of restoration and mitigation areas. Impacts due to the restoration of Fisher Creek are considered self-mitigating and will be re-created within the restored Fisher Creek corridor. As much of this mitigation as possible will be placed within the restored Fisher Creek corridor. If all necessary riparian mitigation cannot be accomplished within the restored Fisher Creek corridor, mitigation will be performed at a 3:1 ratio in suitable areas along Coyote Creek and Fisher Creek in the Greenbelt. If all necessary riparian mitigation cannot be accomplished within the Plan Area, impacted riparian habitat will be replaced at a 4:1 ratio in an off-site preserve. Riparian habitat impacted by the restoration of Fisher Creek not able to be re-created within the restored Fisher Creek corridor shall be subject to the same mitigation ratios as riparian habitat development impacts.

6.1.3 Direct Impacts to Other Sensitive Biological Communities

As stated in Section 5.2.4, impacts will occur to 5 acres of coast live oak woodland, 35 acres of valley oak woodland, and 23 acres of serpentine grassland as a result of development. In addition, potential impacts may occur to each of these communities due to the placement of water tanks in the hills adjacent to the Development Area. The following mitigation measures will reduce potential impacts to these communities as a result of the Plan to a less than significant level.

Mitigation Measure 6a: An Oak Woodland Preservation and Mitigation Plan shall be prepared or incorporated into the Plan RMP. The Oak Woodland Preservation and Mitigation Plan shall contain provisions to protect preserved oak trees during construction, as well as require mitigation for impacts to acreage of oak woodlands. This Plan shall specify the use of locally native oak species, quantities for planting, irrigation and maintenance requirements, performance criteria, and annual monitoring methods for a five-year monitoring period. Mitigation for impacts to oak woodland as a result of the Fisher Creek restoration may be accomplished through creation of oak woodland habitat within the restored Fisher Creek corridor at a minimum ratio of 1:1, created to impacted area. Mitigation for impacts to oak woodland as a result of development elsewhere in the Plan Area may be accomplished through creation of oak woodland habitat within the restored Fisher Creek corridor or Greenbelt at a minimum ratio of 2:1, created to impacted area. No more than 40 percent of the created oak woodland area will be planted using seedlings. The remaining replacement oaks would be planted from deepots, or larger size individuals. To the extent feasible, the existing species diversity of impacted oak woodlands shall be maintained in the created mitigation areas. If all necessary mitigation land for oak woodlands is not available within the Plan Area, oak woodland creation at a 2:1 ratio for acreage and oak woodland preservation at a 3:1 ratio will be necessary in an off-site preserve.

Mitigation Measure 6b: To mitigate for direct impacts to serpentine grassland, preservation and management of serpentine grassland shall be accomplished through establishment of a serpentine grassland preserve. The mitigation ratio for preservation of serpentine grassland areas adjacent to the Plan Area shall be 2:1, preserved to directly impacted area. If preservation of adjacent serpentine grassland areas is not feasible, a minimum ratio of 3:1, preserved to impacted area, shall be accomplished through establishment of an off-site

preserve. In addition, management of the preserve shall be discussed as part of the Plan RMP, Preserve Management Plan, or similar document. The Plan shall establish appropriate management goals such as expansion or improvement of habitat through implementation of methods such as grazing and require annual monitoring of the Preserve for a ten-year period. The results of annual monitoring shall be presented in an annual report that includes monitoring of special status species populations, monitoring of vegetation composition including non-native invasive species and comparisons of cover by native serpentine species and non-native grasses and forbs, and shall recommend management actions that could improve or expand habitat for special status species.

Mitigation Measure 7: To prevent impacts to serpentine grassland, valley oak woodland and live oak woodland as a result of the placement of water tanks in the hills adjacent to the Plan Area, water tanks shall be placed in areas that will cause the least impacts to sensitive biological communities. If impacts to these sensitive biological communities are unavoidable in the placement of water tanks, mitigation shall be performed as described in Mitigation Measure 6a and 6b.

6.1.4 Serpentine Grasslands and Nitrogen Deposition

Section 5.2.5 addresses indirect impacts to serpentine grassland areas that may occur due to Plan implementation. The Plan may have indirect impacts to the surrounding serpentine grassland areas in the foothills of the Santa Cruz Mountains, Santa Teresa Hills, Tulare Hill, and Coyote Ridge. These impacts are related to increased nitrogen deposition due to increased nitrogen emissions from automobiles and other sources within the Development Area at build-out of the Plan Area. The estimated area of serpentine grassland that would be impacted due to Plan implementation is 149 acres. The following mitigation measures will reduce direct and indirect impacts to serpentine grassland communities in and adjacent to the Plan Area to a less than significant level.

Mitigation Measure 8: To mitigate for potential indirect impacts to serpentine grassland as a result of nitrogen deposition, preservation of serpentine grassland shall be accomplished through establishment of a serpentine grassland preserve. In addition, a Preserve Management Plan shall be prepared or included in the development of the overall project RMP, as discussed in Mitigation Measure 6. Management of the preserve should focus on alleviating potential effects of increased nitrogen deposition. The preservation of serpentine grassland for direct and indirect impacts to serpentine grassland may be done in combination, for establishment of one preserve area. Based on the mitigation ratio used for CVRP, the Plan Area shall preserve a minimum of 3 acres of serpentine grassland for every acre of serpentine grassland impacted by increased nitrogen deposition generated as a result of Plan implementation. Based on the estimated impacts to 149 acres of serpentine grassland, the required mitigation would be preservation of 447 acres of serpentine grassland. As discussed in Section 5.2.5, these numbers may be adjusted based on best available science as advances are made in modeling the relationship between nitrogen emissions and nitrogen deposition.

6.2 Mitigation for Impacts to Special Status Species

Potentially significant impacts to 8 special status plant species and 27 special status wildlife species may occur as a result of development in the Plan Area. The following sections discuss mitigation measures designed to reduce these impacts to a level that is less than significant.

6.2.1 Special Status Plant Species

Potential impacts to special status serpentine grassland species may occur as a result of increased nitrogen deposition from development in the Plan Area as discussed in Section 5.3.1. In addition, impacts due to potential take of individuals may occur to bent flowered fiddleneck and big scale balsamroot as a result of development in the Plan Area. The following mitigation measures will reduce the potential impacts to special status plant species as a result of development in the Plan Area to a less than significant level.

Mitigation Measure 9: Implementation of Mitigation Measures 6b, 7, and 8 provide sufficient mitigation for impacts to special status plant species known to occur adjacent to the Plan Area. Known populations of special status plant species will be monitored as part of the management of the Preserve described in these mitigation measures. Recommendations for management actions that could improve habitat or increase the populations of special status species within any off-site preserve will be included in the Annual Monitoring Reports.

Mitigation Measure 10: In order to prevent take of bent flowered fiddleneck and big scale balsamroot, surveys shall be performed in portions of the Plan Area which have not been previously surveyed but contain appropriate habitat for these species. If these species are found in the Plan Area, the population and supporting habitat will be preserved if feasible. If preservation is not feasible, populations will be transplanted to suitable habitat in the Greenbelt or other land preserved for this project and monitored for five years. Transplantation of populations may be accomplished by relocating individual plants or through seed collection and dispersal, or a combination of both, to be determined based on species habitat requirements and best known science.

6.2.2 Special Status Wildlife Species

Central California Coastal Steelhead: Potential impacts to steelhead could occur as a result of direct mortality or acoustic disturbances resulting in mortality to adults and juveniles during construction if it is necessary to install bridge supports in Coyote Creek at two proposed bridge crossing locations. Installation of bridge supports in Coyote Creek may also cause temporary and permanent degradation of habitat for steelhead.

Mitigation Measure 11: Placement of bridge supports in Coyote Creek should be avoided if possible. If it is necessary to place bridge supports in Coyote Creek, they shall be positioned in areas that are determined by hydrologic analysis to be least likely to cause long term habitat degradation. To reduce impacts to adult steelhead, all in-stream work shall be performed between July and October, when migrating and spawning adults are not present. To reduce construction related impacts to adults and juveniles from shock wave and acoustic disturbance, coffer dams shall be installed upstream and downstream of the proposed bridge location. Dewatering shall be performed prior to the onset of construction. No work shall take place in a moving stream. A qualified biologist shall monitor the coffer dam installation to ensure that no special status aquatic species are present in the installation area. If any special status aquatic species are present in the installation area, coffer dam installation shall cease until individuals can be relocated to suitable undisturbed habitat. These mitigation measures will reduce the potential impacts to steelhead and other special status aquatic species as a result of construction of the Highway 101 overpasses to a less than significant level.

California Red-Legged Frog: As discussed in Section 5.2.3.1, potential impacts to CRLF could occur as a result of direct mortality during construction activities, construction of two bridges above Coyote Creek, development of habitat occupied by CRLF, development of dispersal corridors for CRLF, water quality and hydrology changes to occupied CRLF habitat or dispersal corridors, introduction of predatory non-native species, increased human and pet activity within and adjacent to occupied habitat, increased nighttime lighting, and/or increased traffic. Implementation of the following mitigation measures will lessen potential impacts to CRLF to a less than significant level. These measures may be modified by USFWS during the Section 7 consultation process.

Mitigation Measure 12a: To determine areas of aquatic habitat occupied by CRLF, protocol level surveys need to be performed in all portions of the Development Area where suitable aquatic habitat exists. Although surveys performed in 2003 are useful as background information, these survey results have expired and new survey protocols have been developed by USFWS for this species. Wherever possible, CRLF habitat will be avoided and those areas containing CRLF will be preserved. If fill of aquatic habitat occupied by CRLF or surrounding upland habitat, or other construction activity in occupied aquatic habitat is required, it shall be conducted between July and November, during the non-breeding season. In addition, a USFWS-approved biologist shall relocate CRLF to suitable preserved habitat with the permission of USFWS personnel.

Mitigation Measure 12b: To offset impacts to aquatic, upland, or dispersal habitat containing CRLF, the applicant shall provide off-site habitat conservation, either through a conservation bank and/or easement at a 3:1 ratio of like-habitat for every acre of occupied aquatic or upland habitat (within 200 feet of occupied aquatic habitat) filled or removed.

Mitigation Measure 13: In order to avoid impacts to special status aquatic species, placement of bridge supports in Coyote Creek should be avoided if possible. If it is necessary to place bridge supports in Coyote Creek, coffer dams shall be installed as described in Mitigation Measure 11. Installation of the coffer dams shall occur between July and October, outside of the breeding period for the potentially impacted species. A qualified biologist shall monitor the coffer dam installation to ensure that no special status aquatic species are present in the installation area. If any special status aquatic species are present in the installation area, coffer dam installation shall cease until individuals can be relocated to suitable undisturbed habitat.

Mitigation Measure 14: Implementation of an USFWS approved Stormwater Pollution Prevention Plan (SWPPP) containing BMPs designed to prevent construction related discharge into all surface waters including those containing CRLF and other aquatic species will reduce potential water quality impacts to a less than significant level.

Mitigation Measure 15: The proposed project will be required to conform to City of San José Council Policy 6-29 to satisfy the requirements of provision C.3 of the National Pollution Discharge Elimination System (NPDES) permit under Section 401 of the Clean Water Act. The proposed project would implement Policy 6-29 to control stormwater quality and discharge quantities so that they are not significantly affected by urban development in the CVSP Area. This will prevent significant adverse effects to hydrology and water quality of avoided and off-site aquatic habitat post construction, thus reducing potential impacts to special status aquatic species to a less than significant level.

Mitigation Measure 16: Prepare a Management Plan for Bullfrog and Other Invasive Predatory Species. The Management Plan shall include measures for eradication and monitoring.

Implementation of a Management Plan for control of invasive aquatic predators will reduce the impact these species have on special status aquatic species to a less than significant level.

Mitigation Measure 17: Installation of permanent exclusion fencing around new residential or industrial developments when adjacent or near aquatic habitat shall be required to reduce access by pets. Pamphlets will be dispersed to all new residents explaining the importance of maintaining control of pets and avoiding sensitive areas in their area. Signage in preserve or mitigation areas shall be installed to provide information to residents in the area and discourage disturbance. Implementation of these measures will reduce this impact to a less than significant level.

