APPENDIX E
Biological Resources

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Biological Resources Report

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

ENVISION SAN JOSÉ 2040
GENERAL PLAN UPDATE
BIOLOGICAL RESOURCES REPORT

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EXECUTIVE SUMMARY

The City of San José, located in the northern portion of Santa Clara County, California, initiated Envision San José 2040, an update of the City's General Plan with a new horizon year of 2035. This biological resources report describes the physical and biological conditions currently present within the area encompassed by the City of San José's city limits ("Study Area"), potential impacts to biological resources that may occur as a result of the General Plan update, and measures that are identified to reduce potentially significant impacts to less-than-significant levels.

BACKGROUND RESEARCH

The existing conditions summary in this report is based on a review of the current General Plan, San José 2020 (City of San José 1994), the second administrative draft of the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP; ICF Jones & Stokes 2009) currently in development, and area-specific documents such as: the North San José Development Policies Update Program Environmental Impact Report (EIR) (City of San José 2005); the Evergreen – East Hills Vision Strategy Project Draft EIR (City of San José 2006) and the Draft Supplemental EIR for Revision of the Evergreen Development Policy (City of San José 2008); the Coyote Valley Specific Plan Draft EIR and comments on that Draft EIR (City of San José 2007a and 2007b); the Final Program EIR for the Alviso Master Plan (City of San José 1998); the South Bay Salt Ponds Restoration Project's biological resources existing conditions report (H. T. Harvey & Associates 2005) and EIR (EDAW et al. 2007); a variety of biological databases, such as the California Natural Diversity Database (CNDDB 2010); and biological resources reports previously prepared by H. T. Harvey & Associates and others for various sites in the City of San José and vicinity.

The impact assessment in this report is based on activities that are proposed to occur as a result of new development and policies implemented as a result of the General Plan update. In addition, we analyzed impacts to biological resources that may result from development allowable by existing zoning and General Plan conditions within the city limits, but outside of the Urban Growth Boundary (UGB).

PHYSICAL CONDITIONS

The Study Area is defined by the San Francisco Bay to the north, the Diablo Range to the east, and the Santa Cruz Mountains to the west. The majority of the Study Area occurs on the Santa Clara Valley floor and is relatively level. Typical elevations range from one foot below sea level in the Alviso area to approximately 400 feet elevation at the margins of the valley. However, the most extreme range of elevations in the Study Area include a low of approximately three feet below sea level in the mudflats just south of San Francisco Bay, and a high elevation just above 2000 feet in Alum Rock Park along the City's eastern edge. The climate in San José is typical of a Mediterranean climate, with mild, cool, wet winters and warm, dry summers. The lowlands of the Santa Clara Valley typically average 16 inches of rain annually, while the Diablo Range to the east may experience up to 30 inches/year, and the Santa Cruz Mountains to the west receives as much as 50 inches/year (Soil Conservation Service 1968).

The Santa Clara Valley includes more than 800 miles of creeks and rivers, including 14 major waterways, in five major watersheds. The Santa Clara Valley has three major interconnected groundwater basins that supply nearly half of the total water used. Soils immediately within and surrounding baylands in the northern portion of the Study Area near Alviso tend to be fine-textured, clayey soils. Those soils in the valley lowlands and farther inland are more alluvial, deep, level soils, ranging from poorly to excessively drained, medium to fine-textured soils. Higher-elevation substrates in the Study Area are typically thinner, with some rock outcroppings, and these clayey or loamy textured soils may be derived from sedimentary, basic igneous or sometimes serpentine rock (Soil Conservation Service 1968). Serpentine soils, which form from weathered ultramafic rocks, support a unique assemblage of endemic plant and animal species in California.

EXISTING NATURAL COMMUNITIES AND HABITATS

Natural communities, land uses, and biotic habitats in most of the Study Area were recently mapped for most of the Study Area for the second administrative draft HCP/NCCP (ICF Jones & Stokes 2009). That mapping formed the basis of the natural community and habitat maps and descriptions developed for much of this report. However, in the northern portion of the Study Area near Alviso and the San Francisco Bay, and in a small area near Los Gatos, which were not mapped by the second administrative draft HCP/NCCP, we mapped natural communities and habitats based on aerial photographs, United States Geological Survey topographic maps, National Wetland Inventory maps, soils maps, previous reports by H. T. Harvey & Associates and others, personal experience, and limited ground-truthing as necessary. We also made minor revisions to the maps in the second administrative draft HCP/NCCP based on our experience or ground-truthing in certain areas.

H. T. Harvey & Associates biologists, using this mapping, identified eight general natural communities/land uses within the City of San José Study Area: grasslands, chaparral & coastal scrub, oak woodland, riparian forest and scrub, wetland, aquatic/open water, agricultural, and developed. These eight natural communities/land uses were further refined into 37 more detailed plant associations/wildlife habitats, for which the dominant and characteristic plant and animal species were described.

WILDLIFE MOVEMENT

Wildlife movement within or in the vicinity of the Study Area takes many forms, and is different for the various suites of species associated with these lands. Wildlife corridors, while long recognized as important, have been a major topic in conservation ecology over the past few decades, partly in response to increasing urban development and continued isolation of native habitats and species. The general overview of wildlife movement in the Study Area in this document focuses on existing conditions relating to situations where future growth may either impede movements, or areas where movement can be enhanced through thoughtful planning and policies.

Major streams and associated riparian habitat corridors flowing through the City support anadromous fish runs, and have been identified as important landscape linkages. The stream and riparian corridors are rich habitats for wildlife and are also important corridors of movement, especially in areas such as the Coyote Valley where these intact linear habitats can connect broader open space preserves.

The Coyote Valley, as depicted in the habitat maps, is primarily an agricultural area, but it is positioned between large tracts of open land that lie to the east and west of the valley. Movement of mammals, amphibians, and reptiles across this valley was relatively unobstructed historically. This connectivity changed as the Santa Clara Valley developed, particularly when Monterey Highway was constructed, the Coyote Canal was built, agriculture became dominant, and the U.S. 101 Freeway was constructed, and wildlife movement across Coyote Valley is at least somewhat impeded. The De Anza College Wildlife Corridor Stewardship Team has been studying wildlife use of, and movement within, Coyote Valley and has documented the movement of mammals through culverts under U.S. 101 and in fields throughout much of the valley. Wildlife movement across Monterey Highway has been less well studied.

The South Almaden Valley Urban Reserve area, which supports a combination of rural residential areas and agricultural fields, does not have major physical barriers to wildlife movement, but it is more developed overall, especially at its northern end. The south end of the Santa Teresa Hills is characterized by extensive private open space providing ready movement into protected areas of the Santa Cruz Mountains. The Almaden Valley and Santa Teresa Hills thus provide avenues for wildlife movement within and between sections of the Santa Cruz Mountains and its foothills.

In the Alviso area, an important movement corridor has long been recognized infringing non-tidal salt marshes that connect a major population center for the endangered salt marsh harvest mouse in New Chicago Marsh with the marshes of Coyote Creek. Without that corridor, the population south of Coyote Creek would be effectively isolated from areas north of the creek. This corridor includes several small patches of muted tidal and diked salt marsh at the northern edge of the Study Area.

REGULATORY SETTING

The following regulations pertaining to biological resources may apply to projects that will take place within the Study Area: the Clean Water Act Sections 404 and 401, Porter-Cologne Water Quality Control Act, Rivers and Harbors Act, Federal Endangered Species Act, California Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Federal Migratory Bird Treaty Act, California Environmental Quality Act, California Fish and Game Code, Santa Clara Valley Water District regulations, City of San José tree ordinance, City of San José Riparian Corridor Policy, and the City of San José General Plan policies.

SPECIAL-STATUS SPECIES

To develop a list of special-status species and sensitive habitats of concern that may occur in the Study Area, H. T. Harvey & Associates biologists collected and reviewed, in addition to the

previously described documents, Rarefind data (CNDDB 2010); California Wildlife Habitat Relationships information; the Santa Clara County Breeding Bird Atlas (Bousman 2007a); and miscellaneous information available through the United States Fish and Wildlife Service (USFWS) including a list of special-status species potentially occurring in Santa Clara County using their website (http://www.fws.gov/sacramento/es/spp_list.htm), the California Department of Fish and Game (CDFG), and technical publications and previous reports by H. T. Harvey & Associates and others. We also reviewed information regarding wildlife use of Coyote Valley provided by De Anza College's Wildlife Corridor Stewardship Team. For plants, we also consulted all California Native Plant Society (CNPS) lists (http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi) and applicable records to determine the probability of occurrence for all special-status plant species within the Study Area. The *Jepson Manual* (Hickman 1993) supplied information regarding the distribution and habitats of CNPS Lists of category 1A, 1B, 2, 3, and 4 vascular plants in Santa Clara County. In addition, the habitat-level ("land cover") descriptions in the second administrative draft HCP/NCCP provide some indication of the potential locations of special-status plants. Of greater value was the description of a further subdivision of habitats by vegetation associations that was included in the second administrative draft HCP/NCCP land cover descriptions.

Special-status Plant Species

Ninety-three special-status plant species are known to occur in the general vicinity of the Study Area. However, many of these plants are associated with habitat types that do not occur within the Study Area, occur at elevations outside of the range of elevations in the Study Area, or are found only on very specific substrates that do not occur within the Study Area. Following an analysis of the microhabitat conditions associated with all of the species considered and the edaphic factors that favor their occurrence, 28 species were determined to potentially occur in the Study Area from the 93 species originally considered for occurrence: Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*), Coyote ceanothus (*Ceanothus ferrisiae*), Santa Clara Valley dudleya (*Dudleya setchellii*), Contra Costa goldfields (*Lasthenia conjugens*), Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*), showy Indian clover (*Trifolium amoenum*), Franciscan onion (*Allium peninsulare* var. *franciscanum*), bent-flowered fiddleneck (*Amsinckia lunaris*), alkali milk vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), round-leaved filaree (*California macrophylla*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Mt. Hamilton fountain thistle (*Cirsium fontinale* var. *campylon*), Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), Hoover's button celery (*Eryngium aristulatum* var. *hooveri*), fragrant fritillary (*Fritillaria liliacea*), Loma Prieta hoita (*Hoita strobilina*), Satan's goldenbush (*Isocoma menziesii* var. *diabolica*), smooth lessingia (*Lessingia micradenia* var. *glabrata*), arcuate bush-mallow (*Malacothamnus arcuatus*), Davidson's bush-mallow (*Malacothamnus davidsonii*), Hall's bush-mallow (*Malacothamnus hallii*), Mount Diablo cottonweed (*Micropus amphibolus*), robust monardella (*Monardella villosa* ssp. *globosa*), and most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*).

Special-status Wildlife Species

Nine bird species that are California species of special concern only when nesting are not known or expected to nest within the Study Area, and thus are not "special-status species" when they occur in the Study Area as nonbreeders: the redhead (*Aythya americana*), Barrow's goldeneye (*Bucephala islandica*), common loon (*Gavia immer*), American white pelican (*Pelecanus erythrorhnchos*), black tern (*Chlidonias niger*), short-eared owl (*Asio flammeus*), black swift (*Cypseloides niger*), purple martin (*Progne subis*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). These species occur in the Study Area as nonbreeding transients, foragers, or migrants, but are not known or expected to breed anywhere in or near the Study Area, to occur in large numbers, or to be substantially affected by any activities that may occur under the General Plan update.

Seven other bird species that are state or federally listed as threatened or endangered, and that are thus considered special-status species year-round, also occasionally occur (or could potentially occur) in the Study Area as nonbreeding migrants, transients, or foragers, and are not known or expected to breed or occur in large numbers in the Study Area: the California condor (*Gymnogyps californianus*), Swainson's hawk (*Buteo swainsoni*), California black rail (*Laterallus jamaicensis coturniculus*), California least tern (*Sterna antillarum browni*), willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo bellii pusillus*), and bank swallow (*Riparia riparia*).

Two mammals that are listed as California species of special concern, the Townsend's big-eared bat (*Corynorhinus townsendii*) and western red bat (*Lasiurus blossevillii*), may occur in the Study Area as occasional foragers or transients, but are not known or expected to breed in the Study Area. One special-status fish species, the federally threatened green sturgeon (*Acipenser medirostris*), may also occur in the Study Area as an occasional nonbreeding forager, but does not breed in the Study Area.

Thirty-three other special-status wildlife species, including species that are California species of special concern, state-listed as threatened or endangered, and/or federally listed as threatened or endangered, are known to breed or could potentially breed in the Study Area. These include the Bay checkerspot butterfly (*Euphydryas editha bayensis*), Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*), Central California coast steelhead (*Oncorhynchus mykiss*), longfin smelt (*Spirinchus thaleichthys*), California tiger salamander (*Ambystoma californiense*), California horned lizard (*Phrynosoma coronatum frontale*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), western pond turtle (*Actinemys marmorata*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*), black skimmer (*Rynchops niger*), California clapper rail (*Rallus longirostris obsoletus*), western snowy plover (*Charadrius alexandrinus nivosus*), burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), yellow-breasted chat (*Icteria virens*), Alameda song sparrow (*Melospiza melodia pusillula*), grasshopper sparrow (*Ammodramus savannaum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), tricolored blackbird (*Agelaius tricolor*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Francisco dusky-footed woodrat (*Neotoma*

fuscipes annectens), pallid bat (*Antrozous pallidus*), ringtail (*Bassariscus astutus*), and American badger (*Taxidea taxus*).

Two additional species were considered sensitive species for the purpose of this report. The Pacific harbor seal (*Phoca vitulina richardsii*) is protected by the Marine Mammal Protection Act. The Pacific lamprey (*Lampetra tridentata*) is not on any list of special-status species, but it is considered a "covered species" by the Santa Clara Valley HCP/NCCP.

SANTA CLARA VALLEY HCP/NCCP

The Santa Clara Valley HCP/NCCP "is intended to provide an effective framework to protect, enhance, and restore natural resources in specific areas of Santa Clara County, while improving and streamlining the environmental permitting process for impacts on threatened and endangered species"(ICF Jones & Stokes 2009). The City of San José is a partner in the development of the HCP/NCCP.

A number of plant and animal species are proposed for coverage under the Santa Clara Valley HCP/NCCP. Approval of impacts of covered projects (*i.e.*, projects that meet a number of criteria concerning location, proponent, and type) to these covered species will be expedited considerably under the HCP/NCCP. Fees paid in accordance with the extent and nature of projects' impacts will be used to further conservation efforts via the acquisition, creation, or enhancement, as well as the preservation and management, of habitat for these species. In addition, covered projects are subject to a number of measures concerning avoidance and minimization of impacts to covered species and habitats through project design or construction or measures (such as preconstruction species surveys and seasonal restrictions on construction activities) to directly protect species. There are also several "no take" species that, due to their rarity or regulatory status (*e.g.*, state fully protected species), cannot be "taken" by a project that is covered by the HCP/NCCP.

The current schedule for the HCP/NCCP approvals is as follows:

Draft Plan release for public review	November 2010
Draft Plan public review	January to April 2011
Final Plan release for public review	May 2011
Final Plan review and adoption	June to October 2011
Habitat Plan start up	January 2012

SENSITIVE AND/OR REGULATED HABITATS AND RESOURCES

Several sensitive/regulated habitats and resources occur within the Study Area. These include wetland and aquatic habitat, stream and riparian habitat, serpentine habitat, and oak woodland habitat. Impacts to some of these habitats are regulated by resources agencies such as the U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Game. Sensitive habitats tracked by the California Department of Fish and Game's Natural Diversity Database that occur within the Study Area include Northern

Coastal Salt Marsh, Serpentine Bunchgrass Grassland, and Sycamore Alluvial Woodland. In addition, several other sensitive species associations have been reported from the vicinity, and the valley oak, California sycamore, and Fremont cottonwood associations are known to be present in the Study Area.

IMPACTS THAT ARE CONSIDERED LESS THAN SIGNIFICANT

A number of impacts to biological resources that may occur as a result of the General Plan update, including impacts that may occur to areas that are within the Study Area but are outside the UGB, are considered less than significant. Development and disturbance that could occur in areas within the City limits and outside the UGB, such as in steep hillside areas and Alum Rock Park, are limited by the City's General Plan and Municipal Code as well as ownership patterns and geologic hazards. Such impacts include the following:

- Impacts to developed habitats
- Impacts to California annual grasslands
- Impacts to agricultural habitats
- Impacts to scrub and chaparral habitats
- Impacts to special-status, non-breeding birds
- Impacts to Vaux's swifts
- Impacts to olive-sided flycatchers
- Impacts to grasshopper sparrows
- Impacts to western red bats
- Impacts to ringtails
- Impacts to non-special-status invertebrates
- Impacts to non-special-status fish
- Impacts to non-special-status amphibians and reptiles
- Impacts to non-special-status birds
- Impacts to non-special-status mammals (other than bats)
- Impacts in combination with climate change/sea level rise
- Indirect impacts to the Bay and Delta due to procuring water supply
- Indirect impacts to natural habitats and species from alternative energy sources

IMPACTS THAT ARE CONSIDERED LESS THAN SIGNIFICANT WITH MITIGATION

The following impacts to biological resources that may occur as a result of the General Plan update, including impacts that may occur to areas that are within the Study Area but are outside

the UGB, are potentially significant. However, these impacts can be reduced to less-than-significant levels with the application of General Plan policies, conformance to regulatory programs, and implementation of mitigation measures identified by this report. Such impacts include the following:

- Impacts to serpentine grasslands
- Impacts to oak woodlands
- Impacts to aquatic habitats
- Impacts to tidal salt marsh and mudflats
- Impacts to riparian habitats and California sycamore alluvial woodland
- Impacts to mixed serpentine chaparral habitat
- Impacts to the urban forest, including ordinance and heritage trees and street trees
- Impacts to native trees in natural habitats, especially to individual oak trees or to individual California sycamore trees
- Impacts to native tree populations resulting from hybridization with non-native species
- Impacts to any population of Federal and State-listed Plant Species
- Impacts to any population of CNPS-listed, serpentine-adapted, special-status plant species
- Impacts to any population of CNPS-listed scrub, chaparral, oak woodland, and/or grassland-adapted special-status plant species
- Impacts to any population of CNPS-listed special-status plant species in wetland and wet alkaline habitats
- Impacts to Bay checkerspot butterflies
- Impacts to Pacific lamprey, green sturgeon, Central Valley fall-run Chinook salmon, Central California Coast steelhead, and longfin smelt
- Impacts to California red-legged frogs, California tiger salamanders, and foothill yellow-legged frogs
- Impacts to western pond turtles
- Impacts to California horned lizards
- Impacts to northern harriers, white-tailed kites, and loggerhead shrikes
- Impacts to bald and golden eagles
- Impacts to American peregrine falcons
- Impacts to California clapper rails, Alameda song sparrows, and Bryant's savannah sparrows
- Impacts to western snowy plovers and black skimmers

- Impacts to burrowing owls
- Impacts to yellow warblers and yellow-breasted chats
- Impacts to San Francisco common yellowthroats
- Impacts to tricolored blackbirds
- Impacts to salt marsh harvest mice and salt marsh wandering shrews
- Impacts to San Francisco dusky-footed woodrats
- Impacts to pallid bats and Townsend's big-eared bats
- Impacts to American badgers
- Impacts to harbor seals
- Impacts to non-special-status bat colonies
- Collision impacts to birds
- Impacts to wildlife movement in the Coyote Valley

No significant and unavoidable impacts to biological resources (*i.e.*, impacts that cannot be mitigated to less-than-significant levels) are expected to occur as a result of the General Plan update.

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INTRODUCTION

The City of San José, located in the northern portion of Santa Clara County, California, initiated Envision San José 2040, an update of the City's General Plan with a new horizon year of 2035. This biological resources report describes the physical and biological conditions currently present within the area encompassed by the City of San José's city limits ("Study Area"), potential impacts to biological resources that may occur as a result of the General Plan update, and measures that are identified to reduce potentially significant impacts to less-than-significant levels. H. T. Harvey & Associates has conducted an extensive review of existing information regarding existing biological resources within the General Plan update Study Area and compiled relevant information into this report. This information has then been used to assess impacts of the General Plan update to biological resources to inform the General Plan update Environmental Impact Report (EIR).

GENERAL STUDY AREA DESCRIPTION

LOCATION

The Study Area for this biological resources report was determined by the City of San José based on the areas in which development scenarios for the Envision San José 2040 General Plan update may be formulated, as well as other areas within the City limits. This 121,747-acre (ac) Study Area thus includes all the area within the City's current Urban Growth Boundary (UGB), which encompasses the majority of areas where the General Plan update would allow new development, as well as all other areas within the City limits. Some inholdings within the UGB are technically outside the City limits, but they are included in the Study Area (Figure 1).

The City of San José is located in the northern portion of Santa Clara County, California, near the southern terminus of the San Francisco Bay (Figure 1). The Study Area for this report is bounded by the South San Francisco Bay to the northwest; urban development in the cities of Sunnyvale, Santa Clara, Cupertino, Saratoga, Campbell, and Los Gatos from the northwest to southwest, respectively; the Sierra Azul Range of the Santa Cruz Mountains to the south and southwest; the Santa Teresa Hills to the south; the Coyote Valley to the southeast; the western foothills of the Diablo Range to the east; and the City of Milpitas to the north/northeast. The Study Area spans the Milpitas, Calaveras Reservoir, Cupertino, San José West, San José East, Lick Observatory, Los Gatos, Santa Teresa Hills, Mount Sizer, Loma Prieta, and Morgan Hill United States Geological Survey (USGS) 7.5-minute quadrangle maps.

TOPOGRAPHY AND ELEVATION

The Santa Clara Valley floor dominates the Study Area, but the Study Area also includes some surrounding foothill areas to the east and southwest and Baylands areas to the north. The San Francisco Bay to the north, the Diablo Range to the east, and the Santa Cruz Mountains to the west define the limits of the Santa Clara Valley. Because most of the Study Area is located within the Santa Clara Valley, the majority of the Study Area is relatively level, with elevations in the valley lowlands ranging from one foot below sea level in the Alviso area to approximately 400 feet elevation at the margins of the valley. The Study Area extends a short distance into the surrounding foothills as well. To the east, it extends upslope into the Diablo Range foothills in the East San José, Alum Rock, and Evergreen areas. The highest elevations within the Study Area occur in Alum Rock Park, at just over 2000 feet. The Study Area extends into the Silver Creek Hills at the northern end of Coyote Ridge, a long northwest-southeast trending ridgeline that runs from the Yerba Buena Road/U.S. 101 interchange in the north southeastward to Anderson Dam. More Diablan foothills within the Study Area include portions of southern Coyote Ridge and hills east of the northern half of Anderson Reservoir. In the northern Coyote Ridge area, the Study Area rises to an elevation of 800 feet, while in the southern Coyote Ridge area, there are peaks with elevations up to 1700 feet. To the west, the Study Area extends upslope into the foothills of the Santa Cruz Mountains, including the base of the Almaden Hills and a portion of the Santa Teresa Hills. Here, the Study Area peaks at an elevation of 803 feet in the Santa Teresa Hills. In addition, a series of serpentinite hills in the south-central part of the City, collectively termed "Communications Hill", rise up to 420 feet in elevation. These hills include one large, main hill dominated by residential development and serpentine grassland, a

smaller hill to the east on which Valley Christian School (as well as serpentine grassland) is located, and several other lower, nearly entirely developed hills and ridges. Additional Santa Cruz Mountain foothills within the Study Area are located to the south of the Santa Teresa Hills and to the west and southwest of Coyote Valley. In these areas, elevations rise to approximately 1100 feet west of the Calero Reservoir.

To the north/northeast, natural communities/land uses are dominated by the San Francisco Bay and associated tidal marshes, mudflats, and saline and brackish managed ponds, and many areas here are below mean sea level. The majority of the managed ponds within the Study Area were acquired by the U.S. Fish and Wildlife Service for addition to the Don Edwards San Francisco Bay National Wildlife Refuge, and will be restored to a mix of tidal habitats and managed ponds by the South Bay Salt Ponds Restoration Project.

The peaks of the Santa Cruz Mountains to the west and southwest of the Study Area range from 2,000 to 3,400 feet, with the highest point at the peak of Loma Prieta at an elevation of 3,806 feet. The crests of the Diablo Range foothills east of the valley generally range from 1,000 to 2,000 feet elevation, with the highest point in the mountains immediately east of the Study Area occurring at Copernicus Peak at an elevation of 4,372 feet (Soil Conservation Service [SCS] 1968). The portion of the Diablo Range in the San José area is also known as the Mt. Hamilton Range.

CLIMATE AND HYDROLOGY

The climate in San José is typical of a Mediterranean climate, with mild, cool, wet winters and warm, dry summers. Precipitation usually occurs from late October to late April, with little to no rainfall occurring from June through September. Mediterranean climates are sparsely distributed throughout the world: they occur in much of California, along the Mediterranean Sea, in parts of Western and South Australia, in southwestern South Africa, and in parts of Chile. These climates have unique natural communities adapted to this particular precipitation regime, often with many endemic plant species that are adapted to long periods of drought and frequent fire events. The lowlands of the Santa Clara Valley typically average 16 inches of rain annually, while the Diablo Range to the east may experience up to 30 inches/year, and the Santa Cruz Mountains to the west receives as much as 50 inches/year (Soil Conservation Service [SCS] 1968).

The Santa Clara Valley includes more than 800 miles of creeks and rivers in five major watersheds (Santa Clara Valley Water District [SCVWD] 2009), of which portions of the Coyote Watershed, West Valley Watershed, Guadalupe Watershed, and Pajaro Watershed occur within the Study Area. The major waterways that occur within the Study Area include Penitencia Creek, Berryessa Creek, Coyote Creek, the Guadalupe River, Miguelita Creek, Thompson Creek, Alamitos Creek, Ross Creek, Dry Creek, Los Gatos Creek, Saratoga Creek, Calabazas Creek, Fischer Creek, San Felipe Creek, Llagas Creek, and Silver Creek. The Study Area does not include the South San Francisco Bay proper but does contain associated saline managed ponds and sloughs such as the Guadalupe Slough, Artesian Slough, and Alviso Slough. The Study Area also contains portions of large reservoirs (*e.g.*, Calero and Anderson reservoirs) in the vicinity of the Santa Clara Valley, although it does not include Guadalupe and Almaden Reservoirs. These reservoirs influence hydrologic conditions in many of the creeks

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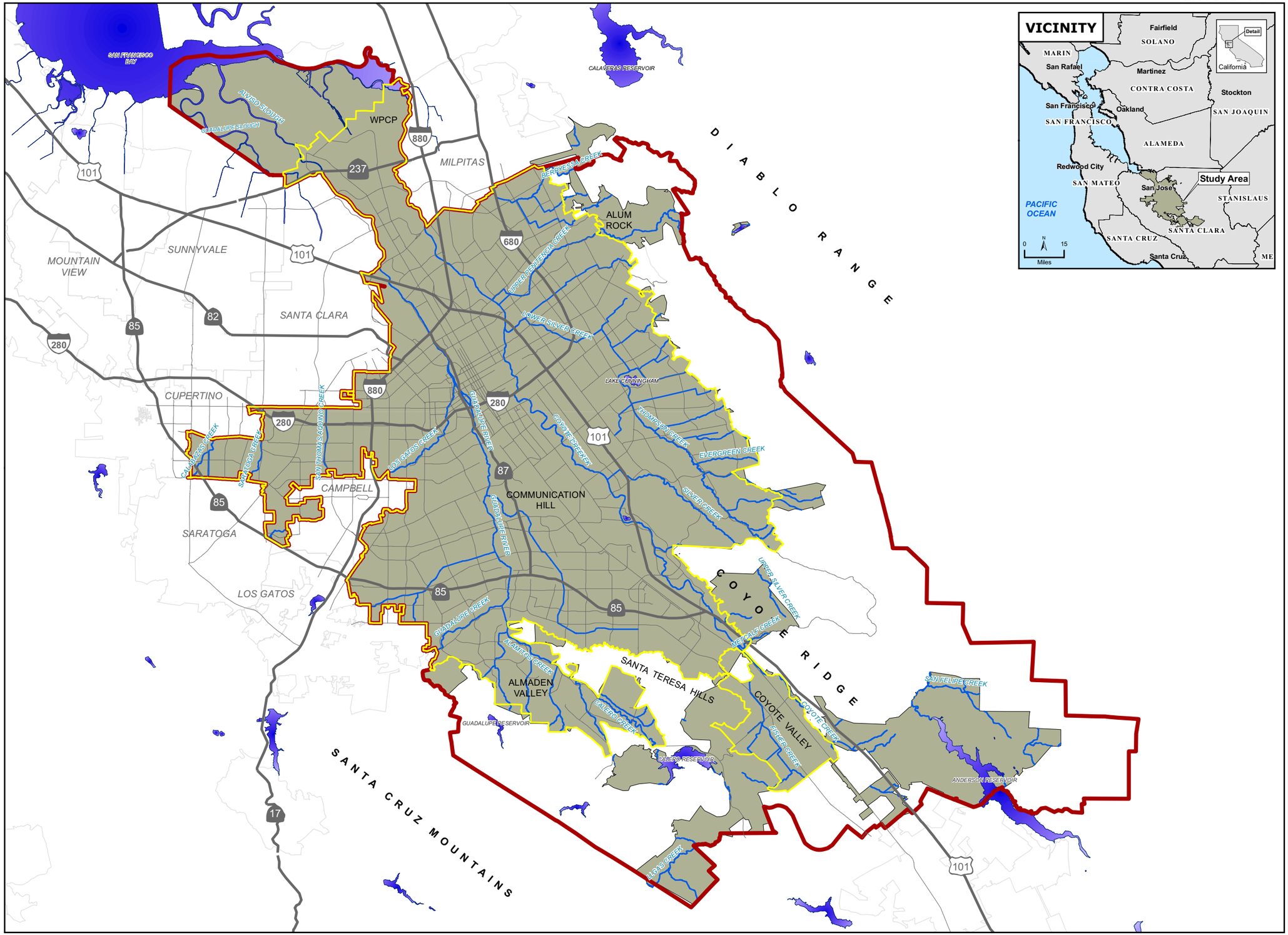


ENVISIONSAN JOSE2040

LEGEND

- Study Area Boundary
- Urban Growth Boundary
- Sphere of Influence
- City Boundary
- Waterbodies outside Study Area
- Creeks within Study Area
- Freeways
- Major Roads

N
W E
S

0 0.5 1 2 3 4
Miles

0 7,000 14,000 28,000
Feet

Date: August 2010
Map By: H.T. Harvey & Associates

Source: Department of Planning,
Building and Code Enforcement
City of San Jose

FIGURE 1
VICINITY MAP

within the Study Area. The SCVWD is the regional agency charged with flood control and protection and enhancement of Santa Clara Valley's waterways, including creeks and rivers, watersheds, reservoirs, and groundwater basins. The Santa Clara Valley, Coyote, and Llagas Groundwater Basins are Santa Clara County's three major interconnected groundwater basins. Groundwater supplies nearly half of the total water used in the Santa Clara Valley basin area and nearly all of that from the Coyote Valley and Llagas Valley basin areas (SCVWD 2009).

SOILS

Soil type significantly affects surface hydrology (*e.g.*, runoff or ponding vs. infiltration), and both surface hydrology and soil chemistry affect plant distribution. As a result, soil types ultimately play a large role in influencing distributions of habitats and wildlife. Soils vary considerably within the Study Area, with over 35 soil series mapped here by the Soil Conservation Service (SCS 1968). Soils within and immediately surrounding bayland areas in the northern portion of the Study Area near Alviso tend to be fine-textured, clayey soils. Those soils in the valley lowlands and farther inland are more alluvial, deep, level soils, ranging from poorly to excessively drained, medium to fine-textured soils. Higher-elevation substrates in the Study Area may be derived from sedimentary, basic igneous or sometimes serpentine rock, with clayey, loamy textured soils (SCS 1968).

Serpentine soils, in particular, support a unique assemblage of endemic plant and animal species in California. These soils form from weathered ultramafic rocks that provide inhospitable conditions for plant growth including: 1) a low calcium to magnesium ratio; 2) a lack of essential nutrients such as nitrogen, potassium, and phosphorus; and 3) high concentrations of heavy metals leading to toxicity (Kruckeberg 1984). The endemic plant species found on serpentine soils are adapted to these harsh soil conditions and thrive in areas where other plant species cannot grow as easily.

METHODOLOGY

The existing conditions information in this report was compiled based on extensive review of existing information regarding the physical and biological conditions of the Study Area. Some of the major documents reviewed in our preparation of this report included the current San José 2020 General Plan (City of San José 1994); the second administrative draft of the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP; ICF Jones & Stokes 2009) currently in development; the North San José Development Policies Update Program EIR (City of San José 2005); the Evergreen – East Hills Vision Strategy Project Draft EIR (City of San José 2006) and the Draft Supplemental EIR for Revision of the Evergreen Development Policy (City of San José 2008); the Coyote Valley Specific Plan Draft EIR and comments on that Draft EIR (City of San José 2007a and 2007b); the Final Program EIR for the Alviso Master Plan (City of San José 1998); the South Bay Salt Pond (SBSP) Restoration Project's Biology and Habitats Existing Conditions Report (H. T. Harvey & Associates 2005) and EIR (EDAW et al. 2007); and biological resources reports previously prepared by H. T. Harvey & Associates and others for various sites in the City of San José and vicinity.

Natural communities, land uses, and biotic habitats in most of the Study Area were recently mapped for most of the Study Area for the second administrative draft HCP/NCCP (ICF Jones & Stokes 2009). Because the City of San José is one of the partners in developing the HCP/NCCP, that mapping was available for use in our biological resources report as well. However, in the northern portion of the Study Area near Alviso, which was not mapped by the draft HCP/NCCP, we mapped natural communities and habitats based on aerial photographs, USGS topographic maps, National Wetland Inventory maps, soils maps, and previous reports by H. T. Harvey & Associates and others, such as the SBSP Restoration Project Biology and Habitats Existing Conditions Report (H. T. Harvey & Associates 2005) and South Bay Marshes habitat mapping (H T. Harvey & Associates 2008b). We refined this mapping using personal experience and limited ground-truthing as necessary. We also made minor revisions to the maps in the draft HCP/NCCP based on our experience or ground-truthing in certain areas (*e.g.*, the habitat designation for a small area west of the Coyote Valley that was mapped as foothill pine-oak woodland was changed to valley oak woodland). We adopted the HCP/NCCP or SBSP Restoration Project nomenclature for natural communities in most instances and employed the term "land uses" for those areas with human related uses that are not natural communities, such as developed and agricultural lands. The HCP/NCCP further divided natural communities into sub-categories of "land cover", which we have referred to as "biotic habitats" in this report. The additional mapping in the Alviso area, including the Baylands areas dominated by sloughs and managed ponds, resulted in the addition of nine habitat types not mapped for the HCP/NCCP. These comprise wetland communities including muted tidal diked marsh, tidal freshwater marsh, tidal brackish marsh, and tidal salt marsh; aquatic habitats including mudflats, tidal aquatic, and saline managed ponds; and developed land use types including wastewater treatment plant and levees. We changed the HCP/NCCP term "Coastal and Valley Freshwater Marsh" to non-tidal freshwater marsh to differentiate this habitat type from the tidal freshwater marshes mapped within the SBSP Restoration Project area (H. T. Harvey & Associates 2005). For both the HCP/NCCP categories and those additional areas we mapped, the identification of habitat types was based upon physical characteristics such as soils, hydrology, and topography, and upon floristic composition. Where we have added habitat types, they were named according to

Holland's system of classification (1986) or functional designations developed for this area (*e.g.*, saline managed ponds).

To develop a list of species and habitats of concern that may occur in the Study Area, H. T. Harvey & Associates biologists collected and reviewed information concerning threatened, endangered, or other special-status species, and habitats of concern, from several sources. In addition to the previously described documents, these sources included Rarefind data (California Natural Diversity Database [CNDDB] 2010) for the Milpitas, Calaveras Reservoir, Cupertino, San José West, San José East, Lick Observatory, Los Gatos, Santa Teresa Hills, Mount Sizer, Loma Prieta, and Morgan Hill USGS 7.5-minute quadrangle maps in which the Study Area occurs; California Wildlife Habitat Relationships information; the Santa Clara County Breeding Bird Atlas (Bousman 2007a); and miscellaneous information available through the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and technical publications and previous reports by H. T. Harvey & Associates and others. We also generated a list of special-status species potentially occurring in Santa Clara County via the internet (http://www.fws.gov/sacramento/es/spp_list.htm) using information from the Sacramento USFWS office on 17 December 2008. Information regarding wildlife use of Coyote Valley and the movement of mammals within Coyote Valley, provided by De Anza College's Wildlife Corridor Stewardship Team, was also reviewed. For plants, we also consulted all California Native Plant Society (CNPS) lists (http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi; accessed 15 January 2010) and applicable records to determine the probability of occurrence for all special-status plant species within the Study Area. Plant species names are from the *Jepson Manual* (Hickman 1993), which also supplied information regarding the distribution and habitats of CNPS Lists of category 1A, 1B, 2, 3, and 4 vascular plants in Santa Clara County. The habitat-level ("land cover") descriptions in the draft HCP/NCCP provide some indication of the potential locations of special-status plants. Of greater value was the description of a further subdivision of habitats by vegetation associations that was included in the draft HCP/NCCP land cover descriptions. The draft HCP/NCCP identifies a total of 47 vegetation associations in the Santa Clara Valley, which includes the Study Area, and we used descriptions of those vegetation associations to assist in discerning potential locations of special-status plants.

From all of these sources, we created initial lists of special-status species considered for potential occurrence within the Study Area. This list was then refined by analyzing the suitable microhabitat types required by each species as well as their historic and present ranges relative to the boundaries of the Study Area. Limited field surveys were conducted for this biological resources report only to ground-truth locations of specific habitats where additional information was needed. However, based on our experience with the biological resources of the City of San José and vicinity, coupled with the extensive information available regarding these resources, more extensive field surveys were unnecessary for the purposes of this report.

To analyze impacts to biological resources, we first determined the resources present within the UGB in or near areas of proposed new development that would occur as a result of the General Plan update; in areas subject to disturbance from increased traffic or human presence (*e.g.*, recreational activities) as a result of this new development; and in areas subject to development or other human activities that are not proposed to be changed by the General Plan update, but that could occur as a result of existing land use designations (*e.g.*, rural residential development

in some areas outside the UGB). Next, we determined the ways in which new development, increased traffic, and increased human use within these areas could potentially affect biological resources. We then determined whether or not these impacts (considered collectively for each resource, such as a special-status species or sensitive habitat) reached a level of significance under CEQA, and identified measures to reduce potentially significant impacts to less-than-significant levels. Additional information on the methodology and assumptions used in our impact assessment is provided in the Impacts section below.

EXISTING NATURAL COMMUNITIES AND HABITATS

Based on dominant plant species and land uses, the Study Area was determined to contain eight general natural communities/land uses: developed, agricultural, grasslands, riparian forest and scrub, chaparral and coastal scrub, oak woodland, wetland, and aquatic/open water (Table 1; Figure 2). These eight natural communities/land uses have been further refined into 37 more detailed plant associations/wildlife habitats (Figures 3a, 3b, and 3c). These habitats are listed, along with their approximate acreages within the Study Area, in Table 1 and are further described below.

Table 1. Natural Community/Land Use and Biotic Habitat Acreages within the Envision San José 2040 General Plan Update Study Area.

Natural Community/Land Use and Biotic Habitat		Acreage*	Percent of Total
Developed		**83,331**	**68%**
	Urban and suburban	73,605	60%
	Golf course/ urban park	6,672	5%
	Rural residential	1,069	<1%
	Wastewater Treatment Plant	960	<1%
	Landfill	720	<1%
	Levees	305	<1%
Agricultural		**5,810**	**5%**
	Grain, row-crop, hay & pasture, disked/short-term	5,290	4%
	Orchards	440	<1%
	Agriculture developed	79	<1%
Grasslands		**11,378**	**9%**
	California annual grassland	5,921	5%
	Serpentine bunchgrass grassland	5,311	4%
	Serpentine rock outcrop/barrens	125	<1%
	Rock outcrop (non-serpentine)	15	<1%
	Serpentine seep	5	<1%
Riparian Forest and Scrub		**2,065**	**2%**
	Willow riparian forests, woodlands, and scrub	1,183	1%
	Mixed riparian forest and woodland	835	<1%
	Central California sycamore alluvial woodland	47	<1%
Chaparral and Coastal Scrub		**1,861**	**2%**
	Mixed serpentine chaparral	924	<1%
	Northern coastal scrub/Diablan coastal scrub	673	<1%
	Northern mixed chaparral/chamise chaparral	219	<1%
	Coyote brush scrub	44	<1%
Oak Woodland		**8,463**	**7%**
	Mixed oak woodland and forest	5,249	4%
	Coast live oak woodland and forest	1,369	1%
	Valley oak woodland	775	<1%
	Blue oak woodland	505	<1%
	Foothill Pine – Oak Woodland	444	<1%
	Mixed Evergreen Forest	120	<1%
Wetland		**1,738**	**1%**
	Tidal brackish marsh	524	<1%
	Muted tidal/diked marsh	521	<1%
	Tidal salt marsh	287	<1%

Natural Community/Land Use and Biotic Habitat		Acreage*	Percent of Total
	Tidal freshwater marsh	212	<1%
	Non-tidal freshwater marsh	123	<1%
	Seasonal wetland	72	<1%
Aquatic/Open Water		**7,102**	**6%**
	Saline managed ponds	5,519	5%
	Freshwater Ponds/Reservoirs	1,315	1%
	Mudflat	135	<1%
	Tidal aquatic	133	<1%
Total		**121,747**	**100%**

* Due to rounding, the total acreage within several of the natural community/land use categories is 1 acre higher than the sum of the biotic habitats within that category.

The following is a discussion of the general habitat conditions and representative plants and animals within the natural communities, land-use types, and biotic habitats summarized in Table 1.

DEVELOPED

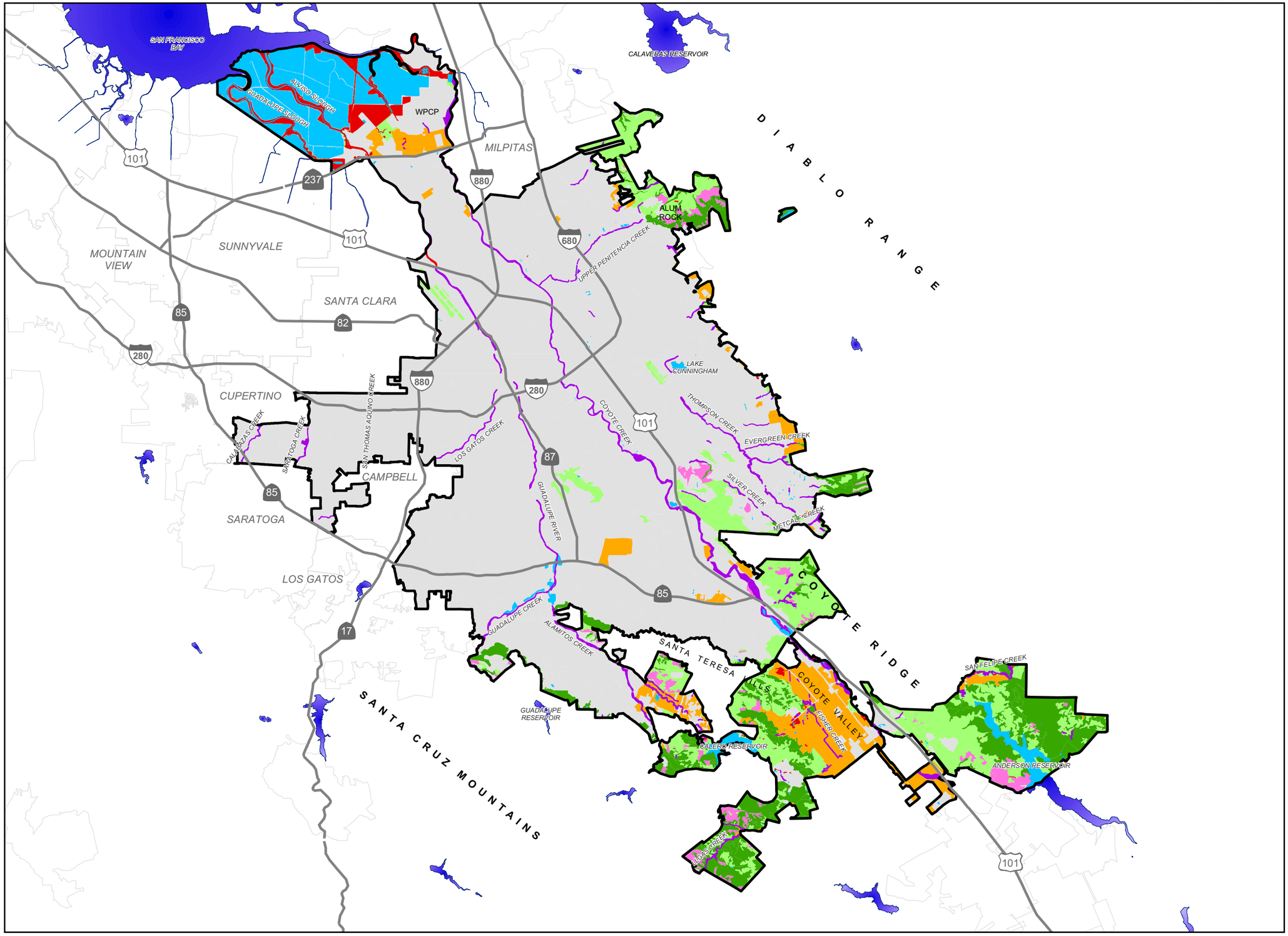
Developed land uses in the Study Area include urban, suburban, and rural residential areas, golf courses, urban parks, landfills, and the San José-Santa Clara Water Pollution Control Plant (WPCP) in Alviso. Human-altered landscapes that contain large amounts of paved surfaces and/or landscaped gardens with ornamental and/or weedy species are generally considered "developed."

"Developed" habitat types differ widely in the amount and types of plant species that they support. Some areas are fully developed areas barren of vegetation, such as portions of landfills or wastewater treatment plants, or completely paved, high-density urban housing. Other areas, although not "natural", are largely vegetated, ranging from rural residential to golf courses to urban parks. Golf courses, urban parks, and suburban gardens are typically landscaped with ornamental vegetation, whereas rural residential development areas may be planted in agricultural or ornamental plant species, or may remain in a relatively natural state dominated by oak woodland or annual grassland habitat. Depending on hydrology and substrate, engineered levees can be unvegetated (with gravel tops and rock slope protection), they may be vegetated with weedy upland species, or they may support salt marsh species along their lower and middle slopes.

Although special-status plant species typically do not occur in developed areas, it is possible that small, vestigial populations of special-status plant species could occur in several areas shown as "developed" on Figures 2, 3a, 3b, and 3c. In particular, such species could potentially occur on serpentine soils in the vicinity of the Silver Creek Valley Country Club or Communications Hill.

Developed or landscaped habitats typically support a suite of relatively common wildlife species that are tolerant of periodic human disturbance. Some of the most abundant species in developed habitats, such as the European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), Virginia opossum (*Didelphis virginiana*), house mouse (*Mus musculus*), eastern gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), Norway rat (*Rattus norvegicus*), and black rat (*Rattus rattus*) are non-native species that are well adapted to

CITY OF SAN JOSE
ENVISION SAN JOSE 2040 GENERAL PLAN UPDATE



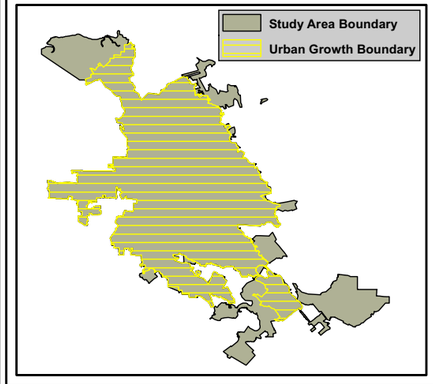
ENVISIONSAN JOSE2040

LEGEND

- Study Area Boundary
- City Boundary
- Waterbodies outside Study Area
- Freeways

NATURAL COMMUNITIES/ LAND USE

- Developed
- Agricultural
- Grasslands
- Riparian Forest and Scrub
- Chaparral and Coastal Scrub
- Oak Woodland
- Wetland
- Aquatic/ Open Water



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Miles

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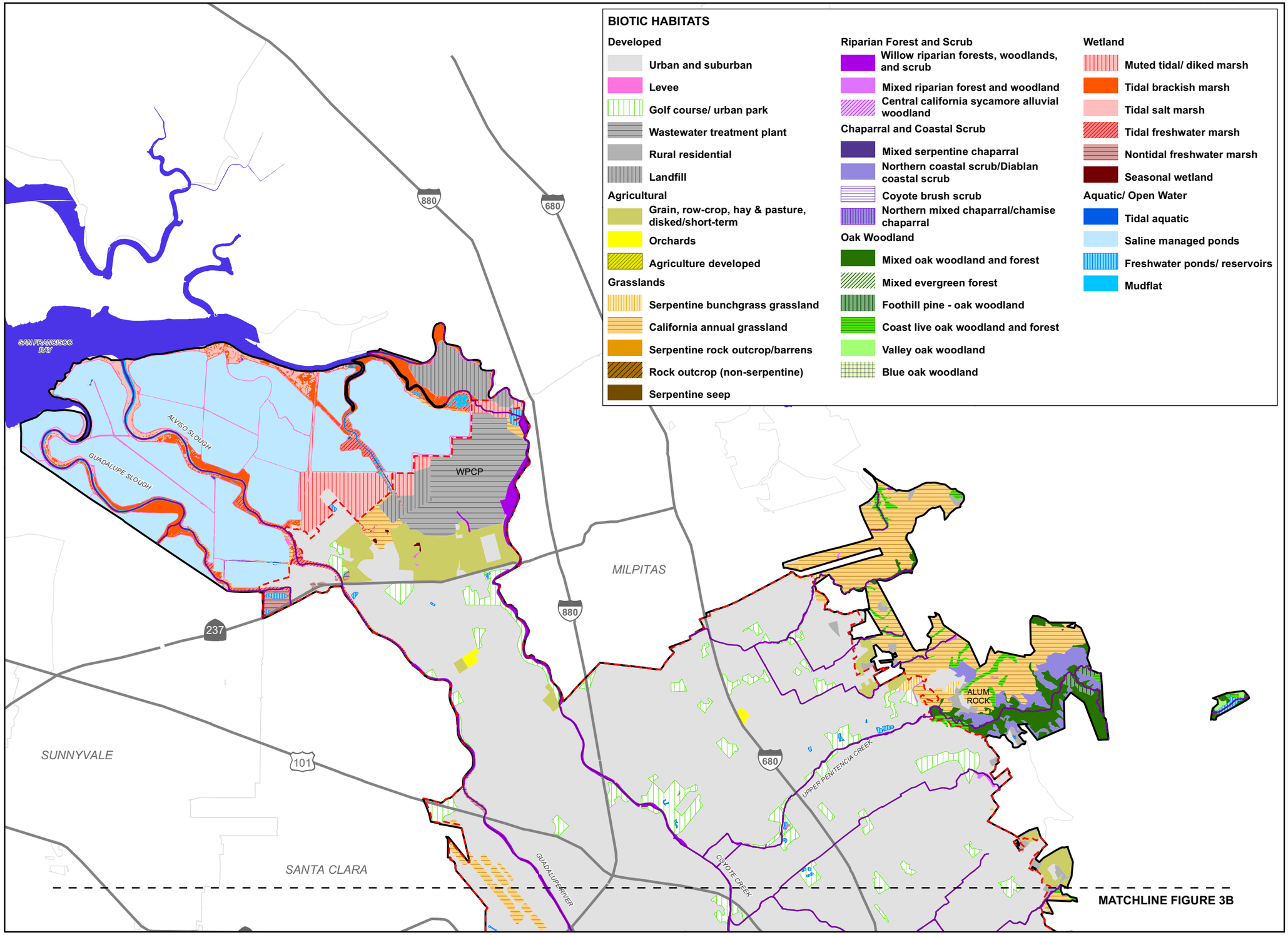
Feet

Date: August 2010
Map By: H.T. Harvey & Associates

Source: Department of Planning,
Building and Code Enforcement
City of San Jose

FIGURE 2
NATURAL COMMUNITIES/LAND USE MAP

CITY OF SAN JOSE
ENVISION SAN JOSE 2040 GENERAL PLAN UPDATE



BIOTIC HABITATS

Developed
- Urban and suburban
- Levee
- Golf course/ urban park
- Wastewater treatment plant
- Rural residential
- Landfill

Agricultural
- Grain, row-crop, hay & pasture, disked/short-term
- Orchards
- Agriculture developed

Grasslands
- Serpentine bunchgrass grassland
- California annual grassland
- Serpentine rock outcrop/barrens
- Rock outcrop (non-serpentine)
- Serpentine seep

Riparian Forest and Scrub
- Willow riparian forests, woodlands, and scrub
- Mixed riparian forest and woodland
- Central california sycamore alluvial woodland

Chaparral and Coastal Scrub
- Mixed serpentine chaparral
- Northern coastal scrub/Diablan coastal scrub
- Coyote brush scrub
- Northern mixed chaparral/chamise chaparral

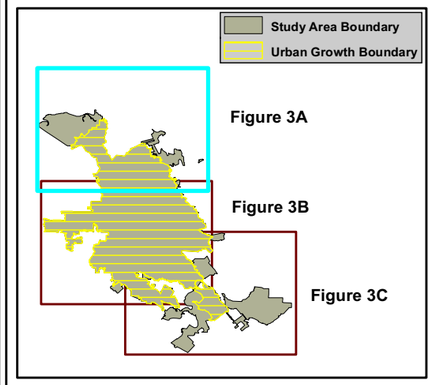
Oak Woodland
- Mixed oak woodland and forest
- Mixed evergreen forest
- Foothill pine - oak woodland
- Coast live oak woodland and forest
- Valley oak woodland
- Blue oak woodland

Wetland
- Muted tidal/ diked marsh
- Tidal brackish marsh
- Tidal salt marsh
- Tidal freshwater marsh
- Nontidal freshwater marsh
- Seasonal wetland

Aquatic/ Open Water
- Tidal aquatic
- Saline managed ponds
- Freshwater ponds/ reservoirs
- Mudflat

ENVISIONSAN JOSE2040

LEGEND
- Study Area Boundary
- Urban Growth Boundary
- City Boundary
- Waterbodies outside Study Area
- Freeways



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Miles

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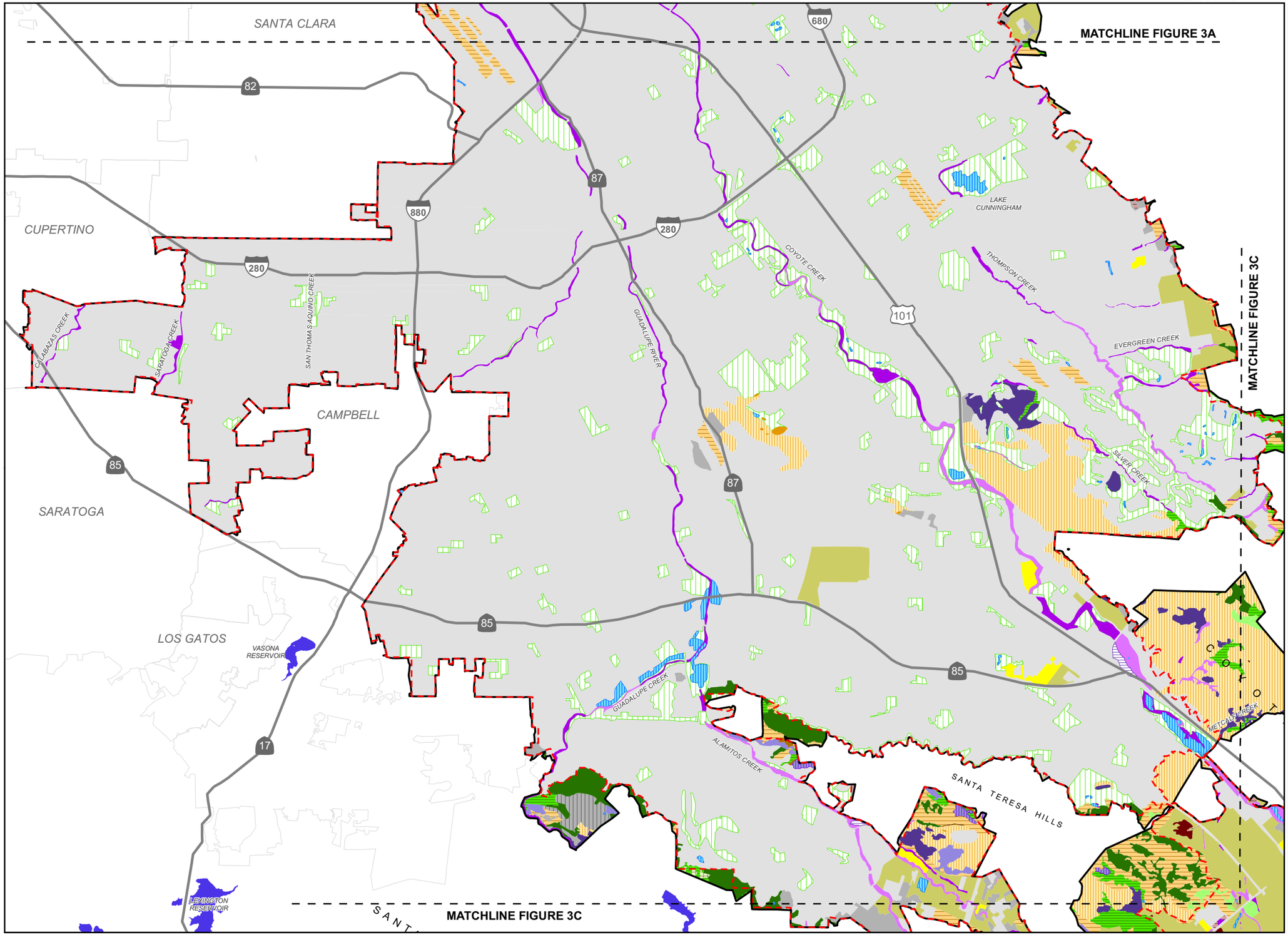
Feet

Date: August 2010
Map By: H.T. Harvey & Associates

Source: Department of Planning, Building and Code Enforcement City of San Jose

FIGURE 3A
BIOTIC HABITAT MAP

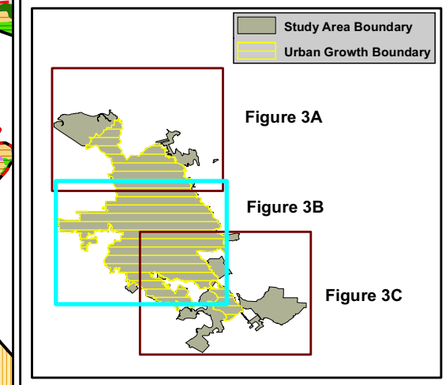


ENVISIONSAN JOSE2040

LEGEND

- Study Area Boundary
- Urban Growth Boundary
- City Boundary
- Waterbodies outside Study Area
- Freeways

Note: Refer to Figure 3A for Biotic Habitats Legend



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Miles

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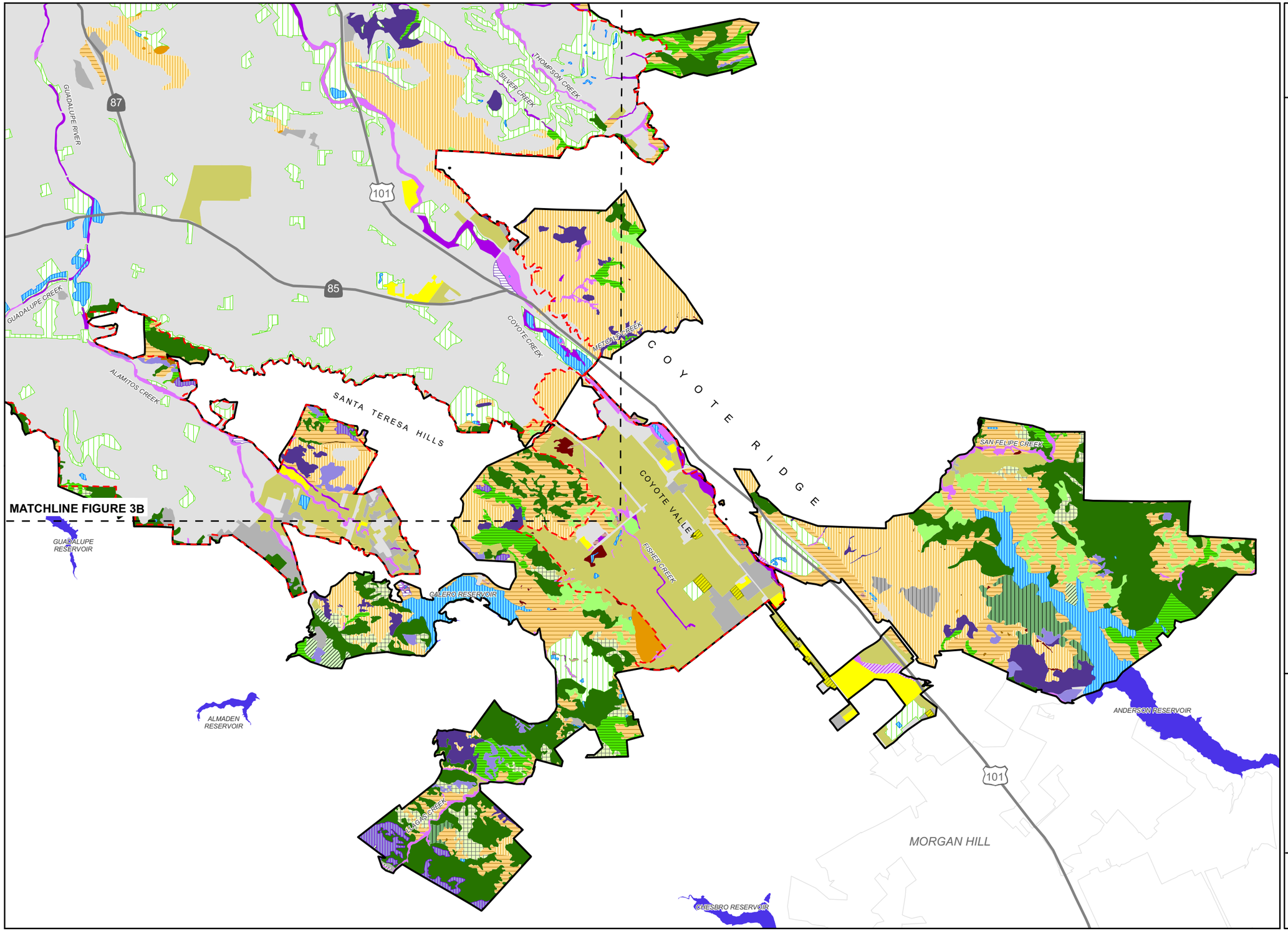
Feet

Date: August 2010
Map By: H.T. Harvey & Associates

Source: Department of Planning, Building and Code Enforcement City of San Jose

FIGURE 3B
BIOTIC HABITAT MAP

CITY OF SAN JOSE
ENVISION SAN JOSE 2040 GENERAL PLAN UPDATE

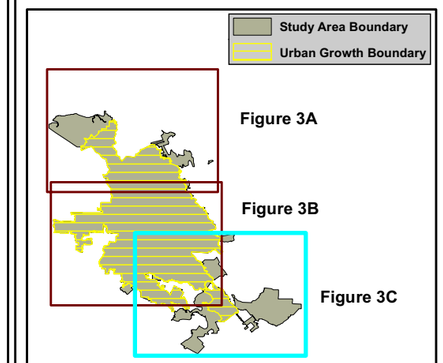


ENVISIONSAN JOSE2040

LEGEND

- Study Area Boundary
- Urban Growth Boundary
- City Boundary
- Waterbodies outside Study Area
- Freeways

Note: Refer to Figure 3A for Biotic Habitats Legend



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Miles

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Feet

Date: August 2010
Map By: H.T. Harvey & Associates

Source: Department of Planning, Building and Code Enforcement City of San Jose

FIGURE 3C
BIOTIC HABITAT MAP

the cover, nesting/denning, and foraging conditions provided by developed areas. In addition, a number of native species have adapted to these conditions. Native bird species commonly found in developed habitats in the Study Area include the house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), Anna's hummingbird (*Calypte anna*), and California towhee (*Pipilo crissalis*). Native mammals such as the deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) utilize these developed areas heavily as well.

Many bridges and other structures in the Study Area provide important nesting and roosting sites for some species of birds and bats. Bats such as the Yuma myotis (*Myotis yumanensis*), Brazilian free-tailed bat (*Tadarida brasiliensis*), and big brown bat (*Eptesicus fuscus*) may roost in bridges, structures, unoccupied buildings, and/or large trees throughout the Study Area. Birds such as the black phoebe (*Sayornis nigricans*), cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and white-throated swift (*Aeronautes saxatilis*) also use bridges and other structures in the Study Area for nesting. Individual bridges may support hundreds of cliff swallow nests.

Urban and Suburban. The majority of the Study Area (60%) and 80% of the area within the UGB is occupied by urban and suburban land uses. Urban and suburban land cover comprises areas dominated by buildings, turf, or pavement with no lawns or plantings greater than 10 acres. Urban land cover is dominated by hardscape, and consists primarily of commercial, industrial, and high-density residential areas. Suburban areas consist of relatively low to medium-density residential development, typically containing more vegetation than urban areas. In both areas, vegetation consists primarily of landscaped ornamental plant species.

Wildlife species present in urban and suburban areas are adapted to the presence of human disturbance, and either use developed structures (*e.g.*, cavities and crevices in buildings, bridges, and other artificial structures) or are attracted to small gardens and landscaping in lawns, yards, and adjacent parks for breeding and foraging. Birds such as house finches, California towhees, American goldfinches (*Carduelis tristis*), chestnut-backed chickadees (*Poecile rufescens*), and Cooper's hawks (*Accipiter cooperii*) are common in urban and suburban areas; many are attracted to bird feeders. Larger trees may support nests of red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), or great horned owls (*Bubo virginianus*). Although non-native vegetation typically supports low native bird diversity and density (Mills et al. 1989), some native birds heavily use certain non-native plants providing particular structural or food resources. For example, hooded orioles (*Icterus cucullatus*) in the Study Area nest almost exclusively in fan palms (*Washingtonia robusta*), and large eucalyptus trees provide nesting sites for raptors and nectar and insects for a variety of birds. California gulls (*Larus californicus*) and Brewer's blackbirds (*Euphagus cyanocephalus*) are attracted to public areas where they forage for edible scraps of refuse. Amphibians such as Pacific treefrogs (*Pseudacris regilla*) and non-native bullfrogs (*Lithobates catesbeianus*) are found in backyard ponds and pools, especially in the vicinity of natural ponds or creeks. Mammals such as the eastern gray squirrel, fox squirrel, raccoon, opossum, Norway rat, black rat, and house mouse are common in urban and suburban habitats.

Golf Courses/Urban Parks. Golf courses and urban parks are dominated primarily by non-native turf grasses, including Bermuda grass (*Cynodon dactylon*), and maintained, landscaped species. Golf courses often support little native vegetation, but some are landscaped with native plant species such as toyon (*Heteromeles arbutifolia*) and valley oak (*Quercus lobata*). Urban parks are typically landscaped with maintained ornamental vegetation, though native trees, particularly larger specimens, are occasionally incorporated into park design. Golf courses and urban parks are often irrigated and intensively maintained.

The landscaped habitats at golf courses in the Study Area provide nesting, denning, and foraging opportunities for a variety of common, widespread wildlife species tolerant of moderate levels of human activity. Some bird species that are well adapted to developed landscapes, including the American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird, and house finch nest in the ornamental vegetation on golf courses. Large trees such as sycamores and oaks that may be present on golf courses provide nesting habitat for cavity-nesting birds such as Nuttall's woodpeckers (*Picoides nuttallii*), chestnut-backed chickadees, and western bluebirds (*Sialia mexicana*). When these large trees occur near streams, they may also provide roosting habitat for several species of bats. Streams and ponds that occur within parks or golf courses, which support a number of additional wildlife species, are described in "Riparian Forest and Scrub" and "Aquatic/Open Water" below. In areas where golf courses or urban parks occur along the fringes of the Study Area adjacent to extensive open space, species from these adjacent natural areas may move through golf courses and parks.

Rural Residential. For the purposes of the land cover/habitat mapping in Figures 3a, 3b, and 3c, rural residential land cover was defined as low-density residential areas with less than one structure per 2.5 acres (ICF Jones and Stokes 2008). These areas may be planted in agricultural species or ornamental plant species, or may remain in a relatively natural state with oak woodland, annual grassland, or other habitats dominating. Often, these areas contain extensive landscaping, irrigated lands, or areas of pasture for livestock with a mixture of ornamental plants, weedy grasses and forbs, and occasional native plants. Most of the rural residential land within the Study Area lies along the foothills on the southeastern edge of the Study Area, south of the Santa Teresa Hills, and in the southern portion of the Coyote Valley. Most of the land in this area comprises pasture for grazing animals. The dominant plants are weedy grasses and forbs such as bromes (*Bromus* spp.), barley (*Hordeum* spp.), mustard (*Brassica* spp.), and alfalfa (*Medicago sativa*).

Rural residential areas provide somewhat higher-quality habitat for wildlife compared with urban and suburban habitats. While rural residential areas are disturbed by human presence and development, such stressors occur at a lower level than in more intensively urbanized areas, and human dwellings are also more widely interspersed among open areas of native and non-native habitats or extensive landscaping. Additionally, most rural residential habitats in the Study Area are located adjacent to more natural habitats such as oak woodland, riparian, agriculture, or grassland. Because these open areas are more extensive and more "natural" compared with urban and suburban areas, and because they occur adjacent to continuous, natural habitats, a higher diversity and abundance of wildlife can be found breeding, foraging, or dispersing through these areas compared to urban and suburban areas. Specific wildlife species associated with rural residential habitats vary considerably according to the dominant plant cover. Rural

residential areas more heavily landscaped within non-native plants support wildlife similar to that in urban parks and golf courses, while those areas providing agricultural habitats or more natural plant communities support wildlife species more similar to those described for those land uses below.

Wastewater Treatment Plant. The WPCP is located in the northern portion of the Study Area near Alviso. WPCP facilities include a solids handling area, sludge ponds, oxidation ponds, drying beds, impoundments, buffer lands available for short-tern agricultural lease or long-term flood control easements, landscaped areas, and buildings. These areas support weedy, ruderal vegetation along levees between ponds, and both ruderal and landscaped vegetation in the central WPCP complex. In addition, wetland habitat (see "Wetland" below) occurs adjacent to WPCP facilities, particularly in very small amounts along the fringes of sludge ponds and in areas north of the WPCP facilities (Figure 2).

Due to the availability of extensive open-water and non-tidal mudflat habitat within sludge ponds, the WPCP is an important breeding and foraging area for waterbirds in the South Bay. Seasonal wetlands and extensive ruderal vegetation provide nesting habitat adjacent to sludge ponds and marshes for brooding of young. Fairly high densities of breeding mallards (*Anas platyrhynchos*), gadwalls (*Anas strepera*), Canada geese (*Branta canadensis*), and black-necked stilts (*Himantopus mexicanus*) occur here. Depending on pond conditions the WPCP can also support very high densities of migrant and wintering waterbirds, including northern shovelers (*Anas clypeata*), Wilson's phalaropes (*Phalaropus tricolor*), red-necked phalaropes (*Phalaropus lobatus*), least sandpipers (*Calidris minutilla*), and gulls, particularly the Bonaparte's gull (*Larus philadelphia*). Additionally, large numbers of shorebirds that forage on intertidal mudflats at low tide use the water treatment plant ponds for roosting and/or foraging, particularly at high tide. American coots (*Fulica americana*) occur by the hundreds or low thousands on sewage treatment plant ponds during winter and migration. High densities of California ground squirrels (*Spermophilus beecheyi*) burrow in the levees and berms separating these ponds, and they in turn serve as prey for numerous raptors.

WPCP buffer lands consist primarily of ruderal, pasture, and agricultural cropland surrounding the plant. These lands support a number of grassland-associated wildlife species, such as western meadowlarks (*Sturnella neglecta*), savannah sparrows (*Passerculus sandwichensis*), California ground squirrels, and valley pocket gophers (*Thomomys bottae*), and one of the largest remaining populations of burrowing owl (*Athene cunicularia*) in the South Bay occurs on these buffer lands.

Landfill. A portion of the Newby Island Landfill, the Zanker Road Resource Recovery Operation and Landfill, and the Zanker Materials Processing Facility occur within the northern portion of the Study Area near Alviso. The majority of these areas are devoid of vegetation during active landfill use and are capped with fill material after the placement of refuse. Capped areas are dominated by an assemblage of non-native species and hydroseeded plant species including ripgut brome (*Bromus diandrus*), black mustard (*Brassica nigra*), and sweet fennel (*Foeniculum vulgare*).

The ruderal habitat present on active and former landfill areas in the Study Area provides foraging habitat for large numbers of diurnal raptors, such as red-tailed hawks, northern harriers (*Circus cyaneus*), white-tailed kites (*Elanus caeruleus*), and American kestrels (*Falco sparverius*). Loggerhead shrikes (*Lanius ludovicianus*) are found on active and closed landfills in areas where nest sites (*e.g.*, trees and shrubs) occur adjacent to ruderal habitats. Active landfills in the South Bay that handle food waste (putrescible materials), such as the Newby Island Landfill, provide food for thousands of breeding California gulls, and for even more wintering gulls of several other species. The dietary subsidy that these landfills provide to breeding California gulls may be at least partially responsible for increases in these gulls' South Bay breeding populations in recent decades, potentially resulting in deleterious effects on more sensitive species subject to California gull predation and competition for nesting space. Black-crowned night-herons (*Nycticorax nycticorax*), American crows, common ravens (*Corvus corax*), and turkey vultures (*Cathartes aura*) forage on refuse at such landfills as well. In contrast, facilities such as the Zanker Road Resource Recovery Operation and Landfill and the Zanker Materials Processing Facility, which do not handle food waste, do not provide food for gulls and other scavengers.

Levees. Approximately 305 acres of levees were mapped within the Study Area, primarily outside the UGB. These engineered, compacted earthen fill features are found along the periphery of baylands and separating many of the individual saline managed ponds in Alviso (Figure 3a). Levees are often barren; where they do support vegetation it occurs in highly disturbed linear bands, although some native salt marsh species may occur along the bottoms of levees. The levees in the Study Area were largely constructed from soils excavated from borrow pits or ditches in former salt marshes, most during development of saline managed ponds. Therefore, the engineered levee substrate in this area is primarily comprised of saline, silty clay and occasionally topped with gravels or shored with large rock slope protection. Portions of levees dominated by transitional high marsh vegetation or disturbed California annual grassland species were categorized as either of those habitat types, rather than as levee habitat.

Numerous species of waterbirds use levees in the Alviso area for roosting, either at night or during high tide when their preferred foraging habitats are submerged. Large mixed-species flocks of shorebirds, gulls, terns, cormorants, pelicans, herons, and other birds are often seen roosting or loafing on levees, particularly on the internal levees within extensive managed ponds. Some of these species, including black-necked stilts, American avocets (*Recurvirostra americana*), western snowy plovers (*Charadrius alexandrinus nivosus*), Caspian terns (*Sterna caspia*), Forster's terns (*Sterna forsteri*), black skimmers (*Rhynchops niger*), California gulls, and double-crested cormorants (*Phalacrocorax auritus*), nest on levees within the Study Area. Vegetated levees and other ruderal habitat also provide nesting habitat for ducks and Canada geese. Native mammals such as the California vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys raviventris*), deer mouse, Botta's pocket gopher, California ground squirrel, black-tailed jackrabbit (*Lepus californicus*), Audubon's cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), and striped skunk occur on managed pond levees in the Study Area.

AGRICULTURAL

Farmed land, including orchards, row crops, developed agriculture, grain, hay, pasture, and disked/short-term fallowed agricultural habitat types occur mostly in the southern portion of the Study Area in and south of Coyote Valley, west of the Santa Teresa Hills in the Almaden Valley lowlands, and in the WPCP buffer lands discussed above. No vineyard habitat is mapped within the Study Area. Soils in most croplands are routinely disked or maintained and are typically devoid of any vegetation but the cover crop. In some cases, ruderal, fast-growing species such as ripgut brome and black mustard occur on the fringes of these habitat types or in fallow fields, but are frequently sprayed or mowed prior to flowering. No special-status plant species are expected to occur within these habitat types.

Intensively cultivated agricultural lands in the Study Area support relatively few wildlife species due to the frequent disturbance associated with farming, the low stature of the crops produced in most of these areas, and the lack of structural diversity in the vegetation in these areas. Rodent control is practiced throughout many of the orchards and agricultural fields where crops are grown, reducing the abundance of small mammals and the suitability of these fields as foraging habitat for raptors and larger mammals that prey on smaller mammals.

Nevertheless, the infrequency of human presence and heterogeneity of habitats in some agricultural areas results in fairly heavy wildlife use, at least by some species. Some California ground squirrel and valley pocket gopher burrows occur along margins of croplands and orchards within the Study Area, and raptors such as red-tailed hawks, American kestrels, and white-tailed kites forage at the edges of fields and orchards. Gopher snakes (*Pituophis catenifer*), racers (*Coluber constrictor*), and western fence lizards (*Sceloporus occidentalis*) are among the reptiles that forage at the edges of agricultural lands.

The De Anza College Wildlife Corridor Stewardship Team (unpublished data) has documented wildlife use in Coyote Valley since 2007, conducting raptor censuses and avian point count surveys and documenting the occurrence of mammals in the area. The Stewardship Team's surveys have documented relatively high abundance of raptors, including golden eagles (*Aquila chrysaetos*), bald eagles (*Haliaeetus leucocephalus*), ferruginous hawks (*Buteo regalis*), and northern harriers, as well as several short-eared owls (*Asio flammeus*), foraging in agricultural fields. A number of pairs of red-tailed and red-shouldered hawks, American kestrels, and white-tailed kites nest in trees interspersed among these fields. Their monitoring of mammal activity in Coyote Valley has also documented the occurrence of coyote (*Canis latrans*), black-tailed deer (*Odocoileus hemionus columbianus*), American badger (*Taxidea taxus*), raccoon, bobcat (*Lynx rufus*), and other species foraging in and moving through agricultural fields in the Valley.

Grain, Row-crop, Hay & Pasture, Disked/Short-term. Grain, row-crop, hay, pasture, and disked fields (short-term) are all manipulated habitat types dominated by herbaceous plants. These habitat types are barren after disking for a short duration, and then are replanted. Hay is cut, bailed, and trucked off-site while livestock consumes pasture on-site. Typical crops in these areas include alfalfa, sweet clover (*Melilotus* spp.), true clover (*Trifolium* spp.), wild oats (*Avena* spp.), Italian ryegrass (*Lolium multiflorum*), barley, and wheat (*Triticum aestivum*). Mustard and wild radish (*Raphanus sativus*) also commonly occur as undesirable vegetation (weeds) in these areas. These disked habitat types occur primarily in the southern portion of the Study Area

within the Coyote Valley, although significant areas also occur in the northern portion of the Study Area near Alviso, in the upper Almaden Valley, and east of Thompson Creek in the Evergreen area.

American pipits (*Anthus rubescens*), Brewer's blackbirds, red-winged blackbirds (*Agelaius phoeniceus*), and killdeer (*Charadrius vociferus*) forage in these agricultural fields. Red-winged blackbirds and western meadowlarks may nest in small numbers in agricultural fields containing taller vegetation, but few other bird species nest in these fields due to the monotypic nature of the habitat and the frequent disturbance that occurs here. During the rainy season, shorebirds such as killdeer and long-billed curlews (*Numenius americanus*), as well as numerous gulls and geese, have been observed foraging in recently disked or sparsely vegetated portions of agricultural fields that occur close to the Bay and in agricultural fields in Coyote Valley. Burrowing mammals such as the California ground squirrel and valley pocket gopher, as well as other small mammals such as the California vole (*Microtus californicus*) and deer mouse, colonize fallow fields and fields that are not regularly disked (*e.g.*, alfalfa fields), where they serve as prey for predators. Ground squirrels also excavate burrows that may be used for roosting and nesting by burrowing owls.

Orchards. Orchards within the Study Area primarily include apricot (*Prunus armeniaca*), cherry (*Prunus* spp.), plum (*Prunus triloba*), and walnut (*Juglans regia*) trees. Trees are planted in rows and are manicured through seasonal pruning. Typically, the understory lacks vegetation, but field mustard (*Brassica rapa*) can dominate the understory, along with other annual non-native grassland species, prior to mowing. Orchards occur primarily in the southern portion of the Study Area.

Orchards provide more structural diversity, roosting and nesting sites, foraging substrates, and cover for wildlife compared with croplands. As a result, birds such as Brewer's blackbirds, American robins, and American crows nest in these orchards. Mammals may find greater cover in some orchards, although closely maintained orchards provide little cover, and management often includes control of small mammals.

Agriculture Developed. "Agriculture developed" land uses include areas of land dominated by agricultural buildings such as greenhouses, shadehouses, nurseries, corrals, or dairies. This land use only occurs within the Coyote Valley in the southern portion of the Study Area. Such areas typically support little vegetation apart from ornamental landscaping. Structures associated with agriculture may be used for nesting by barn owls (*Tyto alba*), barn swallows, cliff swallows, and black phoebes.

GRASSLANDS

The vegetation of grassland communities is dominated by grasses and forbs with less than 10% cover by tree and shrub species. California annual grassland, serpentine bunchgrass grassland, serpentine rock outcrop/barrens, serpentine seep, and rock outcrop (non-serpentine) are grassland habitat types that were identified within the Study Area. California annual grasslands, characterized in large part by a high percentage cover of introduced Mediterranean species, is one of the most common natural habitat areas, comprising 5% of the Study Area. Typical plant species found in California annual grasslands are introduced grasses such as bromes, wild oats,

and barley. Many native California forbs and bunchgrasses are found in these biotic communities; however, tall, non-native grasses usually out-compete and shade-out native species in the absence of managed grazing regimes.

Wildlife use of grasslands within much of the Study Area is limited by human disturbance, the limited extent of these habitats in a given area, and isolation of grassland habitat remnants from more extensive grasslands. As a result, some of the wildlife species associated with extensive grasslands, such as grasshopper sparrows (*Ammodramus savannarum*), breeding Bryant's savannah sparrows (*Passerculus sandwichensis alaudinus*), and western meadowlarks are absent from small patches of grassland within the urban matrix that occupies most of the Study Area. However, much of the grassland around the periphery of the Study Area is contiguous with larger expanses of grassy open space, and thus provides higher-quality habitat for grassland-associated wildlife species.

California ground squirrels, where they are present, are an important component of these grassland communities, providing a prey base for diurnal raptors and terrestrial predators. The burrows of California ground squirrels also provide refugia for several special-status wildlife species, such as the burrowing owl and the California tiger salamander (*Ambystoma californiense*). Other rodent species that are likely present in grassland habitats include the California vole, valley pocket gopher, and deer mouse. Diurnal raptors such as red-tailed hawks, northern harriers, white-tailed kites, and American kestrels forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls, will forage for nocturnal rodents, such as deer mice. Loggerhead shrikes forage in grassland habitats for insects and other prey.

Open grassland habitat with bare ground is important foraging habitat for the pallid bat (*Antrozous pallidus*) and Brazilian free-tailed bat. Mammals such as the coyote, black-tailed jackrabbit, and striped skunk utilize grassland habitats within the Study Area for foraging. Reptiles such as western fence lizards, western skinks (*Eumeces skiltonianus*), western terrestrial garter snakes (*Thamnophis elegans*), gopher snakes, racers, western rattlesnakes (*Crotalus viridis*), common kingsnakes (*Lampropeltis getula*), and southern alligator lizards (*Elgaria multicarinata*) also frequent these habitats.

California Annual Grassland. California annual grassland habitat occurs commonly on undeveloped parcels throughout the Study Area. The largest expanses of this habitat are present on hills surrounding Coyote Valley, in the northern portion of the Santa Teresa Hills, to the east of Anderson Reservoir and elsewhere along the hilly eastern margin of the Study Area, in Alviso in the WPCP buffer lands, and between the runways at the San José International and Reid-Hillview Airports. Dominant plant species are non-native annual grasses such as ripgut brome, Italian ryegrass, and wild oats, although small patches of native grassland habitat may occur within areas mapped as California annual grassland habitat. Associated species include many native and non-native forbs such as California poppy (*Eschscholzia californica*), lupine (*Lupinus* spp.), and filaree (*Erodium* spp.). Native grassland habitat (non-serpentine) is patchily distributed throughout portions of the California annual grassland habitat and is typically dominated by purple needlegrass and an assemblage of other plant species that change from site to site. However, areas supporting these native grasses are sparsely distributed and often native

species dominate the overall assemblage for only a few weeks each year. During the majority of the year, these habitats are dominated by the same introduced, non-native grasses present within the majority of California annual grassland habitat.

Wildlife species associated with California annual grassland are typically those described for grasslands in general above. Small patches in urban areas, particularly at airports and on landfills, often support relatively few species due to intensive disturbance. However, California ground squirrels, valley pocket gophers, and burrowing owls are often present in such areas and hawks and falcons hunt there. More extensive grasslands contiguous with open space areas, such as at the margins of Coyote Valley and in the Santa Teresa Hills, provide habitat for American badgers and a variety of other grassland-associated species.

Serpentine Bunchgrass Grassland. Serpentine bunchgrass grassland habitat occurs on soils derived from serpentine rock substrates. Most serpentine soils support a diverse grassland assemblage dominated by California dwarf plantain (*Plantago erecta*), Italian ryegrass, and spring and summer wildflowers including goldfields (*Lasthenia spp.*), buttercup (*Ranunculus californicus*), purple owl's clover (*Castilleja exserta*), and tidy-tips (*Layia gillardioides, L. chrysanthemoides*), among many others. Native grasses such as purple needlegrass (*Nassella pulchra*), junegrass (*Koeleria micrantha*), big squirreltail (*Elymus multisetus*), creeping wildrye (*Leymus triticoides*), and other perennial bunchgrasses are also common throughout this community.

These serpentine grasslands are highly infertile because of their extremely high levels of magnesium, chromium, and nickel, low concentrations of nutrients such as calcium and nitrogen, and low water-holding capacity. A unique group of vascular plant species, which can tolerate the relatively high magnesium to calcium ratio, has evolved in response to these conditions. Many exotic species in California, including the non-native grasses that have invaded much of the non-serpentine grasslands in the state, are not able to tolerate, or at least do not thrive in, the extremely dry conditions and infertility of serpentine soils. As a result, serpentine grasslands support high-quality native plant communities, including rare plants such as the federally listed Santa Clara Valley dudleya (*Dudleya setchellii*) and Metcalf Canyon jewel-flower (*Streptanthus albidus* ssp. *albidus*); see also "Special-Status Plant Species" below. In turn, several invertebrate species, including the federally threatened Bay checkerspot butterfly (*Euphydryas editha bayensis*), depend on serpentine grasslands because their host food plants are found primarily in these habitats.

It has been demonstrated that the fertilization of serpentine grasslands with nitrogen allows some non-native grasses, particularly Italian ryegrass and barbed goatgrass (*Aegilops triuncialis)*, to invade and become dominant, typically at the expense of native plants (Huenneke et al. 1990). Weiss (1999) described how moderate, well-managed grazing is necessary to prevent large-scale invasion of serpentine grassland by non-native grasses. Although cattle waste provides localized input of nitrogen to serpentine grasslands, the net effect of grazing is the export of nitrogen from these systems as cattle are removed from grasslands for slaughter (Weiss 1999). In the absence of grazing, Bay checkerspot butterflies disappeared from ungrazed areas due to declines in densities of their larval host plants. Weiss (1999) further provided evidence that dry nitrogen deposition resulting from smog facilitates the invasion of serpentine grassland by non-native

plants. As a result, it has been suggested that increases in nitrogen emissions by increases in traffic associated with specific development projects in the South Bay could adversely affect serpentine plant and animal communities. Managed grazing, however, has been effective at controlling non-native grasses and maintaining relatively high-quality native serpentine grassland communities.

Serpentine bunchgrass communities are the second most extensive grassland habitat in the Study Area, occurring in the Study Area in the Silver Creek Hills at the north end of Coyote Ridge, on Communications Hill, to the west of Anderson Reservoir, to the north and west of Calero Reservoir, and in the Santa Teresa Hills in the southwest. There is also one small patch of serpentine bunchgrass habitat located in the northeastern portion of the Study Area north of Alum Rock, south of Suncrest Avenue. Serpentine bunchgrass grasslands are considered a sensitive vegetation community by CDFG (2007).

The Bay checkerspot butterfly occurs in native serpentine grassland communities that support dense stands of its primary larval food plant, dwarf plantain. Larvae also utilize secondary larval food plants such as owl's clover (*Orthocarpus* spp.), and adult butterflies use nectar from plants such as goldfields, onion (*Allium* spp.), tidy-tips, and lomatium (*Lomatium* spp.). This species is associated primarily with large expanses of serpentine grassland characterized by a diversity of slope exposures and moderate-to-high grazing intensity.

Bird species that occur in the Study Area most abundantly in serpentine grassland habitats include the grasshopper sparrow, horned lark (*Eremophila alpestris*), rufous-crowned sparrow (*Aimophila ruficeps*), and rock wren (*Salpinctes obsoletus*). These species are well adapted to the patchy distribution of bunchgrass vegetation in serpentine habitats.

Serpentine Rock Outcrop/Barrens. Serpentine rock outcrops/barrens lack soil entirely and are typically devoid of vegetation, with visible rock outcrops usually covered in crustose lichen species. This habitat type is interspersed with serpentine bunchgrass habitat. Serpentine rock outcrops are found in a patchwork of low-growing serpentine plant communities in the Santa Teresa Hills interspersed with intact, undisturbed patches of sagebrush chaparral communities. Serpentine outcrops also occur on Communications Hill and Coyote Ridge, and in the field south of Suncrest Avenue in the Alum Rock area. Rock outcrops tend to exclude most special-status plant species as there is no soil accumulation in these areas; however, the Santa Clara Valley dudleya occurs primarily on this habitat type. Crevices in these outcrops provide refugia for western fence lizards, common kingsnakes, and western rattlesnakes, and rock wrens hide their nests in these outcrops.

Rock Outcrops (Non-serpentine). A small area of rock outcrops consisting of exposed non-serpentine bedrock occur in the Study Area within California annual grassland habitat north of Alamitos Creek in the Santa Teresa Hills. Similar to serpentine rock outcrops/barrens, these rock outcrops are devoid of soil and typically devoid of vegetation except within crevices that have accumulated soil. In addition, in some crevices that can retain water for short duration, mosses and other epiphytes may grow. No special-status plant species are likely to particularly occur on non-serpentine rock outcrop habitat in the Study Area. Wildlife use of these outcrops is similar to that described for serpentine outcrops above.

Serpentine Seep. Serpentine seeps are small wetlands that typically lack woody vegetation and are fed by small springs or creeks supported by groundwater. These seeps are distinguished from other wetlands in that they occur on serpentine soils within serpentine grassland habitat. Several serpentine seeps occur in the Santa Teresa Hills and in the Silver Creek Hills on northern Coyote Ridge, just to the southeast of the Study Area. Many of the serpentine seeps in the Study Area support the special-status Mt. Hamilton thistle (*Cirsium fontinale* var. *campylon*); this is the only habitat type in which this species occurs. Serpentine seeps are wetland habitat and are therefore considered to be sensitive habitats by the CDFG. These seeps provide moist refugia for Pacific treefrogs, western toads (*Bufo boreas*), and other amphibians but typically do not pond water deep enough to provide suitable breeding habitat for these species. They are also so limited in extent that they are infrequently used by other aquatic/wetland-associated wildlife species such as shorebirds or waterfowl.

RIPARIAN FOREST AND SCRUB

Three major types of riparian forest and scrub communities occur in the general Study Area. These are willow riparian forests, woodlands, and scrub; mixed riparian forest and woodland; and central California sycamore alluvial woodland (ICF Jones & Stokes 2009). Central California sycamore alluvial woodland is considered a sensitive vegetation community by CDFG (2007). Riparian communities immediately border permanent and ephemeral waterways and support an array of vegetation adapted to permanent or semi-permanent water sources.

Within the Study Area, the majority of riparian habitat is surrounded by development and has been degraded by a variety of urban-associated stressors. In some areas, channels are lined with concrete, riprap, or gabions and are channelized (*e.g.*, Guadalupe River near Capitol Expressway). Although native trees dominate most riparian woodlands and forests in the Study Area, non-natives abound as well, and exotic species such as eucalyptus, giant reed, tree-of-heaven (*Ailanthus altissima*), elms (*Ulmus* spp.), and others occur frequently along these riparian systems. For these reasons, no special-status plant species are specifically characteristic of habitats mapped as riparian forest and scrub in the Study Area. However, riparian habitat has been protected, and in many areas restored, in many areas (particularly along the larger streams such as Coyote Creek and the Guadalupe River) by the SCVWD and others.

Riparian habitats in California generally support exceptionally rich animal communities and even though they occupy a limited amount of the landcover (2% within the Study Area), these habitats contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of year-round water and abundant invertebrate fauna provide foraging opportunities for many species, and the diverse habitat structure provides cover and nesting opportunities. The heavily urbanized context of the Study Area limits the value of these habitats somewhat due to the long history of human disturbance, isolation, and other urban-associated pressures on wildlife populations along these habitats. As a result, riparian habitats in the Study Area are restricted to narrow corridors along streams, and many reaches of streams support little or no woody vegetation. Nonetheless, the riparian corridors in the Study Area do provide important habitats for many wildlife species in the region, and support the most diverse bird communities in the Study Area (Rottenborn 1997).

The maturity and structural diversity of the riparian habitats in the Study Area support a high diversity and density of vertebrate species, particularly birds. The wider, more mature riparian corridors within the Study Area contain suitable foraging and breeding habitat for several functional groups of birds including insectivores (*e.g.*, warblers, flycatchers), seed-eaters (*e.g.*, finches), raptors, and cavity-nesters (*e.g.*, swallows and woodpeckers) in addition to a variety of common amphibians, reptiles, and mammals. Among the numerous species of birds that use the riparian habitats within the Study Area for breeding are the Pacific-slope flycatcher (*Empidonax difficilis*), black-headed grosbeak (*Pheucticus melanocephalus*), warbling vireo (*Vireo gilvus*), yellow warbler (*Dendroica petechia*), and black-chinned hummingbird (*Archilochus alexandri*). Raptors such as red-shouldered hawks and Cooper's hawks nest within riparian corridors and forage in adjacent habitats. Riparian habitats are also used heavily by migrants and wintering birds.

Several species of reptiles and amphibians occur in riparian corridors within the Study Area. Leaf litter, downed tree branches, and fallen logs provide cover for the arboreal salamander (*Aneides lugubris*), western toad, and Pacific treefrog. Several lizards may also occur here, including the western fence lizard, western skink, and southern alligator lizard. Small mammals such as the ornate shrew (*Sorex ornatus*), California vole, and Audubon's cottontail use these riparian habitats. San Francisco dusky-footed woodrats (*Neotoma fuscipes annectens*) occur, often at high densities, in riparian habitats in less developed areas, such as in Coyote Valley, but are absent from most heavily urbanized streams. Medium-sized mammals such as the raccoon, striped skunk, and non-native opossum are also common, urban-adapted species present in this riparian habitat. Non-natives such as the opossum, eastern fox squirrel, Norway rat, and feral cat (*Felis catus*) may harass, compete with, or depredate eggs and young of native birds and small mammals, reducing the quality of this habitat for native riparian wildlife species.

The aquatic habitats within streams in the Study Area were included within areas mapped as riparian. These aquatic habitats support several species of native fishes, such as the California roach (*Hesperoleucus symmetricus*), Sacramento sucker (*Catostomus occidentalis*), and sculpins (*Cottus* sp.), as well as non-native fishes such as mosquitofish (*Gambusia affinis*), bluegill (*Lepomis macrochirus*), and inland silverside (*Menidia beryllina*). The federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*) and the Fall-run Chinook salmon (*Oncorhynchus tshawytscha*) are anadromous fish that spawn in several of these streams, such as Coyote Creek, Upper Penitencia Creek, the Guadalupe River, and Los Gatos Creek (SCVWD 2007). Amphibians such as the western toad, Pacific treefrog, and the non-native bullfrog are also present in these creeks. The native western pond turtle (*Actinemys marmorata*) is present in low numbers in some reaches of these streams, as are several species of non-native turtles that have been released locally from captivity, such as red-eared sliders (*Trachemys scripta*) and painted turtles (*Chrysemys picta*). Waterbirds such as the mallard, green heron (*Butorides virescens*), great egret (*Ardea alba*), and belted kingfisher (*Ceryle alcyon*) forage in these waters. Bats, including the Yuma bat and big brown bat, forage aerially on insects over these streams.

Willow Riparian Forests, Woodlands, and Scrub. Willow species such as yellow willow (*Salix lucida* ssp. *lasiandra*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and sandbar willow (*Salix exigua*) dominate willow riparian forests, woodlands, and scrub habitat within the Study Area. Some willow riparian habitat within the Study Area is severely degraded,

with invasive trees such as black locust (*Robinia pseudoacacia*), tree-of-heaven, and elms intermixed within the overstory, and invasive herbaceous plants such as periwinkle (*Vinca major*) and English ivy (*Hedera helix*) dominating the understory. Other areas contain native species such as California blackberry, poison oak, toyon, and Mexican elderberry (*Sambucus mexicana*). Willow riparian forests, woodlands, and scrub, which comprise the most common riparian habitat type in the Study Area, occurs within the majority of drainages within the Santa Clara Valley, particularly in downstream reaches as these drainages approach the South San Francisco Bay. Riparian habitats that include large, mature riparian trees occur along select portions of Coyote Creek and the Guadalupe River. Dominant canopy species in these areas include willows and Fremont cottonwood (*Populus fremontii*), along with native understory species such as elderberry and wild rose (*Rosa californica*). Many of the creek corridors near more heavily developed saline managed pond areas, however, are concrete-lined channels with little to no woody vegetation, and are confined by flood control levees.

Dense, native willow riparian forest in the Study Area provides habitat for higher densities of riparian species, such as native nesting songbirds, compared to mixed riparian forest. Relatively high densities of species such as song sparrows (*Melospiza melodia*), black-headed grosbeaks, and warbling vireos are found nesting in willow riparian forests. This habitat is also more likely to support native bird and mammal species that are sensitive to disturbance and invasive predators, such as Swainson's thrushes (*Catharus ustulatus*), yellow warblers (*Dendroica petechia brewsteri*), yellow-breasted chats (*Icteria virens*), and San Francisco dusky-footed woodrats.

Mixed Riparian Forest and Woodland. In mixed riparian forest and woodland habitat, common overstory trees include white alder (*Alnus rhombifolia*), Fremont cottonwood, California sycamore (*Platanus racemosa*), valley oak, California bay, and big leaf maple. Typical understory trees and shrubs include willow trees, western creek dogwood (*Cornus sericea* ssp. *occidentalis*), California buckeye (*Aesculus californica*), native and introduced blackberry (*Rubus* spp.), and poison oak (*Toxicodendron diversilobum*). Mixed riparian forest and woodland habitat occurs within several drainages, and now primarily persists in the foothills within the southern portion of the Study Area, such as along Thompson Creek, upstream reaches of Coyote Creek, Llagas Creek (above Chesbro Reservoir), Alamitos Creek, Calero Creek, and drainages east of Anderson Reservoir.

The structural diversity of mixed riparian forests in the Study Area supports high diversities of riparian-breeding species. Many of the same species found in willow riparian forests are also present in mixed riparian habitats, but in lower densities. Additional species that prefer low-density riparian habitats and higher structural diversity are likely to be present throughout this habitat type, including chestnut-backed chickadees, oak titmice (*Baeolophus inornatus*), bushtits (*Psaltriparus minimus*), finches, black phoebes, western scrub-jays (*Aphelocoma californica*), house wrens (*Troglodytes aedon*), American robins, and dark-eyed juncos (*Junco hyemalis*). Oak and sycamore trees also support cavity-nesting bird species such as woodpeckers and American kestrels, as well as colonies of bats.

Central California Sycamore Alluvial Woodland. This habitat occurs on broad valley floors along low, braided riparian channels. This land cover type usually forms only where floodplains

are broad, along low gradient streams flowing over deep alluvial deposits. Sycamore alluvial woodland stands have an open canopy dominated by California sycamore, often interspersed with white alder and willows. Other associated species may include bigleaf maple, valley oak, coast live oak, and California bay. Winter flows typically scour the understory vegetation each season, and as such, herbaceous vegetation is spare and patchy. Riparian species such as willows, coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), California buckeye, blackberry species, Italian thistle (*Carduus pycnocephalus*), poison-oak, common chickweed (*Stellaria media*) and bedstraw (*Galium aparine*) may occur along the outer stream banks. Central California sycamore alluvial woodland occupies only 47 acres within the Study Area, all located in the southwestern reaches of Coyote Valley along Coyote Creek (Figure 3c).

Sycamore woodlands provide habitat for many species of bats, including the pallid bat, Brazilian free-tailed bat, yuma myotis, California myotis (*Myotis californicus*), and big brown bat. Cavity-nesting bird species such as woodpeckers and American kestrels are also likely to be found breeding in this habitat. Red-tailed hawks, red-shouldered hawks, great-horned owls, and other raptors nest in the larger trees in this habitat and forage in adjacent habitats. Species that prefer thick understory cover, such as towhees and sparrows, are less abundant in sycamore woodlands compared with other riparian habitats.

CHAPARRAL AND COASTAL SCRUB

Chaparral and coastal scrub communities are characterized by drought-tolerant, shrub-dominated landscapes that are exposed to intense sunlight. These habitat types form dense stands of shrubs with little understory and are prone to intense and regular fire cycles. However, after a fire event, these habitat types recover quickly and support extraordinary blooms of annual forbs adapted to fire in the understory. Typical species found in these communities are chamise (*Adenostoma fasciculatum*), sage (*Salvia* and *Artemisia* spp.), manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), and scrub oak (*Quercus* spp.). Chaparral and coastal scrub communities include four habitat types: northern mixed chaparral/chamise chaparral, mixed serpentine chaparral, northern coastal scrub/Diablan coastal scrub, and coyote brush scrub.

Because chaparral and coastal scrub habitats are typically dry and provide relatively low and homogeneous structure, wildlife species diversity in these areas is often fairly low. Also, because the areas where these habitats occur within the Study Area are small and often surrounded by other habitat types, such as annual grassland and oak woodland, wildlife utilization of these areas is largely determined by adjacent habitats. Nevertheless, a number of animal species occur in these habitats (the following description of wildlife use pertains to all the chaparral/coastal scrub communities described below).

Amphibians are usually absent or scarce in these habitats due to their very dry conditions, and many other wildlife species occurring here either derive moisture directly from food or synthesize their water metabolically from seeds (*e.g.*, the California pocket mouse [*Chaetodipus californicus*]). Mammals that use chaparral and coastal scrub habitats for cover include the coyote, bobcat, and brush rabbit, among others. Nests of San Francisco dusky-footed woodrats are often present where oaks and/or poison oak are mixed with coyote brush scrub. California mice (*Peromyscus californicus*), which occupy woodrat nests, are also present. Bird species that nest in chaparral and coastal scrub habitats include the California thrasher (*Toxostoma*

redivivum), California towhee, spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), loggerhead shrike, lesser goldfinch (*Carduelis psaltria*), and Anna's hummingbird. Rufous-crowned sparrows often nest where these habitats are dominated by California sagebrush (*Artemisia californica*). Reptiles that occur in these habitats include the gopher snake, western rattlesnake, southern alligator lizard, striped racer (*Masticophis lateralis*), and western fence lizard.

Mixed Serpentine Chaparral. Mixed serpentine chaparral contains species adapted to the physical and chemical properties of serpentine substrates (see the previous description of serpentine bunchgrass grassland). Mixed serpentine chaparral is typically more open than northern mixed chaparral/chamise chaparral, northern coastal scrub/Diablan scrub, or coyote brush scrub due to the limited soil nutrients available in serpentine soils. Bigberry manzanita (*Arctostaphylos glauca*), leather oak (*Quercus durata*), California sagebrush, toyon, and California bay occur with poison oak and clarkia (*Clarkia* spp.) along with special-status, serpentine endemics such as Coyote ceanothus (*Ceanothus ferrisiae*) and Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*). Mixed serpentine chaparral is characterized in the Santa Teresa Hills by California sagebrush, black sage (*Salvia mellifera*), and bigberry manzanita in a patchwork interspersed with low-lying serpentine grasslands and serpentine outcrops. It also occurs within the Study Area in the Silver Creek Hills at the northern end of Coyote Ridge, to the southwest of Anderson Reservoir, and in the Santa Cruz Mountain foothills near Llagas Creek.

Mixed serpentine chaparral provides habitat for wildlife species that are adapted to drier and warmer climates. Avian species such as the California thrasher, wrentit, and Anna's hummingbird are resident in chaparral habitats. Yellow-rumped warblers (*Dendroica coronata*), orange-crowned warblers (*Vermivora celata*), and several species of sparrows may forage in mixed serpentine chaparral during the winter. Many reptile species are found in this habitat, such as the common kingsnake, gopher snake, western rattlesnake, southern alligator lizard, and western fence lizard. Mammal species such as brush rabbits, California mice, and San Francisco dusky-footed woodrats may also occur.

Northern Coastal Scrub/Diablan Scrub. Northern coastal scrub/Diablan coastal scrub occurs at elevations below 300 feet on south facing, rocky slopes and is dominated by black sage and California sagebrush with poison oak. Common herbaceous species include wild cucumber (*Marah fabaceus*), naked-stemmed buckwheat (*Eriogonum nudum*), and California bee plant (*Scrophularia californica*). Northern coastal scrub/Diablan scrub occurs primarily in patches within the Santa Teresa Hills north of Alamitos Creek, in the southeast portion of the Silver Creek area, near Calero and Anderson Reservoirs, and north of Llagas Creek. Similar to the northern mixed chaparral/chamise chaparral habitat, special-status species such as Hall's bush mallow (*Malacothamnus hallii*), Loma Prieta hoita (*Hoita strobilina*), and rock sanicle (*Sanicula saxatilis*) occur within this habitat type.

Resident avian species found in coastal scrub habitats in the study area include bushtits, California towhees, northern mockingbirds, California thrashers, spotted towhees, and Anna's hummingbirds. During migration, yellow-rumped warblers and orange-crowned warblers also forage in this habitat. Common yellowthroats and white-crowned (*Zonotrichia leucophrys*),

golden-crowned (*Zonotrichia atricapilla*), and Lincoln's sparrows (*Melospiza lincolnii*) winter in coastal scrub habitat in the Study Area. Other wildlife species that are associated with coastal scrub habitats include black-tailed jackrabbits, desert cottontails, brush rabbits, house mice, deer mice, striped skunks, western fence lizards, and gopher snakes.

Northern Mixed Chaparral/Chamise Chaparral. Northern mixed chaparral/chamise chaparral is dominated by chamise and manzanita species with an understory of toyon, scrub oak, ceanothus, California coffeeberry (*Rhamnus californica*), and California yerba santa (*Eriodictyon californicum*). Dense stands of chamise chaparral intermix with a mosaic of other northern chaparral types at too fine a scale to be shown separately on Figures 3a, 3b, and 3c. Northern mixed chaparral/chamise chaparral occurs within the Study Area primarily in the Santa Teresa Hills and to the south and north of the upstream reaches of Llagas Creek. Hall's bush mallow, Loma Prieta hoita, and rock sanicle occur within chaparral habitat types and have been documented from the Santa Teresa Hills and at the northern end of Coyote Ridge. In particular, rock sanicle occurs on loose talus within northern mixed/chamise chaparral habitat.

The community of wildlife species that occurs in northern mixed chaparral/chamise chaparral habitat is similar to the community of species that occurs in the mixed serpentine chaparral habitat, described above. In addition, pallid bats may roost on talus slopes in northern mixed chaparral habitat during the winter.

Coyote Brush Scrub. Coyote brush scrub is a type of northern coastal scrub/Diablan coastal scrub that is dominated by coyote brush. It is generally found on windy, exposed sites with shallow, rocky soils (Holland 1986) and adjacent to riparian areas. Many patches of coyote brush scrub too small to be mapped in Figures 3a, 3b, and 3c occur along streams in the Study Area. The largest mapped patch of this habitat type is at the Santa Clara Valley Transportation Authority (SCVTA) riparian mitigation site northeast of the State Route 85/U.S. 101 interchange on the west side of Coyote Creek. No special-status plant species occur specifically within coyote brush scrub habitat.

Because a majority of the coyote brush scrub habitat in the Study Area is surrounded by other habitats, such as annual grassland and oak woodland, wildlife utilization of this habitat is largely determined by adjacent habitat type and quality. Mammal species that commonly occur in this habitat include the coyote, bobcat, brush rabbit, and San Francisco dusky-footed woodrat. California mice, which occupy woodrat nests, are also present here. The California thrasher, California towhee, wrentit, loggerhead shrike, lesser goldfinch, and Anna's hummingbird are resident birds in coyote brush habitats throughout the Study Area. Sparrows also often use this habitat for cover during winter and migration. Reptiles commonly observed in this habitat include the gopher snake, western rattlesnake, southern alligator lizard, and western fence lizard.

OAK WOODLAND

Oak woodland communities in the South Bay typically occur at elevations from 300 to 3500 feet and are characterized by native California oak trees sparsely distributed within a relatively open savannah/grassland. Representative understory plants are weedy annual grasses, some native and introduced forbs, and occasional shrubs such as toyon, California coffeeberry, and common snowberry (*Symphoricarpos albus* var. *laevigatus*). Special-status species such as big-scale

balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*) and robust monardella (*Monardella villosa* ssp. *globosa*) occur within oak woodland habitats. Six oak woodland habitat types are included on Figures 3a, 3b, and 3c on the basis of mapping for the draft HCP/NCCP (ICF Jones & Stokes 2009). These oak woodland types include valley oak woodland, mixed oak woodland and forest, coast live oak woodland and forest, blue oak woodland, foothill pine-oak woodland, and mixed evergreen woodland.

Many of the oak woodland habitats within the Study Area have been fragmented by urban and suburban land uses. Nevertheless, they still support many of the common oak-associated wildlife species in the region. Throughout all four oak woodland habitat types, the western scrub-jay, acorn woodpecker (*Melanerpes formicivorus*), oak titmouse (*Baeolophus inornatus*), Nuttall's woodpecker, chestnut-backed chickadee, spotted towhee, and white-breasted nuthatch (*Sitta carolinensis*) are year-round residents. Dusky-footed woodrats are also frequently found in oak woodlands. The deer mouse, California mouse, and the introduced eastern gray squirrel nest and forage in this habitat as well. Reptiles found in adjacent grassland and scrub habitats also occur regularly in oak woodland habitats. Bats, such as the pallid bat, may use hollows of larger, older oak trees for roosting in open-canopy oak woodland. The California myotis and long-eared myotis (*Myotis evotis*) may occur in areas of oak woodland with a closed canopy.

Mixed Oak Woodland and Forest. Mixed oak woodland and forest habitat contains numerous oak species within a mosaic of vegetation associations; no one oak species is dominant. It is found primarily at mid-elevation on either side of the Santa Clara Valley, specifically in the southeast portion of the Study Area near Thompson Creek, in Alum Rock Park, in the Santa Teresa Hills, in the foothills of the Santa Cruz Mountains, east of Anderson reservoir, and east of the Coyote Valley. Representative oak species present in this habitat type include coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii* var. *wislizenii*), canyon live oak (*Quercus chrysolepis*), valley oak, and blue oak (*Quercus douglasii*).

Common amphibians and reptiles such as the California slender salamander (*Batrachoceps attenuatus*), western fence lizard, gopher snake, southern alligator lizard, racer, and common kingsnake make use of downed tree branches under these oak trees. Bird species commonly found in mixed oak woodland include the western bluebird, acorn woodpecker (*Melanerpes formicivorous*), northern flicker (*Colaptes auratus*), white-breasted nuthatch (*Sitta carolinensis*), and other cavity-nesting species. Raptors such as red-tailed hawks as well as predatory mammals such as coyotes and American badgers forage on ground squirrels that are often present in oak woodland habitats. Black-tailed deer browse the lower branches of the oaks.

Coast Live Oak Woodland and Forest. This habitat type is dominated by coast live oak, although other oak species, California bay, and big leaf maple (*Acer macrophyllum*) may also occur scattered within the overstory. California blackberry (*Rubus ursinus*) and poison oak occur within the understory. Coast live oak woodland and forest occurs at lower elevations, typically on steep slopes, in the foothills east of Milpitas, within the Santa Teresa Hills, near Silver Creek, west of Coyote Valley, east of Anderson Reservoir, and near Almaden Country Club (north of the Guadalupe Reservoir and west of the Santa Teresa Hills). Characteristic oak woodland-associated wildlife, as described above, typify the animal communities associated with this habitat type, but in particular, species associated with dense, brambly understory such as

blackberry and poison oak, such as dusky-footed woodrats, spotted towhees, and Bewick's wrens (*Thryomanes bewickii*), tend to occur commonly in this habitat type.

Valley Oak Woodland. Valley oak woodland habitat is characterized by a fairly open canopy of valley oaks with a grassy understory similar to that described in the California annual grassland habitat section, above. Valley oak woodland habitat occurs primarily on valley bottoms with easy access to groundwater. There are typically no other tree species present. Poison oak, California rose, and coyote brush occur sparsely within the understory. Within the Study Area, valley oak woodland is found in the Coyote Valley area, along northern portions of Coyote Ridge, and in patches surrounding Anderson Reservoir. The CDFG (2007) considers valley oak woodland to be a sensitive vegetation community.

Valley oak woodland habitat in the Coyote Valley is frequented by acorn woodpeckers, yellow-billed magpies (*Pica nuttalli*), oak titmice, and a variety of raptors. Red-tailed hawks, American kestrels, and white-tailed kites nest in oaks and forage in surrounding grasslands and agricultural areas. California ground squirrels and valley pocket gophers are common residents of this habitat type, and a number of species of bats may roost in mature valley oaks containing cavities.