Mitigation Measure 18: Where road widening or construction is to occur within a dispersal corridor, culverts, causeways, bridges, and/or overpasses shall be incorporated into the design to allow wildlife, including special status aquatic species, to disperse under roads, thereby reducing road kills. Similar measures shall be implemented, where feasible, to exclude wildlife species from high traffic and developed areas. Implementation of this measure will reduce impacts resulting from widening and construction of roads to a less than significant level.

Mitigation Measure 19: Where high intensity lighting is to occur within or adjacent to CRLF breeding or dispersal habitat, downcast lighting or other appropriate lighting technology shall be incorporated into the design to reduce potential negative effects on wildlife species.

California Tiger Salamander: As discussed in Section 5.2.3.1, potentially significant impacts to CTS are similar to those for CRLF. Potential impacts to CTS could occur as a result of direct mortality during construction activities in upland areas, development of habitat occupied by CTS, development of dispersal corridors for CTS, water quality and hydrology changes to occupied CTS habitat or dispersal corridors, introduction of predatory non-native species, increased human and pet activity within and adjacent to occupied habitat, and increased traffic. Implementation of the following mitigation measures will lessen potential impacts to CTS to a less than significant level. These measures may be modified by USFWS during the Section 7 consultation process.

Mitigation Measure 12c: To determine areas of aquatic and upland habitat occupied by CTS, protocol level surveys need to be performed in all portions of the Development Area where suitable habitat exists. Although past surveys performed from 2003 to 2005 are useful as background information, these survey results are limited to areas where access was permitted. Wherever possible, CTS habitat will be avoided and those areas containing CTS will be preserved. If fill of aquatic habitat or ground disturbance to upland habitat occupied by CTS is required, it shall be limited to the non-breeding season (generally August through November). In addition, a USFWS-approved biologist will relocate CTS to suitable preserved habitat with authorization from USFWS personnel.

Mitigation Measure 12d: To offset impacts to aquatic, upland, or dispersal habitat containing CTS, the applicant shall provide off-site habitat conservation, either through a conservation bank and/or easement at a 3:1 ratio of like-habitat for every acre of occupied aquatic or suitable upland habitat within 2,200 feet of occupied aquatic habitat filled or removed. These measures may be modified by USFWS during the Section 7 consultation process.

Additional potential impacts to CTS shall be mitigated by implementation of Mitigation Measures 14, 15, 16, 17, 18, and 19.

Western Pond Turtle. Fill placed in aquatic habitat occupied by WPT or surrounding upland habitat within 200 feet and other potential habitat impacts discussed in Section 5.2.3.1 would be considered significant impacts to WPT. If habitat occupied by WPT is impacted, the following measures would be required to reduce impacts to a less than significant level.

Mitigation Measure 12e: To determine areas of aquatic habitat occupied by WPT, surveys shall be performed in all portions of the Development Area where suitable aquatic habitat exists, including Coyote Creek. Wherever possible, turtle habitat will be avoided and those areas containing the species will be preserved. If avoidance of aquatic habitat occupied by WPT is not feasible, the applicant shall prepare, or incorporate into the Plan RMP, a CDFG-approved mitigation and monitoring plan that will include methodology for capture, relocation, and monitoring of WPT. Implementation of this measure will reduce direct impacts to turtles to a less than significant level.

Mitigation Measure 20: Development or disturbance in upland oviposition habitats (uplands within 200 feet of occupied aquatic habitat) may impact turtle nest sites. Any construction activity to take place adjacent to aquatic habitat occupied by WPT shall be surrounded by exclusion fencing to prevent turtles from entering the construction area and daily monitoring and repair of the fence shall occur. Implementation of these measures will reduce impacts to WPT to a less than significant level.

Additional potential impacts to WPT will be mitigated by implementation of Mitigation Measures 13, 14, 15, 16, 17, 18, and 19.

Western Burrowing Owl. Construction activities may result in the destruction of occupied burrows both during the breeding season (February through August) and the winter season (December through January). The following mitigation measure will reduce impacts to burrowing owls.

Mitigation Measure 21: The applicant shall conduct pre-construction burrowing owl surveys in accordance with CDFG guidelines. If occupied burrows are observed during the breeding season, no ground disturbance or construction activities may occur within 250 feet of the burrow; in winter, the avoidance buffer will be 125 feet. If avoidance is not feasible, the applicant shall prepare or incorporate into the Plan RMP, a burrowing owl mitigation and monitoring plan. The Plan must be approved by CDFG prior to implementation and shall include details regarding passive exclusion of owls after all young have fledged, the construction of artificial burrows, conservation easements for the displaced owls, and monitoring. Passive exclusion, construction of artificial burrows, and the establishment of conservation easements will reduce direct impacts to a less than significant level.

Additional potential impacts to Western Burrowing Owl will be mitigated by implementation of Mitigation Measures 17, 18, and 19.

Golden Eagle. If Golden Eagles nest within one-quarter mile of the Plan Area, disturbance to nesting eagles during the breeding season (typically February 1 to July 1) could occur as a result of increased human activity and use of heavy equipment during construction. This could result in nest abandonment or poor reproductive success and is a potentially significant impact.

Mitigation Measure 22: Construction activities should commence during the non-breeding season (between September 1 and January 31) to avoid potential impacts to nesting eagles. If avoidance of the breeding season is not feasible, a qualified biologist shall conduct pre-

construction surveys for breeding birds, including the Golden Eagle. If eagles are nesting within one-quarter mile of the Plan Area, no ground disturbance activities shall occur within 1,320 feet of the active nest until all young are no longer dependent upon the nest. A biologist should monitor the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbances. Implementation and maintenance of appropriate buffers until all young have fledged will reduce the potential impact to a less than significant level.

Breeding Special Status Birds. Disruption of nesting special status avian species could occur as a result of increased human activity (e.g., due to the use of heavy equipment and human traffic) during the breeding season (typically March 1 to August 31). Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success.

Mitigation Measure 23: Construction activities in bird nesting habitat should commence during the non-breeding season (between September 1 and February 28) to avoid potential impacts to nesting special status birds. If avoidance of the breeding season is not feasible, a qualified biologist shall conduct pre-construction surveys for breeding birds. If active nests are observed, no ground disturbance activities shall occur within a 100-foot exclusion zone for passerine birds, and 300-foot exclusion zone for raptors and other non-passerine species. These exclusion zones shall remain in place around the active nest until all young are no longer dependent upon the nest. A biologist shall monitor the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbances. Implementation and maintenance of appropriate buffers will reduce potential impacts to nesting special status birds to a less than significant level.

Additional potential impacts to breeding special status birds will be mitigated by implementation of Mitigation Measure 19.

Other Breeding Birds. There are several common avian species known to occur within the Plan Area that are subject to impacts from Plan implementation. Disruption of nesting avian species could occur as a result of increased human activity (e.g., due to the use of heavy equipment and human traffic) during the breeding season (typically March 1 to August 31). Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success. As outlined in the Migratory Bird Treaty Act, an impact to breeding birds and their active nest, eggs, and/or young is considered a significant impact.

Mitigation Measure 24: Implementation of Mitigation Measure 23 will reduce potential impacts to common breeding birds to a level that is less than significant.

Additional potential impacts to breeding birds will be mitigated by implementation of Mitigation Measure 19.

Foothill Yellow-Legged Frog (FYLF): Potentially significant impacts to FYLF may occur if construction of the Highway 101 road connections requires placement of bridge supports in Coyote Creek. Mitigation for these impacts is included in Mitigation Measure 15.

Bay Checkerspot Butterfly and Other Special Status Invertebrate Species: Potentially significant impacts to Bay checkerspot butterfly and other special status invertebrate species in serpentine grassland communities may occur as a result of increased nitrogen deposition in serpentine grasslands as a result of development in the Plan Area.

Mitigation Measure 25: Implementation of Mitigation Measure 8 will reduce potential impacts to these species to a level that is less than significant. In addition, populations of Bay checkerspot butterfly and other special status invertebrate species known to occur in the preserved serpentine grassland habitat shall be monitored annually for 10 years to determine management strategies to increase and improve habitat for these species.

Coast Horned Lizard: Construction activities that affect potential habitat for the Coast horned lizard, if it occurs within or adjacent to the Plan Area, may impact this species through loss of habitat or direct mortality.

Mitigation Measure 26: Pre-construction surveys shall be performed by a qualified biologist in habitat considered suitable for Coast horned lizard and subject to ground disturbance. If horned lizards are found, a mitigation and monitoring plan approved by CDFG shall be prepared or incorporated into the RMP and implemented. The plan shall include details regarding trapping, relocation of the species to the nearest suitable habitat, and preservation of the habitat under a conservation easement. Implementation of this measure will reduce impacts to the Coast horned lizard to a less than significant level.

Additional potential impacts to sensitive bat species will be mitigated by implementation of Mitigation Measure 19.

American Badger: Suitable habitat is present in the Plan Area in the Fisher Creek and Coyote Creek floodplains; and may be available in other non-disked or agricultural areas where suitable burrows are present. Construction activities may result in removal or disturbance of occupied burrows or result in direct mortality due to noise or vehicular impact. This constitutes a potentially significant impact as it may result in direct mortality, reduction in reproductive success, and habitat removal.

Mitigation Measure 27: The applicant shall conduct pre-construction surveys in accordance with CDFG guidelines in all suitable habitat types where ground squirrel burrows are found. Any burrow found with signs of use should be monitored with a tracking medium application and resurveyed for a minimum of three consecutive days to determine use. If potential occupied burrows are observed and avoidance is not feasible, a mitigation and monitoring plan shall be prepared or incorporated into the Plan RMP. American badger mitigation must be approved by CDFG prior to implementation. The plan shall include details regarding passive exclusion of badgers and implementation of a conservation easement for displaced badgers. Passive exclusion and the establishment of conservation easements will reduce direct impacts to a less than significant level.

Additional potential impacts to American badger will be mitigated by implementation of Mitigation Measure 18 and 19.

Sensitive Bat Species: Roosting habitats for special status bat species are present in the Development Area. These species typically use buildings, trees, bridges, and rock crevices for roost habitat. Construction activities may result in the removal or disturbance of hibernation or maternal roost sites due to noise or human intrusion. This constitutes a potentially significant impact as it may result in direct mortality and reduction in reproductive success.

Mitigation Measure 28: Pre-construction surveys for potential bat roost habitat shall be performed in all trees, rock outcrops, and buildings subject to removal or demolition for evidence of bat use (guano accumulation, acoustic or visual detections). If evidence is found, then

acoustic surveys shall be conducted to determine whether a site is occupied. A minimum of three acoustic surveys shall be conducted in areas containing evidence of bat use between April and November under appropriate conditions using an acoustic detector (WBWG 2002). Exclusion of bats from occupied roosts shall be performed in the fall prior to construction. A qualified wildlife biologist shall be present during exclusion. Roost surveys and exclusion activities will reduce impacts to special status bats and bat roosts to a less than significant level.

6.3 Mitigation for Impacts to Wildlife Corridors

Many of the impacts to wildlife corridors for aquatic species, amphibians, and reptiles are mitigated to a less than significant level by one or more of the mitigation measures discussed in Section 6.2. However, development of the Plan Area may result in increased traffic along Monterey Road and Santa Teresa Boulevard, increased night lighting, and presence of domestic animals in the Plan Area. These factors may disrupt the use of existing corridors in the Greenbelt and Tulare Hill area for the movement of some terrestrial wildlife species. This would be a significant impact to wildlife movement in the Plan Area. The following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure 29: The project shall include appropriate measures to facilitate wildlife movement through the Plan Area. The design of new roads, overpasses, fences, and other linear facilities should, where possible, remove existing obstacles to wildlife movement and incorporate design elements to promote, where possible, wildlife movement through the Tulare Hill area and the Greenbelt. Such improvements or modifications can include enlargement of culverts beneath roadways, provision of areas for wildlife movement on overpasses, reduction in night time lighting near potential wildlife corridors, removal of barriers such as walls and fences near critical crossing areas, maintenance of naturally vegetated areas within protected open space areas to provide cover for various species, and other measures that eliminate barriers to movement in these two areas. The project shall include a minimum 100 foot buffer on either side of Coyote Creek and Fisher Creek that will be maintained with natural vegetation to promote movement of wildlife along these creek corridors and prevent potential interference of wildlife movement by domestic animals.