Blue Oak Woodland. Blue oak woodland habitat is dominated by blue oak. Blue oak woodland varies considerably in the understory species present; in some cases, there are no associated species, just a thick leaf litter, and in others, California buckeye occurs with California rose and grass species. Blue oak woodland habitat often occurs adjacent to chaparral and California annual grassland habitats. In the Study Area, blue oak woodland is present in patches on the western slope adjacent to the Coyote Valley, north of Guadalupe Reservoir, west of Calero Reservoir, along Llagas Creek, and east of Anderson Reservoir. The CDFG (2007) considers blue oak woodland to be a sensitive vegetation community.

Those wildlife species associated with other oak woodland habitats, as described above, typify the animal communities associated with this habitat type. In particular, the wildlife species found in the small patches of blue oak woodland in the Study Area are determined largely by adjacent habitat type and quality. Adjacent chaparral and California annual grassland habitats determine the structure of the wildlife communities in oak woodland habitats, and these communities are expected to vary based on their location in the Study Area.

Foothill Pine - Oak Woodland. This habitat type is found where foothill pine (*Pinus sabiniana*) intergrades with blue oak and mixed oak woodlands. Foothill pine-oak woodland typically occurs within and surrounding valley floors in foothill areas. It is often associated with chaparral communities (in steeper areas) or adjacent to other oak land-cover types in bottomlands. This habitat can be located on serpentine soils. In steeper areas, the canopy is dominated by emergent foothill pine over a dense understory comprised of a similar assemblage of shrubs to that found in the adjacent chaparral and scrub communities, along with non-native annual grasses and forbs. Associated shrub species can include ceanothus species, bigberry manzanita, California coffeeberry, poison-oak, silver lupine (*Lupinus albifrons*), blue elderberry, California yerba santa, rock gooseberry (*Ribes quercetorum*), and California redbud (*Cercis orbiculata*). At lower elevations, blue oaks, interior live oaks, coast live oaks, or valley oaks, and California buckeye become more prevalent. These species then form a closed canopy layer

beneath the taller pine canopy that tends to exclude a dense shrub and forb understory. Within the Study Area, areas of foothill pine oak woodland are located adjacent to and east of Anderson Reservoir, in the foothills of Santa Cruz Mountains south of the Santa Teresa Hills, and in Alum Rock Park (Figures 3a, 3b, and 3c).

The community of wildlife species that occurs in foothill pine-oak woodland habitats in the Study Area is similar to the communities of species that occur in blue oak and mixed oak woodlands. Adjacent chaparral habitat communities may also contribute to the species found in small patches of foothill pine-oak woodland. At lower elevations the more open understory in this habitat will tend to support a less dense wildlife community, but the increased prevalence of oaks and California buckeye in these areas support a higher abundance of the common oak woodland-associated species described above.

Mixed Evergreen Forest. Dominant species in this land-cover type are evergreen broadleaved trees, such as California bay, madrone, tanoak (*Lithocarpus densiflorus*), and all three species of live oak: coast live oak, interior live oak, and canyon live oak. Conifers may also be occasionally present and include Douglas fir (*Pseudotsuga menziesii*), Coulter pine (*Pinus coulteri*), and foothill pine. Some deciduous species, such as California buckeye and bigleaf maple (*Acer macrophyllum*), can also be found in mixed evergreen forests. Depending on water and light availability, the understory of mixed evergreen forest varies from dense shrub thickets of shade-tolerant species, such as toyon, poison-oak, and various species of ferns, to areas dominated by sparse grass and forb cover. This habitat type is often associated with oak woodlands in the Study Area, and the transitional zones between the two land-cover types are typically gradual. The ecotonal areas often exhibit a decrease in cover of live oaks and an increase in California bay, madrone, and tanoak. This habitat occurs sporadically on north-facing slopes with well-drained, coarse soils in the southern portion of the Study Area, primarily east of Anderson Reservoir (Figure 3c).

Wildlife species found in mixed evergreen forests are similar to those found in oak woodland habitats. Larger trees may provide nesting sites for raptor species such as the western screech-owl (*Megascops kennicottii*), northern pygmy-owl (*Glaucidium gnoma*), great horned owl, red-shouldered hawk, and red-tailed hawk.

WETLAND

Throughout the past century, wetlands have been drained, filled, and diked for development, farming, and landfill use throughout the South San Francisco Bay and surrounding areas. These wetlands have been converted over time to more developed habitat types, from vast areas of urbanized land and drainages lined with concrete culverts to diked marsh protected by extensive levee systems. This has led to a rapid decline in these natural communities and the species that they support. All wetland communities are considered to be sensitive due to this significant historical and on-going loss. Six wetland biotic habitats occur in the general Study Area: seasonal wetland, muted tidal/diked marsh, tidal salt marsh, tidal brackish marsh, tidal freshwater marsh, and non-tidal freshwater marsh.

Wetland-associated wildlife communities vary considerably depending on salinity, dominant plant species, and hydrology (*e.g.*, duration and depth of ponding). Wildlife communities are thus described for each wetland habitat type below.

Tidal Brackish Marsh. Tidal brackish marsh habitat occurs in the upper intertidal reaches of sloughs and creeks draining into the Bay where vegetation is subject to tidal inundation diluted by freshwater flows from upstream. Within the Study Area, tidal brackish/freshwater marsh occurs only in limited areas along the tidal reaches of San Tomas Aquino Creek, the Guadalupe River/Alviso Slough near Alviso, middle reaches of Artesian Slough, and downstream reaches of Coyote Creek, all near San Francisco Bay. This habitat type is dominated by emergent, vascular plant species adapted to intermediate (brackish) soil water salinities and consists of brackish marsh species including short bulrushes such as alkali bulrush (*Scirpus robustus*) and saltmarsh bulrush (*Scirpus maritimus*).

Tidal brackish marshes receive large, regular inputs of fresh water, and as such wildlife communities are largely similar to those that occur in tidal marshes, with the potential for additional species to occur that prefer freshwater marshes. Marsh wrens, red-winged blackbirds, song sparrows, and common yellowthroats are common breeders in brackish marshes. Salt marsh species such as the federally endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) and California clapper rail (*Rallus longirostris obsoletus*) occur rarely in the brackish marsh habitat. Many additional tidal marsh and freshwater marsh species may forage in these areas, including ducks, herons, egrets, sparrows, larger shorebirds, and swallows.

Muted Tidal/Diked Salt Marsh. Areas of degraded muted tidal/diked marsh occurs in the northern portion of the Study Area to the north and west of the WPCP and landfill areas. It is dominated by pickleweed (*Salicornia virginica*) and upland, ruderal vegetation, although small patches of alkali heath (*Frankenia salina*), gumplant (*Grindelia stricta*), and spearscale (*Atriplex triangularis*) also occur in these areas. Non-native perennial pepperweed (*Lepidium latifolium*), fennel, clover, and bristly ox-tongue (*Picris echioides*) have invaded much of this habitat type within the Study Area.

The muted tidal and diked salt marshes in the Study Area provide important habitat for waterbirds. In some areas, shallow-water areas provide roosting and foraging habitat for shorebirds such as Wilson's phalarope, red-necked phalarope, black-necked stilt, American avocet, western sandpiper (*Calidris mauri*), and least sandpiper. Ducks such as green-winged teal (*Anas crecca*), northern pintails (*Anas acuta*), mallards, gadwall, forage in pools and channels within these marshes, and the latter two species nest in these marshes. Other bird species that use these habitats include the northern harrier, which may nest and forage in extensive tracts of muted tidal marsh habitat, and Bryant's savannah sparrow, which nests in pickleweed and peripheral halophytes in the upper portions of diked salt marsh habitat.

The salt marsh harvest mouse, an endangered species, is dependent on dense vegetative cover, usually in the form of pickleweed and other salt-dependent or salt-tolerant vegetation in both tidal and diked salt marshes. House mice and California voles are common in diked and tidal salt marshes, particularly in the pickleweed-dominated high marsh and the peripheral halophyte zone, where the western harvest mouse (*Reithrodontomys megalotis*) also occurs. Deer mice,

shrews, and rats are also recorded in these marshes during salt marsh harvest mouse trapping studies. Due to the salinity of these marshes, amphibians are generally absent from these habitats. Reptiles such as the gopher snake and common garter snake (*Thamnophis sirtalis*) forage in these marshes.

Tidal Salt Marsh. Approximately 287 acres of tidal salt marsh occurs in the Study Area, primarily along the outboard (tidal) side of the levees that separate saline managed ponds from San Francisco Bay. Salt marshes in the Bay typically consist of three zones: low marsh dominated by cordgrass (*Spartina* spp.) and typically occurring below the mean high water (MHW) mark; middle marsh dominated by pickleweed and occurring above MHW; and above this, a transitional high marsh zone with a mixture of pickleweed and other moderately halophytic species that can tolerate occasional high tides. This high marsh habitat often extends up levee banks in a disturbed ecotone that contains native marsh species as well as ruderal ("disturbance-loving"), non-native, salt-tolerant species such as iceplant (*Mesembryanthemum nodiflorum*), New Zealand spinach (*Tetragonia tetragonioides*), Russian thistle (*Salsola soda*), and Australian saltbush (*Atriplex semibaccata*), and the invasive perennial pepperweed. Differences in transitional, pickleweed, and cordgrass salt marsh habitat types also affect wildlife use and sedimentation in the slough and channels draining into the Bay.

There are two species of dominant cordgrass in the South Bay, the native Pacific cordgrass (*Spartina foliosa*) and smooth cordgrass (*S. alterniflora*), which is native to the east coast of North America. Smooth cordgrass easily hybridizes with Pacific cordgrass, which can lead to widespread distribution of the hybridized species within a short amount of time. Smooth cordgrass and its hybrids are the predominant invasive plant species found in the tidal marshes within the Study Area. Such infestations not only affect the foodweb, but also grow lower into channels than the native cordgrass. This reduces the extent of mudflats and can result in the loss of channels to vegetation encroachment and subsequent sedimentation (PWA and H.T. Harvey & Associates 2006).

Other halophytic plant species commonly found in salt marsh habitat located within the South Bay include alkali heath, saltgrass (*Distichlis spicata*), saltmarsh dodder (*Cuscuta salina*), fleshy jaumea (*Jaumea carnosa*), spearscale, sea lavender (*Limonium californicum*), and marsh gumplant (*Grindelia stricta* var. *angustifolia*). These species typically occur above the MHW mark in the middle marsh and less disturbed areas of high transitional marsh zone.

Tidal marshes in the Study Area and the South Bay are remnants of their former extent, but support high densities of many wildlife species including several species that are endemic to the San Francisco Bay. Marshes dominated by pickleweed support the state and federally endangered salt marsh harvest mouse as well as the salt marsh wandering shrew (*Sorex vagrans halicoetes*). The California vole is often the most common small mammal species found in tidal marshes. The state and federally endangered California clapper rail nests in cordgrass, dense stands of pickleweed, and marsh gumplant in tidal marsh habitats in the South Bay; this species is found in the lower marsh zone where numerous small tidal channels are present. Alameda song sparrows (*Melospiza melodia pusillula*) and savannah sparrows also nest in tidal marshes; Alameda song sparrows prefer dense herbaceous vegetation throughout the tidal marsh, while savannah sparrows nest in pickleweed and high transitional marshes in upland ecotones. Other

avian species that nest in tidal marshes in the South Bay include several species of ducks, herons, and egrets (Gill 1977). California black rails may winter in small numbers in tidal marshes in the South Bay. Shorebirds, swallows, blackbirds, and other avian species roost, often in large numbers, in tidal marsh habitats in the South Bay, but do not breed in these areas.

Tidal Freshwater Marsh. Approximately 212 acres of freshwater marsh habitat occur along the upstream, tidally influenced reaches of sloughs within the Study Area (Figure 3a). These areas include the marshes found in the upper reaches of tidal portions of Coyote Creek, Artesian Slough, Alviso Slough, and Guadalupe Slough where it transitions from tidal brackish marsh. Tidal freshwater marshes are typically only exposed to tidal influence during very high, spring tides, and for the rest of the year only convey freshwater from upstream reaches in the foothills and valley floor. Some of these areas may also have saline sediments resulting from historic conditions, but because these reaches are otherwise flushed with fresh water on a daily basis, they support mostly freshwater emergent vegetation. Such marshes are hydrologically dynamic, and the water-surface elevation can vary by as much as ten feet depending on daily tidal activity and seasonal, freshwater flows from upstream.

Broad-leaf cattail (*Typha latifolia*) and bulrushes such as California bulrush (*Scirpus californicus*) and hard-stem bulrush (*Scirpus acutus*) typically dominate this freshwater marsh habitat, and often form dense stands. Patches of perennial pepperweed and thickets of California blackberry also occur in regions of tidal freshwater marsh.

Wildlife species found in tidal freshwater marsh habitats in the Study Area are similar to those found in freshwater marsh habitats. Tidal marsh species such as California clapper rails and salt marsh harvest mice do not occur in freshwater marsh habitats; however, because tidal freshwater marsh is transitional between tidal marsh and freshwater marsh, Alameda song sparrows may be present in these areas. Tidal freshwater habitats in the Study Area are usually characterized by very dense vegetation, which may allow higher densities of song sparrows, common yellowthroats, red-winged blackbirds, and other freshwater marsh-nesting birds to be present.

Non-tidal Freshwater Marsh. Coastal and valley freshwater marsh is dominated by a variety of tules (*Scirpus* spp.), rushes (*Juncus* spp.), sedges (*Cyperus* spp.), and cattail (*Typha* spp.). Patches of the invasive perennial pepperweed and thickets of native California blackberry also occur within and adjacent to freshwater marsh habitat. This habitat type is present primarily where perennial or near-perennial inundation by shallow, non-tidal fresh water occurs in an open (*i.e.*, not wooded) environment. Within the Study Area, freshwater marsh habitat is present primarily in Coyote Valley and at a marsh restoration site north of State Route 237 between San Tomas Aquino and Calabazas creeks. Coyote brush, fennel, and poison hemlock (*Conium maculatum*) occur along the margins of this habitat type in the Study Area, primarily within Coyote Valley. Smaller patches of freshwater marsh habitat not visible due to scale in Figures 3a, 3b, and 3c occur along and within a number of streams throughout the Study Area.

Freshwater marshes provide habitat for numerous waterbird species, including ducks, gulls, terns, herons, egrets, and other waterbirds. The sora (*Porzana carolina*) and Virginia rail (*Rallus limicola*) forage in freshwater marshes in the Study Area during migration and in winter. American coots, common moorhens (*Gallinula chloropus*), pied-billed grebes (*Podilymbus*

podiceps), and several species of ducks breed in freshwater wetlands, channels, and ponds in and around emergent vegetation in the Study Area. Passerine species that breed in freshwater marshes include the marsh wren (*Cistothorus palustris*), song sparrow, common yellowthroat, and red-winged blackbird. Amphibians such as the Pacific treefrog, bullfrog, and western toad are also present in this habitat. Special-status amphibians such as the California tiger salamander and California red-legged frog (*Rana draytonii*) are not known to breed in the small patches that have been mapped as freshwater marsh habitat within the Study Area.

Seasonal Wetland. Seasonal wetland habitat in the Study Area primarily occurs within the Coyote Valley and in several locations in the Alviso area on the WPCP buffer lands. In addition, there are numerous seasonal wetlands within agricultural lands, particularly in the Coyote Valley, that were not mapped due to their small size. These wetlands form during the rainy season because of underlying clay hardpan layers that prevent water from percolating into the ground water system. These pools evaporate during the summer months, creating an environment that hosts a diverse display of annual wildflowers that bloom in concentric rings around the receding water line. Many endemic wildflowers and herbs that have adapted to these environments are often rare because of the significant loss of these habitat types regionally. Seasonal wetland habitat supports the maroon-spotted downingia (*Downingia concolor*), flat-faced downingia (*Downingia pulchella*), yellow-rayed goldfields (*Lasthenia glabrata*), and Douglas meadowfoam (*Limnanthes douglasii* ssp. *douglasii*). Special-status species such as brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), Hoover's button celery (*Eryngium aristulatum* var. *hooveri*), and Contra Costa goldfields (*Lasthenia conjugens*) could occur or have historically been known to occur in the more saline-alkaline seasonal wetlands near Alviso.

Wildlife use of seasonal wetlands in the Study Area depends largely on the duration and depth of ponding of the wetlands, the extent of open water, and the structure and type of emergent vegetation that is present. Most of the seasonal wetlands in the Study Area provide little open water, and generally do not provide deep water. As a result, they are not used heavily by waterbirds such as ducks, grebes, and herons. Song sparrows and red-winged blackbirds nest in vegetation within those seasonal wetlands that support taller, denser vegetation, and a variety of finches, sparrows, and other birds use this vegetation for cover and foraging habitat. Seasonal wetlands that provide standing water for at least several months could support successful breeding by western toads and Pacific treefrogs, while seasonal wetland swales that do not provide sufficient ponding may provide only foraging habitat and moist refugia for these amphibians. Given the ephemeral nature of many of the wetlands within the Study Area, most are not expected to pond water long enough (*i.e.,* at least into May) to support successful breeding by California tiger salamanders, and they definitely do not pond water long or deep enough to provide breeding habitat for California red-legged frogs. Common garter snakes and western terrestrial garter snakes may forage in these wetlands for amphibian larvae.

AQUATIC/OPEN WATER

Aquatic or open water habitats are permanently or semi-permanently flooded, and support less than 5% vegetation in emergent or submerged states. Such areas are described below in terms of the hydrologic regimes and the salinity of the water.

Saline Managed Ponds. Approximately 5% of the Study Area is occupied by active and inactive saline managed ponds (Figure 3a) originally created for salt production and commonly referred to as salt ponds. Most of the saline managed ponds within the Study Area, typically referred to as the "Alviso Salt Ponds", are inactive, because they have been taken out of salt production in order to restore habitat that is more natural over time. However, these areas are still managed in attempts to achieve specific salinity and hydrologic circulation regimes. Management focuses primarily on meeting discharge requirements for salinity and dissolved oxygen and for selected habitat goals and conditions (*e.g.*, shallow water for shorebirds, deeper water for waterfowl and diving birds) when this is feasible while still meeting water quality requirements. Saline managed ponds are located outside the City's UGB.

Generally, saline managed ponds contain expanses of non-tidal, highly saline open water, along with areas of bare mudflats, and are surrounded by mostly barren levees. Vegetation is sparse due to the high salinity levels, and where it does occur, it is limited primarily to levees. Thus, saline managed ponds provide little to no cover for small mammals or reptiles, and provide nesting habitat only for species that nest on the bare levees and the occasional islands that have been created (by breaching of levees or deposition of material dredged from borrow ditches) within the ponds.

Saline managed ponds in the South Bay provide habitat for numerous waterbirds each year, including shorebirds, ducks, and terns (Accurso 1992; Harrington and Perry 1995; Page et al. 1999; Stenzel and Page 1988; Takekawa et al. 2001). These waterbirds use the saline managed ponds and their associated islands and levees primarily for roosting. Large mixed-species flocks of shorebirds, gulls, terns, cormorants, pelicans, herons, and other waterbirds often roost on levees, in shallow water, or on exposed mud in the saline managed ponds.

The invertebrate communities that occur in saline managed ponds vary considerably depending on the salinities of the ponds. Most of the ponds in the Alviso Complex are managed at salinities close to the salinity of the Bay, generally below 40 ppt. These ponds support high abundances of macroscopic green algae (particularly *Rhizoclonium* spp. and *Enteromorpha* spp.), microscopic algae and diatoms, and occasionally the vascular plant wigeon grass (*Ruppia maritima*). The density and diversity of benthic invertebrates in these ponds is also relatively high; invertebrate species in these ponds include nematodes, polychaete worms, rotifers, arthropods, and crustaceans. Fish species that prey on invertebrates in these low-salinity ponds include topsmelt (*Atherinops affinis*), yellowfin gobies (*Acanthogobius flavimanus*), longjaw mudsuckers (*Gillichthys mirabilis*), rainwater killifish (*Lucania parva*), and staghorn sculpin (*Leptocottus armatus*). Pisciverous birds forage regularly over these ponds, and dabbling ducks that feed on invertebrates and aquatic vegetation can be present in high concentrations.

Some of the ponds in the Alviso area may be managed as higher-salinity ponds. Wildlife communities in these saline managed ponds are less complex, and are dominated by fewer species compared with the lower-salinity ponds. Unicellular algae such as *Stichococcus bacilaris* are present (replacing macroscopic algae), and the brine shrimp *Artemia franciscana*, which has an optimal salinity of 70-175 ppt, is the most common invertebrate. The reticulate water boatman (*Trichocorixa reticulata*) is also found in higher-salinity ponds, and brine flies reach very high densities in some ponds. These three invertebrate species provide an abundant

food source for shorebirds, gulls, swallows, and other birds in shallow water where vertebrates can prey on these species.

Freshwater Ponds/Reservoirs. Isolated ponds, canals/ditches, and two small reservoirs, as well as percolation ponds (off-stream groundwater recharge ponds), represent the open water surfaces mapped in the Study Area. Canals and ditches were not mapped by the HCP/NCCP, and are too narrow to appear on Figures 3a, 3b, and 3c, but they convey runoff throughout a variety of habitats in the Study Area. In addition, riverine habitat along the numerous creeks, rivers, and streams that flow through the Study Area contain aquatic habitat; these were mapped as riparian forest and scrub habitats, and their biotic communities were previously described under "Riparian Forest and Scrub" (above).

Very few naturally occurring ponds exist within the Study Area. Laguna Seca, located at the north end of Coyote Valley, is the most obvious example of a natural pond that still remains in the Study Area (albeit in an altered condition). However, many man-made ponds, including stock ponds or ornamental ponds associated with golf courses and parks, occur throughout the Study Area. Other waterbodies within the Study Area include reservoirs such as Almaden Lake, the Parkway Lakes, Lake Cunningham, Calero Reservoir, the northern portion of Anderson Reservoir, percolation ponds along Guadalupe Creek and Coyote Creek, and a number of others as mapped on Figures 3a, 3b, and 3c.

Common resident birds that occur in ponds, lakes, and reservoirs throughout the Study Area include the pied-billed grebe, double-crested cormorant, great egret, snowy egret (*Egretta thula*), Canada goose, mallard, common merganser (*Mergus merganser*), American coot, and killdeer, among others. Numerous species of wintering ducks, such as the northern shoveler, lesser scaup (*Aythya affinis*), and bufflehead (*Bucephala clangula*), occur in these habitats during fall and winter. Shorebirds such as the greater yellowlegs (*Tringa melanoleuca*), spotted sandpiper (*Actitis macularia*), and others forage and roost at the edges of these habitats during migration and winter.

The Coyote Creek Reach 1A pond along lower Coyote Creek was created and is managed specifically for waterbird use and provides habitat for numerous shorebirds, waterfowl, gulls, terns, and larger waders. Regular monitoring by the San Francisco Bay Bird Observatory (SFBBO) of this 16-acre pond has recorded more than 57 species of waterbirds using the pond, the most common of which were dowitchers, American avocets, northern shovelers, and California gulls (Strong 2003). Additional birds using this pond include pectoral sandpipers (*Calidris melanotos*), western sandpipers, and Wilson's phalaropes, as well as large numbers of nesting American avocets, black-necked stilts, and ducks (Santa Clara County Bird Data Unpublished).

A number of fish use the aquatic habitats in the Study Area. Those listed previously as occurring within streams and rivers also occur in the instream ponds, such as Almaden Lake and the Parkway Lakes. Most of the fish occurring in off-channel ponds and lakes are non-natives, such as the green sunfish (*Lepomis cyanellus*), mosquitofish, and golden shiner (*Notemigonus crysoleucas*). Lake Cunningham is stocked with rainbow trout and channel catfish (*Ictalurus punctatus*), and also contains bass (*Micropterus* spp.), common carp (*Cyprinus carpio*), sunfish,

and bluegill (*Lepomis macrochirus*) (Fishing Bytes 2009). Cormorants and pelicans exhibit movements between foraging areas at inland reservoirs and the South Bay, and they, ospreys (*Pandion haliaetus*), Forster's terns, and Caspian terns forage for fish in a number of ponds and reservoirs in the Study Area. Since the late 1990s, small heron rookeries have become established on islands in inland reservoirs in the South Bay (*e.g.*, Lake Cunningham and Almaden Lake); these herons and egrets forage largely on fish in these waterbodies.

Amphibian species that breed in ponds and reservoirs throughout the Study Area include the Pacific treefrog, the bullfrog, and the western toad. Western pond turtles are known to occur in ponds on the Santa Teresa Golf Course, in Almaden Reservoir, in Calero Reservoir, and in other small ponds throughout the Study Area (H. T. Harvey & Associates 1999a, CNDDB 2010). This species may occur in pond and reservoir habitats throughout the Study Area, though in urban areas, nesting habitat is limited or absent. California tiger salamanders are known to breed in several ponds in the southern part of the Study Area, and near Communications Hill, where upland aestivation habitat is available and non-native aquatic predators such as bullfrogs, green sunfish, mosquitofish, and crayfish (*Procambarus clarkii*) are absent. California red-legged frogs may also occur in pond habitats and along streams at the periphery of the Study Area, but they have apparently been extirpated from the Santa Clara Valley floor (H. T. Harvey & Associates 1997). A variety of mammals come to ponds and reservoirs to drink, and non-native muskrats (*Ondatra zibethicus*) occur regularly in some areas.

Mudflats. Approximately 135 acres of intertidal mudflat habitat are found in the Study Area in the sloughs and below marshes in the Don Edwards National Wildlife Refuge (Figure 3a). Mudflat habitat occurs in intertidal areas from below mean lower low water to mean tide level. Such intertidal areas are expanses of unvegetated mud just beyond the lower edge of tidal wetlands and between the low-flow channel and edge of wetlands within the tidal reaches of slough and creek channels that drain to the Bay in Alviso. Mudflats are generally covered by shallow water during high tide, and are exposed during low tides. These are dynamic depositional features, changing in extent and location depending on erosion and deposition of sediments. Narrow mudflats occur along the edges of the upper reaches of tidal sloughs and channels and on the outboard side of some saline managed pond levees, while much more extensive flats are present at the mouths of the major sloughs. For example, a large expanse of newly formed mudflat habitat exists at the mouths of Alviso Slough and Guadalupe Slough, while small areas of mudflat are surrounded by freshwater marsh at the upper end of Coyote Slough. This habitat typically supports less than 10% cover of emergent vegetation, typically in the form of cordgrass and annual pickleweed (*Salicornia europaea*) that is too sparse to map as distinct salt marsh habitat. This habitat is found outside the City's UGB.

Mudflats located on the bayside of ponds in the Alviso area provide important habitat for resident and migratory bird populations, as well as for fishes and invertebrates. Crustaceans, polychaete worms, mollusks, and other invertebrates live on or just below the surface of the mud in these areas. Detritus from tidal marshes, phytoplankton that settle in the water column, and algae and diatoms that grow on mudflats create substantial nutrient availability that results in high productivity of these invertebrates (Life Science 2003; Warwick and Price 1975). During high tides, fish school over mudflats to forage on these invertebrates. As the tide recedes, the invertebrates provide a primary food source for large numbers of birds, especially shorebirds.

Shorebirds, gulls, terns, American white pelicans, ducks, and Pacific harbor seals (*Phoca vitulina richardsi*) often use exposed mudflats as roosting or loafing areas.

Tidal Aquatic. Approximately 133 ac of tidal aquatic intertidal habitat is present in the Study Area within downstream reaches of Coyote Creek where it meets the Bay, Guadalupe Slough, Artesian Slough, and Alviso Slough, although most tidal aquatic habitat within San Francisco Bay is outside of the Study Area. Such areas have fully tidal estuarine influence and are too deep to support low tidal salt marsh and cordgrass species. Depending on tidal action, such areas can range from relatively clear to extremely turbid. Wildlife in these areas is somewhat similar to that described above in the mudflats section (mudflats are regularly inundated with tidal waters), but these habitats that are more benthic in nature and are not exposed, even during very low tides, are utilized differently by wildlife.

The tidal sloughs and channels in the Alviso area, including Guadalupe Slough, Artesian Slough, and Alviso Slough, provide important habitat for large numbers of benthic and pelagic invertebrates and fish. These channels, which are rich in detritus, serve as important nurseries and feeding areas for estuarine fish species, and for the California bay shrimp (*Crangon franciscorum*). During the nonbreeding season, diving ducks are abundant near the mouths of the larger tidal sloughs, while dabbling ducks are present in high densities in the smaller and shallower channels. Terns forage in the larger and mid-sized channels for fish, while herons and egrets will forage in shallower areas.

MOVEMENT OF NATIVE FISH AND WILDLIFE SPECIES AND MOVEMENT CORRIDORS

Wildlife movement within or in the vicinity of the Study Area takes many forms, and is different for the various suites of species associated with these lands. Bird and bat species move readily over the landscape, foraging over and within both natural lands and landscaped areas of the City. Fish species move along the stream corridors, some as residents, some as anadromous species migrating upstream into streams for spawning and rearing and downstream to marine foraging areas. Mammals of different species move within their home ranges, but also disperse between patches of high-quality habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving to central breeding areas, upland refugia, or hibernacula in a predictable manner, but also dispersing to new areas. Some species, especially among the birds and bats, are migratory, moving into or through the City during specific seasons. Aside from bats, there are no other mammal species in the vicinity of the Study Area that are truly migratory. However, tule elk (*Cervus elaphus nannodes*), which occur on Coyote Ridge, around Anderson Reservoir, and in areas east of the Study Area, disperse through portions of the Study Area, and black-tailed deer shift habitat use somewhat between the breeding and calving seasons. The young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances, in search of new areas to establish themselves within home ranges.

Wildlife corridors, while long recognized as important, have been a major topic in conservation ecology over the past few decades, partly in response to increasing urban development and continued isolation of native habitats and species. Connections between patches of native habitat are important for maintaining wildlife populations in both patches. These connections are referred to as a wildlife corridor, which was defined by Hilty et al. (2006) as "any space, usually linear in shape, that improves the ability of organisms to move among patches of their habitats". Such corridors are scale dependent, and the requirements are different for various species. For large mammals with the ability to move long distances in short periods of time (*e.g.*, over a single night), a corridor can be relatively narrow if it supports good cover and suitable habitat exists on both ends of the corridor. For smaller animals, dispersal may take much longer, and the success of dispersal depends upon suitable habitat that provides food and shelter. In other cases, animals within the corridor are within home ranges, and individual animals may never move the entire distance between larger patches of core habitat; rather, smaller local movements and breeding activities allow for genetic exchange between more distant populations over time.

The width of corridors necessary to maintain habitat connectivity between two core habitat areas depends on a number of factors, including the length of the corridor, habitat quality within the corridor, and the species in question. However, there is very little information on the specific minimum widths of corridors necessary for maintaining connectivity for individual species. For mountain lions (*Puma concolor*) in southern California, Beier (1995) estimated that juveniles required corridors at least 0.25 miles wide if the corridors were more than 0.62 miles long. Others have suggested corridor widths of 1.2 miles or more (South Coast Wildlands 2008).

This general overview on wildlife movement in the Study Area focuses on existing conditions relating to situations within the Study Area where future growth may either impede the kinds of movements discussed above, or areas where movement can be enhanced through thoughtful

planning and policies. As a result, the following sections focus on wildlife movement through relatively undeveloped portions of the Study Area that link larger areas providing core habitat for wildlife. Some relatively natural areas, such as the portions of the Study area located at the northern end of Anderson Reservoir, on Coyote Ridge, west of Calero Reservoir, and along upper Llagas Creek, represent relatively small components of much more extensive core habitat areas rather than providing linkages or corridors between core habitat areas. Although wildlife species certainly move through such core areas, the discussion that follows focuses instead on areas that provide relatively natural habitat closer to areas of existing or proposed urban development, and whose alteration requires more detailed discussion of the potential importance of these areas in providing landscape linkages or movement corridors.

STREAMS AND RIPARIAN CORRIDORS

Major streams and associated riparian habitat corridors flowing through the City include Coyote Creek, the Guadalupe River, and their tributaries. Both waterways support anadromous fish runs, and have been identified in the second administrative draft of the HCP/NCCP as important landscape linkages. The riparian habitat corridor is also useful for migrating birds, which cue on the corridor during their movements and stop to rest and forage in riparian woodlands along these streams. The Coyote Creek Field Station of the SFBBO near the mouth of Coyote Creek has been studying bird use of the corridor for over 20 years, and has documented the seasonal use of riparian habitat as stopover areas for migratory birds. These areas within the urban setting support a suite of medium-sized (*e.g.*, raccoons, skunks, and opossums) and small mammals (*e.g.*, California voles, pocket gophers, and house mice). In the more suburban areas of the City (*e.g.*, Almaden Valley and Evergreen Valley), larger mammals such as black-tailed deer are common and move along riparian corridors and out into residential areas. The stream and riparian corridors in the rural residential, agricultural, and grassland areas within the Study Area are rich habitats for wildlife, supporting dozens of species of mammals, reptiles, and amphibians and hundreds of species of birds. They are nesting locations for many of those bird species, including many raptors. They are also important corridors of movement, especially in areas such as the Coyote Valley where these intact linear habitats can connect broader open space preserves, as described below.

COYOTE VALLEY

The Coyote Valley, as depicted in the habitat maps (Figures 2 and 3a, 3b, and 3c), is primarily an agricultural area, but it is positioned between large tracts of open land that lie to the east and west of the valley. To the east lie the serpentine grasslands of Coyote Ridge, rich stream and riparian areas that feed into Anderson Reservoir, and oak woodlands and other habitats of the Mt. Hamilton Range. To the west, the grassy ridgeline transitions to oak woodlands and riparian corridors and into the woodlands of the Santa Cruz Mountains. Both sides of the valley support an abundance of wildlife. Deer, bobcats, mountain lions, grey foxes (*Urocyon cinereoargenteus*), coyotes, and badgers are just a sampling of the large and medium-sized mammals of those habitats, and there are abundant populations of California ground squirrels in the Coyote Valley foothills. Tule elk have lately been regularly using Coyote Ridge, particularly south of Metcalf Canyon, and can be seen at times along U.S. 101. This species was reintroduced to the Mt. Hamilton Range in the 1970s and 1980s and has been slowly expanding

in that area. Pools on both sides of the valley support California tiger salamanders as well as a suite of more common amphibians.

This valley in the past supported a broad sycamore alluvial riparian forest along Coyote Creek, a large perennial freshwater pond (Laguna Seca) and its associated marshes, wet meadows, valley oak savannah, and dry grassland (Grossinger et al. 2006). Laguna Seca, which once was the terminus of Fisher Creek, is still a prominent feature of the landscape. Movement of mammals, amphibians, and reptiles was relatively unobstructed, impeded only by the high winter flows of Coyote Creek, which in most years was dry in the summer. This connectivity changed as the Santa Clara Valley developed. Anderson and Coyote Reservoirs were developed, Monterey Highway was constructed, and the Coyote Canal was built to allow flows to bypass Coyote Creek and help keep groundwater low for agricultural development. Active agriculture dominated the landscape, golf courses were developed, and the U.S. 101 Freeway was constructed. Now the area which once certainly served as an easy, short-distance crossing for wildlife to move between the Mt. Hamilton Range and the Santa Cruz Mountains is constrained by these developments, and even more so by the urban and residential developments of Morgan Hill, Gilroy, and South San José.

Monterey Highway is a formidable barrier to wildlife movement through most of the Coyote Valley. The center median is nearly continuous, with an approximately 3-foot concrete barrier topped with metal mesh. The only openings in the barrier are at major intersections at Metcalf Road, Bailey Avenue, Coyote Ranch Road, and Palm Avenue and at the connection of Fisher Creek to Coyote Creek. U.S. 101 is another formidable barrier, with fencing alongside the highway, another concrete median barrier, and only a few intersections providing potential access routes. Metcalf Road and Bailey Avenue provide overpasses over the highway, and Coyote Creek Golf Drive is an underpass. There are other barriers to movement within the area as well, including the large fenced Coyote Creek Golf Club, the electrical substation at Metcalf Road, and numerous small developed and fenced parcels.

With respect to U.S. 101, there are also a number of culverts that extend under the freeway that can be used by mammals, reptiles, and amphibians for movement. There are at least 24 such culverts, varying in size from relatively small to ~6-foot high tunnels, documented by the CDFG, the De Anza College Wildlife Corridor Stewardship Team (unpublished data), and ICF Jones and Stokes (2008) as presented in the second administrative draft HCP/NCCP. The De Anza group has been studying the wildlife of the Coyote Valley since December 2007, and they have set up camera stations on seven of these culverts to determine if wildlife were indeed crossing under U.S. 101. They noted movement through six of these culverts by a variety of species, including raccoons, bobcats, skunks, opossums, coyotes, ground squirrels, deer, and mountain lions. The camera stations were set briefly (a few days) at each culvert, and a few animals (less than 10) were detected at each station in these short periods. These animals may have been foraging within home ranges, or they may have been dispersing. Additionally, a number of animals, including badgers and a mountain lion, have been found dead on the freeway or on the overpasses. Using motion-sensing/infrared still and video cameras, the De Anza group has documented over 100 records of animals moving under the freeway at the Coyote Creek Golf Club underpass. This is clear evidence of the ability of wildlife to move under the freeway.

Once under U.S. 101, animals have ready movement corridors along Coyote Creek in the parkway. This is a rich wildlife area, with resident deer, bobcats, badgers, small mammals of a wide variety, and an occasional mountain lion. A population of California tiger salamanders exists and is preserved at the Coyote Creek Golf Club. California red-legged frogs are found on both sides of the valley, but have not been found in this section of Coyote Creek, although there was a recent report of a frog near the quarry ponds at the south end of the valley. Animals within this area still have the challenge of crossing Monterey Highway as was described above. To date, no studies have been conducted of animals moving across Monterey Highway at the three intersections.

Once past this barrier, however, open agricultural fields dominate the landscape within the Study Area with no significant additional physical barriers. Santa Teresa Boulevard and the other roadways of the vicinity present risks for roadkill, but would not prevent the movement of mammals. The De Anza group has also been observing wildlife use of the agricultural fields and searching for mammal tracks along the public roadways. They have recorded badgers, bobcats, coyotes, and foxes moving alongside the agricultural fields. These animals may be moving on regular foraging routes within their home ranges, or may be dispersing. Several road-killed badgers have been observed, and badgers have been observed denning in hills near IBM north of Bailey Avenue and once along Laguna Avenue. While varying with season and by sex, home ranges for badgers have been found to be in the general range of 400-600 acres (Messick and Hornacker 1981) so there would be considerable movement within the home range for foraging, and many of those ranges would extend across local roadways. Bobcat home ranges are typically somewhat larger, on the order of 10 square miles (Zezulak and Schwab 1980), with varying degrees of overlap between ranges of different animals. Bobcats within home ranges in the Coyote Valley would move regularly over wide areas in search of prey such as rodents and rabbits, as this species is reported to move distances in a 24-hour period ranging from 1.6 miles for an adult female to 3 miles for an adult male (Zeiner et al. 1990).

The west side of the Coyote Valley is an area that included extensive seasonal and perennial wetlands in the past, with Fisher Creek and Laguna Seca as prominent features. Laguna Seca, a large permanent lake, probably supported a substantial population of California red-legged frogs (Grossinger et al. 2006). Groundwater was very high, supporting a broad wet-meadow habitat. Some of these features are still found on the west side of Coyote Valley. Laguna Seca still exists, although reduced in size, and Fisher Creek, while channelized, still moves through this area. Draining of wetlands for agricultural purposes has resulted in drier conditions in some fields and meadows than existed historically, and today, agricultural fields in Coyote Valley generally do not pond water for long periods as a result. However, three new ponds along Bailey Avenue, which were constructed as golf course features, now pond yearlong from groundwater.

During heavy rainfall years/periods, amphibians that live on both sides of the valley begin their movements. Adult California tiger salamanders emerge from their underground refugia and move in search of breeding pools. Young salamanders move away from these pools over the first several years of their lives before reaching reproductive age. While most of these salamanders stay within 1,000-2,000 feet of breeding areas, they can move a mile or more searching for breeding pools. Similarly, California red-legged frogs move across upland habitats, including agricultural fields, during the wet season, occasionally moving up to 2 miles

or more from breeding habitat. However, the impediments to movement at Monterey Highway described above for mammals, as well as the impediments posed by vast expanses of agricultural fields containing no vegetation or burrows that provide refugia, are formidable obstacles to these amphibians, should they attempt to move across the valley floor.

The second administrative draft HCP/NCCP recognizes the preservation and, if possible, enhancement of the linkage between the Santa Cruz Mountains and the Diablo Range as an important conservation objective and is analyzing potential connections through the Coyote Valley.

SOUTH ALMADEN VALLEY URBAN RESERVE

The South Almaden Valley Urban Reserve area is a combination of rural residential areas and agricultural fields, including pastureland. It lies north of Calero Reservoir, with the Santa Teresa Hills to the east and Almaden Quicksilver County Park and the base of the Santa Cruz Mountains to the west. This area does not have the major physical barriers to movement that characterize the Coyote Valley, but it is more developed overall, especially at its northern end. The south end of the Santa Teresa Hills is characterized by extensive private open space at the two IBM facilities (on Harry Road and Bailey Avenue), Santa Teresa County Park, and the relatively undeveloped Calero Lake Estates. These areas are contiguous with Calero Lake County Park, thus providing ready movement into protected areas of the Santa Cruz Mountains.

Moving north from this area, the avenues for movement become more restricted. On the west side of the valley there is considerable residential development along Old Almaden Road leading into New Almaden that would impede movement. The northeast side of the valley has pockets of development as well, which also would deter movements somewhat. While there is one relatively undeveloped section in the center of the valley, the southern limits of the valley seem more suited for wildlife movement.

Deer are abundant in the valley, moving freely in and out of the residential areas and along the creeks of the valley. Coyotes and foxes move readily except as described above regarding restrictions, as do other mammals. No California tiger salamanders are known from the immediate area, but red-legged frogs have been found in Alamitos Creek in the past. Wild turkeys are abundant, as are raptors. No wildlife movement studies have been undertaken for the South Valley Urban Reserve, so these observations are made from local knowledge, information from selected studies, and inference based on habitat preferences.

EVERGREEN

The remaining undeveloped parcels in the Evergreen area are primarily grasslands at the base of the foothills. Within the Study Area, the largest open habitat areas are east of the Evergreen Valley at the base of the Diablo Range and south of Evergreen at the northern tip of Coyote Ridge. Certainly animals are resident in these grasslands, and those with larger home ranges may move into the grasslands during foraging. Historically, movement across the Evergreen Valley, between Coyote Ridge and the Diablo Range foothills to the north, occurred regularly. However, this valley is almost entirely developed now, precluding use by wildlife not adapted to

urban/suburban habitats. There are no longer avenues for broad-scale wildlife movement through the Evergreen area due to the presence of development.

Black-tailed deer, grey foxes, coyotes, and other mammals from surrounding, relatively undeveloped areas still move into the Evergreen area in small numbers. Thompson Creek and minor tributaries flow the length of the Evergreen Valley and provide avenues for dispersal of animals into the surrounding development. However, such movement would occur primarily along the creek, and no suitable corridors connecting two or more open space areas are present in the Evergreen area.

As a result, most wildlife species are not expected to make regular movements through the developed Evergreen Valley. The Evergreen area as a whole is not important for wildlife movement other than for local movements. Wildlife moving between open space areas in the hills east of Evergreen and open spaces on northern Coyote Ridge might move through perimeter parcels within the Evergreen portion of the Study Area, but most animals moving successfully between these open spaces likely do so by moving around the most developed areas using less developed habitats outside the Study Area.

ALVISO

Remaining open space within Alviso comprises the agricultural lands and pastures of the WPCP buffer lands, and the fringes of the managed pond complexes, as well as a few other smaller parcels. One important movement corridor has long been recognized in this area, namely the fringing non-tidal salt marshes that connect a major population center for the endangered salt marsh harvest mouse in New Chicago Marsh with the marshes of Coyote Creek. The Coyote Creek Flood Control Project designed in the 1980s included a managed site for this species; this muted tidal salt marsh, coupled with marsh restoration at the north end of the Zanker Road Landfill, and City and WPCP property along the southern edge of Pond A-18 all comprise a corridor for dispersal for the salt marsh harvest mouse. Without that corridor, the population south of Coyote Creek would be effectively isolated from areas north of the creek. The recently designed restoration project for the Don Edwards San Francisco Bay National Wildlife Refuge portion of the South Bay Salt Pond Restoration Project incorporates a shoreline levee with a broad transition zone specifically designed to insure connectivity for this species.

The WPCP buffer lands, while supporting native wildlife, do not function as a major movement corridor, based on an assessment of the habitats adjoining the buffer lands (which are largely developed) and species habitat preferences.

REGULATORY SETTING

Biological resources are regulated by a number of federal, state, and local laws and ordinances, as described below.

CLEAN WATER ACT

Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (Federal Water Pollution Control Act) and Section 10 of the 1899 Rivers and Harbors Act (described below). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must be in compliance with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

Other key components of the Clean Water Act include Sections 303 and 304 that call for the establishment of water quality standards, criteria, and guidelines, including for wastewater effluent. Under Section 303(d) States are required to identify impaired surface water bodies and develop total maximum daily loads for contaminants of concern. EPA's regulations, as called for under Section 402 of the Clean Water Act, also include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by water quality control boards and are designed to control pollutants in sensitive aquatic habitats.

Project Applicability. Any work within areas defined as waters of the U.S. (*i.e.*, wetlands and other waters), including relatively large waterways such as Coyote Creek, Los Gatos Creek, Thompson Creek, Llagas Creek, Alamitos Creek, San Felipe Creek, and the Guadalupe River, as well as smaller perennial and intermittent drainages and wetlands scattered throughout much of

the Study Area may require a Section 404 fill discharge permit from the USACE and Section 401 Water Quality Certification from the RWQCB. Aquatic habitats such as lakes, ponds, reservoirs, saline managed ponds, and mudflats may also be subject to such approvals.

See also *City of San José City Council Post-Construction Urban Runoff Management Policy* below for applicability of NPDES permit.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The RWQCB is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Porter-Cologne Water Quality Control Act of the California Water Code. The RWQCB has both federal and state jurisdiction under Section 401 of the Clean Water Act, for activities that could result in a discharge of dredged or fill material to a water body. Federal authority is exercised whenever a proposed project requires a Clean Water Act Section 404 permit from the USACE in the form of a Section 401 Water Quality Certification. State authority is exercised when a proposed project is not subject to federal authority, in the form of a Notice of Coverage, Waiver of Waste Discharge Requirements. Many wetlands fall into RWQCB jurisdiction, including some wetlands and waters that are not subject to USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends to all areas below the ordinary high water mark.

The RWQCB has no formal technical manual or expanded regulations to help in identifying their jurisdiction. The only guidance can be found in Porter-Cologne Water Quality Control Act, Chapter 2 (Definitions), which states "'waters of the State' means any surface water or ground water, including saline waters, within the boundaries of the state."

Under the Porter-Cologne Water Quality Control Act, the SWRCB and nine regional boards also have the responsibility of granting Clean Water Act NPDES permits, and waste discharge requirements for certain point-source and non-point discharges to waters. These regulations limit impacts to aquatic and riparian habitats from a variety of urban sources.

Project Applicability. As stated above, any projects within the Study Area that impact waters of the U.S./State will require 401 Certification and/or a Waste Discharge Requirement from the RWQCB. Within the Study Area, specific features such as streams and wetlands that are considered waters of the U.S. are also considered waters of the State, and it is possible that some features, such as isolated wetlands or ponds, that are not considered waters of the U.S. will be regulated by the RWQCB as waters of the state.

See also *City of San José City Council Post-Construction Urban Runoff Management Policy* below for applicability of NPDES permit.

RIVERS AND HARBORS ACT

Section 10 of the Rivers and Harbors Act (1899) 33 U.S.C. 403 regulates the construction of structures, placement of fill, and introduction of other potential obstructions to navigation in

navigable waters. Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable or tidal waters requires the approval of the Chief of Engineers.

The USACE has the authority to issue permits for the discharge of refuse into, or affecting, navigable waters under section 13 of the 1899 Act (33 U.S.C. 407; 30 Stat. 1152). The Act was modified by title IV of P.L. 92-500, October 18, 1972; the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1341-1345; 86 Stat. 877), as amended, established the NPDES permits.

Project Applicability. Within the Study Area only the major waterways near San Francisco Bay are tidal, such as Guadalupe, Coyote, Artesian, and Alviso Sloughs. Thus, any activities conducted within or over the tidally influenced portions of these waterways, including mudflats below the MHW elevation, would potentially require a Section 10 Letter of Permission.

FEDERAL ENDANGERED SPECIES ACT

The federal Endangered Species Act (FESA) protects listed wildlife species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury to a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA if they occur on federal lands or if the Project requires a federal action, such as a Clean Water Act Section 404 fill permit from the USACE.

The USFWS has jurisdiction over federally listed threatened and endangered wildlife species under the FESA, while the National Marine Fisheries Service (NMFS) has jurisdiction over federally listed, threatened and endangered, marine and anadromous fish.

Project Applicability. Federally listed wildlife species that regularly occur within the Study Area are the federally endangered salt marsh harvest mouse and the federally threatened bay checkerspot butterfly, Central California Coast steelhead, California tiger salamander, and California red-legged frog. Other listed animals that may occasionally occur within the Study Area include the federally endangered California clapper rail and least Bell's vireo (*Vireo bellii pusillus*), and the federally threatened green sturgeon (*Acipenser medirostris*) and western snowy plover. Federally listed plant species known to occur (or have occurred historically) within the Study Area are the federally endangered Santa Clara Valley dudleya, Tiburon Indian paintbrush, Coyote ceanothus, robust spineflower (*Chorizanthe robusta* var. *robusta*), Contra Costa goldfields, and Metcalf Canyon jewel-flower, while the federally endangered showy Indian clover (*Trifolium amoenum*) could potentially occur in the Study Area.

CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA, Fish and Game Code of California, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the CDFG has

jurisdiction over state-listed species. The CDFG regulates activities that may result in "take" of individuals listed under the Act (*i.e.*, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the Fish and Game Code. The CDFG, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability. State-listed species regularly occurring within the Study Area are the state-endangered California clapper rail, bald eagle, California least tern (*Sterna antillarum browni*), and salt marsh harvest mouse, as well as the state-threatened California black rail (*Laterallus jamaicensis coturniculus*). State-listed species that may occur in the Study Area very infrequently, or perhaps not at all, are the state-endangered least Bell's vireo, California condor (*Gymnogyps californianus*), and willow flycatcher (*Empidonax trailii*), as well as the state threatened longfin smelt (*Spirinchus thaleichthys*), Swainson's hawk (*Buteo swainsoni*), bank swallow (*Riparia riparia*). In addition, the California Fish and Game Commission voted to list the California tiger salamander as a threatened species under the CESA. The only state-listed plant species known to occur within the Study Area is the state-threatened Tiburon Indian paintbrush.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200 nautical mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in fishery management plans for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

Project Applicability. The only fish species subject to any fisheries management plan that occurs within the Study Area with any regularity is the Chinook salmon, which is regulated by the Pacific Fishery Management Council's Salmon Fishery Management Plan. Both Coyote Creek and the San Francisco Bay are officially listed as EFH for this species (Pacific Fisheries Management Council 1999), however, because Chinook salmon also occur within Los Gatos Creek and the Guadalupe River, we expect the NMFS to consider these streams to be EFH for this species as well.

A number of fish species regulated by the Coastal Pelagics and Pacific Groundfish Fisheries Management Plans occur in tidal habitats of South San Francisco Bay and may occasionally disperse upstream into the reaches of Alviso Slough and San Tomas Aquino Creek within the Study Area. Thus, these tidal waters are also considered EFH.

FEDERAL MIGRATORY BIRD TREATY ACT

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the USFWS. Migratory birds protected under this law include all native birds and certain game birds (*e.g.*, turkeys and pheasants; *Federal Register* 70(2):372-377). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the Department of the Interior in its 16 April 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

Project Applicability. All native bird species occurring in the Study Area are protected by the MBTA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) is a state law that requires state and local agencies, such as the City of San José, to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

CEQA and the CEQA Guidelines provide guidance in evaluating impacts of projects to biological resources and determining which impacts will be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under CEQA Guidelines section 15065, a project's effects on biotic resources are deemed significant where the project would:

- "substantially reduce the habitat of a fish or wildlife species"
- "cause a fish or wildlife population to drop below self-sustaining levels"
- "threaten to eliminate a plant or animal community"
- "reduce the number or restrict the range of a rare or endangered plant or animal"

In addition to the section 15065 criteria that trigger mandatory findings of significance, Appendix G of the CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether 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, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
- "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
- "have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act"
- "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"
- "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"
- "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG or species that are locally or regionally rare.

The CDFG has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA § 15380(b).

The CNPS, a non-governmental conservation organization, has developed lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

List 1A Plants considered extinct.

List 1B Plants rare, threatened, or endangered in California and elsewhere.

List 2 Plants rare, threatened, or endangered in California but more common elsewhere.

List 3 Plants about which more information is needed - review list.

List 4 Plants of limited distribution-watch list.

These CNPS listings are further described by the following threat code extensions:

.1—seriously endangered in California;

.2—fairly endangered in California;

.3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on List 1B or List 2 are, in general, considered to meet the CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts to plants that are listed by the CNPS on List 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those on List 1B or List, impacts to them are less frequently considered significant.

Project Applicability. All impacts to biological resources will be considered during CEQA review of the Envision San José 2040 General Plan in the context of an EIR.

CALIFORNIA FISH AND GAME CODE

The California Fish and Game Code includes regulations governing the use of, or impacts to, many of the state's fish, wildlife, and sensitive habitats. The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of §§1601 - 1603 of the Fish and Game Code. The Fish and Game Code requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation.

Certain sections of the Fish and Game Code describe regulations pertaining to certain wildlife species. For example, Fish and Game Code §§3503, 2513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG. Raptors (*i.e.,* eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code §3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Non-game mammals are protected by Fish and Game Code §4150, and other sections of the Code protect other taxa.

Project Applicability. Any work within channels with a clear bed and banks, including creeks, streams, or rivers within the Study Area, will require a Streambed Alteration Agreement from the CDFG per §1602 of the California Fish and Game Code. All native bird species that occur in the Study Area are protected by the state Fish and Game Code. Projects may be required to take measures to avoid impacts to nesting birds per CDFG Code §§3503, 3513, and 3800. Native mammals and other species within the Study Area are also protected by the Code, and measures may be required to avoid and minimize impacts to these species during construction activities.

SANTA CLARA VALLEY WATER DISTRICT

The SCVWD requires permits for all well construction and destruction work, most exploratory boring for groundwater exploration, and projects or work that occurs within 50 feet of any watercourse in Santa Clara County. Permits are required under the Water Resources Protection Ordinance (06-1) and the District Well Ordinance (90-1).

Project Applicability. The City's Riparian Corridor Policy (discussed below) provides equal or greater protection of watercourses within the City as compared to the SCVWD's 50-foot permit protection. As a result, SCVWD permits are expected to be required only for work involving SCVWD property or easements, or any deep excavation that intersects the groundwater aquifers (*e.g.*, a well).

CITY OF SAN JOSÉ GENERAL PLAN POLICIES

The existing City of San José General Plan, entitled Focus on the Future San José 2020 General Plan (1994), was adopted as a statement of policy for the physical development of the City of San José. In relation to biological resources, the current General Plan has goals and policies in place that create an UGB beyond which undeveloped land will remain open space indefinitely. In particular, the City of San José has adopted the following goals for the Greenline/UGB:

1. Delineate the extent of future urban expansion and reinforce fundamental policies concerning the appropriate location of urban development in furtherance of both the City of San José and Santa Clara County General Plans.
2. Preserve substantial areas of the surrounding hillsides, baylands, and other lands, as open space both to conserve the valuable natural resources contained on these lands and to protect valley floor viewsheds.
3. Provide greater long-term certainty regarding future land uses outside the Greenline/UGB than is provided by the Urban Service Area boundary.

In addition, the General Plan (1994) provides a goal for hillside development: Preserve the valuable natural resources of the hillsides and minimize the exposure of the public to potential environmental hazards associated with development on the hillsides.

Lastly, the General Plan (1994) provides the following goals and policies pertaining to natural resources:

Woodlands, Grasslands, Chaparral and Scrub

Goal: Protect the biological diversity and scenic characteristics of grasslands, woodlands, chaparral, and scrub in hillside areas.

Policies:

1. The nature and amount of public access to wooded areas and grasslands, when allowed, should be consistent with the environmental characteristics of these areas.

2. The use of motorized off-road vehicles should be limited, and strictly regulated, in woodlands, grasslands, and hillside areas.
3. The City should cooperate with other agencies in the preservation of hillside vegetation.
4. Grading should be designed to minimize the removal of significant vegetation.
5. The City should preserve and protect oak woodlands, and individual oak trees, to the greatest extent feasible.
6. The City should encourage appropriate reforestation and planting projects in hillside areas.
7. Appropriate agricultural practices should be encouraged in hillside areas.
8. Serpentine grasslands, particularly those supporting sensitive serpentine bunchgrass communities of plant and animal species of concern, should be preserved and protected to the greatest extent feasible. When disturbance cannot be avoided, appropriate measures should be required to restore, or compensate for loss of serpentine bunchgrass communities or habitat of species of concern.