6.4 Mitigation for Impacts to Biological Resources in the BOH Alignment Area

Mitigation measures for impacts that occur in the BOH alignment area are largely the same as those stated above. Emphasis shall be placed on performing surveys within the BOH alignment area prior to any construction. Most of the BOH alignment area has not been adequately surveyed to determine areas of sensitive habitat present and potential occurrence of special status species.

6.4.1 Biological Communities

As previously stated in Section 5.5.1, potentially significant impacts may occur to sensitive biological communities in the BOH alignment area. Implementation of Mitigation Measures 1-7, as applicable, along with the following mitigation measure, will reduce potential impacts to sensitive biological communities in the BOH alignment area to a less than significant level.

Mitigation Measure 30: Surveys of biological communities, including a Section 404 delineation of wetlands and waters, shall be performed within the BOH alignment area to determine impacts to these communities.

6.4.2 Special Status Plant Species that May Occur in the BOH Alignment Area.

As previously stated in Section 5.5.2.1, several special status plant species have the potential to occur within the BOH alignment corridor. Implementation of the following mitigation measures will reduce potential impacts to special status plant species in the BOH alignment area to a less than significant level.

Mitigation Measure 31: A biological assessment shall be completed within the BOH alignment area to determine whether the biological communities present have the potential to support special status species. Based on the results of the biological assessment, focused rare plant surveys may be necessary to determine the presence or absence of special status plant species with the potential to occur in the BOH alignment area. If these species are found in the Plan Area, the population and supporting habitat will be preserved if feasible. If preservation is not feasible, populations will be transplanted to suitable habitat in a preserved area and monitored for minimum of five years. Transplantation of populations may be accomplished by relocating individual plants or through seed collection and dispersal, or a combination of both, to be determined based on species habitat requirements and best known science.

Implementation of Mitigation Measures 7 and 8 may also be necessary, depending on the road alignment and potential traffic impacts.

6.4.3 Special Status Wildlife Species or Critical Habitat that May Occur in the BOH Alignment Corridor:

As discussed in 5.5.2.2, several special status wildlife species and areas of critical habitat may be impacted by development within the BOH alignment corridor. These impacts may result in direct mortality, loss of habitat, and subsequent reduction in reproductive success, all of which are considered potentially significant. Impacts to critical habitat are significant, regardless of the presence/absence of the species for which critical habitat was designated, if the areas designated as critical habitat contain critical habitat elements required by special status species. If designated critical habitat does not contain these critical habitat elements, impacts to critical habitat are not significant.

Mitigation Measure 32a: To offset impacts to designated critical habitat for CTS and BCB, the applicant shall provide off-site habitat conservation, either through a conservation bank and/or easement at a 3:1 ratio of like-habitat for every acre of critical habitat impacted. If critical habitat areas designated by USFWS do not contain suitable habitat for these species, no mitigation is necessary. Implementation of this measure will reduce impacts to designated critical habitat to a less than significant level.

Mitigation Measure 32b: A biological assessment shall be completed within the BOH alignment area to determine whether the biological communities present have the potential to support special status species. Based on the results of the biological assessment, focused surveys to determine the presence or absence of special status wildlife species may be necessary. If special status wildlife species are found in the Plan Area, the population and occupied habitat will be avoided if feasible. If avoidance is not feasible, implementation of Mitigation Measures 13 through 26 may be necessary to reduce potential impacts to sensitive special status wildlife species to a level that is less than significant.

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Appendix A. Special Status Plant Species and their Potential to Occur in the Plan Area.

Appendix A. Special status plant species and their potential to occur in the Plan Area. Plant list compiled from a 2005 search of California Department of Fish and Game Natural Diversity Database (CNDDDB) records and the California Native Plant Society (CNPS) Electronic Inventory for the San Jose East, Lick Observatory, Isabel Valley, Santa Teresa Hills, Morgan Hill, Mt. Sizer, Loma Prieta, Mt. Madonna, and Gilroy USGS quadrangles.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
Plants			
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	List 1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland; 3-500m elevation. (Mar-June)	Moderate Potential. Some suitable habitat for this species exists in the Greenbelt along the Coyote Creek corridor. Species not present during protocol level rare plant surveys of accessible parcels.
Santa Cruz manzanita <i>Arctostaphylos andersonii</i>	List 1B	Broadleaf upland forest, chaparral, North Coast coniferous forest/ openings and edges; 60-700 m elevation. (Nov-Apr)	Not Present. Limited suitable habitat present within the Plan Area. Species prefers openings in redwood forests and similar habitat. Closest occurrence is seven miles from the Plan Area.
San Joaquin spearscale <i>Atriplex joaquiniana</i>	List 1B	Chenopod scrub, meadows, playas, valley and foothill grassland/alkaline soils; 1-320 m elevation. (Apr-Oct)	Unlikely. Very limited marginal habitat for this species is present within the Plan Area; no alkaline grassland areas are present.
big-scale balsamroot <i>Balsamorhiza macrolepsis</i> <i>var. macrolepsis</i>	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ sometimes serpentine; 90-1400 m elevation. (Mar-Jun)	Moderate Potential. Open areas within riparian and annual grassland areas in the Greenbelt may provide suitable habitat for this species. Species was not present during protocol level surveys in accessible portions of the Plan Area.
Santa Cruz Mountains pussypaws <i>Calyptridium parryi</i>	List 3	Chaparral, cismontane woodland; 305-1115 m elevation. (May-July)	Unlikely. Site below known elevation range for this species; no cismontane woodland habitat is present in the Plan Area.
chaparral harebell <i>Campanula exigua</i>	List 1B	Chaparral, rocky soils (usually serpentine); 275-1250 m elevation. (May-Jun)	Unlikely. Very little rocky chaparral habitat is present within the Plan Area; site below known elevation range for this species.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
Bristly sedge (<i>Carex comosa</i>)	List 2	Coastal prairie, valley and foothill grassland, marshes and swamps, (lake margins); 0-625m elevation. (May-Sept.)	Moderate. Margins of the Ogier Ponds in the Coyote Creek Corridor may provide suitable habitat for this species.
Tiburon Indian paintbrush <i>Castilleja affinis</i> ssp. <i>neglecta</i>	CT, FE, List 1B	Valley and foothill grassland (serpentine); 60-400 m elevation. (Apr-June)	Unlikely. Very little marginally suitable serpentine grassland within the Plan Area. Suitable habitat exists just outside the Plan Area boundary in the Santa Teresa Hills. Species known to occur in the Mount Hamilton Range within a mile of the Plan Area. Not present during protocol level rare plant surveys in accessible portions of the Plan Area.
coyote ceanothus <i>Ceanothus ferrisiae</i>	FE, List 1B	Chaparral, coastal scrub, valley and foothill grassland/serpentine; 120-460 m elevation. (Jan-May)	Not Present. <i>Ceanothus</i> was not observed within the limited serpentine grassland habitat present in the Plan Area. Species is known to occur in serpentine grassland in the Mount Hamilton Range and Santa Cruz Mountains within ¼ mile of the Plan Area.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	List 1B	Valley and foothill grassland (alkaline); 1-230 m elevation. (May-Nov.)	Unlikely. No alkaline grassland areas are present within the Plan Area. Closest occurrence is approximately nine miles north of the Plan Area.
Monterey spineflower <i>Chorizanthe pungens</i> var. <i>pungens</i>	FT, List 1B	Chaparral (maritime), coastal dunes/scrub, valley and foothill grassland/ sandy; 3-450 m elevation. (Apr-Jun)	Not Present. Suitable sandy maritime habitat does not exist within the Plan Area.
robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	FE	Coastal dunes/scrub, sandy terraces and bluffs in loose sand; 1-120 m elevation. (Apr-Sept)	Not Present. Suitable sandy coastal habitat does not exist within the Plan Area.
Mt. Hamilton thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	List 1B	Chaparral, cismontane woodland, valley and foothill grassland/ serpentine seeps; 100-890 m elevation. (Feb-Oct)	Present. Found within the Greenbelt and known from many locales in the Mount Hamilton Range. Species was not present elsewhere in the Plan Area during protocol level rare plant surveys.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
San Francisco collinsia <i>Collinsia multicolor</i>	List 1B	Closed cone coniferous forest, Coastal scrub/ sometimes serpentine; 30-250 m elevation. (Mar-May)	Unlikely. No coniferous forest or coastal scrub is present. Limited marginal serpentine habitat is present at the base of the Santa Teresa Hills. Species prefers areas of decomposed shale, which is not present within the Plan Area.
Mt Hamilton coreopsis <i>Coreopsis hamiltonii</i>	List 1B	Cismontane woodland, steep talus with open southwest exposure; 530-1300 m elevation. (Mar-May)	Not Present. No suitable habitat. The Plan Area is well below the typical elevation for this species.
Hospital Canyon larkspur <i>Delphinium californicum</i> <i>ssp. interius</i>	List 1B	Chaparral (openings), cismontane woodland (mesic), boggy meadows/seeps; 230-1095 m elevation. (Apr-Jun)	Not Present. Ideal habitat not present in the Plan Area; no cismontane woodland is present. Elevation of Plan Area is below the typical elevation for this species.
Santa Clara Valley dudleya <i>Dudleya setchellii</i>	FE, List 1B	Cismontane woodland, valley and foothill grassland/ rocky serpentine outcrops; 60-455 m elevation. (Apr-Jun)	Unlikely. Species is known to occur in serpentine grasslands in all of the surrounding hillsides, but was not present in serpentine grassland habitat within the Plan Area during protocol level surveys. Limited marginal habitat does occur on rocky grassland habitat in inaccessible portions of the Plan Area. Species occurs within 200 feet of the Plan Area boundary.
Brandegee's eriastrum <i>Eriastrum brandegeae</i>	List 1B	Chaparral, cismontane woodland, barren volcanic soils in open areas; 305-1030 m elevation. (Apr-Aug)	Not Present. No suitable habitat. The Plan Area is below the typical elevation for this species and no suitable habitat present.
Tracy's eriastrum <i>Eriastrum tracyi</i>	CR, List 1B	Chaparral, cismontane woodland, gravelly shale or clay, open areas; 315-760 m elevation. (Jun-July)	Not Present. Ideal gravelly shale/clay habitat not present. Plan Area is below typical elevation for this species.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	List 3	Chaparral, coastal prairie, valley and foothill grassland/serpentine soils. 10-500 m elevation. (Jun-Sept)	Unlikely. Suitable valley and foothill grassland habitat with serpentine soils located on the margins of the Plan Area, though most known occurrences are coastal. One occurrence known from Santa Teresa Hills, but occurrence information is incomplete and from an unknown secondary literature source. Species was not present during protocol level rare plant surveys of accessible portions of the Plan Area.
fragrant fritillary <i>Fritillaria liliacea</i>	List 1B	Cismontane woodland, coastal prairie and scrub, valley and foothill grassland/ often serpentine; 3-410 m elevation. (Feb-Apr)	Unlikely. Very limited suitable habitat is available outside of area included in rare plant surveys. Species was not present during protocol level surveys in accessible portions of the Plan Area. Known to occur in the Mount Hamilton range within ¼ mile of the Plan Area.
Loma Prieta hoita <i>Hoita strobilina</i>	List 1B	Chaparral, cismontane woodland, riparian woodland/ usually serpentine; 30-860 m elevation. (May-Oct)	Unlikely. Limited suitable habitat exists in the riparian corridor along Coyote Creek in the Greenbelt. However, all nearby occurrences are on serpentine hillsides, so this species is not very likely to occur. Species is known to occur in the Mount Hamilton Range within ¼ mile of the Plan Area.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, List 1B	Cismontane woodland, alkaline playas, valley and foothill grassland, vernal pools/ mesic; 0-470 m elevation. (Mar-Jun)	Not Present. Alkaline playas or vernal pools not present within the Plan Area, limited mesic habitat available.
legenere <i>Legenere limosa</i>	List 1B	In beds of vernal pools; 1-880 m elevation. (Apr-Jun)	Not Present. No vernal pool complexes within the Plan Area.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
woolly-headed lessingia <i>Lessingia hololeuca</i>	List 3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland, clay and serpentine soils; 15-305 m elevation. (Jun-Oct)	Moderate. Suitable valley and foothill grassland with clay/serpentine soils exist in portions of the Plan Area that were not surveyed. However, the species was not present during protocol level rare plant surveys in accessible portions of the Plan Area.
smooth lessingia <i>Lessingia micradenia</i> var. <i>glabrata</i>	List 1B	Chaparral, cismontane woodland/ serpentine, often roadsides; 120-420 m elevation. (Jul-Nov)	Unlikely. Most regional occurrences are located on serpentine hillsides, which occur in areas surrounding the Plan Area, but not inside of the Plan Area. Species was not present during protocol level rare plant surveys in accessible portions of the Plan Area. Species is known to occur within 200 feet of the Plan Area boundary.
Mt. Hamilton lomatium <i>Lomatium observatorium</i>	List 1B	Cismontane woodland, mostly around Mt. Hamilton itself in open rocky terrain; 1219-1330 m elevation. (Mar-May)	Not Present. The Plan Area is well below the typical elevation for this species. No cismontane woodland habitat is present.
arcuate bush mallow <i>Malcothamnus arcuatus</i>	List 1B	Chaparral; 15-355 m elevation. (Apr-Sept)	Not Present. Limited presence of chaparral habitat in the Plan Area. Last known regional occurrence is from 1937 in the Santa Cruz Mountains west of the Plan Area.
Hall's bush mallow <i>Malcothamnus hallii</i>	List 1B	Chaparral, coastal scrub; 10-760 m elevation. (May-Sept)	Not Present. Very limited and sparse chaparral habitat available in the Plan Area. Species is known to occur in the Santa Cruz Mountains approximately ¼ mile from the Plan Area.
Oregon meconella <i>Meconella oregana</i>	List 1B	Oak woodland, valley and foothill grassland; 250-500 m elevation. (Mar-Apr)	Unlikely. Suitable habitat available, however, site is below typical elevation for this species. Only one occurrence in the vicinity of the Plan Area near San Antonio Reservoir approximately 25 miles from the Plan Area.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
robust monardella <i>Monardella villosa</i> ssp. <i>globulosa</i>	List 1B	Broadleaved upland forest, chaparral openings, cismontane woodland, coastal scrub, valley and foothill grassland; 100-915 m in elevation. (June-July)	Unlikely. Species prefers openings in cismontane woodland, forested, and scrub communities. Only local occurrence is in an area of ponderosa pine at Henry Coe State Park.
Santa Cruz Mountains beardtongue <i>Penstemon rattanii</i> var. <i>kleei</i>	List 1B	Chaparral, lower montane coniferous forest, North Coast coniferous forest; 400-1100 m elevation. (May-Jun)	Not Present. Suitable habitat not present on site, and Plan Area is below typical elevation for this species.
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	List 1B	Chaparral, cismontane woodland/ rocky outcrops and talus slopes; 500-1370 m elevation. (Apr-May)	Not Present. Suitable habitat not present on site, and Plan Area is below typical elevation for this species.
hairless popcorn flower <i>Plagiobothrys glaber</i>	List 1A	Alkaline meadows, marshes and swamps (coastal salt), presumed extirpated from California; 15-180 m elevation. (Mar-May)	Not Present. Alkaline meadows and salt marshes not present on site. Presumed extirpated from California.
hooked popcorn flower <i>Plagiobothrys uncinatus</i>	List 1B	Chaparral, cismontane woodland, valley and foothill grassland, coastal bluff scrub; 300-820 m in elevation. (Apr-May)	Unlikely. Species prefers sandstone outcrops and canyon sides, neither of which occurs in the Plan Area. Closest occurrence is in the Isabel Valley, approximately 12 miles from the Plan Area.
rock sanicle <i>Sanicula saxitalis</i>	CR, List 1B	Broadleaf upland forest, chaparral, valley and foothill grassland, bedrock outcrops and talus slopes; 615-1215 m elevations. (Apr-May)	Not Present. Limited habitat present on site, and Plan Area is well below typical elevation for this species.
rayless ragwort <i>Senecio aphanactis</i>	List 2	Chaparral, cismontane woodland, coastal scrub/ alkaline; 15-800 m elevation. (Jan-Apr)	Unlikely. Alkaline soils not observed on site, limited chaparral habitat.
Metcalf Canyon jewelflower <i>Streptanthus albidus</i> ssp. <i>albidus</i>	FE, List 1B	Valley and foothill grassland, relatively open areas with serpentine soils; 45-800 m elevation. (Apr-July)	Unlikely. Some non-native grassland portions of the Plan Area not surveyed may contain marginally suitable habitat. Species was not present during protocol level rare plant surveys in accessible portions of the Plan Area.