Riparian Corridors and Upland Wetlands

Goal: Preserve, protect, and restore riparian corridors and upland wetlands within the City of San José's Sphere of Influence.

Policies:

1. Creeks and natural riparian corridors and upland wetlands should be preserved whenever possible.
2. New public and private development adjacent to riparian corridors should be consistent with the provisions of the Riparian Corridor Policy Study.
3. New development within the Urban Service Area should be set back from the outside edge of riparian habitat (or top of bank, whichever is greater) a distance sufficient to buffer the impacts of adjacent human activities and provide avenues for wildlife dispersal.
4. New development should be designed to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.
5. When disturbances to riparian corridors and upland wetlands cannot be avoided, appropriate measures should be required to restore, or compensate for damage to, the creeks or riparian corridors
6. The City encourages appropriate native plant restoration projects along riparian corridors, upland wetlands, and in adjacent upland areas.
7. The City should consider the preparation of a Riparian Restoration Action Plan to assess riparian conditions and identify potential riparian restoration programs and priorities.

8. Natural riparian corridors outside the Urban Service Area should be protected from disturbance associated with development (such as structures, roadways, sewage disposal facilities and overhead utility lines, except those required for flood control or bridging) by a minimum 150-foot setback from the top bank line, wherever feasible.

Bay and Baylands

Goal: Preserve and restore natural characteristics of the Bay and adjacent lands and recognize the role of the Bay's vegetation and water area in maintaining a healthy regional ecosystem.

Policies:

1. The baylands should be preserved and restored in a manner consistent with the fragile environmental characteristics of this area and the interest of the citizens of San José in a healthful environment.
2. Urban development in the baylands is discouraged unless it can be shown that it results in no net loss of baylands habitat value.
3. The City should cooperate with the County, USACE, EPA, CDFG, and other appropriate jurisdictions to prevent the degradation of baylands by discouraging new filling or dredging of Bay waters and baylands.
4. The City, in cooperation and, where appropriate, consultation with other interested agencies, should encourage the restoration of diked historic wetlands, including salt ponds, to their natural state by opening them to tidal action.
5. The City should continue to participate in the Santa Clara Valley Non-Point Source Pollution Control Program and take other necessary actions to formulate and meet regional water quality standards which are implemented through the National Pollution Discharge Elimination System Permits and other measures.
6. No development which creates adverse impacts on the National Wildlife Refuge in South San Francisco Bay or results in a net loss of baylands habitat value should be permitted.

Species of Concern

Goal: Preserve habitat suitable for species of concern, including threatened and endangered species.

Policies:

1. Consideration should be given to setting aside conservation areas in the Bay and baylands, along riparian corridors, upland wetlands, and hillside areas to protect habitats of unique, threatened and endangered species of plants and animals, and to provide areas for educational and research purposes.
2. Habitat areas that support species of concern should be retained to the greatest extent feasible.

3. Recreational uses in wildlife refuges, nature preserves and wilderness areas in parks should be limited to those activities which have minimal impact on sensitive habitats.
4. New development on undeveloped properties throughout the City contributes to the regional loss of burrowing owl habitat. To offset this loss of habitat, the City should require either habitat preservation on or off site or other appropriate measures for habitat acquisition, habitat enhancement and maintenance of local habitat bank.

Urban Forest

Goals:

1. Preserve, protect, renew, and increase plantings of urban trees within the City to create a diverse, climate-appropriate, thriving, sustainable urban forest, and effectively manage the urban forest to maximize social, economic, and environmental benefits; improve quality of life; and foster a sense of community.
2. Identify and establish comprehensive and sustainable funding strategies and mechanisms to support citywide urban forestry efforts.
3. Plant 100,000 new trees within the City by the year 2023.

Policies:

1. The City should continue to support and develop partnerships with urban forestry programs that foster ownership and stewardship of the urban forest and provide public education and facilitate participation of interested groups, nonprofit organizations, businesses, volunteers, and citizens in tree planting, preservation, care and maintenance of the urban forest.
2. Public and private development projects should incorporate all reasonable measures to preserve native ordinance sized, and other significant trees. Adverse impacts on the health and longevity of native, ordinance sized or other significant trees should be avoided through appropriate design measures and construction practices. When tree preservation is not feasible, the project should include appropriate tree replacement to conserve and renew the urban forest. In support of these policies the City should:
    - Continue to implement the Heritage Tree program and the Tree Removal Ordinance.
    - Consider the adoption of Tree Removal Mitigation Guidelines.
3. The City encourages the preservation and maintenance of mature trees on public and private property. Prior to allowing the removal of any mature tree, all reasonable measures, to preserve the tree, should be pursued. When the preservation is not feasible, appropriate tree replacement should be required to conserve and renew the urban forest.
4. In order to realize the goal of providing street trees along all streets, the City should:
    - Establish and maintain a master plan for the urban forest that identifies approved tree species, planting, stock, care, and maintenance standards, and the community and collective approach to effectively manage a thriving, sustainable Urban Forest.

- Require the planting and maintenance of street trees as a condition of development.
- Continue the program for management and conservation of street trees which catalogs street tree stock replacement and rejuvenation needs.
- Establish and maintain a City inventory of all street trees.
- Encourage that street trees and trees limited by impervious area be planted with structural soil to promote full growth and health.

5. The City should encourage the selection and placement of trees appropriate for a particular urban site in consultation with a certified arborist. Tree selection and placement should consider species, mature size and form, function, canopy and root characteristics, soil conditions, water requirements, energy conservation and production values, potential stormwater quality and erosion control benefits, location of existing and proposed structures, nearby powerlines, and diversity and sustainability of the urban forest.
6. Trees used for new plantings in urban areas should be selected primarily from species with low water requirements.
7. Where appropriate, trees that benefit urban wildlife species by providing food or cover should be incorporated in urban plantings.
8. Where urban development occurs adjacent to natural plant communities or water resources (*e.g.*, oak woodland, riparian forest, reservoirs, and creeks), landscape plantings should incorporate tree species that are sustainable and appropriate for the area to the greatest extent feasible.
9. Disturbance to trees in riparian areas should be avoided.
10. City partnered urban forest programs and public and private development should contribute to and facilitate the goal of planting 100,000 trees within the City by the year 2023.

Project Applicability. The San José 2020 General Plan is the General Plan currently in effect in the City of San José; therefore, all of the goals and policies described above currently apply to development in San José. The UGB that was established pursuant to the current General Plan serves as the boundary for planned growth under Envision San José 2040. The Study Area for the Envision San José 2040 General Plan update also includes the area up to the City limits.

CITY OF SAN JOSÉ CITY COUNCIL POST-CONSTRUCTION URBAN RUNOFF MANAGEMENT POLICY

The purpose of City Council Policy 6-29, entitled *Post-Construction Urban Runoff Management*, is to reduce storm water pollution in aquatic habitats, *i.e.*, in streams, creeks, and rivers, including those within the Study Area and in San Francisco Bay. It establishes an implementation framework, consistent with Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) NPDES MS4 Permit requirements, for incorporating storm water runoff pollution control measures into new and redevelopment projects to reduce storm water runoff pollution from such projects to the maximum extent practicable in compliance with the federal Clean Water Act. The Policy requires all new, redevelopment, and expansion

projects to implement post-construction best management practices (BMPs) and treatment control measures (TCMs) to the maximum extent practicable. This Policy also establishes specified design standards for post-construction TCMs for applicable projects.

Project Applicability. Any new development or redevelopment project in the Study Area that creates, adds, or replaces 10,000 square feet or more of impervious surface area, or new streets, roads, highways and freeways built under the City's jurisdiction that create 10,000 square feet or more of impervious surface area, are required to comply with this policy.

CITY OF SAN JOSÉ CITY COUNCIL POST-CONSTRUCTION HYDROMODIFICATION MANAGEMENT POLICY

The purpose of City Council Policy 8-14, entitled *Post-Construction Hydromodification Management*, is to control hydromodification impacts from new and redevelopment projects where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. It establishes implementation framework, consistent with the SCVURPPP NPDES MS4 Permit requirements, for incorporating measures into the City's development review and approval process to control hydromodification impacts from new and redevelopment. The Policy establishes specified performance criteria for Post-Construction hydromodification control measures (HCMs) and identifies projects that are exempt from HCM requirements.

Project Applicability. Any new or redevelopment project in the Study Area that creates or replaces one (1) acre or more of impervious surface ("Group 1 Projects") must be designed and built to control project-related hydromodification, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local rivers, streams, and creeks.

CITY OF SAN JOSÉ TREE ORDINANCE

The City of San José Tree Removal Controls (San José City Code, Sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk that measures 56 inches or more in circumference (18 inches in diameter) at the height of 24 inches above the natural grade of slope. The ordinance protects both native and non-native tree species. A tree removal permit is required from the City of San José for the removal of ordinance-sized trees.

In addition, any tree found by the City Council to have special significance can be designated as a heritage tree, regardless of tree size or species. It is unlawful to vandalize, mutilate, remove, or destroy such heritage trees. The City of San José requires, prior to the issuance of any approval or permit for construction of any improvement within the Study Area, that all trees within an impacted Study Area be inventoried and categorized according to size, species, and location. This work would also include the determination of the presence of heritage trees.

Project Applicability. Any projects within the Study Area that have the potential to impact trees of ordinance-size or heritage trees must obtain a tree removal permit from the City of San José.

CITY OF SAN JOSÉ RIPARIAN CORRIDOR POLICY

The City of San José has developed riparian policies relevant to planning and development under the existing General Plan (City of San José 1994, revised in 1999). The Riparian Corridor Policy sets guidelines on how areas along natural streams should be treated for consistency with General Plan policies that promote the preservation of riparian corridors. The Policy establishes development guidelines for general site design, as well as guidance for the design of buildings, landscaping, and public recreation facilities related to their interface with riparian corridors. It also provides guidelines for operational activities within natural stream areas, such as vegetation removal, erosion control, flood control, and construction. The riparian policy indicates that "all buildings, other structures (with the exception of bridges and minor interpretative node structures), impervious surfaces, outdoor activity areas (except for passive or intermittent activities) and ornamental landscaped areas should be separated a minimum of 100 feet from the edge of the riparian corridor (or top of bank, whichever is greater)." The Policy allows for exceptions based on adjacent land uses and setbacks, existing setbacks, and other factors. The setback for a particular project is typically determined on a case-by-case basis.

Project Applicability. Any projects within the Study Area that occur near riparian habitat (incised channels with a clear bed and bank that may or may not contain riparian vegetation similar to that described under "Riparian Forest and Scrub" terrestrial communities, above) must be reviewed for conformance with the City's Riparian Corridor Policy.

SANTA CLARA VALLEY HCP/NCCP

The City of San José is a partner in the development of a joint HCP/NCCP along with five local partners (the County of Santa Clara, the SCVTA, the SCVWD, and the cities of Gilroy and Morgan Hill) and three state and federal resource agencies (the CDFG, USFWS, and NMFS).

The Santa Clara Valley HCP/NCCP is "intended to provide an effective framework to protect, enhance, and restore natural resources in specific areas of Santa Clara County, while improving and streamlining the environmental permitting process for impacts on threatened and endangered species" (ICF Jones & Stokes 2009). As it relates to biological resources and conservation, the HCP/NCCP is designed to "protect, enhance, and restore ecosystem integrity and functionality for threatened and endangered species; enhance the diversity of plant and animal communities; and conserve habitat and contribute to the recovery of species listed or likely to be listed under the federal ESA or the California ESA."

A number of plant and animal species are proposed for coverage under the Santa Clara Valley HCP/NCCP. Approval of impacts to covered species from project activities covered by the HCP/NCCP (*i.e.*, projects that meet a number of criteria concerning location, proponent, and type) will be considerably expedited. Fees paid in accordance with the extent and nature of projects' impacts will be used to further conservation efforts via the acquisition, creation, or enhancement, as well as the preservation and management of habitat for these species. In addition, covered projects are subject to a number of measures concerning avoidance and minimization of impacts to covered species and habitats through project design and construction measures (such as preconstruction species surveys and seasonal restrictions on construction activities) to directly protect species. There are also several "no take" species that, due to their

rarity or regulatory status (*e.g.*, state fully protected species), cannot be "taken" by a project that is covered by the HCP/NCCP. A list of covered and "no take" species and their regulatory status is provided in Appendix B.

The process of developing the HCP/NCCP is currently on-going, and is scheduled to be completed in 2011. The most recent second administrative draft of the HCP/NCCP document was released in June 2009. Although not yet adopted, a draft preferred conservation strategy has been identified. Key elements of the preferred conservation strategy for Santa Clara County for the next 50 years include:[1]

- **Land Acquisition.** Preserve and enhance in perpetuity, approximately 48,000 acres of new land obtained from willing sellers through acquisition of fee title and conservation easements.
- **Enhance Existing Park and Open Space.** In addition to new land acquisitions, enhance and monitor approximately 12,500 to 15,000 acres of high-value species habitat in County and State Parks and other publicly owned land.
- **Species Movement Corridors.** Sustain and enhance the movement of native species through the preservation or enhancement of 15 large-scale land linkages. Preserve major local and regional wildlife connections among existing protected areas.
- **Restore Stream and other Wetland Areas.** Restore stream function in proportion to impacts from covered activities (an estimated 17.1 miles of streams). Restore a minimum of 90 acres and up to 573 acres of riparian woodland, wetlands, and ponds.
- **Improve Native Fish-bearing Streams.** Enhance native fish-bearing streams such as Coyote Creek, Guadalupe River and Uvas Creek and their key tributaries. By:
  - Removing or modifying barriers to fish movement.
  - Increasing winter, spring and/or summer base water flows and/or winter and spring pulse water flows from reservoirs during critical life stages of steelhead trout and Chinook salmon.
  - Improving in-stream habitat conditions.
- **Investigate and if Feasible, Expand Steelhead Habitat.** Study and, if feasible, implement expansion of steelhead habitat in Pacheco Creek. Provide for an additional 4 miles of steelhead habitat by providing passage above one of the SCVWD dams or opening up stream reaches in the northern portion of the county that have been cut off to steelhead.
- **Long-term Land and Stream Habitat Management.** Establish a framework for effective, active, long-term management of the Reserve System (the combined system of preserved lands) and streams outside the Reserve System to maintain and enhance populations of covered and other native species.

[1] Since the second administrative draft HCP/NCCP was prepared, the Local Partners and resource agencies have discussed the possibility that fish will be removed from coverage under the Plan. Thus, these conservation strategy elements are subject to revision.

- **Long-term Monitoring and Adaptive Management of Land and Stream Habitats.** Establish a comprehensive, science-based monitoring program to ensure that land and stream management actions are effective at meeting the conservation objectives of the HCP/NCCP. Conduct annual and five year, major audits including extensive public review of HCP/NCCP activities.
- **Conditions on Covered Activities.** Apply conditions of approval such as stream and riparian setbacks and use Best Management Practices such as erosion control to reduce negative impacts on habitat from new public and private development and public operations and maintenance activities.
- **Post-permit Habitat Responsibilities.** Commit to own and manage in perpetuity the lands and biological improvements acquired for the HCP/NCCP Reserve System and in streams throughout the HCP/NCCP area.

The HCP/NCCP covered activities include projects consistent with the San José General Plan. Ultimately, the approval process for covered projects will include steps designed to ensure compliance with the HCP/NCCP and determine the measures (including payment of fees) that will be required for project approval. The process will streamline regulatory approval of impacts to covered species and sensitive habitats while helping to ensure the long-term conservation of sensitive biological resources within the HCP/NCCP area.

Project Applicability. The Santa Clara Valley HCP/NCCP boundary is the same as the Envision San José 2040 General Plan update Study Area boundary to the west (with the exception that Los Gatos Creek is included in the HCP/NCCP). To the north and northwest, the HCP/NCCP area does not include the marshes and saline managed ponds that are in the General Plan Study Area, and the HCP/NCCP area extends much farther to the east, southeast, and south than the General Plan Study Area. Therefore, most of the General Plan update Study Area is within the HCP/NCCP area. The only portion of the General Plan update Study Area that is not included in the HCP/NCCP area is the northernmost part of the Study Area (north and northwest of Alviso).

SENSITIVE HABITATS/RELATION TO REGULATIONS

WETLANDS, STREAMS, LAKES, AND OTHER WATERS OF THE UNITED STATES/WATERS OF THE STATE

As described above under the descriptions of "Wetland", "Riparian Forest and Scrub", and "Aquatic/Open Water" habitat types, these habitats are extremely important in supporting numerous plant and wildlife species in the Study Area. However, throughout California, the quality and quantity of aquatic and wetland habitat types has dramatically declined due to the construction of dams, dikes, and levees as well as due to water diversions, the filling of aquatic and wetland habitat for development, and the overall degradation of general water quality due to inputs of runoff from agricultural and urban development and other sources. As a result, aquatic and wetland habitat types are considered sensitive habitats.

As described in the "Regulatory Setting" section, many streams, lakes, and wetlands in the Study Area are regulated by the USACE as "waters of the U.S." and/or by the RWQCB as "waters of the state". Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Project Applicability. Waters of the U.S./State include the majority of waterbodies in the Study Area, including large waterways such as Coyote Creek, Los Gatos Creek and the Guadalupe River; smaller perennial and intermittent drainages such as Thompson Creek, Alamitos Creek, San Felipe Creek, Llagas Creek, and Upper Penitencia Creek; managed ponds in the Alviso area; reservoirs such as Anderson and Calero; numerous smaller lakes and ponds; and wetlands scattered throughout much of the Study Area. Impacts to these habitats may require a Section 404 fill discharge permit from the USACE and Section 401 Water Quality Certification from the RWQCB.

STREAMS AND RIPARIAN HABITATS REGULATED UNDER CALIFORNIA FISH AND GAME CODE

In addition to the aquatic habitat present in streams and other waterbodies in the Study Area, addressed in the previous section, riparian plant and animal communities also extremely

important to biodiversity, and to the maintenance of biological and physical processes, in the Study Area. These habitats have also been degraded by a variety of factors. Dams, realignment of streams and conversion to concrete-lined culverts, grazing and mowing, and burgeoning population growth all have lead to the decline of riparian areas. Historic groundwater overdraft has caused wetland and riparian loss throughout the region and land subsidence within Santa Clara County, though subsidence is no longer occurring. Riparian forests once bordered many of the valley's major rivers and their tributaries. Willows, California sycamore, box elder, Fremont cottonwood, and valley oak were dominant tree species along the waterways of Santa Clara County and within the Study Area prior to urban development. Although these trees still dominate the riparian habitat remnants in the Study Area, animals such as the western yellow-billed cuckoo (*Coccyzus americanus*) and willow flycatcher, as well as several other riparian specialists, have all declined significantly in California due to loss of riparian forests.

The California Fish and Game Code includes regulations governing the use of, or impacts to, many of the state's fish, wildlife, and sensitive habitats. The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of §§1601 - 1603 of the Fish and Game Code. Activities that result in the diversion or obstruction of the natural flow of a stream, or substantially change its bed, channel or bank, or utilize any materials (including vegetation) from the streambed require that the project applicant enter into a Streambed Alteration Agreement with CDFG, under sections 1600-1603 of the California Fish and Game Code, as stated previously (CDFG 1994).

Project Applicability. Riparian habitats are present in and adjacent to any watercourses in the Study Area, although particularly sensitive riparian woodland and scrub is limited to narrow corridors along streams in many areas and is absent from the most heavily urbanized reaches of smaller streams. Any work within channels with a clear bed and banks, including creeks, streams, or rivers within the Study Area, as well as lakes such as Anderson and Calero reservoirs, will require a Streambed Alteration Agreement from the CDFG per §1602 of the CDFG Code.

SERPENTINE HABITATS

Serpentine grasslands are highly infertile because of their extremely high levels of magnesium, chromium and nickel; low concentrations of nutrients such as calcium and nitrogen; and low water-holding capacity. A unique group of vascular plant species, which can tolerate the relatively high magnesium to calcium ratio, has evolved in response to these conditions. Many exotic species in California, including the non-native grasses that have invaded much of the non-serpentine grasslands in the state, are not able to tolerate the extremely dry conditions and infertility of serpentine soils. As a result, serpentine grasslands support high-quality native plant communities, including rare plants such as the federally endangered Santa Clara Valley dudleya, Metcalf Canyon jewelflower, and Tiburon Indian paintbrush. In turn, several invertebrate species, including the federally threatened Bay checkerspot butterfly, depend on serpentine grasslands because their host food plants are found primarily in these habitats types. Serpentine bunchgrass grasslands are tracked by the CDFG and mapped in the CNDDB as a particularly sensitive and rare habitat type.

The *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area* (USFWS 1998a) provides species accounts, recovery criteria, habitat protection recommendations, monitoring and research programs, and management strategies that should be followed for the conservation of these species. Approximately 6,365 acres within the Study Area are mapped as serpentine habitat, and large areas of land are covered by the Recovery Plan.

Project Applicability. Grasslands and chaparral on soils derived from serpentine rock are present in several locations in the Study Area, including the northern end of Coyote Ridge, a portion of the Santa Teresa Hills, Communications Hill, west of Coyote Valley, near Alum Rock Park (south of Suncrest Avenue), west of Anderson Reservoir, west of Calero Reservoir, and near Llagas Creek. The CNDDB (2010) maps serpentine bunchgrass as occurring along Coyote Ridge and near Calero Reservoir, with these polygons shown mostly just outside the Study Area.

CENTRAL CALIFORNIA SYCAMORE ALLUVIAL WOODLANDS

Although all riparian habitats are considered sensitive habitats, Central California sycamore alluvial woodland is monitored particularly closely by the CDFG and mapped by the CNDDB as a sensitive community type. This plant community occurs along low, braided channels in areas with wide floodplains. The vegetation is dominated by California sycamore and the substrate tends to be cobbly or gravelly, scoured frequently by spring run-off events, and supports a very sparse understory. This habitat type is rare in California. In one study, only 17 occurrences comprising 2,032 acres of central California sycamore alluvial woodland was found to occur within the entire state (Keeler-Wolf et al. 1996). While the habitat type was rigidly defined in this survey, such that stands less than 10 acres or sycamore woodland containing significant stands of alder were not mapped, making this a conservative estimate, it indicates the extremely limited extent of this habitat. Central California sycamore alluvial woodlands were once more broadly distributed, but experienced severe declines due to development of valley floors and changes in hydrology in suitable sites typically due to flood control improvements along the drainages supporting sycamore stands.

Central California sycamore alluvial woodland is mapped by the CNDDB (2010) and the Santa Clara Valley HCP/NCCP as occurring within the Study Area along stretches of Coyote Creek. The mapping presented in this document, based on the HCP/NCCP, is slightly more extensive than that occurring within the CNDDB, but this is because areas with significant cover of alder were also mapped as this habitat type within the Study Area. These habitats are considered very rare, high quality riparian habitats by CDFG, and are also often considered a component of jurisdictional streams under Sections §§1601 - 1603 of the Fish and Game Code.

Project Applicability. Central California alluvial woodland occurs along upstream reaches of Coyote Creek, within and south of Coyote Valley. The CNDDB maps this habitat type as occurring south of the Study Area along Coyote Creek, and to the northeast of the Study Area near the intersection of SR-238 and I-680.

NORTHERN COASTAL SALT MARSH

Although all wetland habitats are considered sensitive habitats, northern coastal salt marsh is monitored particularly closely by the CDFG and mapped by the CNDDB as a sensitive

community type. Northern coastal salt marsh once occurred extensively in the tidally influenced lowlands surrounding San Francisco Bay. Currently, much of this habitat has been lost in the South Bay due to filling of the bay for development, landfills, and other uses; installation of flood control structures which remove or mute tidal influence; and construction of levees to create managed ponds in areas that used to be extensive marshes or ecotonal habitat. This habitat type supports a wide assemblage of plant and animal species specifically adapted to the dynamic hydrologic conditions and high salinity experienced within tidally influenced areas, including federally endangered species such as the salt marsh harvest mouse.

Northern coastal salt marsh habitat was described as *Tidal Salt Marsh* and *Mudflat* under *Existing Natural Communities and Habitats* above. Northern coastal salt marsh is subject to regulation under Sections 404 and 401 of the Clean Water Act, as well as Section 10 of the Rivers and Harbors Act in the jurisdiction area below MHW. The Bay Conservation and Development Commission, a local branch of the State Coastal Commission, also claims jurisdiction over all areas of northern coastal salt marsh. Tidally influenced creek channels and sloughs are typically not claimed by CDFG as a jurisdictional watercourse or riparian habitat under §§1601 - 1603 of the Fish and Game Code.

Project Applicability. Northern coastal salt marsh is mapped in the CNDDB (2010) as occurring along Guadalupe Slough, Alviso Slough, downstream portions of Coyote Creek, and in an area north of the Alviso saline managed ponds. The areas shown on the CNDDB as northern coastal salt marsh were mapped for this document as a mosaic of tidal salt marsh, mudflat and tidal brackish marsh.

CDFG-DESIGNATED SENSITIVE VEGETATION ALLIANCES

The CDFG provides the Vegetation Classification and Mapping Program's currently accepted list of sensitive vegetation alliances (CDFG 2007). Any habitat type dominated by a species listed with a ranking lower than G4S4 (Global ranking of apparently secure, state ranking of apparently secure) is considered to be sensitive by the CDFG. Table 2 lists sensitive alliances that are of regional importance.

Table 2. CDFG-Designated Sensitive Habitat Types of Regional Importance.

Alliance Dominant Species (Scientific Name)	Alliance Common Name	Ranking	Global	State
Acer macrophyllum	bigleaf maple	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Arctostaphylos silvicola	silverleaf manzanita	G2S2	Imperiled	Imperiled
Arctostaphylos stanfordiana	Baker's manzanita	G3S3	Vulnerable to extirpation or extinction	Vulnerable to extirpation or extinction
Arctostaphylos tomentosa ssp. *tomentosa*	woolly leaf manzanita	G3S3	Vulnerable to extirpation or extinction	Vulnerable to extirpation or extinction

Alliance Dominant Species (Scientific Name)	Alliance Common Name	Ranking	Global	State
Cirsium fontinale var. *campylon*	Mt. Hamilton thistle	G1S1	Critically imperiled	Critically imperiled
Cornus sericea	American dogwood	G4S3?	Apparently secure	Possibly vulnerable to extirpation or extinction
Frankenia salina	alkali heath	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Leymus triticoides	creeping wild-rye	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Nassella pulchra	purple needlegrass	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Platanus racemosa	California sycamore	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Populus fremontii	Fremont cottonwood	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Quercus lobata	valley oak	G3S3	Vulnerable to extirpation or extinction	Vulnerable to extirpation or extinction
Rosa californica	California wild rose	G3S3	Vulnerable to extirpation or extinction	Vulnerable to extirpation or extinction
Salix laevigata	red willow	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Salix lucida ssp. *lasiandra*	yellow willow	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Scirpus californicus	California bulrush	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Scirpus maritimus	alkali bulrush	G4S3	Apparently secure	Vulnerable to extirpation or extinction
Spartina foliosa	Pacific cordgrass	G3S3	Vulnerable to extirpation or extinction	Vulnerable to extirpation or extinction

The above alliances may be found within the Study Area, typically in isolated patches among areas of other, more common vegetation alliances. The alliances listed above that are most likely to be present in larger, more contiguous patches include: 1) the Fremont cottonwood alliance, which occurs in riparian habitat along the larger streams such as Coyote Creek and the

Guadalupe River where Fremont cottonwood is dominant; 2) the valley oak alliance, which is present in Coyote Valley in areas dominated by valley oak; 3) native grasses such as creeping wild-rye and purple needlegrass, which occur in serpentine bunchgrass grasslands and in some areas of California annual grasslands; 4) red willow, which occurs along larger streams such as Coyote Creek and the Guadalupe River; 5) California sycamore, which occurs along upstream reaches of Coyote Creek; 6) Mt. Hamilton thistle, which often dominates serpentine seeps in the area; and 7) marsh associates including alkali heath, Pacific cordgrass, California bulrush, and alkali bulrush, which occur in tidally-influenced areas near Alviso.

SPECIAL-STATUS PLANT AND ANIMAL SPECIES

CEQA requires assessment of the effects of a project on species that are "threatened, rare, or endangered"; such species are typically described as "special-status species". For planning purposes during the update of the San José General Plan and for assessment of impacts of the General Plan update, special-status species have been defined as described below. Impacts to these species are regulated by some of the federal, state, and local laws and ordinances described under "Regulatory Setting" above.

DEFINITION OF SPECIAL-STATUS PLANTS

For purposes of this report, "special-status" plants are considered plant species that are:

- Listed under the FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as rare or endangered on Lists 1A, 1B, 2, 3, or 4.

We have also included species covered by the Santa Clara Valley HCP/NCCP regardless of any state or federal regulatory status (or lack thereof).

DEFINITION OF SPECIAL-STATUS ANIMALS

For purposes of this report, "special-status" animals are considered animal species that are:

- Listed under the FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under the CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFG as a California species of special concern.
- Listed in the California Fish and Game Code as a fully protected species (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515).

We have also included species covered by the Santa Clara Valley HCP/NCCP regardless of any state or federal regulatory status (or lack thereof).

SPECIAL-STATUS PLANT SPECIES

Ninety-three special-status plant species were identified as potentially occurring within the Study Area. Following an analysis of the microhabitat conditions and occurrence records associated with all of the species considered, 58 plants from the 93 species originally considered for occurrence were rejected from further consideration. These 58 species included CNPS List 4 species rejected from further analysis due to being rather widespread (see below) and CNPS List 1, 2 or 3 species determined to be absent from the Study Area due to the absence of suitable

microhabitats, or due to the fact they have been regarded as extirpated from Santa Clara County, the most recent occurrences are historical, or they are considered extinct. The names of these plants and the species-specific reasons for their exclusion are provided in Appendix A. The majority of the List 1, 2 and 3 species were rejected for occurrence based on one or more of the following reasons:

1. The species has a very limited range of endemism and has never been observed in the vicinity of the Study Area.
2. Common plants which are nearly always associated with the special-status species, and which indicate the presence of suitable, intact habitat, are absent from the Study Area.
3. Specific, edaphic soil characteristics, such as volcanic soils or adobe clays, are absent from the Study Area.

It is important to understand that all CNPS-listed plants were included in this initial analysis; however, List 4 plants were further analyzed only 1) if the only known populations of these species occurred in the vicinity of Santa Clara County; 2) if the species is recorded by CNPS (2010) as only occurring from two or fewer counties in California (*i.e.*, very limited distribution); 3) for populations at the periphery of a species' range or in areas where the taxon is especially uncommon or has sustained heavy losses; 4) for the type locality of a plant; or 5) for populations exhibiting unusual morphology or occurring on unusual substrates. Two List 4 species were carried further in this analysis due to their restricted range: Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*) and Satan's goldenbush (*Isocoma menziesii* var. *diabolica*).

In total, thirty-five special-status plants were thus carried forward for further analysis. The legal status and potential for occurrence of these 35 special-status plant species known to occur or potentially occurring in the general vicinity of the Study Area are given in Table 3. Expanded descriptions are included below for those species that are known to occur within the Study Area, that are extant, and for which potentially suitable habitat occurs within the Study Area, and for those that resource agencies and/or the HCP/NCCP (ICF Jones and Stokes 2008) have expressed particular concern such that more expanded discussion is required.

Table 3. Special-status Plant Species, Their Status, Habitat Description and Rationale for Occurrence within the Envision San José 2040 General Plan Update Study Area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION*	RATIONALE
Federal or State Endangered and Threatened Species				
Tiburon Indian paintbrush	*Castilleja affinis* ssp. *neglecta*	ST, FE, CNPS List 1B.2, HCP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	Documented occurrences within the Study Area are on Coyote Ridge between Anderson Reservoir and Highway 101. Potential habitat within the Study Area includes serpentine bunchgrass grasslands located in the northern portion of the Coyote Ridge and in the Santa Teresa Hills.
Coyote ceanothus	*Ceanothus ferrisiae*	FE, CNPS List 1B.1, HCP	Chaparral, coastal scrub, valley and foothill grassland on serpentinite/ serpentine bunchgrass grassland and mixed serpentine chaparral	There are three known populations, all of them from Coyote Ridge. One population is recorded from the Anderson Reservoir area, within the southern portion of the Study Area. The species may also occur on serpentine soils within the Study Area on the northern Coyote Ridge and the Santa Teresa Hills.
Robust spineflower	*Chorizanthe robusta* var. *robusta*	FE, CNPS List 1B.1, HCP No Take	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub- sandy or gravelly/ NA	One historical occurrence recorded from within the Study Area; however, this occurrence is considered extirpated, as is another occurrence located in the Santa Cruz Mountains to the southwest of the Study area. It is highly likely that all suitable interior stabilized dunes that historically occurred in the area have been developed. Therefore, the species is absent from the Study Area.
Santa Clara Valley dudleya	*Dudleya setchellii*	FE, CNPS List 1B.1, HCP	Cismontane woodland, valley and foothill grassland on serpentinite, rocky/ serpentine rock outcrop	The species occurs within the Study Area on serpentine rock outcrops in the Santa Teresa Hills, on Communications Hill, on the hill near Monterey Road/Senter Road, in the northern portion of Coyote Ridge, near Anderson Reservoir, and in the upper Llagas Creek watershed. Although many populations have been documented from within the Study Area much of the suitable habitat has not been surveyed.
Contra Costa goldfields	*Lasthenia conjugens*	FE, CNPS List 1B.1, HCP No Take	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools in mesic areas/ California annual grassland, seasonal wetlands	One historical occurrence described from within the Study Area. Presumed extirpated from Santa Clara County; no suitable vernal pool habitat exists within the Study Area; although saline-alkaline seasonal wetlands between Disk Drive and Los Esteros Road, southwest of the WPCP, are very similar to habitats currently supporting this species just north of the Study Area, in Alameda County.
Rock sanicle	*Sanicula saxatilis*	SR, CNPS List 1B.2, HCP	Broadleafed upland forest, chaparral, valley and foothill grassland on rocky substrate/ NA	Several recorded populations from Mt. Hamilton, which is well outside of the Study Area; there are no records within the Study Area and no suitable habitat is present. Therefore, the species is absent from the Study Area.
Metcalf Canyon jewel-flower	*Streptanthus albidus* ssp. *albidus*	FE, CNPS List 1B.1, HCP	Valley and foothill grassland (serpentinite)/ serpentine bunchgrass grassland	The majority of the species' range is considered to occur within the Study Area. The species occurs on serpentine soils along northern Coyote Ridge and near Anderson Reservoir within the Study Area. There is some uncertainty around the taxonomic treatment of this species and most beautiful jewel-flower, but potentially suitable habitat is present north of Alum Rock, in the Santa Teresa Hills, west of Coyote Valley, along Coyote Ridge, on Communications Hill (although surveys of Communications Hill have never found the species), and in serpentine on the hill near Monterey Road and Senter Road.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION*	RATIONALE
California seablite	Suaeda californica	FE, CNPS List 1B.1	Coastal salt marshes, transition zones along such marshes/tidal salt marsh	The only documented occurrence in the region was located in baylands to the north of the Study Area. This species has since been extirpated from the San Francisco Bay (although one population has been introduced at a mitigation site near San Francisco). This species is absent from the Study Area.
Showy Indian clover	*Trifolium amoenum*	FE, CNPS List 1B.1, HCP No Take	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite)/ serpentine bunchgrass grassland	No records exist within the Study Area. However, suitable habitat is present within the serpentine grasslands located north of Alum Rock, in the Santa Teresa Hills, along Coyote Ridge, west of Anderson Reservoir, west of Coyote Valley, and on Communications Hill (although surveys of Communications Hill have never found the species).
California Native Plant Society Species				
Franciscan onion	*Allium peninsulare* var. *franciscanum*	CNPS List 1B.2	Cismontane woodland, valley and foothill grassland on clay, volcanic soils, often serpentinite/ oak woodland	No populations described as occurring within the Study Area. Closest known population occurs off Page Mill Road in Palo Alto, but suitable habitat exists within the Study Area in oak woodland habitats, such as those in the Santa Teresa and Almaden Hills; may be present in the Study Area.
Bent-flowered fiddleneck	*Amsinckia lunaris*	CNPS List 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland/ oak woodland and chaparral	No known occurrences from within the Study Area. One population described from Santa Clara County on Kinkaid Road 1.1 miles north of Mt. Hamilton Road, outside of the Study Area. However, suitable habitat is present at similar elevations within the Study Area in chaparral and oak woodland habitats, particularly in the southwestern portion of the Study Area near the Almaden Hills and near Llagas Creek, and this species may be present in the Study Area.
Alkali milk-vetch	*Astragalus tener* var. *tener*	CNPS List 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools on alkaline soils/California annual grassland habitat on alkaline soil, seasonal wetlands	Four recorded populations from the general vicinity, with one occurrence known from New Chicago Marsh in Alviso within the Study Area. This population may be extirpated, but at least marginally suitable habitat still exists in the Study Area south and southwest of the WPCP, and this species may be present.
Brittlescale	*Atriplex depressa*	CNPS List 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools on alkaline, clay soils /California annual grassland habitat on alkaline soil, seasonal wetlands	Closest known occurrence is in baylands north of Mud Slough in similar habitat to that occurring south and southwest of the WPCP within the Study Area. Though no occurrences are within the Study Area, suitable habitat is present on low lying moist, alkaline, clay soils near the bay, and this species may be present.
San Joaquin spearscale	*Atriplex joaquiniana*	CNPS List 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland on alkaline soils/ California annual grassland habitat on alkaline soil, seasonal wetlands	There are two historical but extirpated records of the species from the Study Area near Alviso, but extant occurrences also exist just outside of the Study Area. Not known to occur within the Study Area, but similar to the rationale described above for brittlescale, habitat of a suitable quality is present south and southwest of the WPCP. Therefore, this species may be present within the Study Area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION*	RATIONALE
Big-scale balsamroot	*Balsamorhiza macrolepis* var. *macrolepis*	CNPS List 1B.2, HCP	Chaparral, Cismontane woodland, Valley and foothill grassland sometimes in serpentinite/ serpentine bunchgrass grassland, mixed serpentine chaparral, and oak woodland	One historical occurrence from east of Coyote Creek in the Study Area and one extant occurrence in the northern portion of the Coyote Ridge; additional suitable habitat present within Study Area in serpentine soils along Coyote Ridge, near Anderson Reservoir, west of Coyote Valley, in the Santa Teresa Hills, Communications Hill, and near Alum Rock; may be present in the Study Area.
Round-leaved filaree	*California macrophylla*	CNPS List 1B.1	Cismontane woodland, valley and foothill grassland/ in California annual grassland and oak woodland habitat on clay soils,	One historical record from within the Study Area; additional suitable habitat occurs within the Study Area in the Santa Teresa and Almaden Hills; may be present in the Study Area.
Pink creamsacs	*Castilleja rubicundula* ssp. *rubicundula*	CNPS List 1B.2, HCP No Take	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland on serpentinite/ oak woodland, serpentine bunchgrass grassland	The nearest recorded population occurs approximately 4.5 miles south of Gilroy, well outside of the Study Area. However, suitable habitat is present along Coyote Ridge, within the Santa Teresa Hills, near Anderson Reservoir, west of Coyote Valley, within Communications Hill (although it has not been found there in surveys), and within the area of serpentine north of Alum Rock; may be present in the Study Area.
Congdon's tarplant	*Centromadia parryi* ssp. *congdonii*	CNPS List 1B.2	Valley and foothill grassland (alkaline)/ California annual grassland habitat on alkaline soils	Five recorded populations near the Study Area in the Warm Springs region of Fremont and in Alviso. The species often occurs in disturbed areas on alkaline soils and could occur in disturbed California annual grassland habitat near seasonally wet habitat; may be present in the Study Area.
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon*	CNPS List 1B.2, HCP	Chaparral, cismontane woodland, valley and foothill grassland in serpentinite seeps/ serpentine seeps	There are numerous recorded populations of the species from within the Study Area. In addition, there are numerous records from outside of the Study Area, on the Coyote Ridge. Suitable habitat within the Study Area includes serpentine seeps on northern Coyote Ridge and in the Santa Teresa Hills or in any serpentine seep habitat.
Santa Clara red ribbons	*Clarkia concinna* ssp. *automixa*	CNPS List 4.3	Chaparral, cismontane woodland/ chaparral, oak woodland	Historical records of the species are listed from the Study Area. The species is currently found only in Santa Clara and Alameda Counties. Suitable habitat exists within the Study Area in chaparral and oak woodland habitats in the Santa Teresa Hills and along Coyote Ridge, near Anderson and Calero Reservoirs, and within the Almaden Hills; may be present in the Study Area.
San Francisco collinsia	*Collinsia multicolor*	CNPS List 1B.2, HCP	Closed-cone coniferous forest, coastal scrub, sometimes serpentinite/ NA	One occurrence listed in Edenvale, located within the southern portion of the Study Area. However, this population occurs in an area that has since been developed and was last observed in 1961. No other records occur near or within the Study Area, and habitat of a suitable quality is not present. We therefore consider the species to be absent from the Study Area.
Point Reyes bird's-beak	*Cordylanthus maritimus* ssp. *palustris*	CNPS List 1B.2	Marshes and swamps (coastal salt)/ tidal salt marsh, muted tidal/ diked salt marsh	Several historic occurrences in the South Bay, one within the marshes in Alviso. While suitable habitat is present, the species is considered extirpated from the entire southern San Francisco Bay Area and is now only known from areas near San Francisco and north within San Pablo Bay (as well as other areas outside the region). Therefore, the species is absent from the Study Area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION*	RATIONALE
Hoover's button-celery	*Eryngium aristulatum* var. *hooveri*	CNPS List 1B.1	Vernal pools/ California annual grassland habitat on alkaline soil, seasonal wetland	There are several occurrences of the species from the vicinity, with one occurrence known from the New Chicago Marsh in Alviso, within the Study Area. Habitat of a suitable quality may be present in the lands between Disk Drive and Los Esteros Road, southwest of the WPCP; therefore, the species may be present within the Study Area.
Fragrant fritillary	*Fritillaria liliacea*	CNPS List 1B.2, HCP	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often in serpentinite/ oak woodland, serpentine bunchgrass grassland	Numerous populations are documented from within or near the Study Area, including near the northern portion of Coyote Ridge and in Alum Rock Park. Additional suitable habitat occurs within the Study Areas, including along Coyote Ridge, near Anderson and Calero Reservoirs, west of Coyote Valley, within the Santa Teresa Hills, on Communications Hill (although it has not been found there during surveys), and within the area of serpentine north of Alum Rock.
Loma Prieta hoita	*Hoita strobilina*	CNPS List 1B.1, HCP	Chaparral, cismontane woodland, riparian woodland, usually serpentinite/ mesic mixed serpentine chaparral, serpentine seeps	Numerous records exist within the Study Area in serpentine soils in the Santa Teresa Hills and just outside of the Study Area near Almaden Quicksilver County Park. Suitable habitat is present within the Study Area in serpentine soils. Additional suitable habitat is present in the Santa Teresa Hills along Coyote Ridge, near Anderson and Calero Reservoirs, and west of Coyote Valley within the Study Area.
Satan's goldenbush	*Isocoma menziesii* var. *diabolica*	CNPS List 4.2	Cismontane woodland/ oak woodland	The species is found only in Santa Clara and San Benito counties and occurs within the Study Area in the foothills near the Almaden Hills. Suitable habitat is present within the Study Area in the foothills where oak woodland habitat occurs in the Santa Teresa Hills, the Almaden Hills, near Anderson Reservoir, and along Coyote Ridge.
Smooth lessingia	*Lessingia micradenia* var. *glabrata*	CNPS List 1B.2, HCP	Chaparral, cismontane woodland- on serpentinite, often roadsides/ mixed serpentine chaparral and oak woodland	Numerous records from near the Study Area, mostly within the Santa Teresa Hills the Almaden Reservoir, east of Llagas Creek, and Almaden Quicksilver County Park. Suitable habitat is present within the Study Area, including those portions of the Santa Teresa Hills within the Study Area and along Coyote Ridge; may be present in the Study Area.
Arcuate bush-mallow	*Malacothamnus arcuatus*	CNPS List 1B.2	Chaparral, cismontane woodland/ chaparral and oak woodland	Five records of the species occur near the Study Area; one is within the Study Area near Alum Rock while the remaining records are from south of the Study Area near Calero Reservoir and Almaden Quicksilver County Park. Suitable habitat exists within the Study Area in the Santa Teresa Hills.
Davidson's bush-mallow	*Malacothamnus davidsonii*	CNPS List 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland/ chaparral, oak woodland, mixed riparian forest and woodland	All known records of the species are from near Stanford and Los Altos, outside of the Study Area. However, suitable habitat is present within the Study Area within the Almaden Hills and Santa Teresa Hills; may be present in the Study Area.
Hall's bush-mallow	*Malacothamnus hallii*	CNPS List 1B.2, HCP	Chaparral, coastal scrub/ chaparral	There are numerous records of the species from the Study Area in the Santa Teresa Hills and along Coyote Ridge. Additional suitable habitat is present within the Study Area in the Almaden Hills and the foothills of the Santa Cruz Mountains.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION*	RATIONALE
Mt. Diablo cottonweed	*Micropus amphibolus*	CNPS List 3.2	Broad-leafed upland forest, chaparral, cismontane woodland, valley and foothill grassland in rocky habitat/ oak woodland, chaparral, California annual grassland	There is one record of the species in the Study Area located west of Campbell. Suitable habitat occurs within the Study Area within rocky oak woodland habitat in the Santa Teresa Hills and near Calero Reservoir; may be present in the Study Area.
Robust monardella	*Monardella villosa* ssp. *globosa*	CNPS List 1B.2, HCP	Broad-leafed upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland/ chaparral, oak woodland, and California annual grassland	There are no records of the species from the Study Area. However, there are three records occurring just outside of the Study Area in Almaden Quicksilver County Park and the Furtado Open Space Preserve. Suitable habitat is present within the Study Area, particularly in the Santa Teresa Hills and the Almaden Hills; may be present in the Study Area.
Hairless popcorn-flower	*Plagiobothrys glaber*	CNPS List 1A, HCP No Take	Meadows and seeps (alkaline), marshes and swamps (coastal salt)/ muted-tidal, diked marsh, tidal salt marsh, tidal brackish marsh	A population is recorded from within the Study Area, although this population is currently believed extirpated. The species is also thought to be extirpated from Santa Clara County and the surrounding areas near San Francisco Bay, although suitable habitat is present within the Study Area. Therefore, the species is absent from the Study Area.
Most beautiful jewel-flower	*Streptanthus albidus* ssp. *peramoenus*	CNPS List 1B.2, HCP	Chaparral, cismontane woodland, valley and foothill grassland in serpentinite/ serpentine bunchgrass grassland, mixed serpentine chaparral	Numerous populations are recorded from within the Study Area along Coyote Ridge, near Anderson and Calero Reservoirs, and the Santa Teresa Hills. Suitable habitat is also present within the Study Area on Communications Hill and the serpentine habitat area near Alum Rock.
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	CNPS List 1B.1, HCP No Take	Valley and foothill grassland (alkaline hills)/ NA	Previously thought to be extinct; no records from the Study Area and only one historical population is described from outside of the Study Area in Saratoga. No suitable habitat in an undisturbed state present in the Study Area. Therefore, this species is absent from the Study Area.

Key to Abbreviations:

Status: Federal Endangered (FE); State Endangered (SE); State Threatened (ST); State Protected (SP); State Rare (SR); California Native Plant Society (CNPS), Covered Species in the Santa Clara Valley HCP/NCPP (HCP); No Take Species in the Santa Clara Valley HCP/NCPP (HCP No Take); Does not occur within Study Area (NA).

* The terms used to describe the general habitat descriptions in this column include the CNPS habitat designations separated by a slash (/) from the terms describing natural communities and habitats within this existing conditions report (*i.e.*, CNPS habitats/existing conditions habitats).

FEDERAL OR STATE ENDANGERED OR THREATENED SPECIES

Tiburon Indian Paintbrush (*Castilleja affinis* ssp. *neglecta*). Federal Listing Status: Endangered; State Listing Status: Threatened; CNPS List: 1B.2. Tiburon Indian paintbrush is a perennial, hemiparasitic herb in the figwort family (Scrophulariaceae) that blooms from April to June and dies back to a woody base in July and August. Due to its hemiparasitic nature, it may depend on certain host plant populations for habitat suitability. This subspecies occurs in serpentinite soils in valley and foothill grassland habitats (a CNPS-designated habitat) from 197 to 1,312 feet in elevation. The yellow flowers are primarily bee-pollinated (USFWS 1998A). Associated species include dwarf plantain and purple needlegrass.

Tiburon Indian paintbrush is a California endemic with fewer than 10 known occurrences in four USGS 7.5-minute quadrangles in Marin, Napa, and Santa Clara counties (CNPS 2010). This relatively limited distribution is consistent with the conclusions reached in the *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area* (USFWS 1998A), which states that the species was probably never widespread.

Two of the 10 known populations of Tiburon Indian paintbrush are located within the Study Area, on southern Coyote Ridge, west of Anderson Reservoir. The largest population consists of approximately 1000 individuals in the Kirby Canyon area of Coyote Ridge. After close review of the specific environmental factors influencing the distribution of this species, including such items as elevation, soil type, slope, aspect, associate species, ecological condition, and proximity of documented populations to the current Study Area, we have concluded that habitat capable of supporting the Tiburon Indian paintbrush is also present elsewhere within the current Study Area. Such suitable habitat includes serpentine bunchgrass grasslands in the Silver Creek Hills area of northern Coyote Ridge, as well as potentially within the Santa Teresa Hills. The Tiburon Indian paintbrush is considered a covered species by the second administrative draft HCP/NCCP.

Coyote Ceanothus (*Ceanothus ferrisiae*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Coyote ceanothus is an erect, stiffly branched evergreen shrub in the buckthorn family (Rhamnaceae) with small, dark green, shiny leaves. It blooms from January to May. This extremely rare species is distinguished from the common buckbrush (*Ceanothus cuneatus*) by the presence of short teeth along the margins of the leaves, tapered or rounded (not wedge-shaped) leaf bases, and wider seed capsules. The species can be found on serpentinite soils in chaparral, coastal scrub, and valley and foothill grasslands between 394 and 1,509 feet elevation. Species commonly associated with Coyote ceanothus include foothill pine (*Pinus sabiniana*) and bigberry manzanita.

Coyote ceanothus occurs in two locations within the Study Area: Anderson Dam and the Kirby Canyon area of southern Coyote Ridge. The species is also known from the mountains south of the Study Area, near Llagas Avenue north of Morgan Hill (USFWS 1998A). According to the *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area* (USFWS 1998A), little or no reproduction has been observed in known stands of this species, and remaining populations are composed of mature and senescent individuals only.

Although the only known records of Coyote ceanothus from the Study Area are located in the Coyote Ridge/Anderson Reservoir areas, complete surveys of suitable serpentine habitat within the Study Area have not been conducted. Similar serpentine soils as those which support the known populations likely occur within the Study Area in the Silver Creek area of northern Coyote Ridge and in the Santa Teresa Hills, and thus, serpentine bunchgrass grassland and mixed serpentine chaparral habitat in these area may also potentially support the species. The Coyote ceanothus is considered a covered species by the second administrative draft HCP/NCCP.

Robust Spineflower (*Chorizanthe robusta* var. *robusta*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Robust spineflower is a summer-flowering annual herb in the buckwheat family (Polygonaceae). Its blooming period is from April to September, although in years with late fall rains fruiting structures are obvious as late as November. This species requires coarse sand- or gravel-based soils and is found at elevations from 10 to 1,000 feet in chaparral, coastal dune, coastal scrub, sandy coastal prairie sites, and openings in cismontane woodland communities with relatively sparse ground cover (CNDDB 2010, CNPS 2010). Associated species include seaside woolly sunflower (*Eriophyllum staechadifolium*) and coastal sagewort (*Artemisia pycnocephala*) (USFWS 2004a).

Robust spineflower is found in Monterey, Santa Cruz, San Francisco, and San Mateo counties, and has been extirpated from its historical range in Santa Clara and Alameda counties. The recovery plan for the species (USFWS 2004a) describes only nine locations with 10 known populations of the species, all of which occur on coastal dune habitat on especially sandy or gravelly soils within a small, relatively coastal area of southern Santa Cruz County (USFWS 2004a).

There are two historical records of robust spineflower near the Study Area. One of these is listed as occurring just outside of the Study Area near Los Gatos and was recorded in 1888. The other record is also a historical occurrence from 1882 that was reported within the Study Area in San José, but the exact site is not known. Because habitats capable of supporting this species are entirely absent from the Study Area, the coastal associated species listed above are absent, and there are no recent records of the species from within or near the Study Area, we consider this species to be absent from the Study Area. The robust spineflower is considered a "no take" species by the second administrative draft HCP/NCCP.

Santa Clara Valley Dudleya (*Dudleya setchellii*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Santa Clara Valley dudleya is a low-growing, succulent, perennial herb in the stonecrop family (Crassulaceae) that blooms during May and June, with a single plant often producing many flowering stems. Propagation occurs sexually via gravity/wind-dispersed seeds or vegetatively via rhizomes or horizontal stems. Individual plants may live more than 10 years. This dudleya is endemic to the ultramafic formations (serpentinite and peridotite) of the Santa Clara Valley, and is largely restricted to the serpentine areas surrounding Coyote Valley. Populations occur on relatively barren rock outcrops and on serpentine balds within serpentine grasslands and cismontane woodlands from 197 to 1,493 feet in elevation. The species is characterized by a basal rosette of fleshy, glaucous leaves, which arise from a short, aboveground stem, and by ascending floral stems bearing pale yellow flowers. The roots of Santa Clara Valley dudleya can grow up to 12 inches long and typically extend into

hairline fractures and rock crevices of serpentine outcrops. Associated species often include dwarf plantain, smooth lessingia (*Lessingia micradenia* var. *glabrata*), and both special-status jewelflowers (*Streptanthus albidus* ssp. *albidus* and *S. albidus* ssp. *peramoenus*).

This Santa Clara County endemic is documented in seven USGS 7.5-minute quadrangles, all in the area from southern San José south to San Martin (USFWS 1998A, CNPS 2010). Within the Study Area, it has been recorded on serpentine rock outcrops along much of the length of Coyote Ridge from the Silver Creek Hills south to the Kirby Canyon area, on Communications Hill, on the serpentine-dominated near Monterey Road/Senter Road, and in the Santa Teresa Hills. The serpentine grassland and outcrop/barren habitats in these areas generally provide suitable habitat for this species. The Santa Clara Valley dudleya is considered a covered species by the second administrative draft HCP/NCCP.

Contra Costa Goldfields (*Lasthenia conjugens*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Contra Costa goldfields is an annual herb in the sunflower family (Asteraceae) that blooms from March to June. It occurs in mesic cismontane woodlands, alkaline playas, valley and foothill grasslands, and vernal pools at elevations from 0 to 1,542 feet. Associated species include toothed downingia (*Downingia pulchella*), woolly marbles (*Psilocarphus brevissimus*), and brass buttons (*Cotula coronopifolia*).

The range of this California endemic is documented as including 24 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Monterey, Marin, Napa, Solano, and Sonoma counties. It is presumed extirpated from its historical range in Mendocino, Santa Barbara, and Santa Clara counties (CNPS 2010).

There are three records of Contra Costa goldfields listed in the CNDDB (2010) as occurring near or within the Study Area. Of these, one was last seen in 1958 within the Study Area at Capitol Avenue and Cornwall Street in San José, although it is presumed extirpated as the area is now developed. There are no current records of the species from within the Study Area; the nearest extant populations are located approximately 3 miles northeast of the Study Area in the Warm Springs District of Fremont within the Don Edwards San Francisco Bay National Wildlife Refuge.

Because suitable habitat potentially capable of supporting this species, and very similar to habitats found at nearby Warm Springs in Fremont, is present within the Study Area, this species could be found within the Study Area in the alkaline seasonal wetlands between Disk Drive and Los Esteros Road, southwest of the WPCP. The Contra Costa goldfields is considered a "no take" species by the second administrative draft HCP/NCCP.

Rock Sanicle (*Sanicula saxatilis*). Federal Listing Status: None; State Listing Status: Rare; CNPS List: 1B.2. This perennial herb in the parsley family (Apiaceae) blooms from April to May. It is found on rocky soils in broadleaved upland forests, chaparral, and valley and foothill grassland habitats at elevations of approximately 2,045 to 3,880 feet (CNPS 2010). Associated species include oceanspray (*Holodiscus discolor*), canyon live oak (*Quercus chrysolepis*), and foothill pine (CNDDB 2010).

Rock sanicle is known from fewer than 15 occurrences in five USGS 7.5-minute topographic quadrangles in Contra Costa and Santa Clara counties (CNPS 2010). There are no records of rock sanicle listed in the CNDDB (2010) as occurring within or near the Study Area. The Consortium of California Herbaria (2010) lists seven records from Santa Clara County, all of which were found on Mt. Hamilton, located approximately 7 miles east of the Study Area. The other known populations of the species occur on Mt. Diablo, located northeast of the Study Area in Contra Costa County, and one occurrence from Henry W. Coe State Park located approximately 5 miles southeast of the Study Area. Because suitable habitat capable of supporting this species is entirely absent from the Study Area, and associate species are absent from or uncommon within or near the Study Area, we consider this species to be absent. The rock sanicle is considered a covered species by the second administrative draft HCP/NCCP.