Species	Status *	Habitat Requirements (blooming period)	Potential for Occurrence within Plan Area
most-beautiful jewelflower <i>Streptanthus albidus ssp. peramoenus</i>	List 1B	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils; 110-1100 m elevation. (Apr-Jun)	Unlikely. Some non-native grassland portions of the Plan Area not surveyed may contain marginally suitable habitat. Species was not present during protocol level rare plant surveys in accessible portions of the Plan Area.
Mt. Hamilton jewelflower <i>Streptanthus callistus</i>	List 1B	Chaparral, cismontane woodland, open talus slopes with shale and/or black oak; 600-790 m elevation. (Apr-May)	Not Present. Suitable habitat not present on site, and Plan Area is well below typical elevation for this species.
showy Indian clover <i>Trifolium amoenum</i>	FE, List 1B	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine); 5-415 m elevation. (Apr-Jun)	Unlikely. More commonly found in coastal habitats, limited habitat present in Plan Area. Most recent occurrence in the vicinity of the Plan Area was in 1903.
Santa Cruz clover <i>Trifolium buckwestiorum</i>	List 1B	Coastal prairie, broadleaf upland forest, cismontane woodland, moist grassland endemic to Santa Cruz County; 105-610 m elevation. (Apr-Oct)	Not Present. More commonly found in coastal habitats near Santa Cruz, typical habitat not present on site.
<p>* Key to status codes: Status codes used above are: FE - Federal Endangered FT - Federal Threatened CT - California Threatened CR - California Rare List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California List 2- CNPS List 2 Plants are rare, threatened, or endangered in California, but more common elsewhere List 3- CNPS List 3: Plants about which CNPS needs more information (a review list)</p>			

Appendix B. Special Status Wildlife Species and their Potential to Occur in the Plan Area.

Appendix B. Special status wildlife species and their potential to occur in the Plan Area. List compiled from a December 2005 search of California Department of Fish and Game Natural Diversity Database (CNDDDB) records for the San Jose East, Lick Observatory, Isabel Valley, Santa Teresa Hills, Morgan Hill, Mt. Sizer, Loma Prieta, Mt. Madonna, and Gilroy USGS quadrangles; and a 2005 search of USFWS Species lists.

Species	Status *	Habitat Requirements	Potential for Occurrence
Mammals			
pallid bat <i>Antrozous pallidus</i>	CSC, SLC, High Priority	Found in a variety of habitats: deserts, coniferous forest, non-coniferous woodlands. Day roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges. May rely heavily on tree roosts. Night roosts commonly under bridges, caves, and mines.	High Potential. Suitable tree, bridge and building roost sites available throughout the Plan Area. Cavities in the large sycamore, oak, and cottonwood trees along Coyote Creek provide quality tree roost habitat. Also may occur on adjacent Santa Teresa Hills.
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	CSC, High Priority	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Very sensitive to human disturbance.	Unlikely. May occasionally forage over the Plan Area. Optimal roost habitats, caves, and mines, are not present in the Plan Area.
small-footed myotis <i>Myotis ciliolabrum</i>	SLC	Found at the middle and high elevations (>6000ft) as well as in arid uplands of California. Associated with desert scrub, grasslands, oak and pinyon-juniper pine forests. Feeds on a variety of small flying insects. Roosts in mines and trees. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges.	Unlikely. Ranges into southern and eastern Santa Clara County. May forage over site.
long-eared myotis <i>Myotis evotis</i>	SLC	Primarily a forest associated species. Day roosts in hollow trees, under exfoliating bark, rock outcrop crevices and buildings. Other roosts include caves, mines and under bridges. New studies indicate occurs at elevations above 8000 feet.	Not Present. Plan Area not within known elevation range of species.
fringed myotis <i>Myotis thysanodes</i>	SLC, High Priority	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	Moderate Potential. May forage over Plan Area. Marginal roost habitat available in trees and buildings on site.
long-legged myotis <i>Myotis volans</i>	SLC, High Priority	Generally associated with woodlands and forested habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	Unlikely. Tree and building roost habitat present in woodland, riparian and urban areas of Plan Area.

Species	Status *	Habitat Requirements	Potential for Occurrence
Yuma myotis <i>Myotis yumanensis</i>	SLC	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	High Potential. Suitable roost and forage habitat available within Plan Area. May roost in trees along Coyote Creek and in barns and outbuildings in urban areas. Also may occur on adjacent Santa Teresa Hills.
greater western mastiff bat <i>Eumops perotis californicus</i>	CSC, SLC, High Priority	Found in a wide variety of habitat. Distribution appears to be tied to large rock structures, which provide suitable roosting sites, including cliff crevices and cracks in boulders.	Unlikely. Only low quality rock structures observed within Plan Area.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	CSC	Occurs in forest habitats of moderate canopy and moderate to dense understory. Also found in chaparral habitats. Feeds mainly on woody plants: live oak, maple, coffeeberry, alder, and elderberry.	Present. Nest found along Coyote Creek during wildlife assessment. Presumed to occur along Fisher Creek and other riparian habitats in the Plan Area.
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE, ST	Found in annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing and suitable prey base.	Unlikely. Plan Area outside of expected range and little suitable habitat is present. Not known to occur in western Santa Clara County. Although an occurrence of two kit foxes near the town of Coyote was documented in 1992 (CNDDDB 2006), Hwy 101 acts as a significant barrier to foxes from the east.
American badger <i>Taxidea taxus</i>	CSC, SLC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	Moderate Potential. Typical suitable habitat found adjacent to the Plan Area in surrounding foothills. Badger burrows have been observed on Tulare Hill. Suitable soils may be present in Plan Area along the Coyote Creek floodplain and in the hills adjacent to the Plan Area.
Birds			
Double-Crested Cormorant (rookery) <i>Phalacrocorax auritus</i>	CSC, SLC	A yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. Requires undisturbed nest-sites beside water, on islands or mainland. Uses wide rock ledges on cliffs; rugged slopes; and live or dead trees, especially tall ones.	Moderate Potential (rookery). Individuals observed foraging in reclamation ponds near Coyote Creek. Tall riparian trees within the Plan Area may provide suitable nesting habitat.
Great Blue Heron (rookery) <i>Ardea alba</i>	SLC	Inhabits freshwater, mudflats, tidal shallows, and marshes. Nest in colonies in large trees.	Present (rookery). 1991 rookery known from Coyote Creek within the Plan Area. Observed foraging along Coyote Creek.

Species	Status *	Habitat Requirements	Potential for Occurrence
American Bittern <i>Botaurus lentiginosus</i>	SLC	Occurs in fresh emergent wetlands, often hiding, resting, and roosting solitarily amidst tall, dense, emergent vegetation, on ground, or near ground on log, stump, or on emergent plants.	Moderate Potential. May occur along Coyote Creek or Fisher Creek. Suitable habitat occurs in marsh habitat in Bailey Over-the-Hill (BOH) area.
Snowy Egret (rookery) <i>Egretta thula</i>	SLC	Widespread along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Feeds primarily on small fish, crustaceans and large insects.	Moderate Potential (rookery). Individuals observed foraging in Coyote Greenbelt area and in agricultural areas. Suitable riparian trees for nesting along Coyote Creek.
Western Least Bittern <i>Ixobrychus exilis hesperis</i>	CSC, SLC	Dense emergent wetlands near sources of freshwater, and in desert riparian (salt cedar scrub). Probably nests only in emergent wetlands.	Not Present. Uncommon to California.
Cooper's Hawk <i>Accipiter cooperi</i>	CSC, SLC	Inhabits areas with dense tree stands or patchy woodlands. Usually nests in deciduous riparian areas or second-growth conifer stands near streams.	High Potential. Suitable nesting habitat is present in Coyote Creek and Fisher Creek riparian areas.
Golden Eagle <i>Aquila chrysaetos</i>	CSC, CFP, BCC, SLC	Found in rolling foothill and mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range.	Present. Observed soaring over Urban Reserve and adjacent hills. Presumably forages within grassland and open habitat within Plan Area. Limited suitable nesting habitat within the Plan Area.
Ferruginous Hawk <i>Buteo regalis</i>	CSC, BCC	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats.	Unlikely. May forage within Plan Area during winter. Does not breed in the area.
Northern Harrier <i>Circus cyaneus</i>	CSC, SLC	Found in open grasslands, prairies, and marshes. Tend to nest near water.	Present. Found throughout the Plan Area, especially in agricultural areas. May breed in undisturbed grassland habitat within the Plan Area.
White-Tailed Kite <i>Elanus leucurus</i>	CFP	Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	Present. Adult and immature kites observed over agricultural fields within Plan Area. Presumed to breed on site.
Bald Eagle <i>Haliaeetus leucocephalus</i>	FPD, FT, SE, CFP, SLC	Requires large bodies of water, or free-flowing rivers with abundant fish, adjacent snags, or other perches. Nests in large, old-growth, or dominant live tree with open branchwork.	Unlikely. One or two bald eagles occasionally winter at Calero Reservoir (H.T. Harvey and Associates 1999a). Do not breed in the area.

Species	Status *	Habitat Requirements	Potential for Occurrence
Prairie Falcon <i>Falco mexicanus</i>	CSC, BCC, SLC	Inhabits dry, open terrain. Breeding sites located on cliffs. Forages widely.	Moderate Potential. Expected to forage within grassland habitats of Plan Area, especially during winter.
American Peregrine Falcon <i>Falco peregrinus anatum</i>	SE, CFP, BCC, SLC	Winters throughout Central Valley. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	Unlikely. Expected to occasionally forage within Plan Area.
Mountain Plover <i>Charadrius montanus</i>	FPT, CSC, BCC	Winters in the Central Valley in short grasslands and plowed fields below 1000m.	Unlikely. May winter in agricultural areas within Plan Area.
Long-Billed Curlew <i>Numenius americanus</i>	CSC, BCC	Winters in large coastal estuaries, upland herbaceous areas, and croplands. Breeds in northeastern California in wet meadow habitat.	Present. Occasional winter forager to Santa Clara County. Observed in Coyote Valley area by H.T. Harvey and Associates (1999a).
Short-Eared Owl <i>Asio flammeus</i>	CSC, SLC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting. Tule patches/tall grass needed for nesting and daytime seclusion.	Moderate Potential. May occur in marsh/grassland area within Plan Area.
Long-Eared Owl <i>Asio otus</i>	CSC, SLC	Inhabits open woodlands, forest edges, riparian strips along rivers, hedgerows, juniper thickets, woodlots, and wooded ravines and gullies. Breeding habitat must include thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	Unlikely. May occur along Coyote Creek. Uncommon in area.
Western Burrowing Owl <i>Athene cunicularia hypugea</i>	CSC, BCC, SLC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Present. Potential nesting habitat available in portions of the Plan Area. Observed in Plan Area adjacent to Fisher Creek, and off-site south of Calero Reservoir. Also known to occur on Tulare Hill just north of Plan Area (CNDDDB 2006).
Vaux's Swift <i>Chaetura vauxi</i>	CSC, SLC	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	Unlikely. May forage over Plan Area.
Black Swift <i>Cypseloides niger</i>	CSC, BCC, SLC	Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above surf. Forages widely.	Unlikely. Known to breed in Almaden Canyon approximately 2 miles from the Plan Area (CNDDDB 2006). No optimal canyon habitat available on site. May forage within Plan Area.

Species	Status *	Habitat Requirements	Potential for Occurrence
Costa's Hummingbird <i>Calypte costae</i>	SLC	Occurs in arid habitats such as desert washes, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent shrub, lower-elevation chaparral, and palm oasis.	Moderate Potential. Suitable habitat conditions available on site. May breed in chaparral or riparian. May also be present during migration.
Rufous Hummingbird <i>Selasphorus rufus</i>	, BCC, SLC	Found in a wide variety of habitats that provide nectar-producing flowers. A common migrant and uncommon summer resident of California.	Unlikely. May use area during migration.
Allen's Hummingbird <i>Selasphorus sasin</i>	SLC	Breeds in sparse and open woodlands, coastal redwoods, and sparse to dense scrub habitats. Distribution highly dependent on abundance of nectar sources.	Moderate Potential. May breed in suitable chaparral or woodland habitats within Plan Area.
Lewis' Woodpecker <i>Melanerpes lewis</i>	BCC, SLC	Found in riparian areas, nests in cavities excavated by other woodpeckers.	Moderate Potential. May occur in oak woodland, riparian, or grassland habitats within Plan Area.
Olive-Sided Flycatcher <i>Contopus cooperi</i>	BCC	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	Unlikely. No coniferous forest habitat within Plan Area. May occur in Plan Area during migration.
Loggerhead Shrike <i>Lanius ludovicianus</i>	CSC, BCC, SLC	Prefers open habitats with scattered shrubs, trees, pots, and utility lines from which to forage for large insects. Nest well concealed above ground in densely foliated shrub or tree.	Present. Observed throughout grassland and agricultural habitats of the Plan Area. Presumed to breed in Coyote Valley.
Least Bell's Vireo <i>Vireo bellii pusillus</i>	FE, SE, BCC	Summer resident of Southern California. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite. Found in low riparian vegetation in vicinity of water.	High Potential. Known from recent occurrences in Llagas Creek, east of Gilroy and an undocumented occurrence in Coyote Creek. Suitable habitat for this species is present within the Plan Area in the Coyote Creek and Fisher Creek riparian corridors.
California Horned Lark <i>Eremophila alpestris actia</i>	CSC, SLC	Resident of open habitats such as grasslands and agricultural areas. They build a grass-lined cup nest in a depression in the ground in areas where grasses, shrubs, forbs, and rocks provide cover.	High Potential. Horned larks are expected to be present in the grassland and agricultural habitats throughout the Plan Area.
Bank Swallow <i>Riparia riparia</i>	ST, SLC	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and banks with fine-textured or sandy soils in which to nest.	Unlikely. May use Plan Area during migration. Historic breeding site 20 miles southeast of Plan Area.

Species	Status *	Habitat Requirements	Potential for Occurrence
California Thrasher <i>Toxostoma redivivum</i>	SLC	Common resident of foothills and lowlands in cismontane California. Occupies moderate to dense chaparral habitats and extensive thickets in young or open valley foothill riparian habitat.	Present. Suitable chaparral and foothill riparian habitat available in Plan Area. Observed in riparian scrub habitat along Coyote Creek in 2003.
Hermit Warbler <i>Dendroica occidentalis</i>	SLC	Frequents mature stands of conifers with open to dense canopy for breeding.	Not Present. Optimal breeding habitat not available within Plan Area.
Yellow Warbler <i>Dendroica petechia brewsteri</i>	CSC, SLC	Nests in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in montane shrubbery in open conifer forests.	Present. H.T. Harvey documented in Coyote Creek riparian habitat (1999).
Saltmarsh Common Yellowthroat <i>Geothlypis trichas sinuosa</i>	CSC, BCC, SLC	Frequents low, dense vegetation near water including fresh to saline emergent wetlands. Brushy habitats used in migration. Forages among wetland herbs and shrubs for insects primarily.	Present. Yellowthroats observed singing at two separate locations along Coyote Creek in 2003. Assumed to be breeding.
Yellow-Breasted Chat <i>Icteria virens</i>	CSC, SLC	(Nesting) summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forage and nest w/in 10 ft of ground.	Moderate Potential. May occur in dense riparian habitat within Plan Area. Uncommon to Bay Area.
Bell's Sage Sparrow <i>Amphispiza belli belli</i>	CSC, BCC, SLC	Prefers dense chaparral and scrub habitats in breeding season. Found in more open habitats in winter.	Moderate Potential. Suitable chaparral habitat found in Plan Area and immediately adjacent at the foot of the Santa Cruz Mountains.
Tricolored Blackbird <i>Agelaius tricolor</i>	CSC, BCC, SLC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	Present. Documented occurrence in 2002 in Ogier Ponds (CNDDDB 2006). Also, freshwater cattail lined marsh habitat present within Plan Area along Coyote and Fisher Creeks.
Lawrence's Goldfinch <i>Carduelis lawrencei</i>	BCC, SLC	Inhabits oak woodlands, chaparral, riparian woodlands, pinyon-juniper associations, and weedy areas near water during the breeding season.	High Potential. Suitable habitat present in Plan Area.
Reptiles and Amphibians			

Species	Status *	Habitat Requirements	Potential for Occurrence
California tiger salamander <i>Ambystoma californiense</i>	FT, CSC	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding	Present. Known to occur immediately adjacent to the Plan Area, in the Santa Cruz Mountains. Occurrences of this species have been documented within the CVSP Area at the Coyote Creek Golf Course and along Bailey Ave. Suitable habitat present in Plan Area.
western spadefoot toad <i>Spea hammondi</i>	CSC	It prefers areas of open vegetation and short grasses where the soil is sandy or gravelly in grassland, scrub, chaparral and woodland habitats.	Not Present. No known historical occurrences in Santa Clara County.
California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	Present. Known to occur in tributaries of Coyote Creek and at several locations within five miles of Plan Area. Documented in Ogier ponds in 2003 (CNDDDB 2006).
foothill yellow-legged frog <i>Rana boylei</i>	CSC	Found in or near rocky streams in a variety of habitats. Feeds on both aquatic and terrestrial invertebrates.	Moderate Potential. Marginal habitat present in Coyote and Fisher Creeks and their tributaries. Known to occur within five miles of Plan Area.
western pond turtle <i>Clemmys marmorata</i>	CSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	Present. Observed in pond adjacent to Coyote Creek during site visit. Known to occur in Coyote Creek, Fisher Creek and other ponded areas throughout the Plan Area.
Coast horned lizard <i>Phrynosoma coronatum frontale</i>	CSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress juniper and annual grass habitats. Prefers sand areas, washes, flood plains and wind-blown deposits.	Moderate Potential. Known to occur throughout Santa Clara County. Suitable habitat presenting adjacent Santa Teresa Hills.
silvery legless lizard <i>Anniella pulchra pulchra</i>	CSC	Burrowing species found in loose, friable soils or sand.	Unlikely. Optimal habitat not present in Plan Area.
San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i>	CSC	Lives in dry grassy/saltbush habitats. Uses mammal burrows for refuge and breeding.	Not Present. Not within known range.