Metcalf Canyon Jewel-flower (*Streptanthus albidus* ssp. *albidus*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Metcalf Canyon jewel-flower is an annual herb in the mustard family (Brassicaceae) that blooms from April to July. It grows on serpentine soils in valley and foothill grassland habitat at elevations from 148 to 2,625 feet and can be found on road cuts. Associated species include bird's foot lotus (*Lotus humistratus*) and dwarf plantain.

Metcalf Canyon jewel-flower is documented from seven USGS 7.5-minute quadrangles in Santa Clara County. The species can be locally abundant, but its range is extremely limited. It is known from fewer than 20 occurrences (CNPS 2010). There are six records of Metcalf Canyon jewel-flower listed in the CNDDB (2010) as occurring within the Study Area, mostly in south San José; all are presumed to be extant. The Consortium of California Herbaria (2009) lists seven records, all of which are from Santa Clara County, and many of which are from within the Study Area, including within the Silver Creek Hills of northern Coyote Ridge and from Communications Hill. Another large population is found on the southern boundary of the Study Area in Metcalf Canyon. Within the Study Area, serpentine bunchgrass grassland habitat elsewhere along the length of Coyote Ridge, as well as within the Santa Teresa Hills is also suitable for, and may support, this species. The Metcalf Canyon jewel-flower is considered a covered species by the second administrative draft HCP/NCCP.

Showy Indian Clover (*Trifolium amoenum*). Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. Showy Indian clover is an annual herb in the legume family (Fabaceae) that blooms from April to June. It is found in coastal bluff scrub and valley and foothill grassland habitats at elevations of 16 to 1,362 feet (CNPS 2010). It is sometimes, but not always, associated with serpentine-derived soils. The species can also occur in disturbed grassland habitat. Associated species include California oatgrass (*Danthonia californica*) and flax (*Linum* spp.)

There are no records of showy Indian clover listed in the CNDDB (2010) as occurring within or near the Study Area. The only record of the species in Santa Clara County is in Gilroy (1903), but this population is believed extirpated. The species is known to occur within Marin County and is considered extirpated from Napa, Santa Clara, Solano, and Sonoma counties (CNPS 2010). Historical habitat that supported the species was lost to urbanization and agriculture.

After close review of the specific environmental factors influencing the distribution of this species, we have concluded that habitat capable of supporting the showy Indian clover is present within the current Study Area. Such areas include the serpentine grasslands north of Alum Rock, in the Santa Teresa Hills, and on Coyote Ridge. The Showy Indian clover is considered a "no take" species by the second administrative draft HCP/NCCP.

CALIFORNIA NATIVE PLANT SOCIETY SPECIES

Franciscan Onion (*Allium peninsulare* var. *franciscanum*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Franciscan onion is a bulbiferous herb in the lily family (Liliaceae) that blooms from May to June. It often occurs on serpentinite soils or on clay or volcanic soils in cismontane woodland and valley and foothill grassland habitats at elevations from 171 to 984 feet (CNPS 2010). CNDDB (2010) records list the species as occurring in mixed hardwood forest habitat with California bay, California buckeye, and coast live oak on volcanic substrates in shade to part sun among large cobbles.

Franciscan onion occurs within 10 USGS 7.5-minute quadrangles within Mendocino, Santa Clara, San Mateo, and Sonoma counties. There are no records of Franciscan onion listed in the CNDDB (2010) as occurring within or near the Study Area. The Consortium of California Herbaria (2009) lists two records of the variety, which were collected in Santa Clara County outside of the Study Area off Page Mill Road along its length to Black Mountain, in the mountains northwest of the Study Area.

The nearest known population is located about 6 miles to the west of the Study Area, along Page Mill Road from Palo Alto to the Los Altos Hills. After close review of the specific environmental factors influencing the distribution of this species, we have concluded that habitat capable of supporting the Franciscan onion is present within the current Study Area. These areas include the Santa Teresa and Almaden Hills, west of Calero Reservoir, east of Anderson Reservoir, and near Llagas Creek within oak woodland habitats. Since focused surveys for the variety have not been conducted for the species within the Study Area, we assume that it could potentially occur there.

Bent-flowered Fiddleneck (*Amsinckia lunaris*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Bent-flowered fiddleneck is an annual herb in the forget-me-not family (Boraginaceae) that blooms from March to June. This species occurs within cismontane woodland, coastal bluff scrub, and valley and foothill grassland habitat at elevations of 10 to 1,640 feet (CNPS 2010). CNDDB (2010) records describe the species as occurring in grassland habitat with encroaching scrub and associated species such as whitehead mule ears (*Wyethia helenioides*) and creamcups (*Platystemon californicus*).

Bent-flowered fiddleneck occurs in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, and Yolo counties. It is known from fewer than 35 occurrences in the North and Central Coast Ranges, many of which have not been observed in recent years (CNPS 2010). There are no records of bent-flowered fiddleneck listed in the CNDDB (2010) as occurring within the Study Area, although there is one 1998 record located approximately 1.1 miles north of Mt. Hamilton Road on Kinkaid Road approximately 1.5 miles east of the Study Area.

After close review of the specific environmental factors influencing the distribution of this species, we have concluded that portions of the Study Area possess these same features, therefore, habitat capable of supporting the bent-flowered fiddleneck is present within the current Study Area. Suitable habitat is present at similar elevations in chaparral and oak woodland habitats, particularly in the southwestern portion of the Study Area near the Almaden Hills and west of Calero Reservoir.

Alkali Milk-vetch (*Astragalus tener* var. *tener*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Alkali milk-vetch is an annual herb in the pea family (Fabaceae) that blooms from March to June. It occurs in alkaline soils in playas, valley and foothill grasslands underlain by adobe clay, and vernal pool habitats at elevations between 3 and 197 feet (CNPS 2010). Associate species include calicoflower (*Downingia* spp.), woolly marbles (*Psilocarphus* spp.), and popcorn flower (*Plagiobothrys* spp.).

Two occurrences, which may be extirpated, are recorded from the Study Area in the vicinity of Alviso and Milpitas, east and southeast of the WPCP. Additionally, the species has recently been found to occur in the Warm Springs area of Fremont near the Don Edwards National Wildlife Refuge, approximately 1.5 miles to the north of the Study Area. Another occurrence is located outside the Study Area in the baylands in the vicinity of the historic railroad town of Albrae, about a mile southeast of the Fremont Raceways (CNDDB 2010). While the species may be extirpated from the area, the extant populations in Fremont provide a potential seed source, and suitable habitat occurs within the Study Area very similar to where is currently found in Alameda County today. This species may also occur within the Study Area in Alviso in alkaline seasonal wetlands south of WPCP, and the alkaline wetlands to the southwest of the WPCP at Arzino Ranch.

Brittlescale (*Atriplex depressa*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Brittlescale is an annual herb in the goosefoot family (Chenopodiaceae) that blooms from April to October. The species grows in relatively barren areas with alkaline clay soils within chenopod scrub, meadows and seeps, playas, vernal pools, valley and foothill grassland, and occasionally in riparian marshes at elevations ranging from 3 to 1050 feet (CNPS 2010). *Atriplex* species are somewhat tolerant of disturbance. Associate species include alkaline-adapted, seasonal wetland species such as bush seepweed (*Suaeda moquinii*), common tarweed (*Centromadia pungens*), and more common alkaline tolerant grasses such as Italian wild-rye.

The species occurs in the Warm Springs Area of Fremont in Alameda County, approximately 1.5 miles north of the Study Area, in alkaline depressional habitats very similar to those found in the lands immediately south of WPCP (CNDDB 2010), as well as in Arzino Ranch to the southwest of the WPCP. As suitable habitat is present within the Study Area and nearby populations may provide a potential seed source, the species may occur within the Study Area in Alviso in alkaline seasonal wetlands south and southwest of WPCP.

San Joaquin Spearscale (*Atriplex joaquiniana*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. San Joaquin spearscale is an annual herb in the goosefoot

family (Chenopodiaceae) that blooms from April to October. It is found in alkaline soils in chenopod scrublands, meadows and seeps, playas, and valley and foothill grasslands from 3 to 2740 feet elevation (CNPS 2010). Associate species include alkaline-adapted, seasonal wetland species such as bush seepweed (*Suaeda moquinii*), common tarweed (*Centromadia pungens*), and more common alkaline tolerant grasses such as Italian wild-rye.

Two occurrences in the vicinity of the Study Area occur in Alameda County, near San Francisco Bay. One extant population is located in the Warm Springs Area of Fremont, approximately 1.5 north of the Study Area (CNDDB 2010). As suitable habitat is present within the Study Area and nearby populations may provide a potential seed source, the species may occur within the Study Area in Alviso in alkaline seasonal wetlands to the south and southwest of the WPCP.

Big-scale Balsamroot (*Balsamorhiza macrolepis var. macrolepis*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Big-scale balsamroot is a perennial herb belonging to the sunflower family (Asteraceae) that blooms from March to June. This plant occurs in chaparral, cismontane woodland, and valley and foothill grasslands, sometimes on serpentine, at elevations between 295 and 4,593 feet (Hickman 1993, CNPS 2008). CNDDB (2010) describes the species as occurring locally on serpentine substrate in California annual grassland habitat on northwest facing slopes of 50%. Associated species include phacelia (*Phacelia* spp.), California beeplant, and Ithuriel's spear (*Triteleia laxa*).

This species is reported from Alameda, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Solano, Sonoma, and Tehama counties (CNPS 2008). There is one record of big-scale balsamroot listed in the CNDDB (2010) as occurring within the Study Area 0.85 miles southeast of the Capital Expressway and Highway 101 interchange that has been extirpated due to development. Another record, believed to be extant, occurs at the north end of the Silver Creek Hills (just outside the Study Area) adjacent to development. The last local record occurs outside of the Study Area approximately 0.5 miles northwest of Coyote Lake Dam in the Coyote Lake-Harvey Bear Ranch County Park.

Although there are no current records of big-scale balsamroot occurring within the Study Area, many of the key habitat characteristics believed to be responsible for influencing the distribution of this species are present here. Suitable habitat includes serpentine bunchgrass grassland, mixed serpentine chaparral, and oak woodland habitat types on Coyote Ridge, the Santa Teresa Hills, Communications Hill, near the Anderson Reservoir, and near Alum Rock, and the species could occur within the Study Area in one or more of these areas. The big-scale balsamroot is considered a covered species by the second administrative draft HCP/NCCP.

Round-leaved Filaree (*California macrophylla,* formerly *Erodium macrophyllum*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1. Round-leaved filaree is an annual herb in the geranium family (Geraniaceae) that blooms from March to May. This species occurs on clay soils in valley and foothill grassland, and open cismontane woodland habitats at elevations from 49 to 3,937 feet.

Round-leaved filaree occurs in 92 USGS 7.5-minute quadrangles throughout the state in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Lassen, Los Angeles,

Merced, Monterey, Napa, Riverside, Santa Barbara, San Benito, Santa Clara, San Diego, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Ventura, and Yolo counties, and within habitats from Oregon to Baja California. It is believed extirpated from Butte County and Santa Cruz Island. Many collections of the species are historical (CNPS 2010).

There is one historical record (1955) of round-leaved filaree listed in the CNDDB (2010) occurring within the Study Area in the Silver Creek Hills. Additional suitable habitat for the species occurs in California annual grassland and oak woodland habitats in the Santa Teresa and Almaden Hills, and the species could be present in the Study Area currently.

Pink Creamsacs (*Castilleja rubicundula* ssp. *rubicundula*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Pink creamsacs is an annual herb in the figwort family (Scrophulariaceae) that blooms from April to June. This subspecies grows on serpentinite soils in openings in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland habitats from 66 to 2,953 feet in elevation. The closest CNDDB (2010) occurrence was observed in 1992 as occurring in a seep/spring with alkali barley (*Hordeum depressum*) and California alkali grass (*Puccinellia simplex*).

This California endemic occurs in 20 USGS quadrangles in Butte, Colusa, Glenn, Lake, Napa, Santa Clara, and Shasta counties (CNPS 2010). There are no records of pink creamsacs listed in the CNDDB (2010) as occurring within or near the Study Area. The nearest occurrence listed is north of Tar Creek, approximately 5.4 miles south of Gilroy within the Santa Cruz Mountains, approximately 23 miles south of the Study Area.

After close review of the specific environmental factors influencing the distribution of this species, we have concluded that habitat capable of supporting the pink creamsacs is present within the current Study Area. Suitable habitat is present on Coyote Ridge, within the Santa Teresa Hills, on Communications Hill, and near Alum Rock, and the species could occur within the Study Area in one or more of these areas. The pink creamsacs is considered a "no take" species by the second administrative draft HCP/NCCP.

Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Congdon's tarplant is an annual herb in the composite family (Asteraceae) that has a variable blooming period extending from June through November. It occurs in valley and foothill grasslands, particularly those with alkaline substrates, and in slumps or disturbed areas where water collects in lower elevation wetlands below approximately 760 feet. The subspecies tolerates disturbance and often occurs in disked fields with non-native, California annual grassland habitat with Harding grass (*Phalaris paradoxa*) and alkali mallow (*Malvella leprosa*).

Congdon's tarplant occurs in Alameda, Contra Costa, San Mateo, Monterey, San Luis Obispo, and Santa Clara counties, and it is presumed extirpated from its historical range in Solano and Santa Cruz counties (CNPS 2010). Several records of Congdon's tarplant are listed in the CNDDB (2010) as occurring near or within the Study Area. A population occurs within the Study Area near Alviso located north of State Route 237 and east of North 1st Street in a field

bounded by Grand Avenue, Wilson Way, Nortech Parkway, and Disk Drive (LSA Associates 1999). There is one historical reference from within the Study Area in eastern San José observed in 1908, but the habitat in that location no longer exists. In addition, the species has recently been detected at Mission College in Santa Clara (West Valley – Mission Community College District 2009). Outside the Study Area, a population is located approximately 1.5 mi northeast of the Study Area in the Warm Springs District of Fremont

Aside from the recent record near Alviso, suitable habitat exists within the Study Area in disturbed California annual grassland habitat (with alkaline substrates), particularly near seasonal wetland, brackish marsh, and muted tidal marsh habitat within the northern portion of the Study Area, and the species could be present here.

Mt. Hamilton Thistle (*Cirsium fontinale* var. *campylon*). Federal Listing Status: Species of Concern; State Listing Status: None; CNPS List: 1B.2. Mt. Hamilton thistle is an erect, pale green, wooly perennial plant in the sunflower family (Asteraceae) that blooms from April to October, producing nodding white to pinkish flowering heads with spiny, reflexed flower bracts. Mt. Hamilton thistle is associated with seeps and streams, within chaparral, cismontane woodland, and valley and foothill grassland habitats on serpentine soils from 328 to 2,920 feet elevation. Some special-status plants that may occur near Mt. Hamilton thistle on similar soils, although not within the moist areas, include the Santa Clara Valley dudleya and the Metcalf Canyon jewelflower. Mt. Hamilton thistle occurs in stands of a few plants to several thousand plants, almost always in seasonal or perennial wetlands.

The range of Mt. Hamilton thistle includes 10 USGS quadrangles in Santa Clara, Alameda, and Stanislaus counties. There are two known clusters of populations: one in the Mt. Hamilton Range and the other in the hills adjacent to the northern Santa Clara Valley. There are nine records of Mt. Hamilton thistle listed in the CNDDB (2010) as occurring within the Study Area. These records primarily occur in the Santa Teresa Hills and the Coyote Ridge area in serpentine seep habitat in the low hills and canyons. It is known from at least two large populations in the Santa Teresa Hills just east of the Calero Reservoir. Suitable habitat within the Study Area includes serpentine seeps on Coyote Ridge, the Santa Teresa Hills, and the Almaden Hills. The Mt. Hamilton thistle is considered a covered species by the second administrative draft HCP/NCCP.

Santa Clara Red Ribbons (*Clarkia concinna* ssp. *automixa*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.3. Santa Clara red ribbons is an annual herb in the evening-primrose family (Onagraceae) that blooms from May to June, and rarely as early as April or as late as July, depending on the microsite and annual climactic conditions. This species occurs in chaparral and cismontane woodland habitats in San Francisco Bay Area foothills at an elevational range of approximately 295 to 4,950 feet (CNPS 2010). The species has been observed growing on steep, rocky slopes surrounded by mixed evergreen forest. Commonly associated species include white fairy lantern (*Calochortus albus*) and yellow stonecrop (*Sedum spathulifolium*).

This species has a very small endemic range and is known to occur only in Alameda and Santa Clara counties (CNPS 2010), although older records exist from surrounding counties such as

Santa Cruz, and herbarium records indicate some populations occurring in the northern Coast Ranges (CCH 2010). There are 10 records of Santa Clara red ribbons listed in the CNDDB (2010) as occurring within or near the Study Area. Of these, two historical occurrences were located within the Study Area. One was mapped just east of Alum Rock in 1922, and another was mapped in Los Buellis Hills northeast of San José in 1905. Suitable chaparral and oak woodland habitat occurs within the Study Area in the Santa Teresa Hills, on Coyote Ridge, and in the Almaden Hills, and the species could occur in the Study Area in one or more of these locations.

San Francisco Collinsia (*Collinsia multicolor*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. San Francisco collinsia is an annual herb in the figwort family (Scrophulariaceae) that blooms from March to May (CNPS 2010). It occurs on serpentine soils in closed-cone coniferous forest and coastal scrub habitats at elevations from 98 to 820 feet. The CNDDB (2010) states that the species occurs in coastal scrub habitat on decomposed shale/mudstone mixed with humus in closed-cone coniferous forest habitat near coast live oak woodland habitat. Associated species include plectritis (*Plectritis* spp.), woodland star (*Lithophragma* spp.), fringe pod (*Thysanocarpus* spp.), and shooting star (*Dodecatheon hendersonii*).

San Francisco collinsia is documented from 10 USGS 7.5-minute quadrangles in Monterey, Santa Clara, Santa Cruz, San Francisco, and San Mateo counties. There is one record of San Francisco collinsia listed in the CNDDB (2010) as occurring within the Study Area in Edenvale, located northeast of the Santa Teresa Hills. This singular reference for the record is from Thomas (1961), however, the Edenvale area is currently developed and it is believed that the population is now extirpated. Based on the very specific description of habitat preferred by this species, the lack of closed-cone coniferous forests within the Study Area indicates that no suitable habitat currently exists within the Study Area, and thus, we presume the species is absent from the Study Area. The San Francisco collinsia is considered a covered species by the second administrative draft HCP/NCCP.

Hoover's Button Celery (*Eryngium aristulatum* var. *hooveri*) Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1. Hoover's button celery is an annual to a perennial herb in the umbellifer (Apiaceae) family that blooms in July. It occurs in vernal pool habitats from 10 to 148 feet elevation. This California endemic is documented in nine USGS 7.5-minute quadrangles in Alameda, San Benito, Santa Clara, San Diego, and San Luis Obispo Counties (CNPS 2010). Associate species include calicoflower (*Downingia* spp.), woolly marbles (*Psilocarphus* spp.), and popcorn flower (*Plagiobothrys* spp.).

This variety may be extirpated from Santa Clara County. Although occurrences were historically located in the Study Area in roadside ditches to the west of Alviso or in nearby baylands, and approx. 0.5 mile north of Montague Expressway, west of Agnews State Hospital (CNDDB 2010), the species was last reported in these areas in 1902. Due to the degree of development in the area since they were last seen, these populations are likely no longer extant. However, an extant population occurs just north of the Study Area in the Warm Springs Area, in a disturbed alkaline wetland habitat very similar to those found southwest of the WPCP. Therefore, because suitable habitat occurs in the Study Area and nearby populations may provide a potential seed

source, this species may still occur in alkaline-influenced or clayey depressional wetlands or possibly even agricultural ditches in the northern portion of the Study Area.

Fragrant Fritillary (*Fritillaria liliacea*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Fragrant fritillary is a bulbiferous herb in the lily family (Liliaceae) that blooms from February through April. It occurs in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland habitats, often on areas with serpentine substrates at elevations of 10 to 1,345 feet (CNPS 2010). The fragrant fritillary prefers relatively open grassland habitats underlain with heavy clay soils derived from serpentine bedrock in Santa Clara County. Some commonly associated species are purple needlegrass, pine bluegrass (*Poa scabrella*), Santa Clara Valley dudleya, and Metcalf Canyon jewel-flower.

The species occurs within 38 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma counties. There are four records of fragrant fritillary listed in the CNDDB (2010) as occurring within or near the Study Area. Of these, one occurs within the Study Area in Evergreen within the Silver Creek Hills, while another occurs near Alum Rock. Records are also documented just outside the Study Area in Calero County Park and in New Almaden Quicksilver County Park, respectively south and southeast of the Study Area. Suitable serpentine bunchgrass grassland habitat and oak woodland habitat within the Study Area occurs in the Silver Creek area, in the Santa Teresa Hills, near Anderson Reservoir, and on Communications Hill, and it is possible that the species occurs in the Study Area in one or more of these locations. The fragrant fritillary is considered a covered species by the second administrative draft HCP/NCCP.

Loma Prieta Hoita (*Hoita strobilina*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1. Loma Prieta hoita is a perennial herb in the legume family (Fabaceae) that blooms from May to October. It typically grows in mesic areas with serpentinite features in chaparral, cismontane woodlands, and riparian woodlands at elevations between 98 and 2,822 feet (CNPS 2010). Commonly associated trees and shrubs include big leaf maple, mountain mahogany (*Cercocarpus betuloides*), and California foothill pine (CNDDB 2010). Some special-status plants also associated with Loma Prieta hoita include Mt. Hamilton thistle, smooth lessingia, and robust monardella (*Monardella villosa* ssp. *globosa*). It often occurs in the understory of coast live oak woodland and forest.

Loma Prieta hoita occurs in 12 USGS quadrangles in Contra Costa, Santa Clara, and Santa Cruz counties, and is believed extirpated from Alameda County. It is endemic to California and occurs primarily in the Santa Cruz Mountains, although it also occurs in the Diablo Range, outside of the Study Area. Two occurrences are located just within the Study Area in the southern end of Coyote Ridge north of Anderson Reservoir, and along the eastern border of the Study Area near the Santa Teresa Hills. There are 16 records of Loma Prieta hoita listed in the CNDDB (2010) as occurring near the Study Area. Of these, six occur just outside of the Study Area in Almaden Quicksilver County Park and Calero County Park, and occurrences are listed for Rancho Cañada del Oro Preserve, the portion of Santa Teresa County Park outside the Study Area, and near Lexington Reservoir west of Los Gatos. After close review of the specific environmental factors influencing the distribution of this species, including such items as elevation, soil type, associate species, ecological condition, and proximity of documented

populations to the current Study Area, we have concluded that habitat capable of supporting the Loma Prieta hoita is present within the Study Area. Suitable habitat for the species occurs in mesic, serpentine-influenced areas of coast live oak woodland and forest habitat within the Study Area including the Santa Teresa Hills, and along Coyote Ridge, and it is possible that the species occurs in the Study Area in these locations. The Loma Prieta hoita is considered a covered species by the second administrative draft HCP/NCCP.

Satan's Goldenbush (*Isocoma menziesii* var. *diabólica*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Satan's goldenbush is a perennial shrub in the sunflower family (Asteraceae) that blooms from August to October. This variety occurs in cismontane woodland habitats, specifically open slopes and cliffs in foothill woodland habitat, from 49 to 1,312 feet in elevation. Associated species include naked buckwheat, yerba santa, and shrub live oak (*Quercus turbinella*) (Corelli and Chandik 1995).

Satan's goldenbush is a California endemic documented only in San Benito and Santa Clara counties (CNPS 2010). There are no records of the variety as occurring within the Study Area. The Consortium of California Herbaria (2009) lists three occurrences in Santa Clara County in Milpitas, one mile northeast of the Study Area. The habitats known to support this species share many characteristics with many of the relatively undisturbed habitats within the Study Area. Suitable habitat includes oak woodlands habitats within the Study Area in the Santa Teresa Hills, the Almaden Hills, and on Coyote Ridge, and it is possible that the species occurs in the Study Area in one or more of these locations.

Smooth Lessingia (*Lessingia micradenia* var. *glabrata*). Federal Listing Status: Species of Concern; State Listing Status: None; CNPS List: 1B.2. Smooth lessingia is an erect annual herb in the sunflower family (Asteraceae). This species is a delicate, many-branched plant with thread-like leaves along the stem and small, white-to-lavender flowers that bloom from July through November. Smooth lessingia's occurs in areas approximately 400 to 1,400 feet in elevation and it is endemic to serpentine outcrops in Santa Clara County. Most populations are associated with open oak woodland and chaparral, and it is sometimes found on roadsides. On Coyote Ridge, however, populations are found within both serpentine grassland and various shrub associations, as well as on the edges of wetlands (CNPS 2010). Commonly associated species include big berry manzanita, California sagebrush, and toyon. Santa Clara Valley dudleya and the most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*) are also known to occur with smooth lessingia.

Smooth lessingia is known from approximately 11 occurrences in eight 7.5-minute USGS quadrangles. Several of these records are listed in the CNDDB (2010) as occurring in or very near the Study Area, mostly within the Santa Teresa Hills and south along Coyote Ridge, as well as near Llagas Creek southwest of the Coyote Valley. The species is also known from outside the Study Area near Almaden Reservoir and Almaden Quicksilver County Park, and immediately north of the Study Area boundary near Calero Reservoir. The Consortium of California Herbaria (2009) lists 24 specimens of the variety from Santa Clara County in or near the Study Area. After close review of the specific environmental factors influencing the distribution of this species we have concluded that the species and habitat capable of supporting the smooth lessingia occurs within the Study Area. Suitable serpentine rock outcrop habitat

within the Study Area occurs within the Silver Creek Hills, on Communications Hill, in and north of the Kirby Canyon area of Coyote Ridge, and within the Santa Teresa Hills. The smooth lessingia is considered a covered species by the second administrative draft HCP/NCCP.

Arcuate Bush-mallow (*Malacothamnus arcuatus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Arcuate bush-mallow is an evergreen shrub in the mallow family (Malvaceae) that blooms from April to September. This plant grows in chaparral and cismontane woodland communities at elevations between 49 and 1,165 feet (CNPS 2010). Associated species include California sagebrush, and sticky monkey-flower.

Arcuate bush-mallow is known to occur in Santa Clara, Santa Cruz, and San Mateo counties. A record occurs in the Study Area near Alum Rock approximately 0.7 miles northeast of the San José Country Club. There are three other records of arcuate bush-mallow listed in the CNDDB (2010) as occurring near the Study Area. One record, from 1928, is located approximately 2 miles southwest of the Study Area on Loma Prieta Peak, and two are located near Calero Reservoir and Almaden Quicksilver County Park, respectively located immediately south and southwest of the Study Area. The Consortium of California Herbaria (2009) lists 12 specimens of the species collected from Santa Clara County near Alviso, Santa Clara, and Los Altos. Aside from Alum Rock, additional suitable chaparral habitat for the species occurs within the Study Area in the Santa Teresa Hills, north of the Silver Creek area, and along Coyote Ridge near Anderson Reservoir and it is possible that the species also occurs in the Study Area in one or more of these locations.

Davidson's Bush-mallow (*Malacothamnus davidsonii*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Davidson's bush mallow is a deciduous shrub in the mallow family (Malvaceae) that blooms from June to January. This species typically occurs on sandy washes and flats within coastal scrub, cismontane woodland, riparian woodland, and chaparral communities (CNPS 2010), and it is generally associated with disturbance (Hickman 1993). Associated species include California sagebrush, sticky snakeroot (*Ageratina adenophora*), and mulefat.

Davidson's bush mallow occurs in disjunct populations in 21 USGS quadrangles in Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties at elevations of 600 to 2,800 feet (CNPS 2010). There are no records of the species listed in the CNDDB (2010) as occurring within or adjacent to the Study Area. The Consortium of California Herbaria (2010) lists three records of the species collected from Santa Clara County in Los Altos and near Stanford. The record near Stanford, though, was previously thought to be arcuate bush mallow. Even though this species has not been reported as occurring within the Study Area, after review of the specific environmental factors influencing the distribution of this species we have concluded that habitat capable of supporting the bush mallow occurs within the Study Area. Suitable habitat exists within chaparral, riparian, and oak woodland habitat within the Study Area in the Almaden and Santa Teresa Hills, west of Calero Reservoir, and near Anderson Reservoir, and it is possible that the species occurs in the Study Area in these locations.

Hall's Bush-mallow (*Malacothamnus hallii*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Hall's bush-mallow is an evergreen shrub in the mallow

(Malvaceae) that blooms from May to September, and sometimes in October. This shrub can be found in chaparral and coastal scrub habitats from 33 to 2,493 feet in elevation. It is primarily found in mixed northern chaparral and chamise chaparral in grassy openings. Germination for the species is fire-dependent. Associated species include chamise, California sagebrush, sticky monkey-flower and purple needlegrass.

Hall's bush-mallow is a California endemic documented in 19 USGS quadrangles in Contra Costa, Mendocino, Merced, Santa Clara, San Mateo, and Stanislaus counties. There are 20 records of Hall's bush-mallow from Santa Clara County listed in the CNDDB (2010). Most of these occur within or near the Study Area in the Santa Teresa Hills and on Coyote Ridge; eight plants were recorded from Anderson Dam County Park in the Study Area. Oddly, a disjunct record occurs in the Study Area along Alviso slough near Alviso, where it was discovered growing amongst pickleweed (CNDDB 2010). Most other populations in the County are located just outside the Study Area in the Santa Cruz Mountains near Almaden Reservoir, near Calero Reservoir and at the Santa Teresa County Park, also just outside of the Study Area. Additionally, the species occurs at Henry W. Coe State Park. Hall's bush-mallow is considered a covered species by the second administrative draft HCP/NCCP (ICF Jones & Stokes 2009).

Mount Diablo Cottonweed (*Micropus amphibolus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 3.2. Mount Diablo cottonweed is an annual member of the sunflower family (Asteraceae) that blooms from March through May. It occurs on bare, grassy or rocky slopes in broadleaved upland forest, chaparral, cismontane woodland, and valley and foothill grassland (Hickman 1993, CNPS 2010). It is found over a fairly wide elevation range, with populations recorded from approximately 145 to 2,725 feet.

The range of Mount Diablo cottonweed includes Alameda, Contra Costa, Colusa, Lake, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Santa Cruz, Solano, and Sonoma counties. The Consortium of California Herbaria (2009) lists one record of the species collected in Santa Clara County near Mayfield, west of Campbell within the Study Area. Despite the lack of records for this species, after consideration of the species habitat preferences and environmental conditions present on several habitats within the Study Area we have concluded that suitable habitat for the species occurs elsewhere within the Study Area as well. Areas of potential occurrence include chaparral, California annual grassland, and oak woodland habitats within the Santa Teresa Hills, and it is possible that the species occurs in the Study Area in this location.

Robust Monardella (*Monardella villosa* ssp. *globosa*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Robust monardella is a perennial, rhizomatous herb in the mint family (Lamiaceae) that blooms from June through July, and sometimes into August. It occurs in openings in broadleaf upland forests and chaparral, open oak woodlands, coastal scrub, and valley and foothill grasslands, and is found at mid elevations from approximately 330 to 3,020 feet. Associated species include California buckeye, California sagebrush, toyon and various oaks including coast live oak.

Robust monardella's range includes Alameda, Contra Costa, Humboldt, Lake, Mendocino, Napa, Santa Clara, Santa Cruz, San Mateo, and Sonoma counties (CNPS 2010). There are nine records of robust monardella listed in the CNDDB (2010) as occurring in near the Study Area. One

occurrence is located off Alum Rock Falls Road, north of Penitencia Creek on the eastern edge of the Study Area. Other records occur just outside the Study Area within Almaden Quicksilver County Park (south of the Santa Teresa Hills) and in Henry W. Coe State Park, located approximately 10 miles south of the Study Area. After close review of the specific environmental factors influencing the distribution of this species we have concluded that other habitat capable of supporting the robust monardella occurs within the Study Area. Suitable habitat includes chaparral, oak woodland, and California annual grassland habitats within the Santa Teresa and Almaden Hills, to the west of Calero Reservoir, and to the east of Anderson Reservoir, and it is possible that the species also occurs in the Study Area in these locations. The robust monardella is considered a covered species by the second administrative draft HCP/NCCP.

Hairless Popcorn-flower (*Plagiobothrys glaber*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1A. Hairless popcorn-flower is an annual herb in the borage family (Boraginaceae) that blooms from March to May. It occurs within alkaline meadows, seeps, saline marshes, and swamps at elevations of 49 to 591 feet (CNPS 2010). There is so little known about the species, and much dispute regarding possible identification, particularly with the most recent report in 2002 by R. Morgan near Dublin (CNDDB 2010), that the associated species for the plant are unknown.

The last confirmed sighting of hairless popcorn-flower was in 1954, and it is now thought to be possibly extinct (CNPS 2010). It occurred in 10 USGS quadrangles in Alameda, Marin, San Benito, and Santa Clara counties around the Bay Area and in central California. There are three records of hairless popcorn-flower listed in the CNDDB (2010) as occurring within or near the Study Area. One record occurs near Los Gatos, outside of the Study Area, but the species was last seen at that location in 1894. An unconfirmed identification from 1955 occurs within the Study Area near the intersection of Story Road and Bayshore Freeway, about 3 miles from the center of San José. Another was observed near Santa Clara in 1892.

Because there are no recent records of the species from within or near the Study Area, and there is no habitat of a suitable quality, we consider this species to be absent from the Study Area. The hairless popcorn-flower is considered a "no take" species by the second administrative draft HCP/NCCP.

Most Beautiful Jewel-flower (*Streptanthus albidus* ssp. *peramoenus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Most beautiful jewel-flower is an annual herb in the mustard family (Brassicaceae) that can bloom from March to October, but usually blooms between April and September. This subspecies is indigenous to thin, rocky serpentine (Montara series) soils and serpentinite rock outcrops. Its germination and growth is greatly enhanced by disturbances such as wildfire and exposure of bare soil/bedrock resulting from road cuts. It occurs in chaparral, cismontane woodland, and valley and foothill grassland habitats at elevations from approximately 308 to 3,281 feet. Associated species include purple needlegrass and dwarf plantain. This variety also occurs with the Santa Clara Valley dudleya and smooth lessingia.

The known range of this California endemic is restricted to 29 USGS quadrangles in Alameda, Contra Costa, Monterey, Santa Clara, and San Luis Obispo, and Santa Barbara counties. The taxonomic status of the species is currently under debate (USFWS 1998A). The range of the species is disjunct, with one range centered at the inner coast along San Francisco Bay, and the other in the outer coast in San Luis Obispo and Santa Barbara counties. Further study is needed to determine if the southern range represents a different species, which would indicate that the northern variety has a more tightly restricted, endemic range than previously thought (CNPS 2010).

There are 20 records of most beautiful jewel-flower listed in the CNDDB (2010) as occurring within or near the Study Area. Most of these occurrences are scattered both within and just outside the boundary of the Study Area in Almaden Quicksilver County Park, around Coyote Peak and the Calero Reservoir, and in the Santa Teresa Hills. There is also one record from the northwest flank of Tulare Hill, just outside of the Study Area, and along Silver Creek Road, within the Study Area. Additionally, the species occurs in a scattered distribution along Coyote Ridge west of Anderson Reservoir to Kirby Canyon. The Consortium of California Herbaria (2010) lists seven specimens of the species collected from Santa Clara County in the Santa Teresa Hills, by the Lexington Reservoir, and near Morgan Hill, all located near, but outside of, the Study Area. Suitable habitat exists for the species in serpentine grasslands within the Study Area within the Santa Teresa Hills, at Communication Hill, and on Coyote Ridge. The most beautiful jewel-flower is considered a covered species by the second administrative draft HCP/NCCP.

Caper-fruited Tropidocarpum (*Tropidocarpum capparideum*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1. Caper-fruited tropidocarpum is an annual herb belonging to the mustard family (Brassicaceae) that blooms from March to April. This plant occurs in alkaline clay soils in valley and foothill grasslands, at elevations between 3 and 1,493 feet.

Caper-fruited tropidocarpum was thought to be extinct, but in 2000 was rediscovered on Ft. Hunter Liggett (DOD). Historical occurrences are reported from Alameda, Contra Costa, Fresno, Glenn, Monterey, Santa Clara, San Joaquin, and San Luis Obispo counties (CNPS 2010). CNDDB (2010) lists an occurrence in Monterey County as occurring on a gravelly slope on alkaline, slowly draining clay soil.

There is one historical record of caper-fruited tropidocarpum dated 1907 listed in the CNDDB (2010) as occurring near the Study Area in Saratoga, approximately 3 miles southwest of the Study Area. Because of the absence of habitat of a suitable quality and the lack of recent records of the species from within or near the Study Area, we conclude this species to be absent from the Study Area. The caper-fruited tropidocarpum is considered a “no take” species by the second administrative draft HCP/NCCP.

SPECIAL-STATUS ANIMAL SPECIES

The legal status and potential for occurrence of special-status wildlife species known to occur or potentially occurring in the general vicinity of the Study Area are given in Table 3. Expanded descriptions are included below for those species known to occur within the Study Area, for

which potentially suitable habitat occurs within or in the general vicinity of the Study Area, for which the site is accessible to animals from known populations, and for which resource agencies and/or the HCP/NCCP have expressed particular concern such that more expanded discussion is required.

Several special-status animal species that historically occurred in the Study Area, or that have been recorded in Santa Clara County but not in the Study Area itself, are not expected to be present within the Study Area currently, at least as "special-status species"[2]:

- The Central California Coast coho salmon (*Oncorhynchus kisutch*) was historically present in Coyote Creek, and possibly in the Guadalupe River and Los Gatos Creek, but it has been extirpated from these areas (Leidy et al. 2005, Spence et al. 2005).
- The willow flycatcher formerly nested commonly in riparian habitats on the Santa Clara Valley floor, but local populations were extirpated by the late 1960s. This species still occurs as an uncommon migrant in the Study Area, between wintering areas in Mexico and breeding areas to the north (Unitt 1987, Hunter et al. 2005). However, migrant willow flycatchers occurring in the Study Area are likely from breeding populations outside the state, and thus would not be individuals from the state-listed California population or the federally listed subspecies *extimus* that resides in riparian habitat of southern California (Unitt 1987).
- Yellow-headed blackbirds (*Xanthocephalus xanthocephalus*) historically nested in marshes on the Santa Clara Valley floor, but breeding has not been noted anywhere in Santa Clara County since 1925 (Bousman 2007b). This species currently occurs in the Study Area only in small numbers during migration. It is only considered a California species of special concern when nesting, and thus it is not a "special-status species" when it occurs as a nonbreeder in the Study Area.

Two birds that are California species of special concern when nesting are known to have bred just outside the Study Area, but they do not nest within the Study Area, and thus are also not "special-status species" when they occur in the Study Area:

- The short-eared owl has never been a regular breeding species in Santa Clara County, and although the species formerly bred as close to the Study Area as the Palo Alto Flood Control Basin (Gill 1977), it has not nested anywhere in Santa Clara County since 1974. This species occurs in the Study Area only as a rare and local forager during migration and winter (Bousman 2007c).
- The redhead (*Aythya americana*) has nested in Santa Clara County only in the Palo Alto area, and has not been recorded breeding there since 1984 (Browning 2007). The redhead is expected to occur in the Study Area only as an uncommon migrant and winter visitor.

[2] Several birds in this group are considered California species of special concern only when breeding (Shuford and Gardali 2008). Thus, if they occur in the Study Area only as nonbreeders (*e.g.*, as migrants or winter visitors), they are not "special-status species" when they occur in the Study Area.

Six other bird species that are considered California species of special concern occur in the Study Area as nonbreeding transients, foragers, or migrants, but they have never been recorded breeding in or very close to the Study Area, they do not occur in the Study Area in large numbers, and/or they would not be substantially affected by any activities that may occur under the General Plan update. These include the Barrow's goldeneye (*Bucephala islandica*), common loon (*Gavia immer*), American white pelican, purple martin (*Progne subis*), black swift (*Cypseloides niger*), and black tern (*Chlidonias niger*). Because they are only considered species of special concern when nesting, they are not "special-status species" when they occur as nonbreeding visitors to the Study Area.

Several bird species that are state or federally listed and consequently special-status species year-round also occasionally occur in the Study Area as nonbreeding migrants, transients, or foragers, but are not known or expected to breed or occur in large numbers in the Study Area. These include the California condor, Swainson's hawk, California black rail, California least tern, least Bell's vireo, and bank swallow. These species are listed as threatened or endangered under the CESA and/or the FESA, and are thus considered "special-status species" even though they do not breed in the Study Area. Thus, although these species occur in the Study Area only infrequently and/or in small numbers, they are discussed in further detail below. The willow flycatcher would be treated similarly to these species if the individuals that occur as migrants in the Study Area were from California breeding populations; however, due to the rarity of the species as a breeder in the state and the paucity of breeding pairs to the north of the Study Area, the probability that any California-breeding willow flycatchers migrate through the Study Area is extremely low.

A number of other special-status wildlife species are addressed in greater detail below because they are known to breed or could potentially breed in the Study Area, because they occur fairly commonly as nonbreeders in the Study Area (and thus could potentially be impacted substantially by activities that occur under the proposed General Plan), because they are described in the HCP/NCCP as potentially occurring within the Study Area, and/or because they are of particular concern to regulatory agencies. These include the Bay checkerspot butterfly, Pacific lamprey (*Lampetra tridentata*), green sturgeon, Central Valley fall-run Chinook salmon, Central California coast steelhead, longfin smelt, California tiger salamander, California horned lizard (*Phrynosoma coronatum frontale*), California red-legged frog, foothill yellow-legged frog (*Rana boylii*), western pond turtle, northern harrier, white-tailed kite, golden eagle, bald eagle, American peregrine falcon, California clapper rail, western snowy plover, black skimmer, burrowing owl, long-eared owl (*Asio otus*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), loggerhead shrike, yellow warbler, San Francisco common yellowthroat, yellow-breasted chat, Alameda song sparrow, grasshopper sparrow, Bryant's savannah sparrow, tricolored blackbird (*Agelaius tricolor*), salt marsh wandering shrew, salt marsh harvest mouse, San Francisco dusky-footed woodrat, pallid bat, Townsend's big-eared bat (*Corynorhinus townsendii*), western red bat (*Lasiurus blossevillii*), ringtail (*Bassariscus astutus*), San Joaquin kit fox (*Vulpes macrotis mutica*), American badger, and Pacific harbor seal.

Table 4. Special-status Animal Species, Their Status, and Potential Occurrence in the Envision San José 2040 General Plan Update Study Area.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Federal or State Endangered, Threatened, or Candidate Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT, HCP	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja* sp.	Occurs within the Study Area in serpentine bunchgrass grasslands and serpentine rock outcrop/barrens along Coyote Ridge, in Santa Teresa County Park, and near Calero Reservoir.
Green sturgeon (*Acipenser medirostris*)	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	Known to occur in San Francisco Bay, apparently occurs in the South Bay very rarely as a nonbreeding visitor. May occur in the tidal reaches of sloughs in the Alviso area within the Study Area. Unlikely to occur far upstream due to lack of spawning habitat and the shallow/narrow nature of channels.
Central California coast Coho salmon (*Oncorhynchus kisutch*)	FE, SE	Open ocean, estuaries, and rivers.	Historically may have been present in Coyote Creek, and possibly in the Guadalupe River and Los Gatos Creek, but it has been extirpated from these areas (Leidy et al. 2005, Spence et al. 2005) and so is absent from the Study Area.
Longfin smelt (*Spirinchus thaleichthys*)	ST	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay.	Occurs in the South Bay year-round (Wernette 2000), and has been collected in Alviso Slough (EDAW 2007). Spawning habitat and suitable spawning substrate occurs in the lower reaches of the Guadalupe River. May be present in the tidal reaches of other sloughs in the Alviso area.
Central California coast steelhead (*Oncorhynchus mykiss*)	FT, HCP	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	Known to occur in the Study Area in Coyote Creek, Upper Penitencia Creek, Los Gatos Creek, Alamitos Creek, Calero Creek, Guadalupe Creek, and the Guadalupe River. Likely present in all accessible portions of these streams in the Study Area during migration. Suitable spawning habitat present in the Guadalupe River, Upper Penitencia Creek, Los Gatos Creek, Coyote Creek, and Guadalupe Creek. Also present in Alviso Slough, Coyote Slough, and in estuarine habitats of the South Bay during migration.
California tiger salamander (*Ambystoma californiense*)	FT, SC/CSSC, HCP	Vernal or temporary pools in annual grasslands or open woodlands.	Known extant breeding locations in the Study Area are present on Communications Hill, near Metcalf Road, in ponds in northwestern Coyote Valley, around Calero Reservoir, northwest of Guadalupe Reservoir, and in Joseph D. Grant County Park (H. T. Harvey & Associates 1999b, CNDDB 2010). An extant population is present in ponds near the Study Area in open grasslands north of Anderson Reservoir and east of San Jose. May also be present in the Study Area in undeveloped portions of the Almaden Valley/Santa Teresa Hills area. Presumed extirpated throughout the remainder of the Study Area (H. T. Harvey & Associates 1999b).

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
California red-legged frog (*Rana draytonii*)	FT, CSSC, HCP	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	Recent CNDDB records from the Coyote Creek Extension Canal near Metcalf Road and a nearby pond just north of the Metcalf Road crossing of U.S. 101 indicate the presence of a breeding population in this area. Additional breeding populations are present in and near the Study Area in Cherry Creek upstream from Calero Reservoir, in the area west of Anderson Reservoir, at Twin Lakes and Tule Lake east of Anderson Reservoir, in Las Animas Creek, in stock ponds in open grasslands in the eastern foothills of San Jose, in San Felipe Creek, in Joseph D. Grant County Park, and in Alum Rock Park (H. T. Harvey & Associates 1997, CNDDB 2010). The species could possibly be present in southern Almaden Valley or the outskirts of the UGB in the Evergreen area. This species has apparently been extirpated from much of the valley floor, and red-legged frogs are not expected to occur throughout most of the developed portions of the Study Area, even in streams and ponds. However, red-legged frogs are recorded in the upper reaches of streams that flow into the Study Area, and individuals from breeding populations within or close to the Santa Teresa Hills and the hills west of Coyote Valley may occasionally disperse, or be washed, downstream into the upper reaches of streams such as Guadalupe Creek, Calero Creek, Thompson Creek, and possibly other streams in the Study Area.
Bank swallow (*Riparia riparia*)	ST (nesting)	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	No recent breeding records from Santa Clara County; no breeding records for (or nesting habitat in) the Study Area. Occurs only as a rare migrant.
California condor (*Gymnogyps californianus*)	FE, SE, HCP No Take	Nests in caves in steep, isolated cliffs or cavities in mature redwood trees. Forages over grasslands, open woodlands, and along coastal beaches.	Likely historically present as a nonbreeder, but not known to occur currently in the Study Area. No breeding habitat for this species is present in the Study Area. Reintroduced individuals from Pinnacles National Monument in San Benito County may occasionally range as far north as the Study Area (and may do so increasingly in the future if the reintroduced population expands), though this has not been documented.
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers. Feeds mostly on fish.	Not known to currently breed in the Study Area. However, this species nests near Calaveras Reservoir northeast of the Study Area and at Coyote Reservoir southeast of the Study Area. Small numbers forage within the Study Area at Calero and Anderson Reservoirs and in Coyote Valley during the nonbreeding season, and it is likely that breeding will occur in or very close to the Study Area (*e.g.*, at Calero or Anderson Reservoirs) within the period covered by the General Plan update.
Swainson's hawk (*Buteo swainsoni*)	ST (nesting)	Nests in trees surrounded by extensive marshland or agricultural foraging habitat.	Apparently historically nested in small numbers in Santa Clara County, and there is an 1894 nest record from the Berryessa area (currently in eastern San José) (Bousman 2007d). Currently the species is known to occur in the Study Area only as a very infrequent transient during migration. Although young not long out of the nest have been recorded on several occasions in the Santa Clara Valley in recent years, more concrete evidence of nesting has not been documented, so this species is currently not known to breed in the Study Area.
California clapper rail (*Rallus longirostris obsoletus*)	FE, SE, SP	Salt marsh habitat dominated by pickleweed and cordgrass.	Suitable breeding habitat is present in the Study Area in Guadalupe Slough, Alviso Slough, and the tidal areas of Coyote Creek (Liu et al. 2009). On very rare occasions, nonbreeding individuals wander up tidal sloughs as far as the UGB (*e.g.*, in tidal brackish/freshwater marsh habitats along Alviso Slough); however, all suitable breeding habitat for clapper rails is present in saline and brackish tidal marshes in the Alviso area.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
California black rail (*Laterallus jamaicensis coturniculus*)	ST, SP	Breeds in fresh, brackish, and tidal salt marsh.	Not known to breed in the South Bay, and there are no records from the Study Area. If it occurs in the Study Area at all, it occurs only as a very infrequent winter visitor to tidal salt marshes in the Alviso area.
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pans in San Francisco Bay saline managed ponds.	Nests on levees, islands, and salt flats in some of the South Bay saline managed ponds. Moderate numbers of snowy plovers breed in Ponds A22 and A23 (north of Coyote Creek and adjacent to the Study Area). Snowy plovers have bred in the past in Ponds A8 and A6, in New Chicago Marsh, and in an impoundment between Pond A12 and New Chicago Marsh. Forages in these same areas and on levees and managed pond bottoms in other ponds.
California least tern (*Sterna antillarum browni*)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates. In S.F. Bay, nests in salt pannes and on an old airport runway. Forages for fish in open waters.	Does not breed within the Study Area. The South Bay is an important post-breeding staging area for least terns. Although most such staging has occurred in ponds outside the Study Area in the Mountain View/Sunnyvale area, post-breeding least terns forage and roost in managed ponds in the Alviso area to some extent as well.
Willow flycatcher (*Empidonax trailii*)	SE (nesting)	Breeds in riparian habitats in Central Valley and mountains.	An uncommon migrant in the Study Area (Unitt 1987, Hunter et al. 2005). Migrants occurring in the Study Area are likely from breeding populations outside the state, and thus would not be individuals from the state-listed California population or the federally listed subspecies *extimus* that resides in riparian habitat of southern California (Unitt 1987).
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE, HCP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods (*Populus* sp.) and willows (*Salix* sp.).	No breeding records for the Study Area, which is north of the species' known current and historical breeding range. A singing male Bell's vireo in June 2006 along Coyote Creek near the Coyote Creek Golf Club, along the eastern edge of the Study Area, is the only record from the Study Area; the closest breeding records are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932. Although riparian habitat along Coyote Creek in Coyote Valley is ostensibly suitable for breeding, this species is unlikely to occur in the Study Area as more than a very infrequent visitor due to its known current and historical range and the abundance of brood-parasitic brown-headed cowbirds (*Molothrus ater*).
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed.	Known to occur in the Study Area in pickleweed habitat at Triangle Marsh, along Coyote Creek and the Coyote Creek Flood Control Channel, in diked and muted tidal salt marsh in the Owens Cornings Marsh southwest of the Zanker Materials Processing Facility, in wetlands adjacent to the Zanker Road Resource Recovery Operation and Landfill, in channels along and within the WPCP, at New Chicago Marsh, along Alviso Slough, along Guadalupe Slough, and in the salt marsh harvest mouse mitigation area between the WPCP and Newby Island Landfill (Shellhammer and Duke 2004).
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST, HCP	Flat or gently sloping grasslands, mostly on the margins of the San Joaquin Valley and adjacent valleys.	Although this species has been reported from the Study Area near Coyote Valley and along Metcalf Road, there is no conclusive evidence of occurrence in or near the Study Area. Based on its current distribution and absence of high-quality habitat, this species is not expected to occur anywhere in the Study Area.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
California Species of Special Concern			
Central Valley fall -run Chinook salmon (*Oncorhynchus tshawytscha*)	CSSC, HCP	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Known to occur in the Study Area in Coyote Creek, Los Gatos Creek, and the Guadalupe River in very small numbers (Leidy et al. 2003). Uses the lower reaches of Coyote Creek and Alviso Slough as migration corridors between estuarine habitats and upstream spawning and rearing habitats.
Foothill yellow-legged frog (*Rana boylii*)	CSSC, HCP	Partially shaded shallow streams and riffles with a rocky substrate. Occurs in a variety of habitats in coast ranges.	In the Study Area, known to occur in Guadalupe Creek downstream from Guadalupe Reservoir, in Llagas Creek south of Calero Reservoir, and along Rincon Creek (CNDDB 2010). Also occurs (or formerly occurred) in Upper Penitencia Creek in the vicinity of Alum Rock Park and at other South Bay locations outside the Study Area (H. T. Harvey & Associates 1999c). Channelization and the presence of introduced predators have reduced habitat suitability on the valley floor, and there are no recent records from any developed areas within the Study Area (H. T. Harvey & Associates 1999a, CNDDB 2010).
Western pond turtle (*Actinemys marmorata*)	CSSC, HCP	Permanent or nearly permanent water in a variety of habitats.	Occurs in a number of aquatic habitats in the Study Area, including a number of creeks, rivers, lakes, and ponds (H. T. Harvey & Associates 1999c, CNDDB 2010). However, habitat is of low quality throughout much of the Study Area, particularly due to the absence of suitable upland nesting habitat due to development. Potential nesting habitat present in scattered open space areas along ponds or creeks.
California horned lizard (*Phyrnosoma coronatum frontale*)	CSSC	Open habitats with sandy, loosely textured soils, such as chaparral, coastal scrub, annual grassland, and clearings in riparian woodlands with the presence of native harvester ants (*Pogonomyrmex barbatus*).	Recently recorded in the Study Area only near Calero Reservoir. Potentially also occurs in low densities in the Santa Teresa Hills where chaparral habitat is present and soils are more loosely textured, or possibly in similar habitat near Alum Rock Park.
Redhead (*Aythya Americana*)	CSSC (nesting)	Nests in freshwater marshes, winters in coastal marine habitats.	Nested in Santa Clara County only in the Palo Alto area, and has not been recorded breeding there since 1984 (Browning 2007). Expected to occur in the Study Area only as an uncommon migrant and winter visitor, primarily on managed ponds in the Alviso area, more rarely on larger ponds and lakes elsewhere in the Study Area.
Barrow's goldeneye (*Bucephala islandica*)	CSSC (nesting)	Nests in freshwater marshes, winters in coastal marine habitats.	Occasional migrant and winter visitor, primarily on managed ponds in the Alviso area, more rarely on larger ponds and lakes elsewhere in the Study Area; does not breed in the Study Area.
Common loon *(Gavia immer)*	CSSC (nesting)	Nests in freshwater marshes, winters in coastal marine habitats.	Occasional winter visitor on managed ponds in the Alviso area and on larger ponds and lakes elsewhere in the Study Area; does not breed in the Study Area.
American white pelican (*Pelecanus erythrorhnchos*)	CSSC (nesting)	Forages on fish found in freshwater lakes and rivers, nests on islands in lakes.	Common non-breeder, foraging primarily on saline managed ponds in the Alviso area (and in much lower numbers at inland ponds and lakes). Regular visitor from late summer to spring. Does not breed in the Study Area.
Black tern (*Chlidonias niger*)	CSSC (nesting)	Nests in freshwater marshes, forages over marshes, ponds, lakes, and moist meadows.	Rare migrant, occurring primarily on managed ponds in the Alviso area; does not breed in the Study Area.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Black skimmer (*Rynchops niger)*	CSSC (nesting)	Nests on abandoned levees and islands in saline managed ponds and marshes.	Uncommon resident. Black skimmers have nested in the South Bay since 1994 (Bousman 2007e). Of the resident population of approximately 30 birds in the South Bay, a few pairs breed and forage in the Study Area on islands in saline managed ponds in the Alviso area (*e.g.*, on Ponds A8 and A16).
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	Within the Study Area, potential nesting habitat is present primarily in diked/muted tidal salt marshes in the Alviso area and in fallow fields and pastures in Coyote Valley. However, the accessibility of these areas to predators (and the abundance of mammalian predators recorded in Coyote Valley) limits the abundance of nesting pairs in the Study Area. Nonbreeders are known to forage regularly in grassland, agricultural, and wetland habitats in the Study Area, occasionally (*e.g.*, during vole outbreaks in Coyote Valley) in high densities.
Short-eared owl (*Asio flammeus*)	CSSC (nesting)	Nests on ground in tall emergent vegetation or grasses, forages over a variety of open habitats.	Uncommon in Santa Clara County during migration and winter. Historical breeding records are known from the Palo Alto Baylands and Flood Control Basin, but this species has not been known to nest in Santa Clara County since 1972 (Bousman 2007c). No nesting records from the Study Area, but small numbers of wintering individuals are occasionally recorded in Alviso tidal marshes and in Coyote Valley.
Long-eared owl (*Asio otus*)	CSSC (nesting)	Riparian bottomlands with tall, dense willows and cottonwood stands (also dense live oak and California Bay along upland streams); forages primarily in adjacent open areas.	Rare resident and occasional winter visitor in Santa Clara County (Bousman 2007f). Historical breeding records are known from the Santa Clara Valley floor, but the current breeding status of this species in this Study Area is unknown. Could potentially breed in oak woodlands, riparian habitats, and other wooded habitats in the Study Area, though likely only in very low numbers if at all.
Burrowing owl (*Athene cunicularia*)	CSSC, HCP	Open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels.	Present year-round in the Study Area in open, agricultural, or grassland areas where active squirrel burrows are present. Nests in open agricultural, ruderal, and grassland areas within the Study Area such as the WPCP buffer lands, the SCVTA's Cerone facility near State Route 237, San José International Airport, and Reid-Hillview Airport/Lake Cunningham area. Numbers have declined rapidaly in recent years. A few pairs may nest elsewhere in the Study Area, though it occurs primarily as a nonbreeder in areas such as Coyote Valley and Coyote Ridge.
Vaux's swift (*Chaetura vauxi*)	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially.	In the South Bay, breeds primarily in snags within Santa Cruz Mountain forests, and suitable nest trees are absent from the Study Area. However, it also breeds in residential chimneys in the foothills of the Santa Cruz Mountains, and a pair was recently confirmed breeding in a chimney near the southwestern edge of the Study Area, west of Guadalupe Creek (Rottenborn 2007a). Also confirmed breeding in chimneys in the Los Gatos/Campbell/Cupertino areas (outside the Study Area), so it likely breeds more commonly (though still in small numbers) in residential areas in the western part of the Study Area. Forages aerially over these areas during the breeding season, and anywhere over the larger Study Area during migration.
Black swift (*Cypseloides niger*)	CSSC (nesting)	Nest on cliffs and coastal bluffs; forage aerially for insects.	Does not breed in Santa Clara County. Occurs in the Study Area only as an occasional migrant.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Olive-sided flycatcher (*Contopus cooperi*)	CSSC (nesting)	Breeds in mature forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes (Altman and Sallabanks 2000, Robertson and Hutto 2007).	Common summer resident in western Santa Clara County (Bousman 2007g). This species breeds in the Santa Cruz Mountains, and more sparingly in the Diablo Range, but it does not breed on the Santa Clara Valley floor. Within the Study Area, it is known to nest along Upper Penitencia Creek in Alum Rock Park and around Calero Reservoir (Bousman 2007g), but few pairs likely breed in the Study Area.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	Breeds in a number of locations in the Study Area where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees provides perches and nesting sites (Bousman 2007h), though populations seem to have declined in recent years as suitable habitat has been increasingly developed. Occurs slightly more widely (*i.e.*, in smaller patches of open areas providing foraging habitat) during the nonbreeding season.
Purple martin (*Progne subis*)	CSSC (nesting)	Nest in abandoned woodpecker holes.	A rare breeder in the Santa Cruz Mountains; does not breed on the Santa Clara Valley floor or within the Study Area (Bousman 2007i); occurs in the Study Area only as a rare visitor during migration.
Yellow warbler (*Dendroica petechia*)	CSSC (nesting)	Nests in riparian woodlands.	Uncommon breeder in riparian habitats in the Study Area. Prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007j), particularly in areas with more open space adjacent to the riparian habitat (rather than in heavily developed areas). An abundant migrant throughout the Santa Clara Valley during the spring and fall.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	Common resident, breeding in fresh and brackish marshes and weedy riparian habitats in the northern part of the Study Area. Known to breed near the edge of the South Bay, such as along Alviso Slough and San Tomas Aquino Creek, as well as in herbaceous riparian habitat and ruderal floodplain habitat along lower Coyote Creek and the Guadalupe River. Common yellowthroats breed in marshy habitat elsewhere, such as in Coyote Valley and along Silver Creek near Lake Cunningham. The demarcation between this subspecies and the more common, widespread subspecies *arizela* occurs somewhere in the mid-San José area, and while those breeding in the southern part of the Study Area are certainly *arizela*, yellowthroats breeding in areas such as Lake Cunningham could be of either race, or could be intergrades.
Yellow-breasted chat (*Icteria virens*)	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat.	Rare breeder, and only slightly more regular transient, in willow-dominated riparian habitats in the Study Area. Historically, it likely bred more widely in Santa Clara County, but it is now rare due to the loss of suitable breeding habitat and brood parasitism by brown-headed cowbirds. Recently recorded nesting in the Study Area only along Coyote Creek upstream from U.S. 101 near Hellyer Park (in 1995), although a singing male along Coyote Creek near Coyote Ranch, at the northern end of the Coyote Valley, in 2008 may have attempted breeding.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	Resident in tidal salt marshes in South San Francisco Bay. Song sparrows breed continuously along tidal sloughs, and the demarcation between this subspecies and the more common, widespread subspecies *gouldii* that nests widely in freshwater habitats in the South Bay is unknown (Rottenborn 2007b). It is possible that *pusillula* occurs in the tidal brackish marshes of San Tomas Aquino Creek and Alviso Slough within the Study Area, but song sparrows here may instead be *gouldii* or intergrades.
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Breeds and forages in grasslands, meadows, fallow fields, and pastures.	Nests in grassy foothills of the Diablo Range and the Santa Cruz Mountains (Heller 2007). In the Study Area, it breeds primarily in serpentine grassland, such as in the Santa Teresa Hills and on Coyote Ridge. It may occur somewhat more widely during migration, but it is seldom detected in the Study Area outside the breeding season.
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominant salt marsh and adjacent ruderal habitat.	Breeds in the Study Area primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the Alviso area. Breeding has also been confirmed in grassy hills in the vicinity of the Santa Teresa Hills and the west side of Coyote Valley, though numbers are low here (Rottenborn 2007c). During the non-breeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the Study Area.
Tricolored blackbird (*Agelaius tricolor*)	CSSC (nesting colony), HCP	Nests near fresh water in dense emergent vegetation.	Typically nests in extensive stands of tall emergent herbaceous vegetation in nontidal marshes and ponds, habitat that is very limited in the Study Area. The only recent breeding records in the Study Area have been a somewhat anomalous record from ruderal/floodplain habitat along levees on the east side of the WPCP along Coyote Creek, from bulrushes around a pond at Coyote Ranch in the northern part of the Coyote Valley, and from the base of Calero Dam (Rottenborn 2007d). No known records of tricolored blackbirds nesting in the Study Area since the 1990s, but may colonize suitable breeding habitat if it becomes available. Occurs as an uncommon nonbreeding forager throughout most of the Study Area.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	CSSC (nesting)	Nests in freshwater marshes.	Rare migrant in Santa Clara County (Bousman 2007b). Bred historically in freshwater marshes on the Santa Clara Valley floor; no breeding records since valley marshes were drained in the early twentieth century. Occasional migrating flocks observed in the Alviso area.
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Medium-high marsh 6-8 feet above sea level with abundant driftwood and common pickleweed.	Typically occurs in tidal salt marsh habitat, and may be present in the Alviso area. Species has been recorded in New Chicago Marsh, which contains muted tidal/diked salt marsh similar to that described previously as potential salt marsh harvest mouse habitat. May occur in the northern part of the Study Area in the same areas occupied by salt marsh harvest mice, although numbers have declined, and current status is unknown.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	Historically, likely present in a number of locations throughout the San José area, but this species has declined in recent decades. There are no known breeding sites within the Study Area, but maternity colonies immediately outside the Study Area include a drainage south of Berryessa Creek and close to Old Piedmont Road; on Chaboya Court at the end of Quimby Road; and on Cochrane Road near Anderson Dam. The species has also been recorded on UTC property on the east side of Coyote Ridge, outside the Study Area. Suitable roosting sites are present in a number of areas, particularly in or near open space or less developed areas around the periphery of the Study Area, and the species may be more widespread than is known. Individuals could potentially forage within the Study Area in open areas located within several miles of colonies.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC, HCP	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	No known extant populations on the Santa Clara Valley floor, and no breeding sites known from the Study Area. Occasional individual Townsend's big-eared bats may roost and forage in habitats nearly anywhere in the Study Area, but such individuals are expected to occur very infrequently and in small numbers. Roosting colonies of Townsend's big-eared bats are known from UTC Property east of Coyote Ridge near Metcalf Road and Almaden Quicksilver County Park. Although both areas are outside the Study Area, these records indicate the potential for this species to occur in suitable habitat within the Study Area, possibly near southern Coyote Ridge and northern Anderson Reservoir or in the Guadalupe Mines area.
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.	Occurs as an occasional migrant or winter resident, and does not breed within the Study Area. May roost in foliage in trees virtually anywhere in the Study Area.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub.	Known to occur in suitable habitat in less-developed areas providing riparian, oak, and scrub habitat, such as the upper reaches of Thompson, Coyote, Calero, and Guadalupe creeks and in the Santa Teresa Hills. Also occasionally nests in trees lacking understory, such as along Bailey Avenue between Monterey Road and Santa Teresa Boulevard in Coyote Valley. Absent from most developed areas, although known to occur along the lower reaches of Coyote Creek near the WPCP.
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	Known to occur in the Study Area primarily in grasslands in the Santa Teresa Hills, along the edges of Coyote Valley, and on Coyote Ridge and Tulare Hill. Roadkills and observations by the De Anza College Wildlife Corridor Stewardship Team indicate at least occasional occurrence on the Coyote Valley floor as well. May also be present in extensive grasslands elsewhere in the Study Area, outside heavily developed areas.
State Fully Protected Species ~~or CNPS Listed Species~~			
American peregrine falcon (*Falco peregrinus anatum*)	SP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	Within the Study Area, known to nest only at San José City Hall and on an electrical tower in Alviso managed ponds. Regular winter forager in the Alviso area, close to the San Francisco Baylands, and in Coyote Valley; may occur anywhere throughout the Study Area as a forager or migrant, though always at low densities. May breed more widely within the Study Area within the period covered by the General Plan update.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE WITHIN THE STUDY AREA
Golden eagle (*Aquila chrysaetos*)	SP, HCP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	This species is known to nest within the Study Area on an electrical tower below Calero Reservoir, and additional pairs likely nest within or near the Study Area near the Santa Teresa Hills, on Coyote Ridge, near Alum Rock Park, and at the northern end of Anderson Reservoir. These individuals, as well as other nonbreeding birds, forage regularly but in low numbers on Coyote Ridge, in the Santa Teresa Hills, and in Coyote Valley, and occasionally in open areas in Alviso.
White-tailed kite (*Elanus caeruleus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Fairly common resident in less developed portions of the Study Area. Most abundant in the Study Area in the vicinity of Coyote Valley, the Santa Teresa Hills, and Coyote Ridge, though pairs breed along lower Coyote Creek, the lower Guadalupe River, in the Alviso area, and at other scattered locations in the Study Area where fairly extensive open/grassy foraging habitat is present.
Ringtail (*Bassariscus astutus*)	SP	Cavities in rock outcrops and talus slopes, as well as hollows in trees, logs, and snags that occur in riparian habitats and dense woodlands, usually in close proximity to water.	Suitable habitat in the Study Area is scarce and highly disturbed. H. T. Harvey & Associates personnel have observed road-killed ringtails as close to the Study Area as State Route 17 near Lexington Reservoir (David Johnston, pers. obs.). Although we are aware of no records of ringtails within the Study Area, the species may be present in less disturbed areas such as near the north end of Anderson Reservoir and near Calero Reservoir.
HCP-Covered Species and MMPA-Protected Species			
Pacific lamprey (*Lampetra tridentata*)	HCP	Spawns in gravel-bottomed streams or rivers upstream of riffle habitat. Adults forage in marine areas.	Historically, this species may have been present in streams throughout the Study Area. Currently known from the Guadalupe River, Coyote Creek, and Upper Penitencia Creek, and may be locally common in these areas (Leidy 2007). Species' status is poorly documented, and abundance in other streams throughout the Study Area is unknown. May be present in all accessible portions of streams in the Study Area during migration between spawning areas and marine foraging habitat.
Pacific harbor seal (*Phoca vitulina richardsi*)	MMPA	Throughout the northern Atlantic and Pacific Oceans along coastal waters, river mouths, and bays	Permanent resident of San Francisco Bay. Primary haul-out sites in San Francisco Bay include Mowry Slough (243 seals in 1999), northeast of the Study Area. Suitable haul-out sites for harbor seals are present in the Study Area in the tidal reaches of sloughs in the Alviso area. No pupping sites are currently known within the Study Area, though potentially suitable pupping habitat is present in the Alviso area.