Species	Status *	Habitat Requirements	Potential for Occurrence
Alameda whipsnake <i>Masticophis lateralis euryzanthus</i>	FT, ST	Prefers a chaparral habitat with rock outcroppings and small mammal burrows for basking and refuge. Can occur in adjacent communities, including grassland and oak savanna. Found in the East Bay hills.	Not Present. Not within known range.
San Francisco garter snake <i>Thamnophis sirtalis tetrataenia</i>	FE, SE, CFP	Found in the vicinity of freshwater marshes, ponds and slow moving streams. Prefers dense cover and water depths of at least one foot. Upland areas important.	Not Present. Known range does not extend into Plan Area.
Fishes			
green sturgeon <i>Acipenser medirostris</i>	FPT, CSC	Anadromous fish that spawns in the Sacramento River. Feeds in estuaries and bays, including San Francisco Bay.	Not Present. Not known to occur in Coyote Creek.
coho salmon-central CA coast <i>Oncorhynchus kisutch</i>	FT, SE, NMFS	Spawn in coastal streams at temps. from 4-14C. Prefer beds of loose, silt-free, coarse gravel and cover nearby for adults.	Unlikely. Not found in Coyote Creek since 1962. Recent surveys did not detect this species in Coyote Creek.
Central California Coastal steelhead <i>Oncorhynchus mykiss</i>	FT, CSC, NMFS	Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	Present. Known to occur in Coyote Creek. Recent surveys detected steelhead throughout the length of the creek.
Central Valley fall/late fall-run chinook salmon <i>Oncorhynchus tshawytscha</i>	CSC, NMFS	Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean	Not Present. Not known to occur in Coyote Creek watershed.
delta smelt <i>Hypomesus transpacificus</i>	FT, ST	Live in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet.	Not Present. Not known to occur in Coyote Creek watershed.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	CSC	Splittail are primarily freshwater fish, but are tolerant of moderate salinity (saltiness) and can live in water with salinities of 10-18 parts per thousand. Found in Sacramento Delta.	Not Present. Has not been detected upstream from Metcalf Dam since 1905. Recent surveys did not find this species in the Plan Area.
tidewater goby <i>Eucyclogobius newberryi</i>	FE, CSC	Found in the brackish waters of coastal lagoons, marshes, creeks, and estuaries. Unique among fishes of the Pacific coast, gobies are restricted to waters of low salinity in coastal wetlands. They feed along the bottom, preferring clean, shallow, slow-moving waters.	Not Present. Not known to occur in Coyote Creek, suitable habitat not present.
Invertebrates			

Species	Status *	Habitat Requirements	Potential for Occurrence
Hom's microblind harvestman <i>Microcina homi</i>	RP	Serpentine soil grasslands.	Moderate Potential. Habitat present.
Jung's microblind harvestman <i>Microcina juni</i>	RP	Serpentine soil grasslands	Moderate Potential. Habitat present.
Edgewood blind harvestman <i>Calicina minor</i>	RP	Found on the underside of moist serpentine rocks near permanent springs.	Moderate Potential. Serpentine habitat present. Four known occurrences in Santa Clara County.
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	Not Present. Not known to occur in Santa Clara County. Typical habitat not present.
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not Present. Not known to occur in Santa Clara County. Typical habitat not present.
California linderiella <i>Linderiella occidentalis</i>	RP	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity and conductivity.	Unlikely. Typical habitat not present. May occur in adjacent grassland habitat.
Opler's longhorn moth <i>Adela oplerella</i>	RP	Inhabit serpentine grassland. Larval foodplant is cream cups (<i>Platystemon californicus</i>).	Moderate Potential. Habitat (host plant) present along western boundary of Plan Area.
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. Dwarf plantain is the primary host plant.	Moderate Potential. Designated habitat present surrounding Plan Area. Known populations present in foothills to the west (Kalana Hills), east (Silver Creek and Kirby Canyon), and north (Tulare Hill) (CNDDDB 2006). May occasionally fly through Plan Area.
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE	Restricted to northern coastal scrub of the San Francisco peninsula. The host plant is johnny jump-up (<i>Viola pedunculata</i>).	Not Present. Plan Area not within known range of this species.

Species	Status *	Habitat Requirements	Potential for Occurrence																														
<p>* Key to status codes: Status codes used above are:</p> <table border="0"> <tr> <td>FE</td> <td>Federal Endangered</td> </tr> <tr> <td>FT</td> <td>Federal Threatened</td> </tr> <tr> <td>FC</td> <td>Federal Candidate</td> </tr> <tr> <td>FPD</td> <td>Federal Proposed De-listed</td> </tr> <tr> <td>FPT</td> <td>Federal Proposed Threatened</td> </tr> <tr> <td>BCC</td> <td>Federal Birds of Conservation Concern</td> </tr> <tr> <td>RP</td> <td>Covered under Federal Recovery Plan</td> </tr> <tr> <td>NMFS</td> <td>Species under the jurisdiction of the National Marine Fisheries Service</td> </tr> <tr> <td>SE</td> <td>State Endangered</td> </tr> <tr> <td>ST</td> <td>State Threatened</td> </tr> <tr> <td>SC</td> <td>State Candidate</td> </tr> <tr> <td>CFP</td> <td>CDFG Fully Protected Animal</td> </tr> <tr> <td>CSC</td> <td>CDFG Species of Special Concern</td> </tr> <tr> <td>SLC</td> <td>Species of Local Concern</td> </tr> <tr> <td>High Priority</td> <td>WBWG High Priority or imperiled species</td> </tr> </table>				FE	Federal Endangered	FT	Federal Threatened	FC	Federal Candidate	FPD	Federal Proposed De-listed	FPT	Federal Proposed Threatened	BCC	Federal Birds of Conservation Concern	RP	Covered under Federal Recovery Plan	NMFS	Species under the jurisdiction of the National Marine Fisheries Service	SE	State Endangered	ST	State Threatened	SC	State Candidate	CFP	CDFG Fully Protected Animal	CSC	CDFG Species of Special Concern	SLC	Species of Local Concern	High Priority	WBWG High Priority or imperiled species
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**Appendix C. Plant and Wildlife Species Observed during Field Investigations of
the Plan Area.**

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Adenostoma fasciculatum</i>	chamise
<i>Acacia sp.</i>	acacia
<i>Acer negundo</i>	box elder
<i>Achillea millefolium</i>	yarrow
<i>Achyrachaena mollis</i>	blow-wives
<i>Adenostoma fasciculatum</i>	chamise
<i>Aesculus californica</i>	California buckeye
<i>Agrostis stolonifera</i>	spreading bentgrass
<i>Alnus rhombifolia</i>	white alder
<i>Alnus rubra</i>	red alder
<i>Amsinckia intermedia</i>	rancher's fireweed
<i>Amsinckia menziesii</i>	fiddleneck
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Anthemis cotula</i>	mayweed
<i>Artemisia californica</i>	California sagebrush
<i>Asclepias fascicularis</i>	milkweed
<i>Atriplex patula</i>	halberd-leaf saltbush
<i>Avena barbata</i>	slender wild oat
<i>Avena fatua</i>	common wild oat
<i>Avena sativa</i>	cultivated oat
<i>Baccharis pilularis</i>	coyote brush
<i>Bassia hyssopifolia</i>	five-horned smother weed
<i>Beta vulgaris</i>	common beet
<i>Brassica nigra</i>	black mustard
<i>Briza minor</i>	little quaking grass
<i>Brodiaea elegans</i>	elegant brodiaea
<i>Bromus carinatus</i>	California brome
<i>Bromus diandrus</i>	ripgut grass

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Bromus hordeaceus</i>	soft chess
<i>Calandrinia breweri</i>	redmaids
<i>Camissonia campestris</i>	sun-cups
<i>Capsella bursa-pastoris</i>	shepherd's purse
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carthamis tinctorius</i>	safflower
<i>Castilleja densiflora</i>	owl's clover
<i>Casuarina equisetifolia</i>	common beefwood
<i>Cedrus deodora</i>	deodar cedar
<i>Centaurea calcitrapa</i>	purple star thistle
<i>Centaurea solstitialis</i>	yellow star thistle
<i>Cerastium arvense</i>	mouse-ear chickweed
<i>Cerastium glomeratum</i>	chickweed
<i>Chamomilla suaveolens</i>	pineapple weed
<i>Chenopodium album</i>	white goosefoot
<i>Chloragalum pomeridianum var. pomeridianum</i>	soap plant
<i>Cirsium brevistylum</i>	Indian thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Clarkia purpurea</i>	purple clarkia
<i>Clarkia unguiculata</i>	canyon clarkia
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Conium maculatum</i>	poison hemlock
<i>Convolvulus arvensis</i>	bindweed
<i>Conyza canadensis</i>	Canada horseweed
<i>Cotula coronopifolia</i>	brass buttons
<i>Crepis capillaris</i>	smooth hawksbeard
<i>Cressa truxillensis</i>	alkali weed
<i>Cryptantha sp.</i>	cryptantha

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Crypsis schoenoides</i>	swamp pricklegass
<i>Cyperus eragrostis</i>	umbrella sedge
<i>Cyperus erythrorhizos</i>	red-rooted cyperus
<i>Dipsacus fullonum</i>	wild teasel
<i>Distichlis spicata</i>	saltgrass
<i>Dodecatheon hendersonii</i>	shooting star
<i>Downingia pulchella</i>	flat face downingia
<i>Eleocharis macrostachya</i>	spikerush
<i>Elymus multisetus</i>	big squirreltail
<i>Epilobium brachycarpum</i>	panicked willow herb
<i>Epilobium ciliatum</i>	hairy willow herb
<i>Eremocarpus setigerus</i>	turkey mullein
<i>Eriogonum nudum</i>	naked stem buckwheat
<i>Erodium botrys</i>	filaree
<i>Erodium cicutarium</i>	red-stemmed filaree
<i>Erodium moschatum</i>	white-stemmed filaree
<i>Eschscholzia californica</i>	California poppy
<i>Eucalyptus globulus</i>	blue gum
<i>Eucalyptus polyanthemos</i>	silver dollar gum
<i>Foeniculum vulgare</i>	fennel
<i>Frankenia salina</i>	alkali heath
<i>Galium sp.</i>	bedstraw
<i>Geranium dissectum</i>	cut leaf geranium
<i>Geranium molle</i>	dove's foot geranium
<i>Gilia achilleifolia ssp. achilleifolia</i>	blue gilia
<i>Gnaphalium palustre</i>	western marsh cudweed
<i>Heteromeles arbutifolia</i>	toyon
<i>Hordeum brachyantherum</i>	meadow barley

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Hordeum jubatum</i>	foxtail barley
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
<i>Hordeum murinum ssp. leporinum</i>	wall barley
<i>Hordeum vulgare</i>	barley
<i>Hydrocotyle ranunculoides</i>	pennywort
<i>Juglans californica var hindsii</i>	Northern California black walnut
<i>Juglans regia</i>	English walnut
<i>Juncus balticus</i>	Baltic rush
<i>Juncus bufonius</i>	toad rush
<i>Juncus effusus</i>	soft rush
<i>Juncus mexicanus</i>	Mexican rush
<i>Juncus phaeocephalus</i>	brown-headed rush
<i>Juncus xiphioides</i>	iris-leaf rush
<i>Juniperus sp.</i>	juniper
<i>Lactuca saligna</i>	willow-leaf lettuce
<i>Lactuca serriola</i>	prickly lettuce
<i>Lepidium latifolium</i>	broad-leaved pepperweed
<i>Lepidium nitidum</i>	common peppergrass
<i>Leymus triticoides</i>	beardless ryegrass
<i>Lilaea scilloides</i>	flowering quillwort
<i>Lolium multiflorum</i>	Italian ryegrass
<i>Lomatium sp.</i>	lomatium
<i>Lotus corniculatus</i>	bird's foot trefoil
<i>Ludwigia peploides</i>	floating water primrose
<i>Lupinus spp.</i>	lupine
<i>Lythrum californicum</i>	California loosestrife
<i>Lythrum hyssopifolium</i>	hyssop loosestrife
<i>Malva parviflora</i>	cheeseweed

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Malva sp.</i>	mallow
<i>Malvella leprosa</i>	alkali mallow
<i>Medicago arabica</i>	burclover
<i>Medicago polymorpha</i>	California burclover
<i>Medicago sativa</i>	alfalfa
<i>Melica californica</i>	California melic
<i>Mentha pulegium</i>	pennyroyal
<i>Mimulus aurantiacus</i>	sticky monkeyflower
<i>Mimulus guttatus</i>	monkeyflower
<i>Muilla maritima</i>	common muilla
<i>Nasella pulchra</i>	purple needlegrass
<i>Nemophila menziesii</i>	baby blue eyes
<i>Oxalis pes-caprae</i>	Bermuda buttercup
<i>Phalaris brachystachys</i>	short spike canary grass
<i>Phalaris paradoxa</i>	hood canary grass
<i>Phalaris sp.</i>	harding grass
<i>Piciris echioides</i>	bristly ox tongue
<i>Pinus sp.</i>	pine
<i>Plagiobothrys stipitatus</i>	slender popcorn flower
<i>Plantago coronopus</i>	cut-leaf plantain
<i>Plantago erecta</i>	dwarf plantain
<i>Plantago lanceolata</i>	English plantain
<i>Plantago major</i>	common plantain
<i>Platanus acerifolia</i>	London plane tree
<i>Platanus racemosa</i>	western sycamore
<i>Platystemon californicus</i>	cream cups
<i>Poa annua</i>	annual bluegrass
<i>Polygonum amphibium</i>	water smartweed