Key to Abbreviations:

Status: Federally Endangered (FE); Federally Threatened (FT); State Endangered (SE); State Threatened (ST); State Candidate for Listing (SC); State Protected (SP); California Species of Special Concern (CSSC); Species Protected by the Marine Mammal Protection Act (MMPA); Covered Species in the second administrative draft Santa Clara Valley HCP/NCCP (HCP)[3]; No Take Species in the second administrative draft Santa Clara Valley HCP/NCCP (HCP No Take).

[3] Since the second administrative draft HCP/NCCP was prepared, the Local Partners and resource agencies have discussed the possibility that fish will be removed from coverage under the Plan. Thus, the steelhead, Chinook salmon, and Pacific lamprey may not be covered by the HCP/NCCP.

FEDERAL OR STATE ENDANGERED AND THREATENED SPECIES

Bay Checkerspot Butterfly (*Euphydryas editha bayensis*). Federal Listing Status: Threatened; State Listing Status: None. The life cycle of the Bay checkerspot butterfly is closely tied to the biology of its primary larval host plant, the dwarf plantain. Secondary host plants, purple owl's-clover and exserted paintbrush (*Castilleja exserta*), are also important sources of food for both larvae and adults (Black and Vaughn 2005). Populations of the Bay checkerspot butterfly are restricted to areas with shallow serpentine-derived or similar soils that have substantial populations of dwarf plantain, which are highly fragmented and isolated (USFWS 2008a).

The Bay checkerspot butterfly formerly ranged around San Francisco Bay from Twin Peaks and San Bruno Mountain in San Francisco east to Contra Costa County and south to Santa Clara County (USFWS 1998A). However, the current known range of the Bay checkerspot butterfly is now reduced to Santa Clara County, where patches of the species' habitat are still present (USFWS 2008a), and to San Mateo County, where it was extirpated but where reintroduction has recently been attempted. The Bay checkerspot butterfly was listed as threatened in September 1987 (USFWS 1987), and critical habitat was finalized in September 2008 (USFWS 2008a). Five of this species' critical habitat units occur within or adjacent to the Study Area. These units include Metcalf (Unit 5), Tulare Hill (Unit 6), Santa Teresa Hills (Unit 7), Calero Reservoir (Unit 8), and Kirby (Unit 13). The Bay checkerspot is considered a covered species by the second administrative draft HCP/NCCP.

Within the Study Area, the Bay checkerspot butterfly and its habitat are present along Coyote Ridge within the Metcalf and Kirby critical habitat units, in the Santa Teresa Hills within the Santa Teresa Hills critical habitat unit, on the northern half of Tulare Hill within the Tulare Hill critical habitat unit, on the northernmost of the two subunits of the Kalana Hills critical habitat unit on the west side of Coyote Valley, and west of Calero Reservoir in the Calero Reservoir critical habitat unit (USFWS 2008a). All of these areas contain serpentine grasslands that provide sufficient populations of host plant species.

Serpentine soils are also present on Communications Hill, however most of this area has been developed and recent surveys have determined that the remaining habitat does not provide sufficient host plants or habitat area to support the Bay checkerspot butterfly (USFWS 1998A). There is also a small patch of serpentine habitat within the Study Area just north of Alum Rock Park, however, there are no records of the Bay checkerspot butterfly in this area, and the species is not expected to occur this far north of its known populations.

Green Sturgeon (*Acipenser medirostris*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The NMFS listed the southern Distinct Population Segment (DPS) of the green sturgeon as threatened on 7 April 2006 (NMFS 2006). Critical habitat for the southern DPS of the green sturgeon was proposed on 8 September 2008 (NMFS 2008). All of the San Francisco Bay, including tidal and estuarine areas associated with the Bay, is proposed for designation as critical habitat. All tidal reaches of sloughs in the Alviso area have the potential to be designated as critical habitat.

The range of the green sturgeon extends from Ensenada, Mexico, to the Bering Sea; the species occurs in coastal waters from the San Francisco Bay to Canada. Green sturgeon occur widely in accessible estuarine habitat, and in summer and fall the species is found in estuaries not associated with known spawning activity and where there are no records of their occurrence farther up the river system (Adams et al. 2007). Spawning within the southern DPS occurs predominantly in the upper Sacramento River (Adams et al. 2007).

Little is known about green sturgeon in the South San Francisco Bay. Although the species may forage in the South Bay, we are aware of no definitive records here, and green sturgeon are likely rare in the South Bay. If they occur in lower portions of sloughs in the Alviso area, they are not expected to swim upstream as far as the UGB because there is no spawning habitat to migrate to within or upstream of the Alviso area.

Longfin Smelt (*Spirinchus thaleichthys*). Federal Listing Status: Proposed Endangered Status; State Listing Status: Candidate Endangered. The southernmost population of longfin smelt is found as far north as Prince William Sound, Alaska, and occurs in the San Francisco Bay. The longfin smelt was declared a Candidate for listing under the CESA in February 2008 (California Fish and Game Commission 2008) and has been petitioned for listing as endangered under the FESA (USFWS 2008b).

Suisun and San Pablo Bays support the most abundant populations of nonbreeding longfin smelt in the Bay area, where salinity generally ranges from 2 to 20 parts per thousand. Spawning occurs in fresh water in the upper end of the San Francisco Bay and in the Sacramento-San Joaquin Delta (Wernette 2000). Longfin smelt occur in the South Bay year-round as pre-spawning adults and yearling juveniles (Wernette 2000), and have been collected in the Alviso area and in Alviso Slough (EDAW 2007). Suitable spawning habitat for this species may be present in the Study Area in Alviso Slough and Coyote Slough.

Central California Coast Steelhead. Federal Listing Status: Threatened; State Listing Status: None. The steelhead is an anadromous form of rainbow trout that migrates upstream from the ocean to spawn in late fall or early winter, when flows are sufficient to allow them to reach suitable habitat in far upstream areas. In the Study Area, adults typically migrate to spawning areas from late December through early April, and both adults and smolts migrate downstream from February through May. Steelhead typically spawn in gravel substrates located in clear, cool, perennial sections of relatively undisturbed streams, with dense canopy cover that provides shade, woody debris, and organic matter. Steelhead usually cannot survive long in pools or streams with water temperatures above 70° F, however, they can use warmer habitats if adequate food is available. Steelhead populations have declined due to degradation of spawning and rearing habitat, introduction of barriers to upstream migration, over-harvesting by recreational fisheries, and reduction in winter flows due to damming and spring flows due to water diversion.

Steelhead have been categorized into DPSs, by the NMFS. The Central California Coast DPS consists of all runs from the Russian River in Sonoma County south to Aptos Creek in Santa Cruz County, including all steelhead spawning in streams that flow into the San Francisco Bay. In 1998, the NMFS published a final rule to list the Central California Coast DPS as threatened

under the FESA (NMFS 1998). Critical habitat for the Central California Coast DPS was finalized in September 2005 (NMFS 2005). The Santa Clara Hydrologic critical habitat unit, which encompasses the Study Area, includes Coyote Creek, Upper Penitencia Creek, and the upper portion of the Guadalupe River from its mouth to downtown San José. The Central California Coast steelhead is currently considered a covered species by the second administrative draft HCP/NCCP, though the Local Partners and the resource agencies have discussed the possibility of removing coverage of this species.

Steelhead historically occurred in streams throughout the Study Area, but they are now relatively rare due to urbanization, the presence of barriers to movement, and loss of spawning and rearing habitat (Leidy et al. 2005). Within the Study Area, steelhead are known to occur in, and suitable spawning habitat is likely present in, Coyote Creek, Upper Penitencia Creek, Los Gatos Creek, Alamitos Creek, Calero Creek, Guadalupe Creek, and the Guadalupe River (Leidy et al. 2005, NMFS 2005). This species may also be present in Calero Creek, though it does not appear to be present in Ross Creek (Leidy et al. 2005). Steelhead are absent from Lower Penitencia Creek, Calabazas Creek, the portion of Saratoga Creek that intersects the Study Area, San Tomas Aquino Creek, Thompson Creek, Canoas Creek, and Berryessa Creek, and they are unlikely to be present in Lower Silver Creek (Leidy et al. 2005). Steelhead could potentially spawn in virtually any reach of streams within the Study Area offering suitable spawning habitat and lacking downstream barriers to dispersal, and they likely occur in all accessible portions of streams in the Study Area during migration between the ocean and upstream spawning and rearing areas. Tidal channels in brackish marshes, such as sloughs in the Alviso area, may provide habitat for juveniles during the process of smoltification (*i.e.*, physiological adaptation to the saltwater environment).

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened (Central Population); State Listing Status: Candidate for State Listing, Species of Special Concern. The California tiger salamander's preferred breeding habitat consists of temporary (minimum of 3-4 months), ponded environments (*e.g.*, vernal pool, ephemeral pool, or human-made ponds) surrounded by uplands that support small mammal burrows. California tiger salamanders will also utilize permanent ponds provided that aquatic, vertebrate predators are not present. Such ponds provide breeding and larval habitat, while burrows of small mammals such as California ground squirrels and valley pocket gophers in upland habitats provide refugia for juvenile and adult salamanders during the dry season.

The range of the California tiger salamander is restricted to the Central Valley and the South Coast Range of California from Butte County south to Santa Barbara County. Tiger salamanders have disappeared from a significant portion of their range due to habitat loss from agriculture and urbanization and the introduction of non-native aquatic predators. The California tiger salamander was listed as threatened in August 2004 (USFWS 2004b) and critical habitat was designated in August 2005 (USFWS 2005). The California tiger salamander is considered a covered species by the second administrative draft HCP/NCCP.

The Laurel Hill critical habitat unit (Unit 8) in the East Bay Geographic Region (USFWS 2005) is located around Calero Reservoir, and overlaps a portion of the Study Area within the Almaden Valley, south of Santa Teresa County Park. Although the California tiger salamander

historically occurred in a number of locations within the Study Area, few populations are still extant, as filling or draining of ponds and development of upland habitat have restricted suitable habitat conditions to a few undeveloped areas. Populations that are presumed extant, as the ponds have not been filled or drained, are located at in a number of areas in the hills between Coyote Valley and Calero Reservoir, around Calero Reservoir, northwest of Guadalupe Reservoir, in Joseph D. Grant County Park, near Communications Hill, and just north of the Metcalf Road crossing of U.S. 101 (at the very edge of the Study Area) (CNDDB 2010). California tiger salamanders may still be present in the Study Area in undeveloped portions of the Almaden Valley/Santa Teresa Hills area. In addition, tiger salamanders were recorded (albeit sporadically and in low numbers) in two ponds on the west side of Coyote Valley south of Bailey Avenue in 1998 and 2000 (H. T. Harvey & Associates 1998, 2000a). Although intensive cultivation of the areas around these ponds, coupled with the presence of non-native fish and crayfish (potential predators of the tiger salamander), limits the potential for continued use of these ponds by tiger salamanders, the species may still be present there.

California tiger salamanders were historically present in several ponds in the Evergreen area and at the north end of Coyote Ridge. Although some of these ponds have been filled and the surrounding areas developed, there is still some chance that tiger salamanders are still present within the Coyote Ridge/Evergreen part of the Study Area. Tiger salamanders are also present in several ponds immediately outside the Study Area on the west side of Coyote Valley and in and near the Santa Teresa Hills, and the species may occur within adjacent portions of the Study Area. An extant population is also present near the Study Area in ponds and open grasslands north of Anderson Reservoir and east of San José.

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The California red-legged frog inhabits perennial freshwater pools, streams, and ponds throughout the Central California Coast Range and isolated portions of the western slope of the Sierra Nevada (Fellers 2005). Its preferred breeding habitat consists of deep perennial pools with emergent vegetation for attaching egg clusters (Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Jennings and Hayes 1994). Nonbreeding frogs may be found adjacent to streams and ponds in grasslands and woodlands, and may travel up to 2 miles from their breeding locations across a variety of upland habitats (Bulger et al. 2003, Fellers and Kleeman 2007).

The historic distribution of the California red-legged frog extended from the city of Redding in the Central Valley and Point Reyes National Seashore along the coast, south to Baja California, Mexico. The species' current distribution includes isolated locations in the Sierra Nevada and the San Francisco Bay area, and along the central coast (USFWS 2002). The California red-legged frog was listed as threatened in June 1996 (USFWS 1996) based largely on a significant range reduction and continued threats to surviving populations (Miller 1994). Critical habitat was designated in April 2006 (USFWS 2006a), and revised critical habitat has been proposed (USFWS 2008c). Neither designated nor proposed critical habitat for red-legged frogs lies within or adjacent to the Study Area (USFWS 2006a). The California red-legged frog is considered a covered species by the second administrative draft HCP/NCCP.

It is presumed that the California red-legged frog formerly occurred in pools and streams throughout the Study Area, but it has been extirpated from the majority of the Study Area due to development, alteration of hydrology of its aquatic habitats, and introduction of non-native predators such as non-native fish and bullfrogs (H. T. Harvey & Associates 1997). Extant breeding populations of red-legged frogs are likely limited to the periphery of the Study Area. Recent CNDDB records from the Coyote Creek Extension Canal near Metcalf Road and a nearby pond just north of the Metcalf Road crossing of U.S. 101 indicate the presence of a breeding population in this area, which is at the edge of the Study Area. Additional breeding populations are present in Cherry Creek upstream from Calero Reservoir, west of Anderson Reservoir along the southern Coyote Ridge, at Twin Lakes and Tule Lake east of Anderson Reservoir, in Las Animas Creek, in stock ponds in open grasslands in the eastern foothills of San José and Santa Clara County, in San Felipe Creek, in Joseph D. Grant County Park, and in Alum Rock Park (H. T. Harvey & Associates 1997, CNDDB 2010). It is possible that the species could still be present in the southern Almaden Valley Planning Area or the outskirts of the UGB in the Evergreen Planning Area.

California red-legged frogs have also been recorded in the upper reaches of several streams that flow into the Study Area, such as Saratoga, Calabazas, Guadalupe, and Upper Penitencia creeks. Red-legged frogs from populations in streams located upstream from the Study Area may potentially disperse or be washed down some of these streams onto the Santa Clara Valley floor on rare occasions. However, such individuals are unlikely to breed successfully on the valley floor.

Bald Eagle (*Haliaeetus leucocephalus*). Federal Listing Status: None; State Listing Status: Endangered, Fully Protected. Bald eagle populations exhibited precipitous declines in the early part of the 20th century primarily as a result of pesticide poisoning, which severely impacted reproductive rates (Buehler 2000). DDT was the most debilitating of these chemicals, and since its use was banned in the United States in 1972, eagle populations have recovered rapidly (Buehler 2000). The bald eagle was removed from the federal endangered species list in 2008 (USFWS 2008d) but remains listed as both endangered and fully protected by the state of California (CDFG 2008).

Currently, bald eagles are distributed throughout North America along waterways and coasts (Buehler 2000). In California, bald eagle populations remain low, although their numbers are increasing steadily (Peeters and Peeters 2005). Bald eagles can be found nesting in a number of locations in the Sierra Nevada range and southern California, and they nest in a few scattered locations in central California as well (Buehler 2000, CDFG 2008).

Ideal habitat for bald eagles is comprised of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base (Buehler 2000). Bald eagles forage in fresh and salt water where prey species (fish) are abundant and diverse (Buehler 2000). They build nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities (Buehler 2000). The eagle breeding season extends from January through August (Buehler 2000).

Bald eagles are known to nest in Santa Clara County only in two locations – on an electrical transmission tower near Calaveras Reservoir, northeast of the Study Area (Bousman 2007k) and

in a gray pine at Coyote Reservoir, southeast of the Study Area. Bald eagles are not known to breed within the Study Area. Rather, they are known to occur here only as nonbreeding visitors, typically at reservoirs on either side of the Santa Clara Valley but occasionally in Coyote Valley as well. Given the recent increases in this species' populations in California and the recent discovery (in April 2010) of nesting at Coyote Reservoir southeast of the Study Area, there is a high probability that one or more pairs will nest in the Study area, likely near Calero or Anderson Reservoir, within the lifespan of the proposed General Plan update. However, nesting within the UGB is unlikely.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened. Swainson's hawk was listed as threatened by the state of California in 1983 due to population declines likely precipitated by significant losses of riparian habitat and conversion of open foraging habitats to developed lands (England et al. 1997, Woodbridge 1998). Swainson's hawks are distributed throughout western North America during the breeding season, but in California they are primarily limited to the Central Valley and the southeastern Great Basin region (Woodbridge 1998). Swainson's hawks in California are strongly associated with riparian habitats, though they are also found in oak woodlands and other open habitats (Smallwood 1995, England et al. 1997, Woodbridge 1998). Prime breeding habitat for Swainson's hawk encompasses riparian draws or clumps of trees surrounded by open grassland or oak savannah for foraging (England et al. 1997, Woodbridge 1998). Swainson's hawks build sturdy stick nests in low willows, box elders, oaks, or other trees, breeding from early March though July (England et al. 1997). Swainson's hawks are neotropical migratory birds, flying south after the breeding season to spend their winter months on the Pampas of Argentina (England et al. 1997, Canavelli et al. 2003). Stresses on winter populations, including pesticide poisoning, on the winter grounds have contributed to declines in North American breeding populations.

Swainson's hawks apparently nested in small numbers in Santa Clara County historically, and there is an 1894 nest record from the Berryessa area (currently in eastern San José) (Bousman 2007d). Currently, this species is known to occur in the Study Area only as a very infrequent transient during migration. Although young not long out of the nest have been recorded on several occasions in the Santa Clara Valley in recent years (Santa Clara County Bird Data, unpublished), more concrete evidence of nesting has not been documented, and this species is not currently known to breed in the Study Area.

California Condor (*Gymnogyps californianus*). Federal Listing Status: Endangered; State Listing Status: Endangered. The California condor was listed as endangered by the USFWS in 1967 (USFWS 1967) and by the state of California in 1971 (CDFG 2008). Critical habitat was designated for this species in 1976 (USFWS 1976). Historically, the condor ranged from Baja California to British Columbia, and likely foraged throughout the Study Area. However, the condor was extirpated from its entire range, and in 1987 the last remaining wild birds were captured and kept in zoos as part of a comprehensive captive breeding program (Snyder and Schmitt 2002). Intensive recovery efforts have produced a managed population currently numbering approximately 150 free-flying birds, which range along the central and southern Coast Ranges from Monterey Bay in the north to Los Angeles County in the south; and across the Transverse Ranges and up the western slope of the southern Sierra Nevada (Snyder and Schmitt 2002).

California condors seek out caves in steep, isolated cliffs or cavities in mature redwood trees for nesting, and forage over grasslands, open woodlands, and along coastal beaches (Snyder and Schmitt 2002). Consistent air movements that support the extended soaring flight utilized by the condor are a critical component of suitable habitat (Snyder and Schmitt 2002). Condors nest between February and November, laying one egg every other year (Snyder and Schmitt 2002). Medium- to large-bodied carcasses appear to be the preferred food source for condors, but smaller carcasses are readily consumed as well (Snyder and Schmitt 2002). The persistence of re-established condor populations is threatened primarily by lead contamination from spent ammunition, although habitat loss and collision with utility lines and towers are also important threats (Meretsky et al. 2000, Cade 2007).

The current range of the California condor does not extend into Santa Clara County, and no breeding habitat for this species is present in the Study Area. California condors have been reintroduced into the wild at Pinnacles National Monument in San Benito County and on the Big Sur coast in Monterey County. It is possible that individuals from these reintroduction efforts may occasionally wander into Santa Clara County. However, we are not aware of any such records in or near the Study Area, and at most condors are expected to occur as infrequent visitors that overfly portions of the Study Area. Nevertheless, reintroduced birds could foreseeably expand their movements and eventually occur more regularly in or near the Study Area, most likely in the southern part of the Study Area (but only as nonbreeders). The California condor is considered a "no take" species according to the second administrative draft HCP/NCCP.

California Clapper Rail (*Rallus longirostris obsoletus*). Federal Listing Status: Endangered; State Listing Status: Endangered and Fully Protected. The California clapper rail is a secretive marsh bird that is currently endemic to marshes of the San Francisco Bay. It formerly bred at several other locations, including Humboldt Bay (Humboldt County), Elkhorn Slough (Monterey County), and Morro Bay (San Luis Obispo County), but is now extirpated from all sites outside of the San Francisco Bay. California clapper rails nest in salt and brackish marshes along the edge of the Bay, and are most abundant in extensive salt marshes and brackish marshes dominated by Pacific cordgrass (*Spartina alterniflora*), pickleweed, and marsh gumplant (*Grindelia stricta*) and that contain complex networks of tidal channels (Harvey 1980). Shrubby areas adjacent to or within these marshes are also important for predator avoidance at high tides.

Since the mid-1800s, about 90% of the San Francisco Bay's marshlands have been eliminated through filling, diking, or conversion to salt evaporation ponds (Goals Project 1999). As a result, the California clapper rail lost most of its former habitat, and its population declined severely. The subspecies was listed as endangered by the USFWS in 1970 (USFWS 1970) and by the State of California in 1971. The USFWS approved a joint recovery plan of the salt marsh harvest mouse and the California clapper rail in 1984 (USFWS 1984), and an updated Tidal Marsh Species Recovery Plan is currently under development. Critical habitat has not been proposed for the California clapper rail.

California clapper rails breed from February through August along tidal sloughs, primarily in salt marsh vegetation. Breeding-season surveys conducted in fully tidal marshes bordering Coyote Creek in 1989 documented breeding California clapper rails in a wide variety of plant associations. Surveys conducted during the 1990 breeding season (H. T. Harvey & Associates 1990a) and winter season (H. T. Harvey & Associates 1990b) found a number of California

clapper rails occupying salt/brackish transitional marshes and several brackish, alkali bulrush-dominated marshes. In addition, California clapper rails were found in nearly pure stands of alkali bulrush along Guadalupe Slough in 1990 and 1991 (H. T. Harvey & Associates 1990a; H. T. Harvey & Associates 1990b; H. T. Harvey & Associates 1991).

Clapper rails are resident breeders within salt marsh habitat of the Alviso area in the northern portion of the Study Area. The species does not occur in muted tidal or diked salt marshes. Breeding-season surveys of South San Francisco Bay marshes for California clapper rails through the early 1990s, summarized by Foin and others (1997), indicate that clapper rails occur in Triangle Marsh in Alviso. Breeding-season surveys conducted by PRBO between 2005 and 2008 indicate that clapper rails occur along Guadalupe Slough, Alviso Slough, at Calaveras Point, and have the potential to occur in habitat along Coyote Creek and Coyote Creek South Tributary Marsh (Liu et al. 2009).

Although California Clapper Rails are typically found in tidal salt marshes, they have also been documented in brackish marshes in the South Bay. Surveys conducted during the 1990 breeding season (H. T. Harvey & Associates 1990a) and winter season (H. T. Harvey & Associates 1990b) found a number of California clapper rails occupying salt/brackish transitional marshes and several brackish, alkali bulrush-dominated marshes, including Warm Springs Marsh (immediately east of Pond A19 and just outside the Study Area) and the marshes along upper Coyote Slough even farther east. In addition, California clapper rails were found in nearly pure stands of alkali bulrush along Guadalupe Slough in 1990 and 1991 (H. T. Harvey & Associates 1990a; H. T. Harvey & Associates 1990b; H. T. Harvey & Associates 1991).

Occasional nonbreeding individuals may also wander upstream along tidal sloughs from their typical salt marsh habitats into tidal brackish/freshwater marsh habitats. Such individuals have been recorded in the Study Area along upper Alviso Slough near the Gold Street Bridge and in the nontidal freshwater marsh/ponds between Calabazas and San Tomas Aquino Creeks north of State Route 237 (H. T. Harvey & Associates, unpublished data), but only during the nonbreeding season.

California Black Rail (*Laterallus jamaicensis coturniculus*). Federal Listing Status: None; State Listing Status: Threatened and Fully Protected. The California black rail is a small rail that inhabits a variety of marsh types. California black rails are most abundant in extensive tidal marshes with some freshwater input (Evens et. al. 1991). They nest primarily in pickleweed-dominated marshes with patches or borders of bulrushes, often near the mouths of creeks. Black rails build nests in tall grasses or marsh vegetation during spring, and lay about six eggs. Nests are usually constructed of pickleweed, and are placed directly on the ground or slightly above ground in vegetation. Black rails feed on terrestrial insects, aquatic invertebrates, and possibly seeds (Trulio and Evens 2000).

The California black rail reportedly bred in the Alviso area in the early 1900s (Wheelock 1916), but currently it is not known to breed in the South Bay. Black rails breed primarily in marshes in north San Francisco Bay (*i.e.*, San Pablo Bay and Suisun Bay). Following breeding, some black rails disperse into the South Bay during the nonbreeding season; however, their abundance in the South Bay during the nonbreeding season is unknown. Black rails are likely present in small

numbers at scattered locations in the South Bay during the nonbreeding season (*e.g.*, there are unconfirmed reports from the Alviso marina during high winter tides).

The absence (or scarcity) of breeding black rails in the South Bay is presumably a result of habitat loss. Tidal marsh habitat has been lost, but perhaps more important to winter survival is loss of high-tide refugia habitat. Upland transition habitat, both on natural levees within marshes and on landward edges of marshes, has been lost as a result of fill for development, and reductions in marsh size and resulting reductions in natural levees along higher-order channels. Predation by egrets, herons, gulls, and harriers has been observed in these marshes during winter high tides, as black rails are forced into the open by rising water. The importance of this predation on a population level, especially in light of impacts to high tide refugia, is unknown, but it may be a significant factor in the extirpation of breeding populations of the species from the South Bay.

Western Snowy Plover (*Charadrius alexandrinus nivosus*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The snowy plover is a small shorebird that occurs on almost every continent. On the Pacific coast, snowy plovers nest on sandy beaches and salt panne habitat from Washington to Baja Mexico. Because they nest during the summer, primarily on beaches in a temperate climate, snowy plovers are susceptible to nest disturbance and other negative interactions with humans. Much of their nesting habitat, particularly in southern California, has been lost to development and high human use. In addition, introduced predators, especially the non-native red fox, have had dramatic effects on snowy plover nesting success (Neuman et al. 2004). In response to severe population declines, the USFWS listed the Pacific coast population of the western snowy plover as threatened in 1993. Critical habitat was designated for this population in 1999 (USFWS 1999a), and a revised recovery plan was released in 2007 (USFWS 2007). None of the breeding sites within the San Francisco Bay are considered critical habitat.

In the South San Francisco Bay, snowy plovers nest on low, barren to sparsely vegetated saline managed pond levees and islands, at pond edges, and on salt pan areas of dry ponds (Page et al. 2000), and preferentially use light-colored substrates such as salt flats (Feeney and Maffei 1991; Marriott 2003). Nesting areas are located near water, where prey (usually brine flies and other insects) are abundant. In some areas, snowy plovers nest within dry saline managed ponds; in other areas where ponds typically hold water through the summer, nests are located primarily on levees.

In the Alviso area, snowy plovers have nested primarily at Ponds A6 and A8, in a small impoundment immediately east of Pond A12, and more recently in New Chicago Marsh (Ryan and Parkin 1998; Strong et al. 2004). Other managed ponds in the Alviso area, such as A12 (which is currently being managed for low-water conditions that may provide suitable nesting habitat for snowy plovers), may also provide breeding habitat. It is possible that nonbreeding individuals may occasionally forage in the Study Area in the WPCP sludge ponds, or possibly at the Coyote Creek Reach 1A waterbird pond, but they are expected to do so infrequently and in low numbers if at all.

California Least Tern (*Sterna antillarum brownii*). Federal Listing Status: Endangered; State Listing Status: Endangered, Fully Protected. California least terns nest in California during the breeding season from April to September (Baron and Takegawa 1994, Rigney and Granholm 1990). Their nesting habitat consists of shallow depressions in sand or small gravel along large tracts of undisturbed beaches (Baron and Takegawa 1994, Marschalek 2008). The loss of available high quality nesting habitat for least terns resulted in a reduction in population size to only 600 known breeding pairs (Baron and Takegawa 1994). In response to severe population declines, the USFWS listed the California least tern as endangered in 1970 (USFWS 1970), and the state of California listed the species as both endangered and fully protected in 1971 (Baron and Takegawa 1994). No critical habitat has been designated for this species.

Habitat requirements for the California least tern typically consist of quiet, extensive beaches or tidal flats, close to an abundance of small fish (Baron and Takegawa 1994, Rigney and Granholm 1990). In San Francisco Bay, this species' largest colony is located on an old airport runway at the former Alameda Naval Air Station, although small numbers nest on islands and salt pannes in former saline managed ponds in a few areas.

California least terns do not breed within or adjacent to the Study Area. The South Bay is an important post-breeding staging area for least terns, and this species forages in late summer and early fall in saline managed ponds within and adjacent to the Alviso area. Both adult and juvenile least terns roost on saline managed pond levees (both outboard levees and interior levees between ponds) and boardwalks, and forage both in the saline managed ponds and over the open waters of the Bay. In recent years, the post-breeding (late summer/fall) staging area for least terns in the South Bay has been in the complex of saline managed ponds immediately north of Moffett Field and west of the Study Area (Ponds AB1, A2E, and AB2). This site is used predictably for roosting and foraging by both adult and juvenile least terns in July and August each year, with typical counts of 20 to100 birds. Least terns have also been recorded at a number of ponds in the Study Area, including A5, A7, A9, A10, A11, and A14 (Hurt 2004 and Krause 2005 [pers. comm.]).

Least Bell's Vireo (*Vireo bellii pusillus*). Federal Listing Status: Endangered; State Listing Status: Endangered. The least Bell's vireo is a small neotropical migratory songbird that is sparsely distributed along waterways in southern California and northern Baja California, Mexico (Brown 1993). The least Bell's vireo was historically distributed throughout much of California, including the Central Valley (Franzreb et al. 1994, Kus 2002). Extensive habitat destruction and declines in nest survival caused by heavy parasitism by the brown-headed cowbird (*Molothrus ater*) resulted in severe population declines, and the species' range decreased to a few small remnant populations in riparian drainages in the eight counties south of Santa Barbara, with the greatest abundance of the vireos occurring in San Diego County (Franzreb 1994, Kus 2002). The least Bell's vireo was listed as endangered by the state of California in 1980, and by the USFWS in 1986 (USFWS 1986). No critical habitat for this species occurs in Santa Clara County (USFWS 1994).

The least Bell's vireo is a riparian-obligate breeder (Kus 1998), nesting in dense thickets of willows and other low bushes along perennial or ephemeral streams (Franzreb 1994, Kus 2002). Prime least Bell's vireo habitat can be described as a wide (greater than 825 feet) riparian

corridor (Kus 2002) with dense shrub growth extending vertically from 2 to 10 feet (Brown 1993), few trees greater than 3 inches in diameter at breast height in the canopy, and an open canopy (Sharp and Kus 2006). Least Bell's vireos arrive on their breeding grounds in mid-March, and the nesting season extends from early April through July (Brown 1993). Least Bell's vireos exhibit high breeding site fidelity, returning to the same territory, and even nesting in the same shrub, over multiple years (Kus 2002).

The coastal range of this species (*i.e.*, west of the Central Valley) extended north through the Salinas River valley, but apparently ended in extreme southern Santa Clara County, where the only record prior to 1997 was of a nest collected at Sargent along the Pajaro River (on the Santa Clara/San Benito County line near the current location of Highway 101) in 1932 (Unglish 1937). By 1930, declines were widespread, mostly due to parasitism by brown-headed cowbirds. The least Bell's vireo was thought to be extirpated from northern California by 1970. Isolated and infrequent sightings of singing males in northern and central California have suggested that the species may eventually recolonize historic habitat in northern California. In 1972, and again in 1982, lone singing males were found in riparian habitat in Pinnacles State Park, in San Benito County (Roberson 2002). In 1983, three singing males were found on the Salinas River in southern Monterey County, and a female was observed building a nest.

In the past several years, populations of least Bell's vireos have begun to rebound due to intensive recovery efforts (Kus 2002, USFWS 2006b). However, the species is still not known to have recolonized former breeding areas in southern Monterey County, and there have been only three records from Santa Clara County in recent years. In southern Santa Clara County, a pair was present in April and May 1997, and two singing males were reported on 17 May 2001 (Rottenborn 2007e); both of these records were from lower Llagas Creek between Highway 152 and the confluence with the Pajaro River, just east of Gilroy. The only record from the Study Area is of a single male heard singing along Coyote Creek near the Coyote Creek Golf Course on 20 June 2006 (H. T. Harvey & Associates, unpublished). This individual, which was right at the edge of the Study Area boundary, was looked for but not relocated subsequently, and it is not likely to have bred in the vicinity. There are no other recent records of the least Bell's vireo in Santa Clara County.

Given that the single record in the Study Area is north of the known historical and current breeding range, there is a low probability that this species nests (or will nest in the future) in the Study Area, despite the presence of ostensibly suitable riparian habitat along Coyote Creek. The least Bell's vireo is considered a covered species by the second administrative draft HCP/NCCP.

Bank Swallow (*Riparia riparia*). Federal Listing Status: None; State Listing Status: Threatened (Nesting). In the western hemisphere, the bank swallow is a neotropical migrant with a wide distribution, breeding locally in coastal and interior California as far south as Monterey County (Roberson and Tenney 1993, Garrison 1999). Bank swallows are colonial nesters, excavating nesting burrows in vertical banks of streams, rivers, and ocean coasts (Garrison 1999). Nest sites in central California are typically composed of soft soils, with banks averaging at least 10 feet high and 0.25 miles long (Garrison et al. 1987). The historical range of the bank swallow in California has been dramatically reduced by streambed alterations, which have resulted in a widespread loss of nesting habitat (Garrison 1999). The nesting season for

bank swallows begins in April, and continues through July, when the birds depart for their wintering grounds in Mexico and Central America (Garrison 1999).

The only record of bank swallows breeding in Santa Clara County is from the Pajaro River, and this colony has not been active in decades (Bousman 2007l). No suitable nesting habitat is present in the Study Area, and the species is not expected to breed here. Bank swallows occur in the Study Area only as rare transients.

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*). Federal Listing Status: Endangered; State Listing Status: Endangered and Fully Protected. The salt marsh harvest mouse is found only in saline wetlands of the San Francisco Bay and its tributaries. The southern subspecies *raviventris* is restricted to an area along both sides of San Francisco Bay, from San Mateo County and Alameda County south to Santa Clara County. Although its primary habitat consists of pickleweed-dominated areas in the upper regions of tidal marshes, the salt marsh harvest mouse is also found in diked and muted tidal marshes dominated by pickleweed, and recently it has been found in dense vegetation within brackish marshes in the South Bay (H. T. Harvey & Associates 2006). The salt marsh harvest mouse occurs with the closely related, ubiquitous and abundant western harvest mouse at upper edges of marshes and in marginal areas. Both animals occur in pickleweed, but the salt marsh harvest mouse replaces the western harvest mouse in denser areas of pickleweed.

The salt marsh harvest mouse has declined substantially in recent decades. This decline is due primarily to diking and filling of marshes, subsidence, and changes in salinity brought about by increasing volumes of fresh water discharge into the Bay. In response to habitat loss and population declines, the salt marsh harvest mouse was listed as endangered by the USFWS in 1970 (USFWS 1970) and by the state of California in 1971. Critical habitat has not been designated for this species.

Within the Study Area, salt marsh harvest mice occur only in pickleweed-dominated salt marsh habitat in the Alviso area. Here, they have been captured during trapping studies in Triangle Marsh, along Coyote Creek and the Coyote Creek Flood Control Channel, in the Owens Cornings Marsh west of the Zanker Materials Processing Facility, near the Zanker Road Resource Recovery Operation and Landfill, in channels along and within the WPCP, at New Chicago Marsh, along Alviso Slough, along Guadalupe Slough, and in an area specifically restored to provide habitat for this species in the area between the WPCP and the Newby Island Landfill (Shellhammer and Duke 2004). Trapping studies have not captured salt marsh harvest mice along the willow/riparian habitat farther inland along Coyote Creek, at the tidal brackish/freshwater marsh habitat at the mouth of Calabazas Creek, or along the coastal and valley freshwater marsh habitat along Artesian Slough (Shellhammer and Duke 2004), and the species is not expected to occur away from pickleweed-dominated areas in Alviso.

San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing Status: Threatened. The San Joaquin kit fox is the largest subspecies of the kit fox, the smallest canid species in North America. The San Joaquin kit fox was listed as endangered by the USFWS in 1967 and by the State of California in 1971. Loss of habitat from urban, agricultural, and industrial development are the principal factors in the decline of the San

Joaquin kit fox. Subpopulations of the San Joaquin kit fox appear to be increasingly isolated from one another due to development within its range (USFWS 1998b). Critical habitat has not been designated for this species.

The San Joaquin kit fox is primarily nocturnal and typically occurs in annual grassland or mixed shrub/grassland habitats throughout low, rolling hills and in the valleys. It requires underground dens for temperature regulation, shelter, reproduction, and predator avoidance. Kit foxes commonly modify and use dens constructed by other animals and human-made structures (USFWS 1998b). Dens are usually located on loose-textured soils on slopes less than 40 degrees, but San Joaquin kit fox dens vary across the fox's geographic range in regard to the number of openings, shape, and the slope of the ground on which they occur (USFWS 1998b). Kit foxes change dens frequently, often using numerous dens each year.

San Joaquin kit foxes were infrequently sighted in San Benito County and southern Santa Clara County in the early 1970s. Morrell (1975) reported four sightings prior to 1972, and seven sightings between 1972 and 1975 within this region. These reports include nine sightings in San Benito County near Hollister and two sightings in Santa Clara County between Pacheco Pass and San Felipe Lake.

Since 1975, there have been two reports of kit foxes in Santa Clara County. Two adults were reported near Coyote, in the southeastern part of the Study Area in 1983 (Weslar 1987), and one adult was reported near Bell's Station in an outlying portion of Henry Coe State Park in 2002 (CNDDB 2010). The Coyote report was not documented adequately to confirm that this species, which can be easily confused with other foxes or, especially, young coyotes, was actually present. As a result, there are no firm records of the kit fox from the Study Area. There is a also report of a San Joaquin kit fox on Metcalf Road near the Study Area from the early 1970s (CNDDB 2010), but that report was not substantiated. Subsequent extensive surveys throughout the area have failed to detect any kit foxes, and kit foxes are now generally acknowledged to be extremely rare in Santa Clara County and found only in areas proximal to access from Central Valley population centers (*e.g.*, near State Route 152 in the southeastern corner of the county). The species' preferred habitat, low-lying grasslands with minimal topography, is not present within the Study Area. Although the extensive grassland habitat on Coyote Ridge is similar to habitat occupied by the species in the foothills of the San Joaquin Valley, it is separated from areas of known occurrence by many miles of unsuitable or low-quality habitat. As a result, this species is considered absent from the Study Area. The San Joaquin kit fox is considered a covered species by the second administrative draft HCP/NCCP.

CALIFORNIA SPECIES OF SPECIAL CONCERN

Central Valley Fall-Run Chinook Salmon (*Oncorhynchus tshawytscha*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Like the steelhead, the Chinook salmon is an anadromous salmonid. Populations of Pacific salmon have been categorized into Evolutionarily Significant Units (ESUs) by the NMFS; an ESU represents a population of Pacific salmon that is reproductively isolated from other conspecific populations, and is recognized as a distinct evolutionary component of the species (USFWS 1991). The Central Valley Fall-run ESU represents a population of Chinook salmon that migrate from the ocean to spawning streams in late fall and begin spawning in beds of coarse river gravels

between October and December. Populations of fall-run Chinook salmon have suffered the effects of over-fishing by commercial fisheries, degradation of spawning and rearing habitat, added barriers to upstream migration, and reductions in winter flows due to damming. Approximately 40-50% of the spawning and rearing habitats in Central Valley streams have been lost or degraded. Chinook salmon generally spawn in cool waters providing incubation temperatures no warmer than 55^{o} F. Compared to steelhead, Chinook salmon are more likely to spawn in coarse gravels located lower in the watershed.

Chinook salmon did not historically spawn in streams flowing into South San Francisco Bay. Since the mid-1980s, however, small numbers of fall-run Chinook salmon have been found in several such streams, including Coyote Creek, Los Gatos Creek, and the Guadalupe River within the Study Area (Leidy et al. 2003). These fish spawn in reaches with suitable gravels, and use downstream reaches for migration between the ocean and spawning and rearing areas. In at least some areas, juvenile Chinook salmon may spend a significant amount of time foraging in estuarine habitats (Simenstad et al. 1982), showing significant growth in some estuaries (MacDonald et al. 1987) as they adapt physiologically to higher-salinity environments (Maragni 2000). As a result, Chinook salmon may also use sloughs in the Alviso area for foraging. The Central Valley fall-run Chinook salmon is considered a covered species by the second administrative draft HCP/NCCP, though the Local Partners and the resource agencies have discussed the possibility of removing coverage of this species.

Foothill Yellow-legged Frog (*Rana boylii*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The foothill yellow-legged frog is a stream-breeding frog that was historically found in most Pacific drainages from the Coast Ranges to the western Sierra Nevada and San Gabriel mountain foothills (Jennings and Hayes 1994, California Herps 2008). Currently, the foothill yellow-legged frog may occupy only 55% of its historical range (California Herps 2008). It appears that the main reason for the reduction in the species' range is the alteration of stream hydrology due to the presence of dams (Jennings and Hayes 1994, Wheeler et al. 2006).

Ideal habitat for the foothill yellow-legged frog consists of streams with riffles and cobble-sized rocks, with slow water flow (Jennings and Hayes 1994). The breeding ecology of the foothill yellow-legged frog requires consistently slow-moving flows, as well as the presence of upland areas surrounding the breeding locations for use as non-breeding habitat.

Historically, this species likely occurred at the edges of the UGB where cobbly streams, its preferred habitat, were present. There are no recent records of foothill yellow-legged frogs from the Santa Clara Valley floor, and although it still occurs in foothill streams within the Study Area, it is now presumed extirpated from the majority of the Study Area (H. T. Harvey & Associates 1999c). At the edges of the Study Area, foothill yellow-legged frogs are known to occur in Guadalupe Creek downstream from Guadalupe Reservoir, in Llagas Creek south of Calero Reservoir, and along Rincon Creek (CNDDB 2010). The species also occurs (or formerly occurred) in Upper Penitencia Creek in Alum Rock Park within the Study Area and at other South Bay locations outside the Study Area (H. T. Harvey & Associates 1999c). The foothill yellow-legged frog is considered a covered species by the second administrative draft HCP/NCCP.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California and northern Baja California, Mexico (Bury and Germano 2008). The central California population was historically present in most drainages on the Pacific slope (Jennings and Hayes 1994), but streambed alterations and other sources of habitat destruction, exacerbated by frequent drought events, have caused substantial population declines throughout most of the species' range (Stebbins 2003). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas up to 0.25 miles from aquatic habitat (Jennings and Hayes 1994). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 feet of aquatic habitat, but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest. Threats to the western pond turtle include impacts to nesting habitat from agricultural and grazing activities, human development of habitat, and increased predation pressure from native and non-native predators as a result of human-induced landscape changes.

Western pond turtles have been recorded recently along a number of streams and rivers, and within a number of ponds and lakes, throughout much of the Study Area away from northern, tidal stream reaches (H. T. Harvey & Associates 1999a). However, the cumulative stressors of urbanization, including release of non-native turtles, predation and harassment by pets and non-native mammals, capture by humans, degradation of water quality, loss of upland nesting habitat due to development, and the construction of barriers between creeks and nesting areas have reduced western pond turtle populations, and there are few areas where they can be considered common. In particular, the scarcity of suitable expanses of nesting habitat makes the maintenance of viable populations unlikely along reaches of many creeks within the Study Area. Large numbers of different-aged individuals, suggesting the presence of successfully breeding turtles, have been observed in ponds near Coyote Ranch, along the eastern edge of the Study Area in the northern part of Coyote Valley, since the 1990s (S. Rottenborn, pers. obs.). Western pond turtles are also present at Anderson and Almaden reservoirs. However, most recent observations in the Study Area are of small numbers of primarily older individuals, suggesting low productivity and/or survival of western pond turtles in most of the Study Area. The western pond turtle is considered a covered species by the second administrative draft HCP/NCCP.

California Horned Lizard (*Phrynosoma blainvillii*). Federal Listing Status: None; Listing Status: Species of Special Concern. The California horned lizard is a California endemic that is distributed along the coast from Contra Costa County in the north to San Diego County in the south, as well as in patches throughout the Central Valley (Jennings and Hayes 1994). The breeding season for California horned lizards extends from April to August, after which individuals disperse to overwintering habitats where they hibernate from November through March (Jennings and Hayes 1994). California horned lizards occupy a variety of open habitats characterized by sandy, loosely textured soils, such as chaparral, coastal scrub, annual grassland, and clearings in riparian woodlands (Jennings and Hayes 1994). Horned lizards are most strongly associated with loose soils free of plant debris, and with the presence of native harvester

ants (*Pogonomyrmex barbatus*), which comprise a primary part of their diet (Fisher et al. 2002). California horned lizard populations have declined significantly due to loss of habitat and the influx of invasive invertebrate species (Fisher et al. 2002). The introduction of Argentine ants (*Linepithema humile*) has displaced the harvester ant in California, reducing the range of the California horned lizard.