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Polygonum arenastrum</i>	knotweed
<i>Polygonum lapathifolium</i>	willow-weed
<i>Polypogon monspeliensis</i>	rabbitfoot grass
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Populus nigra</i> var. <i>italica</i>	Lombardy poplar
<i>Potamogeton</i> sp.	pondweed
<i>Prunus dulcis</i>	almond
<i>Prunus</i> sp.	plum
<i>Quercus agrifolia</i>	coast live oak
<i>Quercus douglasii</i>	blue oak
<i>Quercus lobata</i>	valley oak
<i>Quercus suber</i>	cork oak
<i>Ranunculus californicus</i>	California buttercup
<i>Ranunculus muricatus</i>	spiny fruit buttercup
<i>Raphanus sativus</i>	wild radish
<i>Ribes</i> sp.	currant
<i>Rorippa nasturtium-aquaticum</i>	watercress
<i>Rosa californica</i>	wild rose
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rubus ursinus</i>	California blackberry
<i>Rumex acetosella</i>	sheep sorrel
<i>Rumex crispus</i>	curly dock
<i>Rumex obtusifolius</i>	bitter dock
<i>Rumex pulcher</i>	fiddle dock
<i>Rumex salicifolia</i>	willow dock
<i>Salix babylonica</i>	weeping willow
<i>Salix exigua</i>	narrow-leaved willow
<i>Salix laevigata</i>	red willow

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Salix lasiolepis</i>	arroyo willow
<i>Salsola tragus</i>	Russian thistle
<i>Salvia mellifera</i>	black sage
<i>Sambucus mexicana</i>	blue elderberry
<i>Sanicula bipinnatifida</i>	purple sanicle
<i>Schinus molle</i>	Peruvian peppertree
<i>Scirpus acutus</i>	hard-stemmed bulrush
<i>Scirpus californicus</i>	California bulrush
<i>Scirpus robustus</i>	alkali bulrush
<i>Scrophularia californica</i>	bee plant
<i>Sidalcea sp.</i>	checkerbloom
<i>Silybum marianum</i>	milk thistle
<i>Sinapis arvensis</i>	charlock
<i>Sisymbrium altissimum</i>	tumble mustard
<i>Solanum sp.</i>	nightshade
<i>Sonchus asper</i>	prickly sow thistle
<i>Sonchus oleraceus</i>	common sow thistle
<i>Spergularia rubra</i>	ruby sand-spurrey
<i>Stellaria media</i>	common chickweed
<i>Symphoricarpos albus var. laevigatus</i>	common snowberry
<i>Toxicodendron diversilobum</i>	poison oak
<i>Trifolium dubium</i>	little hop clover
<i>Trifolium hirtum</i>	rose clover
<i>Trifolium wormskioldii</i>	cow's clover
<i>Trifolium sp.</i>	clover
<i>Triteleia laxa</i>	Ithuriel's spear
<i>Typha angustifolia</i>	narrow-leaf cattail
<i>Typha latifolia</i>	broad-leaved cattail

Appendix C-1. List of plant species observed within the Plan Area and adjacent lands between 2003 and 2005.

Scientific Name	Common Name
<i>Umbellularia californica</i>	California bay
<i>Veronica peregrina</i>	purslane speedwell
<i>Veronica persica</i>	Persian speedwell
<i>Vicia sativa</i>	spring vetch
<i>Viola pedunculata</i>	Johnny jump-up
<i>Vulpia bromoides</i>	brome fescue
<i>Vulpia myuros</i>	rattail fescue
<i>Xanthium strumarium</i>	rough cocklebur

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
Mammals			
evening bats	<i>Myotis spp.</i>	resident	Observed in a stockpond adjacent to Development Area
Audubon's cottontail	<i>Sylvilagus audubonii</i>	resident	Observed in riparian habitat along Coyote Creek
California ground squirrel	<i>Spermophilus beecheyi</i>	resident	Observed throughout the Development Area
San Francisco dusky-footed woodrat	<i>Neotoma fuscipes annectens</i>	FSC, CSC	Stick nests observed along Coyote Creek in riparian habitat
coyote	<i>Canis latrans</i>	resident	Observed adjacent to Fisher Creek in agricultural areas
raccoon	<i>Procyon lotor</i>	resident	Tracks observed around percolation and Ogier Ponds
domestic cat	<i>Felis catus</i>	feral/ domestic	Observed adjacent to Fisher Creek
mule deer	<i>Odocoileus hemionus</i>	resident	Observed in oak woodland/annual grassland
Birds			
Pied-Billed Grebe	<i>Podilymbus podiceps</i>	resident	Pair in Bailey Over-the-Hill (BOH) pond and in Coyote Creek
Double-Crested Cormorant	<i>Phalacrocorax auritus</i>	CSC (rookery)	Observed foraging in PG&E reclamation ponds, and in Coyote Creek
Great Blue Heron	<i>Ardea herodias</i>	none (rookery)	Fly over; observed foraging along Coyote Creek
Great Egret	<i>Ardea alba</i>	resident	Foraging in agricultural fields, and in Coyote Creek
Snowy Egret	<i>Egretta thula</i>	FSC (rookery)	Foraging in agricultural fields, and in Coyote Creek
Green Heron	<i>Butorides virescens</i>	resident	Observed in BOH pond
Black-Crowned Night Heron	<i>Nycticorax nycticorax</i>	resident	Observed along Coyote Creek
Turkey Vulture	<i>Cathartes aura</i>	resident	Observed soaring over Plan Area
Canada Goose	<i>Branta canadensis</i>	migrant	Observed flying over Plan Area
Wood Duck	<i>Aix sponsa</i>	resident	Observed in Coyote Creek

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
Mallard	<i>Anas platyrhynchos</i>	resident	Observed off-site adjacent to Plan Area in Calero Reservoir, also observed in Coyote Creek
Gadwall	<i>Anas strepera</i>	resident	Pair in BOH stockpond
Bufflehead	<i>Bucephala albeola</i>	migrant	Pair observed in Development Area stockpond; and in off-site adjacent stockpond
Ruddy Duck	<i>Oxyura jamaicensis</i>	resident	Pair observed in BOH pond
White-Tailed Kite	<i>Elanus leucurus</i>	CSC	Adult and juvenile observed in agricultural fields
Northern Harrier	<i>Circus cyaneus</i>	CSC	Observed over agricultural fields
Red-Shouldered Hawk	<i>Buteo lineatus</i>	resident	Observed foraging in field adjacent to Coyote Creek
Red-Tailed Hawk	<i>Buteo jamaicensis</i>	resident	Observed soaring throughout Plan Area
Golden Eagle	<i>Aquila chrysaetos</i>	CSC, CFP	Observed soaring over southwestern boundary of Development Area
American Kestrel	<i>Falco sparverius</i>	resident	Observed throughout Plan Area
Ring-Necked Pheasant	<i>Phasianus colchicus</i>	resident	Observed in cultivated field
Common Peafowl	<i>Pavo cristatus</i>	domestic	Heard calling from farm yard
Wild Turkey	<i>Meleagris gallopavo</i>	resident	Heard in Plan Area, carcass found
California Quail	<i>Callipepla californica</i>	resident	Observed throughout Plan Area
Sora	<i>Porzana carolina</i>	resident	Heard calling in Ogier Ponds
Common Moorhen	<i>Gallinula chloropus</i>	resident	Observed in Coyote Creek
American Coot	<i>Fulica americana</i>	resident	Pair with two young in Coyote Creek
Killdeer	<i>Charadrius vociferus</i>	resident	Observed throughout Plan Area
Long-Billed Curlew	<i>Numenius americanus</i>	FSC, CSC	H.T. Harvey documented in Plan Area, in wetland habitat
California Gull	<i>Larus californicus</i>	resident	Observed flying over Plan Area
Caspian Tern	<i>Sterna caspia</i>	migrant	Observed over percolation ponds
Rock Dove	<i>Columba livia</i>	resident	Observed throughout Plan Area
Mourning Dove	<i>Zenaida macroura</i>	resident	Observed throughout Plan Area

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
Barn Owl	<i>Tyto alba</i>	resident	Dead barn owl found along Coyote Creek; also observed adjacent to Fisher Creek
Great Horned Owl	<i>Bubo virginianus</i>	resident	Feather found in oak woodlands in Plan Area; observed in Greenbelt
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	FSC, CSC	Observed near Fisher Creek in grassland/cultivated field; and off-site in grassland habitat adjacent to Plan Area
Anna's Hummingbird	<i>Calypte anna</i>	resident	Observed in riparian habitat along Fisher Creek and Coyote Creek
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	resident	Observed in oak woodland
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	resident	Observed in riparian habitat along Coyote Creek and in oak woodland
Downy Woodpecker	<i>Picoides pubescens</i>	resident	Observed in riparian habitat along Coyote Creek
Western Wood-Pewee	<i>Contopus sordidulus</i>	migrant	Observed in riparian habitat along Coyote Creek
Black Phoebe	<i>Sayornis nigricans</i>	resident	Observed throughout Plan Area
Ash-Throated Flycatcher	<i>Myiarchus cinerascens</i>	migrant	Observed throughout Plan Area
Western Kingbird	<i>Tyrannus verticalis</i>	migrant	Observed in agricultural, cultivated and grassland habitats in Plan Area
Northern Rough-Winged Swallow	<i>Stelgidopteryx serripennis</i>	migrant	Observed along farm road and along Coyote Creek
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	migrant	Observed throughout Plan Area
Barn Swallow	<i>Hirundo rustica</i>	migrant	Observed throughout Plan Area
Western Scrub-Jay	<i>Aphelocoma californica</i>	resident	Observed throughout Plan Area
House Wren	<i>Troglodytes aedon</i>	resident	Observed throughout Plan Area
Western Scrub-Jay	<i>Aphelocoma californica</i>	resident	Observed throughout Plan Area
Yellow-Billed Magpie	<i>Pica nuttalli</i>	resident	Observed in oak woodland
American Crow	<i>Corvus brachyrhynchos</i>	resident	Observed throughout Plan Area

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
Oak Titmouse	<i>Baeolophus inornatus</i>	SLC	Observed in oak woodlands throughout Plan Area
Bushtit	<i>Psaltriparus minimus</i>	resident	Observed in riparian habitat along Coyote Creek
White-Breasted Nuthatch	<i>Sitta carolinensis</i>	resident	Observed in riparian habitat along Coyote Creek
House Wren	<i>Troglodytes aedon</i>	resident	Observed throughout Plan Area
Western Bluebird	<i>Sialia mexicana</i>	resident	Observed throughout Plan Area
American Robin	<i>Turdus migratorius</i>	resident	Observed throughout Plan Area
Loggerhead Shrike	<i>Lanius ludovicianus</i>	CSC	Observed in urban, agricultural, cultivated and grassland habitats in Plan Area
Northern Mockingbird	<i>Mimus polyglottos</i>	resident	Observed throughout Plan Area
California Thrasher	<i>Toxostoma redivivum</i>	FSC	Observed in riparian habitat along coyote creek
European Starling	<i>Sturnus vulgaris</i>	resident	Observed throughout Plan Area
Hutton's Vireo	<i>Vireo huttoni</i>	resident	Observed in wooded drainage in BOH
Yellow Warbler	<i>Dendroica petechia brewsteri</i>	CSC, migrant	H.T. Harvey documented in Plan Area, in riparian habitat
Saltmarsh Common Yellowthroat	<i>Geothlypis trichas sinuosa</i>	FSC, CSC	Observed at two locations in riparian habitat along Coyote Creek
Song Sparrow	<i>Melospiza melodia</i>	resident	Observed throughout Plan Area
Rufous-Crowned Sparrow	<i>Aimophila ruficeps</i>	migrant	Observed in grassland habitats
Spotted Towhee	<i>Pipilo maculatus</i>	resident	Observed in dense riparian and chaparral habitats throughout Plan Area
California Towhee	<i>Pipilo crissalis</i>	resident	Observed in riparian habitat along Fisher Creek and Coyote Creek
Dark-Eyed Junco	<i>Junco hyemalis</i>	resident	Observed in riparian habitat along Coyote Creek
Tricolored Blackbird	<i>Agelaius tricolor</i>	resident	Documented nesting colony in Ogier pond in 2002 (CNDDDB 2006)
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>	resident	Observed in riparian habitat along Coyote Creek and in BOH pond

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
Western Meadowlark	<i>Sturnella neglecta</i>	resident	Observed in grassland and agricultural habitats
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	resident	Observed throughout Plan Area
House Finch	<i>Carpodacus mexicanus</i>	resident	Observed throughout Plan Area
Lesser Goldfinch	<i>Carduelis psaltria</i>	resident	Observed in riparian habitat throughout the Plan Area
House Sparrow	<i>Passer domesticus</i>	resident	Observed throughout Plan Area
Amphibians			
California tiger salamander	<i>Ambystoma californiense</i>	FT, CSC	Observed in stockpond adjacent to Development Area. Also reported in Development Area next to Bailey Road.
California newt	<i>Taricha torosa</i>	resident	Observed in stockponds and Coyote Creek throughout Plan Area
California red-legged frog	<i>Rana aurora draytonii</i>	resident	Documented occurrence of breeding frogs in February 2003 in the Ogier Ponds.
Western toad	<i>Bufo boreus</i>	resident	Observed in stockponds throughout Plan Area
Pacific treefrog	<i>Hyla regilla</i>	resident	Observed in stockponds, Coyote Creek, and Fisher Creek throughout Plan Area
bullfrog	<i>Rana catesbeiana</i>	introduced	Observed in Coyote Creek, percolation ponds, Ogier Ponds, pond south of PG&E substation, and BOH stockponds
Reptiles			
Western pond turtle	<i>Clemmys marmorata</i>	FSC, CSC	Observed in pond south of PG&E substation in the Greenbelt
Western fence lizard	<i>Sceloporus occidentalis</i>	resident	Observed throughout the Development Area and BOH
gopher snake	<i>Pituophis catenifer</i>	resident	Observed throughout Plan Area and BOH
common kingsnake	<i>Lampropeltis getulus</i>	resident	Observed in grassland habitat and BOH

Appendix C-2. List of wildlife species observed within the Plan Area and adjacent lands between 2003 and 2005.

Common Name	Scientific Name	Status	Notes
California red-sided garter snake	<i>Thamnophis sirtalis infernalis</i>	resident	Observed in ponded area of unnamed tributary to Fisher Creek, immediately adjacent to Plan Area
Fish			
common carp	<i>Cyprinus carpio</i>	introduced	Observed in pond south of PG&E substation
mosquitofish	<i>Gambusia affinis</i>	introduced	Observed in Fisher Creek and percolation ponds
prickly sculpin	<i>Cottus asper</i>	resident	Observed in Coyote Creek and Ogier Ponds
bluegill	<i>Lepomis macrochirus</i>	introduced	Observed in Coyote Creek and in percolation ponds
green sunfish	<i>L. cyanellus</i>	introduced	H.T. Harvey documented in Coyote Creek
large mouth bass	<i>Micropterus salmonides</i>	introduced	Observed in Coyote Creek and in percolation ponds
Central California coastal steelhead	<i>Oncorhynchus tshawytscha</i>	resident	Documented to occur in Coyote Creek
Invertebrates			
Louisiana red-swamp crayfish	<i>Procambarus clarkii</i>	introduced	Observed in Fisher Creek, Coyote Creek, percolation ponds, and Coyote Creek Golf Course water hazards
variable checkerspot	<i>Euphydryas chalcedona</i>	resident	Observed in grassland and oak woodland habitat immediately adjacent to Plan Area.

Appendix D. Calculation of Plan Area impacts to serpentine grassland as a result of nitrogen deposition.

Appendix D. Calculation of Plan Area impacts to serpentine grassland as a result of nitrogen deposition.

Method 1: Comparison of nitrogen emissions from the Plan Area to nitrogen emissions from the CVRP. This method compares nitrogen emissions from CVRP to nitrogen emissions from the Plan Area. The result of the comparison is used to determine the impacts and mitigation for the Plan Area based on the impacts and mitigation that were required for CVRP.

$$848.16 \text{ lbs NOx per day from the Plan Area} \div 1,271 \text{ lbs NOx per day from CVRP} = 66.7\%$$

$$\text{Acres of Serpentine Impact: } 66.7\% \times 223 \text{ acres}^1 = 149 \text{ acres}$$

$$\text{Serpentine Preserved as Mitigation: } 149 \times 3 = 447 \text{ acres}$$

This method is a science based approach, using the results of standard air quality and traffic modeling to determine the local and regional nitrogen emissions that may occur as a result of the Plan. Method 1 is the most biologically conservative scientifically based means of estimating the nitrogen deposition impacts and mitigation for the Plan Area. In addition, impacts and mitigation calculated for the Plan Area using Method 1 are directly proportional to the impacts and mitigation that were required for CVRP.

Method 2: Application of the same calculation used to determine impacts to serpentine grassland for CVRP. This method uses the same method that was used to determine the impacts and mitigation required for CVRP emissions in the USFWS consultation for MEC and CVRP.

$$2 \times (848.16 \text{ lbs NOx per day from the Plan Area} \div 685 \text{ lbs NOx per day from MEC}^2) = 2.48$$

$$2.48 \times 1.55\%^3 = 3.84\% \text{ (estimated increase above ambient nitrogen deposition)}$$

$$\text{Estimated impact: } 3.84\% \times 3,910^4 \text{ acres} = 150 \text{ acres}$$

$$\text{Estimated Mitigation: } 150 \times 3 = 450 \text{ acres}$$

There are two technical problems associated with using the above method to perform the calculation of impacts and mitigation for the Plan Area:

¹Total mitigation required for CVRP was 669 acres, therefore the total CVRP impact was 223 acres based on application of a 3:1 ratio of preserved to impacted area.

²The USFWS calculation for CVRP uses only half of the total nitrogen emissions from MEC. Actual MEC NOx emissions used to calculate deposition rates in the CH2MHill method are 1,329 lbs/day (679.5 lbs NOx/day and 649.9 lbs ammonia/day).

³1.55% is the estimated increase in background nitrogen deposition that was modeled to occur from MEC operations (Calpine/Bechtel 2000, Chris Nagano, pers. comm.). The estimate is based on modeled deposition rates of total MEC nitrogen emissions (1,329 lbs/day), including both NOx and ammonia.

⁴Acreage of serpentine habitat impacted by both the MEC and CVRP based on estimated acreage of serpentine grassland habitat surrounding the Plan Area, CVRP, and MEC (USFWS 2001b).

1. **The use of the multiplier of “2”.** The USFWS used this multiplier to “account for additional sources of nitrogen reasonably likely to occur from the CVRP”. This multiplier was intended to account for increases in regional nitrogen emissions that may occur as a result of the CVRP, and was not chosen based on scientific modeling or analysis. Nitrogen emissions calculated for the Plan Area using accepted air quality and traffic models included nitrogen emissions that would occur in areas outside of the Plan Area as a result of the Plan. Therefore this multiplier has been accounted for in the determination of is not applicable to the nitrogen emissions from the Plan Area.
2. **The MEC emissions used in the calculation is not the total MEC emissions used in MEC nitrogen deposition modeling.** Nitrogen deposition calculated to occur from MEC was based on modeling of MEC emissions of NOx and ammonia (CH2MHill 2000, Calpine/Bechtel 2000)⁵. However, the above calculation compares Plan Area emissions to MEC emissions of NOx only, but relates this comparison to the total nitrogen deposition that was calculated to occur from the total MEC emissions, which included both NOx and ammonia⁶. This results in an overestimate of the relative contribution of nitrogen deposition from the Plan Area. When this calculation is performed accurately, using the total emissions from MEC, the total impacts for the Plan Area are 77 acres. Mitigation required for these impacts would be 231 acres.

Because of these technical issues, it was determined that this model is not the most appropriate method to use for a calculation of Plan Area nitrogen deposition impacts and mitigation.

Method 3: Comparison of nitrogen emissions from the Plan Area to nitrogen emissions from MEC. This method compares nitrogen emissions from MEC to nitrogen emissions from the Plan Area. The result of the comparison is used to determine the impacts and mitigation for the Plan Area based on the impacts and mitigation that were required for MEC.

848.16 lbs NOx per day from the Plan Area ÷ 1,329.3 lbs NOx per day from MEC⁷ = 63.8%

Acres of Serpentine Impact: 63.8% x 81.65 acres⁸ = **52 acres**

Serpentine Preserved as Mitigation: 52 acres x 3 = **156 acres**

⁵ Ammonia emissions from MEC occurred as a byproduct of emissions filters installed at the power plant. Because CVRP and Plan Area emissions are generated by traffic and other combustion related sources that do not use the same emissions filter technology as the MEC power plant, ammonia is not a significant component of nitrogen emissions for CVRP or the Plan Area.

⁶ MEC modeling assumed that both NOx and ammonia emissions were immediately converted to depositional nitrogen. Approximately half of the total MEC nitrogen emissions were in the form of NOx and half were ammonia. Therefore, approximately half of the nitrogen deposition determined to occur from MEC is due to ammonia and half is due to NOx. To accurately relate Plan Area nitrogen deposition to modeled MEC nitrogen deposition, the total nitrogen emissions from MEC must be compared to total Plan Area nitrogen emissions.

⁷Total MEC nitrogen emissions used in nitrogen deposition modeling, including both NOx and ammonia emissions (Calpine/Bechtel 2000).

⁸ Impacts attributed to MEC as a result of nitrogen deposition totaled 81.65 acres (Chris Nagano, pers. comm.).

This method uses a similar science based approach as is used in Method 1, but compares emissions from the Plan Area to emissions from MEC. However, because the mitigation for MEC nitrogen deposition impacts were determined based on varying mitigation ratios⁹, the mitigation for impacts from the Plan Area are not directly proportional to the mitigation that was required for MEC. In addition, the impacts and mitigation calculated using this method are not proportional with the impacts and mitigation required for CVRP. As discussed under Method 2, the CVRP impacts and mitigation were overestimated because they were based on comparison to only half of the total MEC emissions, but were related to the total nitrogen deposition modeled to occur for total emissions from MEC. As a result of this overestimate, Method 3 is not proportional to the mitigation that was required for CVRP.

Method 4: Estimated increase in regional nitrogen emissions from the Plan Area. This method takes a regional approach to nitrogen emissions impacts by comparing the estimated increase in regional nitrogen emissions that the Plan Area would induce to the total area of Bay checkerspot butterfly critical habitat in Santa Clara County.

848.16 lbs NOx per day from the Plan Area ÷ 121,800 lbs NOx per day from Santa Clara County = 0.69%¹⁰

Estimated impact: 0.69% x 21,911 acres¹¹ = **151 acres**

Estimated Mitigation: 151 x 3 = **454 acres**

This approach is scientifically based, applies a regional scope to Plan Area emissions, and results in an estimated impact and mitigation that is similar to Method 1 and Method 2. However, the application of total Plan Area emissions to Bay checkerspot butterfly critical habitat units may result in an overestimate of the impacts to serpentine grassland areas, and is inconsistent with the methods used to determine impacts and mitigation for MEC. Bay checkerspot butterfly critical habitat mapping includes areas of high and low quality serpentine grasslands as well as many areas that do not contain any serpentine grassland habitat. In calculating the impacts and mitigation for MEC, mitigation ratios were adjusted based on the quality of serpentine grassland habitat. Assessment of the quality of all mapped Bay checkerspot butterfly critical habitat units in Santa Clara County is not practicable given the scope of this EIR.

⁹ Mitigation for MEC impacts to serpentine areas was determined using a 0.5:1 ratio for impacts to Tulare Hill and 3:1 ratio for impacts to Coyote Ridge.

¹⁰ Compares estimated Santa Clara County emissions in 2020 (BAAQMD 2006) to estimated nitrogen emissions at Plan Area buildout in 2030.

¹¹ Total area of Bay checkerspot critical habitat in Santa Clara County.