Suitable loose-textured soils are relatively scarce, and Argentine ants are relatively common and widespread, in the Study Area; therefore, the potential for California horned lizards to occur in the majority of the Study Area is extremely low. Additionally, pressure from domestic cat predation limits the populations of California horned lizards near urban areas. There is a single recent record of the species in the Study Area, from Calero Reservoir (N. Merrill, Santa Clara Valley Water District, pers. comm.), and there is some potential for the California horned lizard to occur in the Santa Teresa Hills, where the soils are more loosely textured. There is also potential habitat for this species in the vicinity of Alum Rock Park, although it is unlikely that individuals would occur within the UGB in this area.

Northern Harrier (*Circus cyaneus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The northern harrier nests in marshes and grasslands, usually those with tall vegetation and moisture sufficient to inhibit accessibility of nest sites to predators. This species forages, primarily on small mammals and birds, in a variety of open grassland, ruderal, and agricultural habitats.

Northern harriers breed in small numbers in more extensive patches of tidal marsh habitat close to San Francisco Bay. It is possible that this species nests in tall, dense ruderal vegetation and grassland in the WPCP buffer lands or in diked/tidal marsh habitat in Alviso. There is also some potential for harriers to nest in fallow fields in Coyote Valley, although no breeding was documented in any portions of the Study Area away from the Bay edge by the Santa Clara County Breeding Bird Atlas project (Bousman 2007m). However, in all these areas, nest accessibility to predators would limit the potential for, and likely the success of, nesting. Northern harriers forage in a variety of open habitats, especially during the nonbreeding season, and the species is fairly widespread as a forager in grasslands, extensive wetlands, and agricultural areas in the Study Area during migration and winter. In some years, when vole populations are particularly high, high densities of harriers can be found in some areas, such as less intensively cultivated portions of Coyote Valley (De Anza College Wildlife Corridor Stewardship Team, unpublished data).

Black Skimmer (*Rynchops niger*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Colony). The black skimmer's unique physiology, with its lower mandible longer than its upper mandible, allows this species to fly over the surface of the water, "skimming" for small fish. Nesting habitat for black skimmers occurs primarily on the coasts of the southeastern United States, the Gulf of California, and from the Pacific Coast of Baja, California, north to San Diego. In the state of California, black skimmers are considered a species of special concern only when nesting.

Black skimmers were first detected nesting in California in 1972, and since that time their populations in California have increased considerably (*e.g.*, to approximately 1200 pairs in 1995

(Collins and Garrett 1996). The black skimmer was considered a rare nonbreeding visitor to the San Francisco Bay area until the mid-1990s. In 1994, one pair of black skimmers was documented nesting at saline managed Pond AB2 in Santa Clara County and a second pair nested at Hayward Regional Shoreline in Alameda County (Layne and others 1996). Since 1994, black skimmers have occurred in the South Bay every year, nesting at several additional sites (Strong 2004). In the San Francisco Bay area, black skimmers typically nest among Forster's terns, on small dredge-spoil islands (including both bare islands and islands vegetated, sometimes heavily, with pickleweed) in saline managed ponds. Exact nesting locations vary from year to year.

Since 1994, skimmer populations in the South Bay have slowly but steadily increased. Nesting success of black skimmers in the South Bay has apparently been very low, based on the number of chicks known to survive to fledging age, and therefore this population increase has likely been the result of immigration from the increasing southern California population. Within the Study Area, skimmers have bred at ponds A8 and A16, and Pond A12 and other managed ponds in Alviso may provide breeding and foraging habitat.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The burrowing owl is a small, terrestrial owl of open country. These owls prefer annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFG (1995) runs from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate (Rosenberg et al. 2007); young birds disperse across the landscape from 0.1 miles to 35 miles from their natal burrows (Rosier et al. 2006). Burrowing owl populations have declined substantially in the San Francisco Bay area in recent years, with declines estimated at 4-6% annually (DeSante et al. in press, in Rosenberg et al. 2007).

Burrowing owls occur year-round in the Santa Clara Valley (Trulio 2007), and are commonly present in open, agricultural or grassland areas with active squirrel burrows. Burrowing owls also exhibit strong site fidelity, and may return to a nesting site and attempt to nest even after the site has been developed. Within the Study Area, particular concentrations of burrowing owls occur at the WPCP and its buffer lands, and the SCVTA's Cerone operating division, in the Alviso area; at the San José International Airport and on undeveloped parcels east of U.S. 101 near the airport; and in the vicinity of Lake Cunningham and the Reid-Hillview Airport. This species is increasingly disappearing from "infill" locations on the urban valley floor.

Burrowing owls were present in the Coyote Valley and Evergreen areas in the 1990s, but they have been infrequently recorded in either area in recent years. They are still occasionally recorded in Coyote Valley and in grasslands at higher elevations, such as on Coyote Ridge, but they seem to occur in such areas primarily during the nonbreeding season. The burrowing owl is considered a covered species by the second administrative draft HCP/NCCP.

Long-eared Owl (*Asio otus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The long-eared owl is an uncommon year-long resident throughout much

of the state. It frequents dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats, but also may be found in dense conifer stands at higher elevations. This species forages over open areas, where it hunts for rodents and small birds. It breeds from valley foothill hardwood up to ponderosa pine habitats from early March to late July. This species is only considered a California species of special concern when breeding.

There are no known nesting locations for the long-eared owl in the Study Area (Noble 2007), and the species likely occurs here only as a rare and irregular nonbreeding visitor. However, because the long-eared owl is known to nest in a variety of wooded habitat types, it is possible that a few pairs occur in riparian, oak woodland, or mixed evergreen forest in the Study Area.

Vaux's Swift (*Chaetura vauxi*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The Vaux's Swift is distributed throughout the Pacific Northwest, in close association with coniferous forests (Bull and Collins 2007). In California, the range of this small neotropical migratory bird is concurrent with the range of the coast redwood, which extends along the coast from Del Norte County in the north to Monterey County in the south (Hunter 2008). Vaux's swifts can also be found in smaller numbers in other coniferous forest types across northern California and along the western slope of the Sierra Nevada (Hunter 2008). Vaux's swifts nest both in small colonies and as single pairs, occupying cavities in redwoods and other trees (Hunter and Mazurek 2003). They will use both basal cavities and holes near the tops of trees, and once they have discovered a suitable tree they will return to reuse the site in subsequent years (Hunter and Mazurek 2003). Swifts also occasionally use artificial cavities such as chimneys (Hunter 2008). Swifts forage on flying insects in the air above a variety of habitats, and can often be seen far from the nearest suitable breeding habitat (Hunter 2008). Swifts begin breeding in early May and continue until mid-August, when most individuals migrate to southern Mexico and Central America, though small numbers overwinter as far north as central California (Bull and Collins 2007). Loss of nest and roost sites, particularly in old-growth and other mature forests, is a primary threat to this declining species (Hunter 2008).

In the South Bay, Vaux's swifts breed primarily in snags in the forests of the Santa Cruz Mountains (Rottenborn 2007a); suitable nest trees are absent from the Study Area. However, this species also breeds in residential chimneys in the foothills of the Santa Cruz Mountains, and a pair was confirmed breeding in a chimney near the southwestern edge of the Study Area, west of Guadalupe Creek, by the Santa Clara County Breeding Bird Atlas Project (Rottenborn 2007a). Confirmed breeding in chimneys in other locations in the Los Gatos/Campbell/Cupertino areas, outside the Study Area, suggests that it likely breeds more commonly (though still in small numbers) in residential areas in the western part of the Study Area. Vaux's swifts are aerial foragers that forage in low numbers throughout the Study Area during migration.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The loggerhead shrike is a predatory songbird associated with open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt (Yosef 1996). Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and upon which prey items are impaled. The breeding season for loggerhead shrikes may begin as early as mid-February and lasts through July (Yosef 1996). Nationwide, loggerhead shrike populations have declined significantly over the last 20 years. Loggerhead shrikes are still fairly common in parts of the San Francisco Bay area, but

urbanization has reduced available habitat, and local populations are likely declining (Cade and Woods 1997, Humple 2008). Loss and degradation of breeding habitat, as well as possible negative impacts of pesticides, are considered to be the major contributors to the population declines exhibited by this species (Cade and Woods 1997, Humple 2008).

Loggerhead shrikes breed in a number of locations in the Study Area with open grassland, ruderal, or agricultural habitat having scattered brush, chaparral, or trees that provide perches and nesting sites (Bousman 2007h). This species occurs slightly more widely (*i.e.*, in smaller patches of open areas providing foraging habitat) during the nonbreeding season.

Olive-sided Flycatcher (*Contopus cooperi*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). In northern California, the olive-sided flycatcher is distributed throughout the state along the Coast Ranges and the Sierra Nevada (Altman and Sallabanks 2000, Widdowson 2008). Olive-sided flycatchers are associated with coniferous forest habitats, and breed in mature forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes (Altman and Sallabanks 2000, Robertson and Hutto 2007). Olive-sided flycatchers nest in tall trees, building an open cup nest away from the main trunk in the middle to upper reaches of the tree (Widdowson 2008). This species makes one of the longest annual migrations of any songbird, from the Andes Mountains of South America to boreal breeding grounds in the United States and Canada. Individuals exhibit high site fidelity, and arrive on their breeding territories beginning in mid-May, remaining until late July. Populations of olive-sided flycatchers are experiencing steady and steep declines throughout the range of the species, likely due to conversion of forested habitat to non-forested landscapes, and to the loss of habitat on wintering grounds (Altman and Sallabanks 2000, Widdowson 2008).

This species breeds in the Santa Cruz Mountains, and more sparingly in the Diablo Range, but it does not breed on the Santa Clara Valley floor. It is known to nest along Upper Penitencia Creek in Alum Rock Park, and occasionally around Calero Reservoir, just within the Study Area; however, the Santa Clara County Breeding Bird Atlas Project did not detect any breeding evidence within the UGB (Bousman 2007g).

Yellow Warbler (*Dendroica petechia*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The yellow warbler is a widespread neotropical migrant that inhabits wet deciduous forests throughout North America (Lowther et al. 1999). In California, yellow warblers occupy riparian habitats along the coast, on both eastern and western slopes of the Sierra Nevada up to approximately 1,700 feet, and throughout the northern portion of the state (Heath 2008). Their range has remained relatively stable over time, but populations have declined substantially in many localities due to habitat loss (Cain et al. 2003, Heath 2008) and expansion of the brood-parasitic brown-headed cowbird. As a result, breeding yellow warblers have been largely extirpated from the Santa Clara Valley (Heath 2008). Ideal breeding habitat for yellow warblers consists of riparian corridors with dense, shrubby understory and open canopy (Lowther et al. 1999, Cain et al. 2003, Heath 2008). Yellow warblers breed from early May through early August and construct open cup nests in upright forks of shrubs or trees in dense willow thickets or other dense vegetation (Lowther et al. 1999).

Yellow warblers are uncommon breeders within the Study Area due to loss of riparian habitat, invasion by non-native plants, development along riparian corridors, and the abundance of the brown-headed cowbird in the San José area. However, small numbers of yellow warblers still breed in remnant riparian areas within Santa Clara County (Bousman 2007j). Suitable breeding habitat consists of riparian corridors, often with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007j). Riparian areas with reduced understory due to grazing or disturbance are generally not used by this species, and riparian corridors lacking open ruderal or herbaceous vegetation along the edges of the corridors or with development up to the corridor edge are often avoided as well. This species breeds in very low numbers along the lower reaches of South Bay streams, being somewhat more common in the upper reaches of the cottonwood/willow-dominated zone. Yellow warblers are an abundant migrant throughout the Valley during the spring and fall.

San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco common yellowthroat inhabits emergent vegetation and breeds in fresh and brackish marshes and moist floodplain vegetation around the San Francisco Bay. Common yellowthroats will use small and isolated patches of habitat as long as groundwater is close enough to the surface to encourage the establishment of dense stands of rushes (*Scirpus* and *Juncus* spp.), cattails, willows (*Salix* spp.), and other emergent vegetation (Nur et al. 1997, Gardali and Evens 2008). Ideal habitat, however, is comprised of extensive, thick riparian, marsh, or herbaceous floodplain vegetation in perpetually moist areas, where populations of brown-headed cowbirds are low (Menges 1998). San Francisco common yellowthroats breed primarily in fresh and brackish marshes, although they nest in salt marsh habitats that support tall vegetation (Guzy and Ritchison 1999). This subspecies builds open-cup nests low in the vegetation, and nests from mid-March through late July (Guzy and Ritchison 1999, Gardali and Evens 2008).

The San Francisco common yellowthroat is one of the approximately 12 subspecies of common yellowthroat recognized in North America, two of which occur in the Study Area. Because subspecies cannot be reliably distinguished in the field, determination of the presence of San Francisco common yellowthroat can be achieved only by locating breeding birds in the breeding range known for this subspecies.

In the South Bay, the San Francisco common yellowthroat is a fairly common breeder in fresh and brackish marshes in the northern part of the Study Area. It is known to breed near the edge of the South Bay, such as along Alviso Slough and San Tomas Aquino Creek, as well as in herbaceous riparian habitat and ruderal floodplain habitat along lower Coyote Creek and the Guadalupe River. Common yellowthroats are also in marshy habitat elsewhere, such as in Coyote Valley and along Silver Creek near Lake Cunningham. The demarcation between this subspecies and the more common, widespread subspecies *arizela* occurs somewhere in the mid-San José area (Grinnell and Miller 1944), and while those breeding in the southern part of the Study Area are certainly *arizela*, yellowthroats breeding in areas such as along Silver Creek near Lake Cunningham could be of either race, or could be intergrades.

Yellow-breasted Chat (*Icteria virens*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The yellow-breasted chat is a neotropical migrant that

breeds throughout eastern North America and patchily throughout the west (Eckerle and Thompson 2001). Chats nest in the understory of early-successional riparian corridors and other riparian habitats with dense foliage in the understory and an open canopy (Ricketts and Ritchison 2000, Comrack 2008). Chats prefer large patches of nesting habitat (Burhans and Thompson 1999), and are more likely to fledge young in patches with very dense foliage cover and sparse canopy cover (Ricketts and Ritchison 2000). They also require some taller trees for song perches (Ricketts and Kus 2000). Thus, optimal chat habitat is characterized by large patches of riparian vegetation with a thick shrubby understory, and a few taller trees but little overall canopy cover. Chats arrive on their breeding grounds as early as mid-April, and breed through August, after which they migrate to southern Mexico and Central America for the winter (Eckerle and Thompson 2001).

Yellow-breasted chats historically nested in riparian habitats in the Santa Clara Valley, though there is no evidence that they were ever common here. Now, they are extremely rare breeders due to loss of suitable breeding habitat and the presence of brown-headed cowbirds (Bousman 2007n). In recent years, chats have been recorded nesting in the Study Area only along Coyote Creek upstream from U.S. 101 near Hellyer Park, where a family group was seen in 1995 (S. Rottenborn, pers. obs.). However, a singing male along Coyote Creek near Coyote Ranch, at the northern end of the Coyote Valley, in 2008 (De Anza College Wildlife Corridor Stewardshop Team, unpublished data) may have attempted breeding. Otherwise, this species occurs in the Study Area primarily as a rare migrant.

Alameda Song Sparrow (*Melospiza melodia pusillula*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The Alameda song sparrow is one of three subspecies of song sparrow that breed only in salt marsh habitats in the San Francisco Bay area (Chan and Spautz 2008). Prime habitat for Alameda song sparrows consists of large areas of tidally influenced salt marsh dominated by cordgrass and gumplant and intersected by tidal sloughs, offering dense vegetative cover and singing perches. Although the *pusillula* subspecies (the "species" of special concern) is occasionally found in brackish marshes dominated by bulrushes, it is apparently very sedentary and is not known to disperse upstream into freshwater habitats (Basham and Mewaldt 1987). While the range of the Alameda song sparrow has remained relatively unchanged over time, populations have been reduced substantially and are continually threatened by the loss and fragmentation of salt marshes around the Bay (Nur et al. 1997, Chan and Spautz 2008).

This subspecies' primary habitat is fully tidal salt marsh, which is present in the Study Area in the Alviso area. Song sparrows breed along the lengths of tidal sloughs, and the demarcation along these sloughs between this subspecies and the more common, widespread subspecies *gouldii* that nests widely in freshwater habitats in the South Bay is unknown (Rottenborn 2007b). It is possible that *pusillula* occurs within the Study Area in the tidal brackish marshes of San Tomas Aquino Creek and Alviso Slough, but song sparrows here may instead be of the *gouldii* subspecies or intergrades. All song sparrows breeding in tidal marsh habitat in the Alviso area are of the *pusillula* subspecies.

Grasshopper Sparrow (*Ammodramus savannarum*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). In California, the distribution of breeding grasshopper

sparrows includes the Coast Ranges, the northern Central Valley, and areas west of the southeastern deserts (Lyon 2000, Unitt 2008). The species has always been sparsely distributed in the state, and its abundance has declined over the past half-century, likely in relation to conversion of native grassland habitats to agricultural and developed lands (Sutter and Ritchison 2005, Unitt 2008). Grasshopper sparrows breed in open, short grasslands with scattered clumps of shrubby vegetation, constructing domed ground nests with grasses in patches of dense vegetation (Vickery 1996, Sutter and Ritchison 2005, Unitt 2008). Prime grasshopper sparrow breeding habitat features very large, unfragmanted areas of grassland with patches of bare ground, and clumps of shrubby vegetation surrounded by denser grass cover for singing perches and nest sites (Vickery 1996, Lyon 2000, Sutter and Ritchison 2005). Grasshopper sparrows breed from mid-March to August in California, after which they migrate to wintering grounds that are presumed to be in Mexico and Central America (Vickery 1996, Unitt 2008).

In the South Bay, grasshopper sparrows breed in grassy foothills of the Diablo Range and the Santa Cruz Mountains (Heller 2007). In the Study Area, it breeds primarily in serpentine grassland, such as in the Santa Teresa Hills and on Coyote Ridge (including the portion of northern Coyote Ridge within the UGB), but its numbers in the Study Area are relatively low. It may occur somewhat more widely during migration, but it is seldom seen in the South Bay outside the breeding season.

Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The Bryant's savannah sparrow is one of four subspecies of savannah sparrow that breed in California. The *alaudinus* subspecies occurs primarily along coastal and bay shore areas from Humboldt Bay to Morro Bay, and is found year-round in low-elevation tidally influenced habitat, specifically pickleweed-dominated salt marshes, and in adjacent grasslands and ruderal areas. In South San Francisco Bay, levee tops with short vegetative growth and levee banks with high pickleweed are the preferred nesting habitat of this sparrow (Fitton 2008).

Bryant's savannah sparrows breed in the Study Area primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the Alviso area. Breeding has also been confirmed in grassy hills in the vicinity of the Santa Teresa Hills and the west side of Coyote Valley, though numbers there are low (Rottenborn 2007c). During the non-breeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the Study Area.

Tricolored Blackbird (*Agelaius tricolor*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Colony). Tricolored blackbirds are found primarily in the Central Valley and in central and southern coastal areas of California. This species is considered a California species of special concern (at its nesting colonies) due to concerns over the loss of wetland habitats in the state. The tricolored blackbird is highly colonial in its nesting habits, and forms dense breeding colonies that, in some parts of the Central Valley, may consist of up to tens of thousands of pairs. This species typically nests in tall, dense, stands of cattails or tules, but also nests in blackberry, wild rose bushes, and tall herbs. Nesting colonies are usually located near fresh water. Tricolored blackbirds form large, often multi-species flocks during the non-breeding period and range more widely than during the breeding season.

In the Study Area, this species typically nests in tall emergent herbaceous vegetation in marshes and ponds, habitat that is very limited here. The only recent breeding records in the Study Area have been a somewhat anomalous record from ruderal/floodplain habitat along levees on the east side of the WPCP along Coyote Creek at the eastern edge of the WPCP, in bulrushes around a pond at Coyote Ranch in the northern part of the Coyote Valley, and in cattails below the main dam at Calero Reservoir (Rottenborn 2007d). This species has also nested at the Ogier Ponds, located just outside the Study Area along Coyote Creek in Coyote Valley, as recently as the 1990s. There are no known records of tricolored blackbirds nesting in the Study Area since the 1990s. However, because nesting habitat for this species is short-lived due to disturbance, colonies are generally not present at a given location for more than a few years. Additionally, because tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available. As a result, it is possible that colonies of tricolored blackbirds may appear in the Study Area if new areas of emergent vegetation are established (*e.g.*, due to wetland restoration or in stormwater detention basins or other ponds that are recently constructed or modified) in areas surrounded by extensive open foraging habitat. The tricolored blackbird is considered a covered species by the second administrative draft HCP/NCCP.

Salt Marsh Wandering Shrew (*Sorex vagrans halicoetes*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The salt marsh wandering shrew occurs primarily in medium-high wet tidal marsh (6 to 8 feet above sea level) with abundant driftwood and other debris for cover (Shellhammer 2000). This species has also been recorded in diked marsh habitat. Within these habitats, individuals typically prefer patches of tall pickleweed, in which they build nests. Salt marsh wandering shrews breed and give birth during the spring, however, very little is known about the natural history of this species.

The salt marsh wandering shrew was historically more widely distributed in the San Francisco Bay, but it is currently confined only to salt marshes in the South Bay (Findley 1955). Salt marsh wandering shrews are occasionally captured during salt marsh harvest mouse trapping studies, but the difficulty in identifying them to species has precluded a better understanding of their current distribution in the South Bay. The shrew was formerly recorded from marshes of San Pablo and San Francisco Bays in Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara counties, but captures in recent decades have been very infrequent in these areas.

The fully tidal salt marshes in the Alviso area provide high-quality habitat for the species, and salt marsh wandering shrews are likely present in these areas. The species has been recorded in New Chicago Marsh, which contains muted tidal/diked salt marsh similar to that described above as being potential salt marsh harvest mouse habitat. Therefore, it may occur in pickleweed-dominated tidal, muted tidal, or diked salt marshes within the northern part of the Study Area.

Pallid Bat (*Antrozous pallidus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The pallid bat is a light brown or sandy-colored, long-eared, moderate-sized bat that occurs throughout California with the exception of the northwest corner of the state and the high Sierra Nevada (Zeiner et al. 1990). Pallid bats are most commonly found in oak savannah and in open dry habitats with rocky areas, trees, buildings, or bridge structures that are used for roosting (Zeiner et al. 1990, Ferguson and Azerrad 2004). Coastal

colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in the crevices, hollows, and exfoliating bark of trees. Night roosts often occur in open buildings, porches, garages, highway bridges, and mines. Colonies can range in size from a few individuals to over a hundred (Barbour and Davis 1969), and usually consist of at least 20 individuals (Wilson and Ruff 1999). Pallid bats typically winter in canyon bottoms and riparian areas. After mating during the late fall and winter, females leave to form maternity colonies, often on ridge tops or other warmer locales (Johnston et al. 2006). Pallid bat roosts are very susceptible to human disturbance, and urban development has been cited as the most significant factor contributing to their regional decline (Miner and Stokes 2005).

Pallid bats were likely present throughout the Study Area historically, but they are slowly being extirpated from the area due to anthropogenic disturbance and habitat loss. No maternity colonies are known to occur within the Study Area. However, maternity colonies are present immediately outside the Study Area at a drainage south of Berryessa Creek close to Old Piedmont Road, on Chaboya Court at the end of Quimby Road, and along Cochrane Road near Anderson Dam in Morgan Hill (Dave Johnston, pers. obs.). Individuals from these maternity roosts may forage within the Study Area, in open areas located within several miles of these roost locations. Pallid bats are known to forage along Alamitos Creek and Metcalf Road, but the locations of breeding colonies for these individuals are unknown. Although no breeding colonies are known from within the Study Area, potential breeding habitat is present in barns or old oak trees in areas such as Metcalf Road, the Evergreen and Silver Creek areas, the Santa Teresa Hills, Almaden Valley, and in other less developed portions of the Study Area.

Townsend's Big-eared Bat (*Corynorhinus townsendii*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The Townsend's big-eared bat is a colonial species, and females aggregate in the spring at maternity colonies to begin their breeding season, which may extend through the end of August. Females give birth to one young, and females and young show a high fidelity to both their group and their specific roost site (Pearson et al. 1952). Although the Townsend's big-eared bat is usually a cave dwelling species, many colonies are found in anthropogenic structures, such as the attics of buildings or old abandoned mines. Known roost sites in California include limestone caves, lava tubes, mine tunnels, buildings, and other structures (Williams 1986). This species also roosts in deep crevices of redwood trees. Radio tracking studies suggest that movement from a colonial roost during the maternity season is confined to 9 miles (Pierson and Rainey 1998). This species is easily disturbed while roosting in buildings, and females are known to abandon their young when disturbed (Humphrey and Kunz 1976). Townsend's big-eared bats feed primarily on moths and other soft-bodied insects (Kunz and Martin 1982).

Townsend's big-eared bats have been found roosting just outside the Study Area on UTC property, east of Coyote Ridge near Metcalf Road; a second colony is located at San Cristobal mine at Almaden Quicksilver County Park (Dave Johnston pers. obs.). Additional roosts of Townsend's big-eared bats may be present in other areas, especially where mines are present (such as Guadalupe Mines and possibly on southern Coyote Ridge), and it is possible that large trees or abandoned buildings in relatively undisturbed areas are used as well. No populations of Townsend's big-eared bats are currently known to occur on the Santa Clara Valley floor, and this species is not expected to breed in developed portions of the Study Area. Individual Townsend's

big-eared bats may occasionally wander through any portion of the Study Area, where they may roost in cavities or structures and forage in a variety of habitats. The Townsend's big-eared bat is considered a covered species by the second administrative draft HCP/NCCP.

Western Red Bat (*Lasiurus blossevillii*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western red bat is a locally common bat in coastal California and the Central Valley, and its range extends from Shasta County to Baja California, Mexico (Zeiner et al. 1990). Western red bats are strongly associated with intact cottonwood and sycamore valley riparian habitats in low elevations (Pierson et al. 2006), and the loss of such habitats throughout the species' range threatens the persistence of the western red bat (Western Bat Working Group 2005). Both day and night roosts are almost always located in the foliage of trees; red bats in the Central Valley show a preference for large trees and extensive, intact riparian habitat (Pierson et al. 2006). Day roosts are often located along the edges of riparian areas, near streams, grasslands, and even urban areas (Western Bat Working Group 2005). During the breeding season, red bats establish individual tree roosts and occasionally small maternity colonies in riparian habitats (Zeiner et al.1990). Little is known about the habitat use of western red bats during the nonbreeding season (Pierson et al. 2006). The red bat uses echolocation to capture insects in mid-flight, and requires habitat mosaics or edges that provide close access to foraging sites as well as cover for roosting (Zeiner et al. 1990).

The Central Valley is assumed to be the primary breeding location of western red bat populations in California, and red bats likely occur in the San Francisco Bay Area only during winter (Pierson et al. 2006). Western red bats are occasional migrants and winter foragers within the Study Area, but they are not known or expected to breed here. Individual male and female bats may occur as occasional migrants during the fall and spring or as foragers during the winter, and nonbreeding individual males may occur during the summer. No breeding females occur in the Study Area during the summer. Western red bats may roost in the foliage in trees virtually anywhere throughout the Study Area.

San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco dusky-footed woodrat occurs in a variety of woodland and scrub habitats throughout the South Bay and the adjacent central coast range, south to the Pajaro River in Monterey County (Hall 1981, Bryiski et al. 1990). Woodrats prefer riparian and oak woodland forests with dense understory cover, or thick chaparral habitat (Lee and Tietje 2005). Although woodrats are locally common in many areas, habitat conversion and increased urbanization, as well as increasing populations of introduced predators such as domestic cats, pose substantial threats to this subspecies (H. T. Harvey & Associates 2008a). Dusky-footed woodrats build large, complex nests of sticks and other woody debris, which may be maintained by a series of occupants for several years (Carraway and Verts 1991). Woodrats are also very adept at making use of human-made structures, and can nest in electrical boxes, pipes, wooden pallets, and even portable storage containers. Woodrat nest densities increase with canopy density and with the presence of poison oak (Carraway and Verts 1991). While the San Francisco dusky-footed woodrat is described as a generalist omnivore, individuals may specialize on local plants that are available for forage (Haynie et al. 2007). The breeding season for dusky-footed woodrats begins in February and sometimes continues through September, with females bearing a single brood of one to four young per year (Carraway and Verts 1991).

Because dusky-footed woodrats are extremely sensitive to non-native predators, their distribution in the mostly-urban Study Area is limited. Woodrats occur in the Study Area in less-developed areas providing riparian, oak woodland, and scrub habitat, such as the upper reaches of Fisher, Thompson, Coyote, Calero, and Guadalupe creeks and in the Santa Teresa Hills. They can be found in dense scrub or chaparral habitat at higher elevations of the foothills surrounding the Valley, such as long the ridgelines of Alum Rock Park (but not within riparian vegetation). This species also occasionally nests in trees lacking understory vegetation, such as along Bailey Avenue between Monterey Road and Santa Teresa Boulevard in Coyote Valley. Woodrats are absent from most developed areas in the Study Area, although they are known to occur along the lower reaches of Coyote Creek near the WPCP.

American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. American badgers are stocky, burrowing mammals that occur in grassland habitats throughout the western United States. Badgers can have large territories, up to 21,000 acres in size, and territory size varies by sex and by season. They are strong diggers, and feed primarily on other burrowing mammals such as ground squirrels. In central California, American badgers typically occur in annual grasslands, oak woodland savannas, semi-arid shrub/scrublands, and any habitats with stable ground squirrel populations or other fossorial rodents (*i.e.*, ground squirrels, gophers, kangaroo rats, and chipmunks—Zeiner et al. 1990). They occur to a lesser extent in agricultural areas, where intensive cultivation inhibits den establishment and reduces prey abundance. Badgers are primarily nocturnal, though they are often active during the day. They breed during late summer, and females give birth to a litter of young the following spring.

Badgers are known to occur in the Study Area primarily in grasslands in the Santa Teresa Hills, on Tulare Hill, along the edges of Coyote Valley, around Calero Reservoir, and on Coyote Ridge. Roadkills and observations by the De Anza College Wildlife Corridor Stewardship Team indicate at least occasional occurrence in agricultural areas on the Coyote Valley floor as well. Badgers may also be present in grasslands in the eastern foothills of the Study Area and around Anderson Reservoir.

STATE FULLY PROTECTED SPECIES

Golden Eagle (*Aquila chrysaetos*). Federal Listing Status: None; State Listing Status: Fully Protected. In California, the golden eagle is an uncommon permanent resident and migrant throughout the state. The species' breeding range within California excludes only the Central Valley, the immediate coast in the far north, and the southeastern corner of the state (Polite and Pratt 1990). Recent declines of golden eagle populations have occurred in several western states in North America, including California, primarily due to loss of habitat and mortalities due to human activities (Kochert and Steenhof 2002, Good et al. 2007). Further declines in eagle populations are expected to occur as long as habitat loss and anthropogenic landscape alteration continue (Good et al. 2007).

Golden eagles breed in a range of open habitats including desert scrub, foothill cismontane woodlands, and annual or perennial grasslands (Polite and Pratt 1990, Kochert et al. 2002). Golden eagle nesting habitat is characterized by large, remote patches of grassland or open woodland; a hilly topography that generates lift; an abundance of small mammal prey; and tall

structures that serve as nest platforms and hunting perches (Kochert et al. 2002). Once a breeding pair establishes a territory, they may build a number of nests in tall structures such as tall trees or snags, cliffs, or utility towers (Polite and Pratt 1990, Kochert et al. 2002), only one of which is used in any given year (Kochert et al. 2002). The eagle breeding season begins in late January and continues through August (Polite and Pratt 1990). Following the nesting period, adult eagles usually remain in or near their breeding territory (Polite and Pratt 1990). Young birds in California tend to be sedentary, remaining in or near their parental home ranges (Kochert et al. 2002).

In the South Bay, golden eagles breed widely in the Diablo Range, and less commonly in the Santa Cruz Mountains (Bousman 2007o). Golden eagles are known to nest within the Study Area only on an electrical tower below Calero Reservoir, but additional pairs likely nest in the vicinity of the Study Area near the Santa Teresa Hills, on Coyote Ridge, at the north end of Anderson Reservoir, and near Alum Rock Park. These individuals, as well as other nonbreeding birds, forage regularly but in low numbers on Coyote Ridge and in Coyote Valley, and occasionally in open areas in Alviso. The golden eagle is considered a covered species by the second administrative draft HCP/NCCP.

White-tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected. In California, white-tailed kites can be found in the Central Valley and along the coast, in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Polite 1990, Dunk 1995, Erichsen et al. 1996). White-tailed kites are year-round residents of the state, establishing breeding territories that encompass open areas with healthy prey populations, and snags, shrubs, trees, or other nesting substrates (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997). Although the species recovered after population declines during the early 20th century, its populations may be exhibiting new declines as a result of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996).

White-tailed kites are fairly common residents in less developed portions of the Study Area containing extensive open grassland, ruderal, or agricultural habitats. They are most abundant in the Study Area in the vicinity of Coyote Valley, the Santa Teresa Hills, and Coyote Ridge, though pairs also breed along lower Coyote Creek, the lower Guadalupe River, in the Alviso area, and at other scattered locations in the Study Area where fairly extensive open/grassy foraging habitat is present (Mammoser 2007).

American Peregrine Falcon (*Falco peregrinus anatum*). Federal Listing Status: None; State Listing Status: Fully Protected. The American peregrine falcon occurs throughout much of the world, and is known as one of the fastest flying birds of prey. Peregrine falcons prey almost entirely on birds, which they kill while in flight. These falcons nest on ledges and caves on steep cliffs, as well as on human-made structures such as buildings, bridges, and electrical transmission towers. In California, they are known to nest along the entire coastline, the northern Coast, and the Cascade Ranges and Sierra Nevada.

A severe decline in populations of the widespread North American subspecies *anatum* began in the late 1940s. This decline was attributed to the accumulation of DDE, a metabolite of the organochlorine pesticide DDT, in aquatic food chains. When concentrated in the bodies of predatory birds such as the peregrine falcon, this contaminant led to reproductive effects, such as the thinning of eggshells. The American peregrine falcon was listed as endangered by the USFWS in 1970 (USFWS 1970) and by the State of California in 1971. Recovery efforts included the banning of DDT in North America, and captive breeding programs to help bolster populations. The USFWS removed the American peregrine falcon from the endangered Species List in 1999 (USFWS 1999b), and although the State of California still lists the species as endangered, delisting under the CESA has also been proposed (California Fish and Game Commission 2007).

The only locations within the Study Area where peregrines have been detected breeding are on San José City Hall, where successful nesting has occurred each year since 2007 (Santa Cruz Predatory Bird Research Group 2010), and in old raven and hawk nests on electrical transmission towers within managed ponds in Alviso. Although no suitable cliff habitats are present in the Study Area, other buildings and transmission towers in San José provide potentially suitable nest sites. Given the recent increases in this species' populations in California, it is possible that this species' distribution and abundance as a breeder in the Study Area will expand during the lifespan of the General Plan update. Small numbers of peregrine falcons regularly forage in the Alviso and Coyote Valley areas, particularly during the nonbreeding season, and they are occasional foragers at other locations throughout the Study Area.

Ringtail (*Bassariscus astutus*). Federal Listing Status: None; State Listing Status: Fully Protected. The ringtail is distributed throughout much of California, occurring in forests and shrubland, often in close association with rocky areas or riparian habitats. This species nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests; young are usually born between May and June (Walker et al. 1968). Ringtails are omnivorous, eating rodents, rabbits, birds, invertebrates, fruits, and nuts (Taylor 1954, Trapp 1978). The status of this species in Santa Clara County is poorly known. Although this species' strictly nocturnal habits may be at least partially responsible for the lack of information on this species' distribution in the project vicinity, it is likely very rare given the lack of sightings, and the scarcity of roadkill records (*e.g.*, compared to the nocturnal American badger, which is much more frequently detected by roadkills). The distribution of the ringtail in the Study Area is thus not well known. However, it is possible that ringtails could be present in small numbers in less developed, wooded areas such as around the north end of Anderson Reservoir and south and west of Calero Reservoir.

HCP-COVERED SPECIES AND OTHER SPECIES OF REGIONAL SIGNIFICANCE

This section includes the only animal species, the Pacific lamprey, that is currently proposed as a covered species by the second administrative draft HCP/NCCP but that does not meet the criteria for a "special-status" animal species described previously. However, it should be noted that the HCP/NCCP Local Partners and the resource agencies have discussed the possibility of removing coverage of this and other fish species by the Plan. Although they are not listed by the state as a

species of special concern or covered by the second administrative draft HCP/NCCP, Pacific harbor seals are protected under the federal Marine Mammal Protection Act (MMPA), and are sensitive to human disturbance.

Pacific Lamprey (*Lampetra tridentata*). Federal Listing Status: None; State Listing Status: None. The Pacific lamprey is a member of the family Petrornyzontidae, a group of eel-like fish that do not possess jaws or paired fins. This species' range extends from Hokkaido Island, Japan across the Pacific Ocean to Alaska, and south along the coast to Baja, California Mexico (USFWS 2004c). Lampreys are born in fresh water, and larvae (or ammocoetes) hatch and drift downstream where they act as filter feeders for 2 to 7 years (USFWS 2004c). Ammocoetes will gradually mature to the adult phase, and in streams that run to the ocean adults migrate to salt water habitat (USFWS 2004c). Adults are parasitic, and feed on marine fish for 1-3 years before returning to fresh water (USFWS 2004c). Their fidelity to natal streams is unknown, but adults may spend several years in streams before spawning (USFWS 2004c). Spawning habitat consists of gravel-bottomed streams at the upstream end of riffle habitat, typically also upstream of suitable ammocoete habitat (USFWS 2004c). Adults construct nests and deposit eggs between March and July (USFWS 2004c). Threats to this species include degraded water quality, construction of artificial barriers that prevent migration of anadromous populations to and from breeding habitat, harvest by fishing, predation by non-native species, and habitat loss (USFWS 2004c).

Historically, the Pacific lamprey may have been present in streams likely throughout the Study Area (Leidy et al. 2007). It is currently known to occur in the Study Area in the Guadalupe River, Coyote Creek, and Upper Penitencia Creek, and may be locally common in these areas (Leidy et al. 2007). The species' status is poorly documented, and though it likely occurs throughout the Study Area in streams connected to the Bay, its distribution is largely unknown. As with other anadromous fishes, the Pacific lamprey may be present in all accessible areas of streams in the Study Area during migration to breeding areas, as well as during the latter portion of the adult phase of their lives when they return to freshwater streams.

Pacific Harbor Seal (*Phoca vitulina richardsi*). Federal Listing Status: None; State Listing Status: None. Pacific harbor seals occur along the Pacific coast of North America from Alaska south to Baja, California. In the San Francisco Bay, harbor seals haul out at sites that typically consist of mudflats located far from areas used regularly by humans, and near deeper water where the seals forage. Haul-out sites are used for resting and pupping (giving birth); pupping typically occurs during spring, with a peak in April (Fancher and Alcorn 1982). Harbor seals forage in nearshore marine habitats on a variety of fishes and invertebrates. The major harbor seal dietary components in the South Bay include yellowfin goby, staghorn sculpin, and white croaker (*Genyonemus lineatus*) (Kopec and Harvey 1995).

During the spring, female harbor seals nurse pups for about 28 days, during which time they are susceptible to being separated from their young as a result of human disturbance. The NMFS (the agency that oversees the protection of marine mammals) recommends a 100-yard disturbance-free buffer around harbor seals. Disturbance can lead to separation of pups from nursing mothers, can add physiological stress to adults, and can lead to long-term abandonment of historic haul-out sites (Lidicker and Ainley 2000).

Any undisturbed intertidal habitat that is accessible to the open bay can potentially be used by harbor seals (Lidicker and Ainley 2000). A known, primary haul-out site for harbor seals in the South Bay is present just north of the Study Area at Mowry Slough in Fremont. There are additional haul-out sites and foraging habitat for harbor seals in the intertidal habitat and mud flats in the Alviso area, and harbor seals are likely to occur in these areas.

IMPACTS

As stated in the "Regulatory Setting" section above, CEQA is a state law that requires state and local agencies, such as the City of San José, to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. This section describes our assessment of the impacts to biological resources expected to occur as a result of the General Plan update (including impacts that may occur in areas outside the UGB as a result of existing land use designations and approvals).

Activities that will occur as a result of the General Plan update will ultimately result in conversion of some of the City's natural habitats into structures, pavement (roadway and parking areas), landscaping, and other habitats that may not be as suitable for sensitive species as existing habitats. General Plan-related activities will also increase the number of people and vehicles using the Study Area, which will also affect biological resources. CEQA and the CEQA Guidelines, as described in the "Regulatory Setting" section above, provide guidance in evaluating Project impacts and determining which impacts will be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

In assessing impacts to biological resources, we considered the potential impacts of two general sets of activities:

- General Plan update activities, which include new development, new and modified General Plan goals and policies, and any other activities that could impact biological resources within the UGB.
- Additional activities and development that are not currently ongoing or in place, but that could be initiated in the future as a result of zoning, land-use designations, or goals and policies that apply to areas in the city limits but outside the UGB (e.g., Alum Rock Park). Examples of such activities include development of buildings and infrastructure outside the UGB in accordance with General Plan and zoning allowances (*e.g.*, rural residential or park development), or increases in recreational activities (both within and outside of the UGB) as a result of increasing population resulting from the General Plan update.

This assessment of impacts to biological resources is mainly dependent on the overall footprint of development, the amount of such development that will occur in or adjacent to natural areas, the amount of additional development occurring outside the UGB, and the increase in the number of people visiting natural areas for recreational purposes. The footprint of the development occurring in natural areas or in areas with biological resources determines the amount of habitat that will be lost due to such impacts as clearing, grading, and tree removal. The footprint of a development is also related to the amount of hardscape, the amount of hardscape relates to the amount of runoff, and runoff relates to erosion, downcutting of streams, sedimentation in aquatic habitats, and transport of contaminants. An increase in jobs created within the UGB may lead to a greater level of development pressure on areas outside the UGB,

for example within rural residential developments within the Study Area. An increase in the number of people residing in the area may lead to an increase in the number of people accessing and utilizing nearby natural areas, resulting in more indirect impacts from trampling, soil compaction, vegetation damage, increased erosion, and disturbance (*e.g.*, disturbance of nesting birds and other sensitive wildlife species). Increases in human occupancy, concentration, or activity also leads to increases in urban-associated, native and non-native predators, increases in predation by pets or feral animals, increases in wildlife mortality as a result of vehicle strikes on new roads or from increased traffic on existing roads, and potentially a reduction in the quality of habitat from the introduction of invasive non-native vegetation, replacement of natural vegetation with ornamental (frequently exotic) vegetation, use of pesticides, herbicides and rodenticides, and increased potential for hazardous material spills.

The Envision San José 2040 Task Force considered a number of growth scenarios as part of the formulation of the proposed General Plan Update. The primary scenarios all directed housing and job growth to areas within the City's existing UGB and excluded new development within the Coyote Valley Urban Reserve and the South Almaden Valley Urban Reserve.

On April 20, 2010, the City Council directed City staff to review a scenario for the General Plan Update that calls for up to 470,000 new jobs and 120,000 new dwelling units within the city by 2035. Growth may be phased to meet goals for balancing the growth of new dwelling units and jobs.

Because density and location (within a planned growth area) of both dwelling units and jobs can be adjusted, there is potential for impacts to be increased or decreased within each of the planning areas. In general, the greatest impacts to biological resources within the UGB could occur where future development is proposed in the Planning Areas with the largest areas of natural habitats, particularly of sensitive habitat types, and other biological resources; these are concentrated in three areas within the UGB:

- The northern part of San José, including the North San José Planning Area and the Alviso Planning Area.
- The southern part of San José in the Coyote Planning Area.
- In eastern San José in the Evergreen Planning Area.

Within these areas, Employment Land Areas have the largest areas of natural habitat. The discussion of specific impacts that follow note any impacts that specifically relate to these or other areas.

This General Plan update analysis includes five general scenarios describing the potential number of new jobs and new residents that may occur (Table 5).

Table 5. Summary of Land Use/Transportation Scenarios.[1]

Scenario	New Jobs	New Dwelling Units	Buildout Jobs/Employed Resident[a]
Preferred Scenario	470,000	120,000	1.3:1
Scenario 1 – Low Growth	346,550	88,650	1.2:1
Scenario 2 – Medium Growth	360,550	135,650	1.1:1
Scenario 3 – High Housing Growth	339,530	158,970	1:1
Scenario 4 – High Job Growth	526,050	88,650	1.5:1
Notes: [a]Buildout for each scenario equals existing jobs (369,450) and dwelling units (309,350) plus full use of the new job and new dwelling unit capacity provided within that scenario. There are currently approximately 1.5 employed residents per dwelling unit or 0.8 jobs per employed resident.			

[1] Table taken from project description.

To relate impacts of the General Plan to biological resources generally, we made the following assumptions concerning development that provided a guide for comparing the relative level of impacts between development scenarios.

- All else being equal (*i.e.*, development density held constant within fixed planned growth areas), we assumed that scenarios resulting in a greater increase in dwelling units would result in more habitat disturbance due to the greater development footprint. Unless density is proportionally adjusted, there is a potentially larger footprint with more development.
- Less development in a given growth area means that there is greater potential for preservation and avoidance of biological resources, because less space will be required, providing planners more flexibility to situate development away from sensitive biological resource areas. However, a given number of dwelling units can be planned for a smaller footprint if density increases, providing planners more flexibility to situate development away from sensitive biological resource areas.
- If high-density development occurs, then the scenarios with greater numbers of dwelling units may not necessarily lead to greater levels of footprint-related impacts. Nevertheless, in the absence of any guidance concerning the density of dwelling units that may be created, we assumed that the potential for habitat disturbance was directly proportional to the number of new dwelling units proposed under a given scenario.
- Scenarios resulting in greater numbers of dwelling units will result in more indirect pressure on natural habitats for recreational uses, particularly outside of the UGB, regardless of the dwelling unit density. This is important in the assessment of biological resources because the most extensive areas of natural habitats in the Study Area are outside the UGB (but within the city limits).
- All other development being equal, scenarios resulting in a greater increase in the number of jobs may result in a proportionately greater increase in hardscaped areas than scenarios resulting in a greater increase in the number of new dwelling units. In general, job-related development will lead to the creation of more hardscape in areas that are not currently hardscaped. This is because some residential development will contain yards,

and even in high-density residential development, there are typically more courtyards, landscaping, and "pocket parks" associated with residential areas than with commercial development. However, the magnitude of this difference ultimately depends on the type of landscaping and amount of large new parking lots associated with planned commercial development.

- A high ratio of new jobs to new dwelling units would entail more commuting from surrounding areas (outside the Study Area) and more residential development pressure within the Study Area but outside the UGB, such as rural residential development. More commuting would result in more traffic-related impacts (*e.g.*, more emissions in areas outside the UGB and more wildlife roadkills).
- Recreational demand is expected to be proportional to population, with greater residential population resulting in greater increases in recreational activity than increases in jobs do. As a result, increases in residential population could potentially subject biological resources (both within and outside the UGB) to greater disturbance from recreation and increase the need for additional development of recreational facilities.
- The overall relative impact of the scenarios to biological resources within the UGB is difficult to determine because it cannot be determined if greater impacts will result from a higher number of new residences, higher number of new jobs, or a combination of relatively high numbers of both new jobs and new residential development. However, as described for specific impacts below, the relative impacts of the scenarios on certain biological resources within the UGB can be predicted in some cases, based on the locations of areas that could be developed under each scenario relative to the locations of those specific biological resources.
- Scenarios leading to greater increases in resident population (i.e., Scenario 3 and to a lesser extent Scenario 2) will likely lead to a greater degree of impacts resulting from increased recreational usage of natural areas outside the UGB. However, Scenario 4 and to a lesser extent the Preferred Scenario, which will provide the greatest increases in jobs, may attract a greater number of new residents to the wider South Bay Area, potentially leading to the greatest pressure for rural residential development outside the UGB. Impacts to areas outside the UGB, either from recreational activities or development (such as rural residential development), that result from the General Plan Update are noteworthy because areas outside the UGB generally have higher habitat value, and provide higher functions and values for most special-status species, than areas within the UGB, most of which are dominated by developed land uses. Consequently, the potential for impacts to areas outside the UGB contribute substantially to the assessment of impacts to biological resources resulting from the General Plan Update. The Preferred Scenario would provide high increases in the number of jobs and moderately high increases in residential development, while Scenario 2 would provide moderately high increases in the number of jobs coupled with a large increase in residential development; therefore, these scenarios could potentially have impacts to biological resources outside the UGB that exceed those of Scenarios 4 or 3. Scenario 1 would have the least impact to biological resources outside the UGB.

Given these assumptions, we made some general, relative impact comparisons of the scenarios.

- The Preferred Scenario has a high job-to-dwelling-unit ratio, second only to Scenario 4. The high number of jobs that would be provided under the Preferred Scenario, greater than Scenarios 1, 2, and 3, is likely to translate into a relatively high degree of impact on biological resources resulting from conversion of natural habitat to hardscape (associated with commercial/industrial land uses), traffic-related effects from increased commuting, and development impacts outside the UGB (e.g., rural residential development) resulting from increased pressure for additional residential development (based on our assumptions above). The high number of new jobs under the Preferred Scenario indicates that much of the development under this scenario will occur in Employment Land Areas, most of which are currently occupied by natural habitats or agricultural land uses providing high to moderate biological resource value.

  In addition, this Scenario has a higher number of new dwelling units than Scenarios 1 and 4, being slightly less than Scenario 2 and considerably less than Scenario 3. Our assumption is that the number of people using areas both within and outside the UGB for recreation is expected to be proportional to population and so is greater with increased residential population. As a result, increases in residential population could potentially subject biological resources to greater disturbance from recreation and increase the need for additional development of recreational facilities than job-related increases.

  Also, because this scenario would provide relatively high levels of development of both jobs and housing, there may be less flexibility for preservation and avoidance of biological resources by adjusting the location within a planned growth area and the density/size of development sites than if demand for jobs and/or housing were lower. In combination, the high number of jobs and moderately high number of dwelling units may result in a greater overall impact to biological resources than some of the other scenarios due to the size of the development footprint, amount of new hardscape, and indirect impacts to areas outside of the UGB from recreation and rural residential development pressures.

  Overall, the Preferred Scenario is expected to have a greater impact on biological resources than Scenario 1 and Scenario 2, for which the combined effects of new jobs and new residences would be lower. Overall, the relative impact of the Preferred Scenario as compared to Scenarios 3 and 4 cannot be determined at this time; while the Preferred Scenario would provide relatively high numbers of new jobs and new residential development, the higher number of new residences under Scenario 3, or the higher number of new jobs under Scenario 4, would make it difficult to determine whether the overall impacts to biological resources from one of these three scenarios is greater than the others.

- Scenario 1 will have the least impact to biological resources because it entails the least number of new dwelling units and a relatively low number of new jobs, and quite a few of the planned growth areas will have no development at all. Scenario 1 also has the greatest opportunity for preservation and avoidance of biological resources by adjusting the location with a planned growth area and the density/size of development sites due to the relatively lower number of new dwelling units and jobs compared to the size of the UGB.

- In comparing Scenario 4 to Scenario 1, Scenario 4 will have greater impact because it has many more jobs and the same number of dwelling units, which translates to a larger footprint and development of more planned growth areas, and the same number of residents accessing natural areas. There will be comparatively more redevelopment of parcels and development of relatively natural parcels in planned growth areas, particularly Employment Land Areas, under Scenario 4. Based on our assumptions above, Scenario 4 will also lead to comparatively more traffic-related impacts, hardscape installation, and more development pressure on rural residential areas within the Study Area but outside the UGB.
- Scenario 2 and Scenario 3 are very similar to each other because the numbers of jobs and the number of dwelling units are similar, but based on our assumptions, there is a slight difference in that Scenario 3 could have slightly greater indirect impacts related to greater recreational use or more people in natural areas due to the higher resident population. Under Scenario 2 there may be more pressure for development outside of the planned growth areas, either outside the UGB or outside the Study Area. Due to the high number of dwelling units (almost twice that of Scenarios 1 and 4), both of these scenarios are expected to have greater overall footprint-related impacts than Scenario 1, but the difference in total footprint between Scenarios 2 and 3 and Scenario 4 is unknown. Also, Scenarios 2 and 3 may have the greatest potential to result in recreational impacts to natural resources, both within and outside of the UGB, given the number of new City residents that these two scenarios would entail.
- The potential for development of entitled and vacant parcels, as well as impacts occurring from road improvements within the UGB, will be the same under all Scenarios (assessed at the maximum level). However, as described above, under different scenarios there may be more or less pressure to develop additional housing outside the UGB (*e.g.*, much less pressure under Scenario 1 but substantially greater pressure under Scenario 4).

Because density and location (within a planned growth area) of both dwelling units and jobs can be adjusted, there is potential for impacts to be increased or decreased in any scenario. Therefore impacts among the scenarios could be more similar than we have assumed, or scenarios that we have assumed would have greater footprint-related impacts may have equal or even less impacts to biological resources such as habitats and the species that use them (*e.g.*, if building density is increased).

IMPACTS TO HABITATS

Impacts to Developed Habitats

Developed areas comprise the most abundant habitat type within the Study Area, and by far is the most abundant habitat found within the UGB. Most direct impacts, involving construction-related and added development effects, are expected to occur within urban and suburban developed habitat where biological resources are more limited than in less developed areas. The vast majority of planned growth areas are dominated by developed habitats. There are several types of developed habitat, representing a range of suitability for and ability to support biological resources. Within developed habitats, urban and suburban uses are the most abundant

(particularly within planned growth areas) and also represent the most intensive land use, although some areas mapped within this category contain vacant, grassy, infill lots that provide lower-quality and fragmented habitat for native species. Lower-density suburban areas may also support more trees and other vegetation useful for wildlife than high-density urban areas, and a lower proportion of hardscape. Another category, golf courses/urban parks, falls within planned growth areas. These areas are typically much more well-vegetated (often retaining some older, native trees) than most developed land uses, and a number of more urban-adapted, disturbance-tolerant wildlife species use such habitats. However, landscaping, removal of understory vegetation, and frequent human use degrade habitat quality on golf courses and in urban parks, limiting habitat values. Of the developed habitat types, rural residential typically is the least intensively developed and the most likely to provide relatively abundant resources for native species.

Direct, development-related impacts to developed habitat may lead to land use changes but will not result in a loss of developed habitat. Rather, developed habitat may be converted from one type to another (*e.g.*, parks to urban), or habitat may remain as previously mapped but still will experience a change in intensity of development. Typically, both of these changes will result in less intensively developed areas becoming more intensively developed, although in some cases, parks may be installed where more intensive development is currently located. While developed habitats largely provide sparse, fragmented, disturbed, or minimal biological resources compared to more natural habitats, some loss of biological resources due to changes in developed habitat can occur where urban adapted species or remnants of natural habitats and populations are still present (see *Impacts to Burrowing Owls* below). For example, urban adapted species will be impacted by more intensive development within grassy or more natural, non-irrigated infill lots that occur within the areas mapped as developed. While shown as developed on Figures 3a, 3b, and 3c, grassy infill areas provide habitat for some grassland plant and wildlife species that can tolerate some level of disturbance and human activities, and such areas may represent the best habitat for biological resources in areas with largely urban and suburban character. Grassy infill areas are expected to decrease in abundance under implementation of the Plan compared to urban and suburban buildings, attendant features such as parking lots, transportation infrastructure, and highly-maintained irrigated golf courses and urban parks. Additionally, intensified development of vacant lands and entitled parcels (approved but not yet built) in developed habitats on the edges of the UGB, or in more natural areas mapped as urban and suburban, parks, or rural residential outside the UGB but within the city limits, may lead to a corresponding reduction in available usable habitat for wildlife and native plants.

The conversion described above can lead to a number of impacts to biological resources associated with developed habitats. Biological impacts due to conversion of developed habitats to more intensive uses may include a temporary reduction or permanent loss of mature trees from an area (see *Impacts to Urban Forest*, below); an increase in hardscape, particularly in job-related development, resulting in an increase in urban runoff, perhaps with increased contamination due to an increase in roadways, parking areas, and traffic, and decreased groundwater infiltration (see also *Impacts to Aquatic and Wetland Habitats*, below); a reduction in foraging or nesting/breeding habitat for wildlife; and possibly a loss of marginally suitable habitat for, or even individuals of, rare plant species.

Some developed habitats, such as levees, landfills, and wastewater treatment plants are not expected to be converted to other types of developed habitats. However, use of such areas may be intensified. For example, if landfill uses are intensified, secondary impacts could occur, such as increased predation in other habitat areas by an increased number of gulls that are attracted to the landfill. If levees receive more use or are improved, wildlife that uses these areas may be disturbed by increased human presence. Levees may require repair which would temporarily remove established habitat uses (*e.g.*, by blocking existing burrows used by burrowing owls and small mammals or eliminating nesting habitat used by shorebirds). In general, development of such areas may lead to an increase in hardscape compared to existing conditions and, therefore, loss of some habitat for urban wildlife.

Within the UGB, scenarios assumed to lead to greater levels of development, such as the Preferred Scenario, followed by Scenarios 3 and 4, will likely cause the greatest impacts associated with the conversion of developed habitats to other types of developed habitats and the intensification of land use. This would result in impacts such as a temporary reduction in mature trees, a permanent reduction in trees, or increases in hardscape. The Preferred Scenario, followed by Scenario 4, is expected to lead to greater levels of impacts within the North San Jose Employment Land Area, which contains several grassy parcels (mapped as parks) that will experience much more development under this scenario. Whether there will be greater impacts related to higher residential or higher job growth is not discernable. However, Scenario 1 with the lowest growth will lead to fewer direct, indirect, and temporary impacts to biological resources within developed habitats essentially because there is less development expected under the low-growth scenario. Impacts under Scenario 2 will be less than Scenario 3. Allowable growth in vacant lands, entitled parcels, and due to road development is consistent among all scenarios so that impacts are likely to be consistent too.

There is relatively little developed habitat in areas that are outside of the UGB but within the city limits. Impacts to currently developed habitat are likely to mainly involve increased development density within some rural residential, suburban, and park areas as areas within existing developments are developed or redeveloped. Additionally, increases in structures, conversion of quarries, or intensification of use of existing landfills or waste treatment facilities may occur due to increasing population pressure within the UGB. These latter impacts may be maximized under Scenario 3 due to the large number of dwelling units expected to be built. Scenario 4 may lead to the greatest impacts related to intensification of rural residential development outside the UGB but within the city limits, because the disproportionately large increase in jobs compared to the increase in dwelling units may create more pressure for residential development outside the UGB. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to biological resources outside the UGB.

Impacts to developed habitats resulting from allowable development under the General Plan update are expected to be less than significant because of the relatively low value of these habitats for biological resources compared to more natural habitats, their abundance within the

region and state, and the proportionately low magnitude of impacts to native plants and animals likely to occur as one developed land-use type is converted to another.

Impacts to Grasslands

Grasslands comprise the most abundant natural habitat within the Study Area. This designation encompasses a wide range of habitat quality and ability to support special-status plant and animal species, with occurrences ranging from more disturbed areas of California annual grassland adjacent to developed habitat to extensive, high-quality serpentine bunchgrass grassland habitat.

Within each of these grassland habitats, impacts may occur as a result of development, leading to direct, permanent loss of that habitat. In addition, such areas may be used for construction staging, access, and other construction related activities (such as stockpiling and materials storage). Even where direct loss does not occur, construction access may lead to soil disturbance, vegetation trampling, soil compaction, erosion, and an increase in weeds in an area, leading to temporary or even permanent habitat impacts depending on the habitat type in which these activities take place (as discussed below). Indirect impacts could occur in grassland areas not directly lost to or affected by development due to an increase in human presence and numbers leading to increased public use of these habitats. Whether in intentional recreational open space areas or ad hoc in natural habitat areas adjacent to development areas, such impacts could potentially include trampling, soil compaction, increased erosion, and vegetation impacts associated with hiking, horseback riding, off-highway vehicle (OHV) use, off-road biking, and other such recreational activities. Grasslands located adjacent to new developments may experience land use changes such maintenance of new fire breaks, leading to increased levels of disturbance related to mowing and herbicide use. Grasslands adjacent to new development may also be affected by drift of pesticides and herbicides from application areas, increased fire events, increased numbers of urban predators, spill of night lighting into grasslands, increased noise from developed areas, and invasion or spread of exotic plant species all of which can change the composition of vegetative cover and the species associated with the habitat. For example, degradation of habitats in this manner could involve a decrease in necessary host plants for native insects, or alteration of grassland structure due to a high weed canopy could lead to habitat that supports fewer native plant species or wildlife species such as ground squirrels that also support many more species that are symbionts or predators. Similarly, the intensity of grazing in such parcels may be increased or decreased compared to existing levels. Influence by adjacent development may lead to an increase in stocking rates or grazing utilization which may lead to greater rates of erosion, soil compaction, or in some cases, cause or worsen noxious weed infestations; conversely a sudden decrease in stocking rates may allow non-native grasses, thatch levels, and noxious weeds to increase, reducing cover of native grassland species.

California annual grassland is common throughout the state and within the South Bay, and can occur on a variety of landforms and soil types. Depending on the level of existing disturbance due to mowing, spraying, non-native plant invasions, and grazing, California annual grassland can provide high habitat values for a variety of common native plant and wildlife species, and it also supports special-status plant and wildlife species. However, this habitat type generally supports lower abundance of at least some special-status plants and animals than grasslands, especially those on serpentine soils, dominated by native plants. No parcels mapped as California annual grassland occur within any proposed transit and commercial corridors and

villages, although small areas mapped as California annual grasslands occur within the Alviso Specific Plan Area in the Alviso Planning Area, Communications Hill Specific Plan Area in the South Planning Area, and North Coyote Valley Employment Land Area in the Coyote Planning Area, as well as some within the Urban Reserves. However, in some planned growth areas, areas mapped as developed golf courses/urban parks actually support large, natural grassy areas, and in some cases provide wildlife habitat adjacent to riparian corridors, where direct development may cause impacts more similar to a direct loss of California annual grassland habitat or, if adjacent to riparian habitats, also contribute to indirect impacts to riparian habitat (see *Impacts to Riparian Habitats* below). Such large, relatively natural grassland parks are located in the following planned growth areas:

- Berryessa Planning Area
  - North San José Employment Land Area
    - NSJ18 - southeast of Murphy Avenue and Oakland Road
- Cambrian/Pioneer Planning Area
  - Neighborhood Village V70-2
- Central Planning Area
  - Mabury Employment Land Area
  - Senter Road Interchange Project
- Edenvale Planning Area
  - Old Edenvale Employment Land Area
    - OE 1 - northeast of Santa Teresa Boulevard between Miyuki Drive and San Ignacio Avenue
    - OE 7 – northeast of Santa Teresa Boulevard between San Ignacio Avenue and Grast Oaks Boulevard
  - BART/Caltrain Village
    - VT6-2
    - VT6-3
    - VT6-4
- Evergreen Planning Area
  - Light Rail Village/Corridor VR22
- North Planning Area
  - North San José Employment Land Area
    - NSJ9 - northeast of Malovis Road and Zanker Road
    - NSJ11 - northeast of River Oaks Parkway and Juntion Avenue
    - NSJ20 - north of Tasman Drive and First Street

- NSJ26 - south of River Oaks Parkway and First Street

California annual grasslands occur on hillsides and in lowlands within the UGB, and these areas may be impacted by development of vacant lands and entitled parcels. While direct impact of development of these vacant and entitled parcels will result in loss of California annual grassland, this habitat is more resilient than most in recovering from temporary impacts. Non-serpentine rock outcrops are similar to California annual grasslands, except soils are thin and rocky, and many areas are barren and do not support plant species. These habitats within the UGB occur only outside of planned growth areas and are principally north of Alamitos Creek on the western edge of the Santa Teresa Hills within the Almaden and Edenvale Planning Areas. Non-serpentine rock outcrops are not expected to experience a large degree of direct impacts because they are located in such steep, inaccessible areas that direct loss is not expected to occur.

Serpentine grasslands (including serpentine bunchgrass grassland, serpentine outcrops, and serpentine seeps) tend to support a higher concentration of native plant species than observed in California annual grasslands, and are also more fragile and susceptible to direct and indirect impacts. For example, unlike similar impacts in California annual grasslands, construction-related impacts that would typically lead to minor, temporary impacts in California annual grassland, are not likely to be easily restored in serpentine areas or may even essentially permanently degrade high-quality serpentine grassland habitat. Additionally, serpentine grasslands are much more susceptible to indirect impacts such as those occurring from increased recreational use and trampling, increases in non-native grass cover, and habitat deterioration resulting from increased nitrogen deposition (see *Indirect Impacts to Serpentine Communities from Increased Nitrogen Deposition*, below). While most invasive species do not invade serpentine habitats, a small suite of plants, such as barbed goatgrass, do tolerate serpentine soils and can exclude native species and degrade serpentine habitat. Planned growth areas containing parcels mapped as serpentine grasslands occur in the North Coyote Valley Employment Land Area in the Coyote Planning Area, New Edenvale (Areas 1, 2, and 4) Employment Land Areas in the Edenvale Planning Area, and in the Communications Hill Specific Plan Area in the South Planning Area. Other parcels containing these habitats could be impacted by development of vacant lands, previously entitled parcels, and roads.

Within the UGB, most direct impact areas will be within employment land areas (i.e., North San José, North Coyote,. Evergreen, and New Edenvale Employment Land Areas) where the Preferred Scenario, followed by Scenario 4, will have the greatest development within mapped annual grasslands (and grassland within areas mapped as developed land) and therefore, will have the greatest impacts. Also, only the Preferred Scenario will allow development (residential) in BART/Caltrain Village VT6 in the Edenvale Planning Area. Impacts within the North Coyote Valley Employment Land Area are the same under any scenario, and will result from development consistent with existing entitlements. Plan-related footprint impacts due to residential development in villages V70 (Cambiran/Pioneer Planning Area) and VR22 (Evergreen Planning Area), which contain grassy parcels mapped as parks that may function more like California annual grassland, will likely be maximized under Scenario 3 but are expected to be less than those from development of Employment Land Areas of the Preferred Scenario and Scenario 4. Impacts to grasslands within other vacant and entitled parcels, due to roads, and within specific plan areas are expected to be similar across all scenarios. Indirect

impacts to grasslands within the UGB, especially recreational impacts associated with an increased urban population, are also expected to be maximized under Scenarios 2 and 3, which will lead to the greatest increase in dwelling units within the UGB. Development in the New Edenvale Employment Land Area, which would be slightly higher under the Preferred Scenario and Scenario 4, could lead to greater direct serpentine grassland impacts.

Outside the UGB, impacts as described above may occur to grassland habitats (particularly serpentine grasslands, which are much more extensive outside the UGB than within) due to land use changes and development of additional parks or park facilities, agriculture, rural residential areas or other uses that will not change as a result of the General Plan update. In addition, impacts to grasslands outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to grassland habitats outside the UGB.

Impacts to California annual grassland are expected to be less than significant due to the relatively limited extent of impacts relative to the vast extent of such habitat within the state and region; particularly, impacts within the UGB would have a minimal impact on the distribution of this habitat, and the plant and animal species it supports, regionally. Non-serpentine rock outcrops are less common, but these areas are steep and remote, and are not expected to be subjected to development and direct loss under the Plan or to indirect impacts, even due to development of vacant lands or entitled parcel and so impacts are expected to be less than significant. Due to the sensitivity of serpentine grassland habitats, their relative rarity within the region and state, and their ability to support native species, including many special-species endemic to these habitats (see *Impacts to Federally and State-listed Plant Species*, *Impacts to CNPS-Listed, Serpentine-Adapted Special-Status Plant Species*, and *Impacts to Bay Checkerspot Butterflies*, below), impacts to all three types of serpentine grasslands (serpentine bunchgrass grasslands, serpentine rock outcrop/barrens, and serpentine seep) are potentially significant.

Impacts to Oak Woodlands

Oak woodlands provide ample, high-quality, and structurally varied habitat for wildlife within the Study Area, and contribute greatly to the aesthetic character of the natural areas surrounding San Jose. Oak woodlands comprise a large portion of the Study Area (7%), but the majority of stands (95% of oak woodlands mapped within the Study Area) are located outside the UGB.

Development in proximity to oak woodlands, either within urban reserves within the UGB or within woodlands outside of the UGB, can cause indirect impacts. These impacts can result from planned or ad hoc recreation, landscape management (*e.g.*, introduction of invasive plants), pesticide and herbicide drift, increase in fire events, increased runoff from hardscape (*e.g.*, contamination or erosion), spill of night lighting into oak woodlands, increased noise from developed areas, and influences on grazing patterns. Several types of indirect impacts may occur

due to the increased population growth and subsequent increased use of native habitats within the Study Area. Increases in resident population density will lead to an increased usage of these habitats, thus resulting in more invasive weed propagule spread, trampling impacts, soil compaction, increased erosion, and vegetation impacts associated with hiking, horseback riding, OHV use, off-road biking, and other recreational activities. Additionally, more human activities in these areas may contribute to an increase in the spread of *Phytophthora ramorum*, the organism responsible for sudden oak death, which could impact oak stands within oak woodlands. Temporary impacts may also occur due to construction staging, access and other construction related activities.

No oak woodlands are mapped within any planned growth areas such as villages, corridors, or employment land areas. Therefore development is not expected to cause the direct loss of oak woodlands. The majority of direct impacts to and loss of these habitats under the General Plan within the UGB are expected to occur through development of other vacant lands and entitled parcels (such as valley oak woodland within the North Coyote Valley Employment Land Area in the Coyote Planning Area), or due to roadway improvements, and most impacts to this habitat type in the Study Area will likely occur in areas outside of the UGB.

In general, the level of direct impacts to oak woodlands related to new construction within the UGB are expected to be of similar magnitude under all Scenarios because only very small areas mapped as oak woodlands occur within the extreme periphery of planned growth areas, such as the Evergreen Campus Industrial Employment Area in the Evergreen Planning Area, or because this habitat occurs within planned growth areas expected to experience the same degree of development under any scenario, such as the large patches of valley oak woodland within the North Coyote Valley Employment Land Area in the Coyote Planning Area. Localized impacts may occur elsewhere within the UGB due to development of vacant lands, entitled parcels, and roadways, which do not vary under any scenario.

Outside the UGB, impacts may occur to oak woodland habitats due to land use changes and development of additional parks and other recreational facilities; agriculture; rural residential areas; or other allowable uses. Impacts to oak woodlands outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Implementation of Scenario 4, which would presumably attract a greater amount of people to the wider South Bay Area but would provide for limited increases in housing, may lead to the greatest degree of rural residential development outside the UGB (including in areas within the city limits), and subsequently the greatest potential for losses of natural oak woodland habitats outside the UGB. The Preferred Scenario could potentially result in high impacts to oak woodland outside the UGB both due to the increased need for housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 2, which has a higher level of job development, may have greater impact due to pressure for rural residential development than Scenario 3. However, scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of indirect impacts resulting from increased recreational usage of natural areas outside the UGB, which could possibly lead to a greater risk of spread of the pathogen responsible for sudden oak death. As described in our

general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to oak woodlands outside the UGB.

Due to the typical high quality of oak woodlands in Santa Clara County, and continuing loss and increasing rarity of this habitat type within the state, impacts to valley oak woodlands, blue oak woodlands, foothill-pine oak woodlands, and coast live oak woodlands and forests are potentially significant. Impacts to mixed oak woodland and forest and mixed evergreen forests are also potentially significant, depending on the density of mature oak stands and general habitat quality in such areas subject to direct loss or other intensive impacts.

Impacts to Aquatic and Wetland Habitats

Seasonal wetlands, freshwater marshes, ponds, and other aquatic habitats have significant wildlife benefits and values, and improve and control overall water quality and watershed functions within the Study Area. Additionally, wetlands are a relatively uncommon feature on the landscape. Together, aquatic and wetland habitats comprise about 7% of the Study Area. While large concentrations of the habitats occur outside the UGB, near San Francisco Bay in the northern portion of the Study Area and within and surrounding Calero and Anderson Reservoirs, smaller and/or isolated areas of both wetland and aquatic habitats occur scattered throughout the Study Area within the UGB. Some of these smaller wetlands within the UGB may be unmapped, particularly bench wetlands in riparian corridors and small, isolated seasonal wetlands in grassy infill parcels. Also, aquatic habitat within streams was typically mapped as riparian habitat.

Aquatic and wetland habitats within the Study Area vary widely in their sources of hydrology and degree of anthropogenic disturbance, and range from natural, tidal marshes to man-made freshwater ponds and reservoirs. Wetlands serve an important function within the watershed by sequestering pollutants and protecting water quality. They are a rare and sensitive habitat. Both wetlands and aquatic habitats present unique and important habitats for many species of native plants and wildlife. These areas provide water for drinking, green vegetation and thick cover during seasons when surrounding vegetation is dormant, and necessary habitat for water-dependant insects (such as dragonflies, caddisflies, and mayflies), amphibians, fish, and waterbirds. Additionally, such habitats are often easily invaded by exotic invertebrates (see *Impacts to Common Invertebrate Species*, below). Direct impacts could occur as a result of loss related to development. Principally, loss of wetlands may occur due to shading impacts (such as when a bridge is widened) or by drainage or filling. Aquatic habitats are typically lost due to fill placement. Temporary impacts to wetlands could occur as a result of construction activities and need for access, while temporary impacts could occur to aquatic habitats as a result of dewatering for construction.

Indirect impacts may occur to both habitat types as a result of increased hardscape within uplands leading to an increase in runoff, a decrease in infiltration and groundwater recharge, a possibility of flashier (quick and surging) flood events leading to increased erosion, and a potential increase in anthropogenic contaminants such as petrochemicals, brake dust, fuel,

fertilizer, pesticides, herbicides, mercury, and unmetabolized drug compounds. Increasing population pressure may also lead to a greater demand being placed on reservoirs for either recreation (*e.g.*, boating) or for water supply, while increased well installation in rural residential areas (e.g., if rural residential development increases due to the increases in jobs resulting from the General Plan update) may contribute to decreased groundwater reserves. Increased night lighting and increased noise from developed areas may also affect the quality of wetland and aquatic habitats in areas close to new development.

Direct impacts to wetland and aquatic habitats, or indirect impacts to immediately adjacent habitats, may occur within developments located in the following areas:

- North Planning Area
  - North San José Employment Land Area
    - NSJ25 – southeast of Tasman Drive and First Street (seasonal wetlands)
    - NSJ23 – southwest of First Street and State Route 237 (non-tidal freshwater and tidal freshwater marshes, ponds)
  - BART/Caltrain Village VT5 (ponds)
- Coyote Planning Area
  - North Coyote Valley Employment Land Area (seasonal wetlands, ponds and other aquatic habitat)
- Cambrian/Pioneer Planning Area
  - Light Rail Village/Corridor VR17 (ponds)
- Central Planning Area
  - Senter Road Interchange Project (aquatic habitat within Coyote Creek)

Also, as mentioned above, smaller unmapped wetlands may also occur in other areas that will be subject to direct impacts. Additionally, it is likely that some of the vacant lands and entitled parcels that will be impacted or developed also contain small areas of wetland or aquatic habitats. While indirect impacts resulting from such changes such as hardscape increases are expected to be concentrated within planned growth areas within the UGB, these may affect aquatic and wetland habitats throughout the Study Area, particularly in the north, where the majority of such habitats are located downstream of direct impact areas. Impacts related to indirect impacts such as recreational usage are likely to occur within reservoirs, such as Calero and Anderson Reservoir.

Because of the importance of hardscape in runoff patterns and effects on aquatic and wetland habitats, General Plan scenarios that are expected to introduce more hardscape are likely to have a greater impact on the watershed. Within the UGB, Scenario 4, followed by the Preferred Scenario, is likely to produce the greatest increase in hardscape, and the Preferred Scenario, followed by Scenario 4, is expected to result in more development-related impacts in fairly natural Employment Land Areas such as the North San José Employment Land Area, New Edenvale Employment Land Area, or Evergreen Campus Industrial Employment Land Area,

thus especially increasing hardscape in these areas. Overall, water quality impacts from increased contaminants may be similar between high-development scenarios, because more jobs may lead to a greater number of commuters into the city and subsequent increases of road and parking lot contaminants, while more residents would also contribute to overall levels of vehicle usage within the UGB, and pesticides, fertilizers, and herbicides may be used more in landscaping for yards and apartment buildings compared to commercial and employment centers. However, as described in our general assumptions, scenarios having high levels of both job development and residential development resulting in large areas of hardscape and, potentially, a relatively large residential footprint, may result in a greater combined direct (loss of habitat) and indirect (increased hardscape, recreational use, and potential for contaminants) impact on aquatic and wetland habitats. Scenario 1 is expected to have the least degree of direct habitat loss impacts within planned growth areas, as well as the least degree of indirect impacts related to increased hardscape, runoff-based contaminants, and recreational usage. The number of other vacant lands, entitled parcels, and roadways subject to development does not change under any scenario, and such impacts are expected to be consistent among all scenarios.

Outside the UGB, impacts may occur to aquatic and wetland habitats due to land use changes or intensification and development of additional parks, agriculture, other recreational facilities, or rural residential areas. The Preferred Scenario could potentially result in relatively high impacts to aquatic and wetland habitats outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 followed by Scenario 2, will likely lead to the greatest degrees of impacts resulting from increased recreational usage of reservoirs and similar areas outside the UGB. Scenario 4, which will provide the greatest increases in jobs (and may attract a greater amount of people to the wider South Bay area) while providing the least increase in housing, may lead to the greatest degree of road and rural residential development outside the UGB, and subsequently, greater losses in wetland and aquatic habitats in those areas. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to aquatic and wetland habitats outside the UGB.

Due to the significant wildlife functions and values and the relative rarity of aquatic habitats, impacts due to loss of any of these habitats or reduction of water quality in wetland and aquatic habitats are potentially significant. In addition, any loss due to construction impacts (unless for restoration purposes) of tidal salt marsh and mudflats is potentially significant due to the rarity of these habitats and their extreme importance for special-status plant and wildlife species. However, few if any impacts to such sensitive tidal habitats are expected to occur under the General Plan, because these habitats are located outside of the planned growth areas, including the Alviso Specific Plan area, and outside the UGB in areas where no vacant lands or entitled parcels exist.

Impacts to Agricultural Habitats

Agricultural habitats comprise 5% of the Study Area, and most of this is located within the UGB. Agricultural habitats include a wide range of management regimes, vegetation structure, and level of anthropogenic disturbance, from semi-natural hayfields that are grazed and/or annually mowed to highly controlled, monocultural row crops that are subject to intense levels of planting, tending, and harvesting disturbance annually. Also included in this category are orchards of fruit and nut trees spaced in rows with varying levels of herbaceous management in between rows, as well as outbuildings, greenhouses, and agricultural facilities. Within agricultural habitats, native plant suitability is generally low, but both it and wildlife use also depend on the degree of anthropogenic manipulation of the habitat, including use of irrigation, fertilizers, pesticides, and herbicides; whether areas are intentionally seeded or planted, with what species, and how often; what degree and frequency of soil tillage and disturbance is required; and how often and during what seasons areas are harvested. However, while the quality of such habitats is often relatively low compared to more natural or native-dominated habitats, these areas are some of the largest non-developed lands in and near the urban areas of San Jose. This fact alone makes them attractive to wildlife within the Santa Clara Valley, particularly in allowing movement, migration, and dispersal (See *Impacts to Wildlife Movement* below). Furthermore, pastureland and fallow agricultural fields often support grassland-associated species, potentially providing relatively high-quality, grassland-like habitat in areas (such as portions of Coyote Valley) that have not been cultivated in years.

Direct impacts may occur to agricultural habitats due to loss and habitat conversion resulting from development. Additionally, temporary impacts may occur due to ancillary construction activities although these are usually easily ameliorated. Agricultural areas that remain following development are expected to experience few indirect impacts. Population pressure is unlikely to cause significant usage increases in such areas because these areas are fenced off and not as attractive for recreation activities as natural habitats. Increasing weed pressure will typically be controlled in such areas through tending practices and use of herbicides and pesticides. If growing population pressure puts a strain on water availability, this may have an impact on irrigation practices within these lands.

Direct impacts may occur to several agricultural areas that are located within planned growth areas, including:

- North Planning Area
  - North San José Employment Land Area
    - NSJ8 – northeast of Zanker Road and Center Road (row crops or hayfields)
    - NSJ11 – east of River Oaks Parkway and Junction Avenue (row crops or hayfields)
    - NSJ21 – north of River Oaks Parkway and First Street (orchards)
    - NSJ27 – east of Orchard Parkway between Junction Avenue and Component Drive (row crops or hayfields)
- Edenvale Planning Area

    - Employment Land Areas
        - New Edenvale (Areas 1, 2, and 4) (row crops or hayfields)
        - Old Edenvale
            - OE2 – northwest of State Route 85 and Great Oaks Boulevard (row crops or hayfields)
            - Edenvale Area 5 (I-Star)(orchards and row crops or hayfields)
    - BART/Caltrain Village
        - VT6-1 (row crops or hayfields)
        - VT6-2 (row crops or hayfields)
- Berryessa Planning Area
    - Light Rail Village/Corridor
        - VR12-2 (orchards)
- Evergreen Planning Area
    - Evergreen Campus Industrial Employment Land Area (row crops or hayfields)
- Coyote Planning Area
    - North Coyote Valley Employment Land Area (row crops or hayfields).

Smaller agricultural parcels may also occur in other areas. Additionally, it is likely that some of the vacant lands and entitled parcels that will be impacted or developed also comprise agricultural habitats.

While increased housing may require more space than job development and therefore expand further into outlying parcels within the UGB, most of the mapped hayfields and row crops within planned growth areas occur within Employment Land Areas. Therefore, the Preferred Scenario, followed by Scenario 4, may lead to greater development of agricultural lands, particularly in the North, Edenvale, Evergreen, and Berryessa Planning Areas. Scenario 1 will lead to fewer agricultural impacts than expected in Scenarios 2 and 3. Impacts associated with development of vacant parcels, entitled lands, and roadway developments are expected to be the same across all scenarios.

It is important to note that the 2040 General Plan update would change allowable development in the Coyote Valley Urban Reserve, such that approximately 10,000 dwelling units that could be built in Coyote Valley under the 2020 General Plan, and that could thus be constructed even in the absence of the 2040 General Plan update, could not be constructed under the General Plan update. Thus, the General Plan update would reduce allowable residential development in Coyote Valley and preserve (at least, for the time being) the agricultural land uses within this Urban Reserve.

Aside from ranchlands, which are discussed in other sections according to their dominant habitat type, there is little agricultural habitat within the city limits outside the UGB. The scenario

expected to create the most jobs, attracting the largest number of people to the general South Bay area, and so having the highest level of impacts associated with conversion of agricultural habitat outside the UGB to rural residential areas are likely to have the greatest effect on agricultural habitats. Scenario 4, followed by the Preferred Scenario, is likely to have the greatest impact on agricultural habitats. Scenario 2 has the next highest level of new jobs and therefore may have more impacts on agricultural habitat outside the UGB than Scenarios 1 and 3, which will have comparable, minimal impacts.

Due to the relatively high levels of disturbance associated with existing agricultural habitats, the relative abundance of suitable habitat for species that use such habitats (when grassland availability is considered) both within the region and the state, and the reduction in allowable residential development in the Coyote Valley Urban Reserve, impacts of allowable development under the General Plan update to agricultural habitats are expected to be less than significant (see also *Impacts to Wildlife Movement* below).

Impacts to Riparian Habitats

Riparian habitats comprise approximately 2% of the Study Area, with much of this occurring within the UGB. These habitats are one of the most important natural habitats for wildlife that occurs within the Study Area. Within the UGB, riparian forests, woodlands, and scrub occur in linear bands of more natural habitat, often with extensive canopy cover and intermittent or perennial water resources, than is present in the surrounding hardscaped areas and dense neighborhoods that dominate the Santa Clara Valley floor. Such urban riparian areas are often too disturbed, invaded by non-native trees such as eucalyptus species and tree-of-heaven (*Ailanthus altissima*), and shaded, eroded, or covered in leaf litter to present significant habitat for rare plants. However, they offer a haven to birds (including raptors), western pond turtles, common amphibians, and mammals such as raccoons and woodrats, and they are important to special-status fish species such as steelhead and Chinook salmon. These areas offer natural cover, nest sites for a variety of birds and mammals, and food and watering resources, and they protect, cool, and enrich adjacent and downstream aquatic habitats. More natural types of riparian habitat that are much less disturbed are found outside the UGB. An example is California sycamore alluvial woodland, a sensitive habitat type that occurs within the Study Area but outside the UGB, mostly in and near the Coyote Planning Area.

In large part because the City of San José has an existing riparian setback policy that protects remaining riparian corridors from development, most direct impacts and loss of riparian habitat under the General Plan will occur due to roadway bridge improvements such as the Senter Road Interchange, including their construction, as well as recreational trail construction and expansion within riparian corridors. Such impacts are expected to be localized. However, in planned growth areas, as well as within any vacant lands or entitled parcels outside the UGB where rural residential development may increase due to the increases in jobs resulting from the General Plan update , direct impacts to riparian habitats such as soil disturbance, placement of structures (such as outfalls), temporary dewatering, trampling, and tree removal could potentially occur through construction impacts.

Increasing development and population could cause several indirect impacts to occur within riparian habitats in the Study Area. For example, additional population pressure is expected to

lead to greater recreational use, ad hoc or planned, of rural and especially urban riparian corridors. This may lead to increases in vegetation trampling, soil compaction, and soil erosion. Additionally, homeless persons often live or camp in urban riparian corridors, trampling large areas, disrupting wildlife with their presence, and even catching fish and other wildlife within the corridors for food. As the City expands, it is uncertain whether homeless populations will increase as some function of increasing overall population size, or if new jobs and employment opportunities expected to occur under the General Plan will lead to an increase in average employment rates and a subsequent decrease in use of riparian corridors by homeless persons. Increasing populations may lead to greater predation pressure on wildlife within riparian areas, as urban adapted predators and feral and outdoor pet cats utilize these corridors to hunt birds and small mammals (see *Impacts to Special-status Wildlife* below). Another indirect impact that may occur is increased channel downcutting and flashier flow regimes within riparian corridors due to an increase in surrounding hardscaped areas, eroding away riparian vegetation/habitat. Such an impact may be particularly problematic if it occurs in areas that have not experienced much downcutting previously, or within habitat types, such as California sycamore alluvial woodland, that only occur on low, shallow, braided channels. Water quality within the streams may be affected if additional contaminants enter the watershed through an increase in petrochemicals, brake dust, pesticide, herbicide, and fertilizer use, soil erosion from construction, and others (see *Impacts to Aquatic and Wetland Habitats*, above). Increased night lighting and increased noise from developed areas may also affect the quality of riparian habitats in areas close to new development. Finally, some riparian areas may experience serious invasions of common landscaping species from nearby developments, such as iceplant (*Carpobrotus* spp.), ivies (*Hedera* and *Senecio* spp.), and periwinkle (*Vinca major*).

Because streams flow through heavily urbanized areas, there are many planned growth areas that either contain riparian habitats or are adjacent to them. In most cases, riparian habitats within the UGB are perennial or long-period intermittent streams mapped as willow riparian forests, woodlands, and scrub, although within the outer hills some areas of intermittent or even ephemeral mixed riparian forest and woodlands occur. Planned growth areas containing or adjacent to mapped riparian habitats include:

- Alum Rock Planning Area
  - BART/Caltrain Villages (Upper Penitencia Creek)
    - VT2-1
    - VT2-3
  - Light Rail Village/Corridor
    - VR11 (Upper Penitencia Creek)
  - Mabury Employment Land Area (Coyote Creek)
- Alviso Planning Area
  - Alviso Specific Plan Area (Coyote Creek and Guadalupe River)
- Berryessa Planning Area
  - BART/Caltrain Village VT2-3 (Upper Penitencia Creek)

- East Gish Employment Land Area (Coyote Creek)
- North San José Employment Land Area (Coyote Creek)
  - NSJ13 – east of Interstate 880 between Murphy Avenue and Component Drive
  - NSJ15 – southwest of Murphy Avenue and Oakland Road
  - NSJ12 – east of Interstate 880 between Brokaw Road and Murphy Avenue
  - NSJ18 – southeast of Murphy Avenue and Oakland Road

- Cambrian Pioneer Planning Area
  - Light Rail Village/Corridor
    - VR17-16 (Guadalupe River)
- Central Planning Area
  - Light Rail Village/Corridor
    - CR28-26 (Coyote Creek)
    - VR9-1 (Los Gatos Creek)
  - Mabury Employment Land Area (Coyote Creek)
  - Specific Plan Areas
    - Tamien Station (Guadalupe River)
    - Midtown (Los Gatos Creek)
  - Senter Road Interchange Project (Coyote Creek)
- Coyote Planning Area
  - North Coyote Valley Employment Land Area (Coyote Creek and Fisher Creek)
- Edenvale Planning Area
  - New Edenvale (Area 1, 3 and 4) Employment Land Area (Coyote Creek)
- Evergreen Planning Area
  - Evergreen Campus Industrial Employment Land Area (Evergreen Creek and Fowler Creek)
  - Evergreen Specific Plan Area (Evergreen Creek, Fowler Creek, and Quimby Creek)
  - Neighborhood Village
    - V54-3 (Thompson Creek)
    - V55-2 (Fowler Creek)
    - V55-5 (Fowler Creek)
- North Planning Area
  - North San José Employment Land Area (Coyote Creek and Guadalupe River)
    - NSJ4 – north of Charcot Avenue and Junction Avenue

        - NSJ5 – west of Interstate 880 between Trimble Road and Charcot Avenue
        - NSJ7 – northeast of Junction Avenue and Brokaw Road
        - NSJ8 – northeast of Zanker Road and Center Road
        - NSJ11 – northeast of River Oaks Parkway and Junction Avenue
        - NSJ23 – southwest of First Street and State Route 237
        - NSJ25 – southwest of Tasman Drive and First Street
        - NSJ26 – south of River Oaks Parkway and First Street
        - NSJ27 – east of Orchard Parkway between Junction Avenue and Component Drive
    - Rincon South Specific Plan Area (portion - Guadalupe River)
- South Planning Area
    - Senter Road Employment Land Areas (Coyote Creek)
- Willow Glen Planning Area
    - Light Rail Village/Corridor (Los Gatos Creek)
        - CR21-1
        - CR21-3
        - CR21-15

Additionally, a number of unmapped, typically unforested and/or channelized creeks, which are often higher-order, tributaries of larger creeks, also enter the Study Area and would be considered low quality riparian habitat. Planned growth areas adjacent to or containing such features include:

- Alum Rock Planning Area
    - BART/Caltrain Village (Upper Penitencia Creek [branch])
        - VT2-2
    - Commercial Center Village/Corridor
        - C42-4 (Lower Silver Creek)
        - C42-7 (Lower Silver Creek)
        - C42-11 (Lower Silver Creek)
    - Light Rail Village/Corridor
        - CR29-31 (Lower Silver Creek)
        - CR29-34 (Lower Silver Creek)
        - CR29-37 (Lower Silver Creek)
        - CR29-38 (Lower Silver Creek)

        - CR29-39 (Lower Silver Creek)
- Cambrian Pioneer Planning Area
    - Neighborhood Village
        - V68-1 (Ross Creek)
        - V68-2 (Ross Creek)
- Edenvale Planning Area
    - Light Rail Village/Corridor
        - VR18-2 (Canoas Creek)
        - VR18-4 (Canoas Creek)
- Evergreen Planning Area
    - Neighborhood Village
        - V54 -1 (Quimby Creek)
- South Planning Area
    - Light Rail Village/Corridor
        - VR10-3 (Canoas Creek)

Within the UGB, direct riparian impacts are expected to be similar under all scenarios, due to protections from the existing riparian setback policy. All scenarios may entail similar levels of trail development within the UGB; however, based on our assumptions, Scenario 3 with the greatest residential increase with a high associated recreational need, and to a similar but lesser degree, Scenario 2, may lead to more trail development in riparian corridors. Most direct impacts to riparian habitats within the UGB are expected to occur from road development, which will be the same under all scenarios. Similarly, actions within vacant lands and entitled parcels are not expected to vary between differing scenarios. In general, the Preferred Scenario, Scenario 4, and Scenario 3 are expected to contribute to the highest degree of indirect riparian impacts. Indirect impacts will be more likely from development in proximity to the watercourses. In looking only at planned growth areas near mapped riparian habitat, it is under the Preferred Scenario, followed by Scenario 4, that the most planned growth areas will experience growth, likely having more potential for indirect effects on riparian habitats. Also, greater levels of impacts are expected to occur under the Preferred Scenario, followed by Scenario 4, within Employment Land Areas, and many of the planned growth areas containing ample riparian habitat are Employment Land Areas that currently support a relatively low density of hardscaped areas, such as North San José. As a result, riparian habitats in these Employment Land Areas may experience the greatest relative degree of indirect impacts under this scenario. Therefore, it is likely that the Preferred Scenario, followed by Scenario 4, will have the greatest indirect impact to riparian habitat within the UGB because of the greater level of development.

It is straightforward that the total development of jobs and housing will be least under Scenario 1, and as a result it will have the least impact to riparian habitat. Also, the total development of

jobs and housing will be less under Scenario 2 than under Scenario 3 in the planned growth areas adjacent to riparian corridors. Due to the expected increase in the resident population, Scenario 3 may lead to greater recreational or casual usage and trampling impacts, especially in areas with increased populations, while the Preferred Scenario and Scenario 4 may lead to greater channel erosion impacts resulting from an increase in hardscaped surfaces. Water quality impacts from increased contaminants may be greater under Scenario 3, because pesticide, fertilizer, and herbicide usage may be greater in landscaping for yards and apartment buildings compared to commercial and employment centers. Road-based and parking lot based contaminants are likely greater under the Preferred Scenario, followed by Scenario 4, because more jobs may lead to a greater number of commuters into the city and subsequent increases of road contaminants within the UGB.

Outside the UGB, impacts may occur to riparian habitats due to land use changes or intensification and development of additional parks or park facilities, agriculture, recreational facilities, or rural residential areas leading to greater changes in water quality. Impacts to riparian habitats outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). The Preferred Scenario could potentially result in relatively high impacts to riparian habitats outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage, and will possibly lead to a greater risk of spread of the pathogen responsible for sudden oak death, which could affect some mixed riparian forests. However, Scenario 4, which will provide the greatest increases in jobs but the least increase in housing, may lead to the greatest degree of rural residential development outside the UGB, and subsequently, greater associated impacts to water quality or adjacent habitat within riparian corridors in these areas. Scenario 2, which has a higher level of job development, may have greater impact based on pressure for rural residential development than Scenario 3. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to riparian habitats outside the UGB.

Due to the overall rarity within the landscape of riparian habitats, in concert with their importance to wildlife and the array of potential impacts, impacts of allowable development under the General Plan update to riparian habitats, including California sycamore alluvial woodland, are potentially significant.

Impacts to Chaparral and Coastal Scrub Habitats

Chaparral and coastal scrub habitats comprise a fairly low proportion of the Study Area (2%), with only about a quarter of this occurring within the UGB. This category includes the sensitive mixed serpentine chaparral habitat type. Scrub and chaparral habitats tend to be located in

foothill areas on the edges of the UGB and in outer foothills outside the UGB, and no scrub or chaparral is mapped as occurring within any planned growth areas or specific plan areas.

Direct impacts can occur from development and construction staging, access, or other construction-related activities. Indirect impacts may occur to this habitat due to an increase in recreational usage of scrub and chaparral areas on the edges of the area within the UGB and in the more extensive stands of chaparral and scrub found elsewhere in the Study Area outside the UGB. As with other natural habitats, such increased usage may lead to increased trampling, an increase in propagule spread of noxious weeds, soil compaction, and soil erosion. Also, such habitats are often adapted to specific fire regimes. Increases in human usage, or expansion of human development into such area, may alter fire frequency in one of two ways – both of which are worsened if weed invasions increase or are more frequent. Fire suppression can lead to the development of a greater fire fuel load in these areas. During the period of fire suppression, native plants and wildlife may decrease in the area due to a thickening canopy and subsequent changes in vegetation structure. Native plants adapted to scrub habitats are often fire adapted and show the greatest abundance following fires as well, so these species may be reduced. When fires finally do occur, they may be hotter than normal due to the greater fuel load that has developed, potentially killing shrubs that would have resprouted if a less intense fire, to which they are adapted, had occurred. Secondly, increased human usage could actually lead to an increase in fire initiation events in some areas, due to sparks, campfires, cigarettes, and hot motor vehicle tail pipes. Indirect impacts to this habitat include increased night lighting and increased noise from developed areas, which may affect the quality of chaparral and coastal scrub habitats in areas close to new development.

Only a very small amount (less than 2 acres) of scrub or chaparral is mapped as occurring within planned growth areas. Northern coastal scrub/Diablan scrub occurs in the Almaden Valley Urban Reserve, and is not expected to be impacted under the Plan. However, sensitive mixed serpentine chaparral occurs along the eastern periphery of the New Edenvale Employment Land Area. The vast majority of the direct impacts under the General Plan, such as occurring from development and construction staging access or other construction-related activities, are expected to be minimal, widely spaced, and will principally be located in vacant lands and entitled parcels, due to road expansion, or due to growth occurring outside the UGB.

Within the UGB, impacts to scrub and chaparral habitats are expected to be fairly similar under all scenarios, because most impacts will occur within vacant lands and entitled parcels, and due to roadway development. However, the Preferred Scenario and Scenario 4 have the greatest development in the New Edenvale Employment Land Area where sensitive mixed serpentine chaparral occurs along the eastern periphery. These scenarios may also have indirect impacts of ad hoc recreational use in the vicinity of the employment development in New Edenvale. Scenario 3, which will entail a greater population increase, may contribute to the greatest levels of indirect impacts due to increased recreational usage. Lower intensities of these impacts would occur under the lower-housing growth Scenario 2, based on the assumption that Scenario 2 would involve the next greatest population increase and subsequent recreational impacts. Scenario 1 would involve a fairly low population increase and would be expected to cause a lesser degree of indirect impacts due to casual usage of scrub and chaparral areas within the UGB.

Outside the UGB, direct loss of scrub and chaparral habitats may occur due to road development, and land use changes or intensification and development of additional parks or park facilities, agriculture, recreational facilities, and rural residential areas. Impacts to chaparral and scrub habitats outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). The Preferred Scenario could potentially result in relatively high impacts to these habitats outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage of natural areas outside the UGB. Scenario 4, because of a greater increase in jobs but a lower increase in new residential units, may lead to the greatest degree of rural residential development outside the UGB and consequent scrub habitat loss. Scenario 2, which has a higher level of job development, may have greater impact based on pressure for rural residential development than Scenario 3. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to chaparral and scrub habitats outside the UGB.

In general, impacts to scrub and chaparral habitats resulting from allowable development under the General Plan update are expected to be less than significant due to the very limited extent of potential impacts compared to the regional and statewide abundance of these habitats. However, due to the rarity and sensitivity of serpentine habitats, impacts to mixed serpentine chaparral are potentially significant.

IMPACTS TO TREES

Impacts to Urban Forest, Street Trees, and Ordinance/Heritage Trees

The urban forest is an important biological resource within the UGB. It is comprised of all the native and non-native trees planted in yards and parks, along streets, and as landscaping in building complexes and parking lots. Together, these trees provide nesting, cover, and foraging habitat for a variety of birds (including raptors) and mammals that are tolerant of humans, as well as providing necessary vegetation structure for beneficial insects such as wild honeybees (*Apis mellifera*). Some trees, such as fruit trees (*Prunus* spp.), also provide food in the form of nectar and pollen resources and edible fruit or seeds. While the resources this forest provides are typically not as favorable for native wildlife as those provided by more extensive tracts of native vegetation, and non-native trees do not typically provide resources for as many native animals as do native trees, trees in the urban forest are often the only or the best habitat commonly or locally available within urban areas. Additionally, the urban forest collectively contributes to mitigating temperature increases within urban areas, and it also collectively contributes to conversion of the greenhouse gas carbon dioxide to oxygen, dampening climate change effects.

Ordinance-sized and heritage trees and street trees comprise subsets of the trees that make up the urban forest and are specifically protected under the existing City of San José Tree Ordinances. In general, ordinance-sized trees are clearly defined by size parameters, while any tree determined to have special significance, usually historical, by the City may be designated as a heritage tree. Permits are required for the removal of ordinance-sized trees and typically require planting of three to five replacement trees per ordinance-sized tree removed. Heritage trees are typically under stronger protection, and are also protected from vandalism and acts other than removal. Street trees are protected by ordinance as well under the City's Department of Transportation and cannot be removed without a permit which requires at least one replacement tree must be planted.

There are currently over 200 trees on the City's Heritage Tree List. Heritage trees in established single family neighborhoods, parks and community facilities (such as the Palm Haven Willow Glen, and Naglee Park neighborhoods, along University Avenue, and in St. James Park, William Street Park, Saratoga Creek Park, Luther Burbank School, and at the Hayes Mansion) that generally would not be disturbed by development and redevelopment in growth areas identified in the General Plan update. Where large trees are found on vacant properties or in identified growth areas or Employment Lands within the UGB, the potential for direct or indirect impacts would be increased. Heritage trees located within or adjacent to growth areas include Chilean wine palms in the North San Jose Planning Area (HT-04-04-A and –B), a California sycamore in the Berryessa Planning Area (HT-04-03), a monkey puzzle tree at the Santa Clara County Fairgrounds in the South San Jose Planning Area (HT-02-06), and several large valley oaks in the Edenvale Planning Area (HT-02-06, -13, and -14). Additional Heritage trees are located in the immediate vicinity of several other growth areas in the Central, Edenvale, and South San Jose Planning Areas (refer to Table 6).

Table 6. Heritage Trees Within or Adjacent to Growth Areas Subject to Development

Planning Area	Growth Area	Tree Species	CSJ Heritage Tree Number(s)	Location
Berryessa	Berryessa Planned Community	California sycamore	HT-04-03	1550 Lundy Avenue
Central	CR20 (adjacent)	California bay	HT-03-13	730 Miller Street
Edenvale	Old Edenvale	Valley oak	HT-02-06	Great Oaks Blvd. and Via del Oro (NW corner)
	Old Edenvale	Valley oak	HT-02-13	San Ignacio Avenue and Los Colinas (NE corner)
	C37	Valley oak	HT-02-14	San Ignacio Avenue, Bernal Road
	Old Edenvale (adjacent)	Eucalyptus (11 trees)	HG-02-01	Blossom Hill CalTrain parking lot
North San	NSJ-14	Chilean wine	HT-04-04-A	1769 Oakland Road

Jose		palm	HT-04-04-B	
South	C45	Monkey puzzle tree	HT-07-06	County Fairgrounds
	VR26 (adjacent)	Valley oak	HT-07-03	3067 Cray Court

Direct impacts due to loss of trees may occur to the urban forest and to ordinance/heritage and street trees whenever planned growth areas, vacant lands, entitled parcels, or roads are developed under the General Plan. Trees will likely be removed as part of redevelopment under the proposed General Plan update. While trees are often replanted during development, typically, larger, more mature trees are removed and replaced with smaller, less mature trees, effectively reducing the total tree canopy, at least temporarily and, in some cases, permanently. The same is true for street trees. Temporary loss of tree canopy from mature trees generally is not a short-term loss due to the length of time required for trees to mature. Depending on the character of the development and any permit conditions issued for the removal of ordinance and heritage trees, the trees in a given development area may not be replanted on a tree-for-tree basis, which would cause permanent decreases in tree density and canopy area and will cause at least a temporary loss of tree canopy for a significant duration. Although the existing San José Tree and Street Tree Ordinances provide protection for large trees, historic trees, and street trees, tree removal with permits still allows for the decrease in tree canopy temporarily and/or permanently. Potential General Plan-related indirect impacts to the urban forest lay in health and persistence of trees because many trees do not adapt to conditions in developed areas, such as pavement covering roots or limiting water reaching roots, and may die and/or have such reduced health that the canopy and wildlife value is reduced for the remainder of its life.

Within the UGB, Scenario 4 is expected to cause the greatest level of permanent, local impacts to the urban forest and to ordinance/heritage trees due to the increased employment land development, because employment development typically has large areas covered by buildings or parking lots; even high-density residential development (such as apartment complexes) often have a greater amount of landscaping and tree-filled yards or courtyards, and a lesser amount of parking lot area, compared to employment and commercial centers. Following this reasoning, the Preferred Scenario has the second highest employment development and may therefore have slightly less impact on the community forest. Scenario 2, followed by Scenario 3, are likely to have progressively lower levels of impacts, particularly permanent local impacts. As described in our general assumptions, scenarios having high levels of both job development and residential development (such as the Preferred Scenario), thus resulting in large areas of hardscape and, potentially, a relatively large residential footprint, may result in a greater combined direct (loss of habitat) and indirect (increased hardscape, recreational use, and potential for contaminants) impact on the community forest, street trees, and heritage trees. The low growth of Scenario 1 is likely to have the least impact to the urban forest and ordinance and heritage trees simply due to the relatively lower levels of both types of development in this scenario. Additional impacts outside of planned growth areas, such as within vacant lands, entitled parcels, and due to roadway development, will be similar under all scenarios.

As the urban forest is located within the urban areas of the City of San José, it occurs entirely within the UGB; therefore, no impacts are expected to occur to the urban forest outside of the

UGB. Ordinance trees and heritage trees or street trees outside the UGB but within the Study Area may be affected by land use changes or intensification and development of additional parks or park facilities, agriculture, golf courses and other recreational facilities, rural residential areas, or other allowable uses. Scenario 4 will provide the greatest increase in jobs, and presumably attract a greater amount of people to the wider South Bay area, while providing the lowest increase in housing. As a result, this scenario may lead to the greatest pressure for residential development, and hence, the greatest degree of development outside the UGB and consequent impacts ordinance or heritage tree and perhaps street trees. The Preferred Scenario could result in somewhat lower impacts to such trees due to rural residential development, having a lower increase in new jobs and higher increase in new dwelling units. In all cases, the existing City Ordinances will apply and may reduce impacts.

Although the current General Plan policy for planting trees within the City may offset this impact to some extent, the extent to which such planting would offset losses of trees is unknown. Overall, impacts to the urban forest, including ordinance and heritage trees and street trees, resulting from allowable development under the General Plan update are thus potentially significant due to the potential loss of trees and reduction in canopy.

Impacts to Native Trees in Natural Areas

Native trees in natural forests, scrubs, and woodlands may be impacted by certain actions under the General Plan. These trees provide habitat, often of high value, for common and special-status wildlife species, and provide the dominant structure and vegetative character for many riparian and woodland habitat types. Direct impacts to such trees may result from development of vacant lands and entitled parcels, intensification of development within rural residential areas and relatively natural Employment Land Areas, transportation improvements in natural areas, and removal of native trees within riparian corridors. Such impacts may occur in more rural areas both inside and outside the UGB, although riparian native tree impacts may also occur in relatively urban areas within the UGB. In general, native trees most susceptible to direct impacts from development include native riparian trees, which may be removed or heavily trimmed for trail construction and road and bridge improvements or even along the corridor perimeters, and native oak trees, that may be removed for development of parcels in oak woodlands (which are the most common woodland type in the Study Area). Trail construction in natural habitats will also lead to greater usage of these areas, and thus, potentially impact individual trees by exposing them to soil compaction, vandalism, or other impacts.

Indirect impacts of concern to native trees include channel downcutting and increased erosion that may occur in riparian areas due to an increase in surrounding hardscape, as well as increased usage of these corridors by the public. Channel downcutting could cause some riparian trees at top of bank to become disconnected from groundwater sources, or trees may erode out of the banks at a greater rate than would be expected from natural flooding. The most substantial indirect impact that may occur to oaks within the Study Area is an increase in human activities and associated spread of the pathogen responsible for sudden oak death (see *Impacts to Oak Woodlands*, above).

In general, most native trees in natural areas will be located in areas mapped as riparian habitats or oak woodlands within the Study Area but outside the UGB. Within the UGB, most native trees in natural areas will occur in:

- Urban reserves such as
  - Coyote Valley Urban Reserve in the Coyote Planning Area
  - South Almaden Valley Urban Reserve in the South Planning Area
- Natural urban parks, such as
  - portions of Santa Teresa County Park that are located within the UGB in the Edenvale Planning Area
- Riparian forests and woodlands, such as outlined above (see *Impacts to Riparian Habitats*), including such waterways as Coyote Creek, Guadalupe River, Los Gatos Creek, Upper Penitencia Creek, and others
- Relatively natural Employment Land Areas such as
  - Valley oaks within the North Coyote Valley Employment Land Area (Coyote Planning Area)
  - Coast live oaks within the New Edenvale (Areas 1, 3, and 4) Employment Land Area (Edenvale Planning Area)
  - Oaks within mixed oak woodlands in the Evergreen Campus Industrial Employment Land Area (Evergreen Planning Area)
  - Individual oaks in the NSJ Employment Land Area (North Planning Area)

Within the UGB, the Preferred Scenario, followed by Scenario 4, may result in more development-related impacts in fairly natural Employment Land Areas such as the North San Jose, New Edenvale, or Evergreen Campus Industrial areas. As with most impacts to biological resources, Scenario 3, with the highest levels of housing, is expected to cause the highest level of recreation-associated impacts and consequent increase in use of natural areas, followed by Scenario 2 with moderate growth or the Preferred Scenario with high job growth and moderate residential growth, then high job and low growth Scenario 4, and with Scenario 1 having the least impact. However, the greatest level of direct impacts to these trees within the UGB will almost entirely occur due to development of vacant lands, entitled parcels, and road improvements, which are expected to be the same under all scenarios.

Outside the UGB, impacts may occur to native trees due to land use changes or intensification and development of additional parks or park facilities, agriculture, recreational facilities, or rural residential areas or other allowable uses. The Preferred Scenario could potentially result in relatively high impacts to these habitats outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenarios leading to greater increases in resident population, such as Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage of natural areas inside and outside the UGB, and will possibly lead to a greater

risk of spread of the pathogen responsible for sudden oak death. Scenario 4, which will provide the greatest increase in jobs while providing the lowest increase in housing, may lead to the greatest degree of rural residential development outside the UGB, and subsequently, the greatest losses of native trees due to development. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to native trees outside the UGB.

Overall, impacts to native trees in natural habitats resulting from allowable development under the General Plan update, especially to individual oak trees as a result of an increase in sudden oak death, or to individual California sycamore trees in sycamore alluvial woodlands, are potentially significant due to their rarity and high habitat value.

Impact of Hybridization of Native Trees with Non-natives

Native trees may hybridize with non-native trees introduced for landscaping purposes. For example, oaks hybridize readily with congeneric members within the same oak group, as do native California sycamore trees with non-native London plane trees (*Platanus hybrida*). Hybridized individuals can readily back-cross to native trees and further dilute native gene combinations within that population. Hybrids are often polyploid (carrying more than the normal amount of gene copies), and therefore can be very vigorous and outcompete native trees. They can expand beyond the natural native habitat and have different form and structure that may have reduced habitat value to native wildlife.

The risk of detrimental hybridization is highest when extensive plantings of congeneric non-native trees are located in close proximity to natural areas, such riparian zones or oak woodlands. For example, holly-leaved oak (*Quercus ilex*) is a scrubby, fast-growing non-native oak species that has been extensively planted in urban stream corridors by the Santa Clara Valley Water District and other groups, ostensibly for slope protection and revegetation purposes. Holly-leaved oak is in the same oak group (genus *Quercus*, subgenus *Quercus*, section *Quercus*) as several native oak species that occur in the Study Area, including scrub oak (*Quercus berberidifolia*), blue oak (*Quercus douglasii*), leather oak (*Quercus durata*), and valley oak (*Quercus lobata*). Therefore, such plantings pose risk to nearby native oak populations of these species. Similarly, London plane trees are extensively planted as street and parking lot trees and are used in landscaping for their attractive leaves and bark. Of particular concern are London plane trees that may be planted in the North Coyote Valley Employment Land Area, which is near to areas mapped as California sycamore alluvial woodland, an extremely rare and sensitive riparian habitat type.

Impacts may occur throughout the UGB if non-native trees are used in landscaping, but will likely be greatest wherever non-native landscaping trees are planted near native habitats, such as in Employment Land Areas that are currently rather natural, rural, or agricultural in character, such as North San Jose, Evergreen Campus Industrial, New Edenvale, or North Coyote Valley, or in planned growth areas adjacent to riparian habitats (see also *Impacts to Riparian Habitats*, above). Because pollen is windborne, trees planted within the UGB can cause hybridization in trees outside of the UGB.

Within the UGB, the Preferred Scenario and Scenario 4, which would lead to the greatest levels of development within some of the Employment Land Areas cited above, may lead to more development that places non-native trees in proximity with native trees and have a greater likelihood of more trees of a similar type being planted, such as London plane trees in large parking areas. This is mainly true of the North San Jose Employment Land Area, which will be much more heavily developed under the Preferred Scenario, followed by Scenario 4, as the Evergreen Campus Industrial and New Edenvale Areas will only exhibit moderately higher development under both the Preferred Scenario and Scenario 4, and North Coyote Valley is expected to undergo the same degree of development under any scenario. Scenario 3, and to a lesser extent, Scenario 2, may involve the greatest degree of landscaping changes due to the large number of dwelling units constructed and street trees planted in these scenarios. Impacts within other vacant parcels and entitled lands, and due to roadway improvements, are expected to be similar under all scenarios.

In addition to the windborne pollen from trees planted inside the UGB, impacts resulting from hybridization may occur to native trees outside the UGB due to land use changes or intensification and development of additional parks or park facilities, rural residential areas, or other allowable uses that may utilize species such as London plane tree in their landscaping. Although the use of such trees may be lower outside the UGB than in more urban habitats, the species planted in private yards are often not well controlled as more urban and/or commercial plantings may be. Again, Scenario 4, which will provide the greatest increase in jobs while providing the lowest increase in new housing, may lead to the greatest degree of rural residential and other development outside the UGB, and subsequently, potentially introduce more non-native trees that could hybridize with native trees in these areas. Successively less rural residential development due to employment development pressures is likely to produce successively lower impacts such that, considering the level of new jobs in each scenario, the Preferred Scenario, Scenario 2, Scenario 1, then Scenario 3 would provide the lowest potential for rural residential development.

In areas where California sycamores occurring within sycamore alluvial woodlands may be at risk, impacts to native tree populations resulting from hybridization with non-native species associated with allowable development under the General Plan update are potentially significant due to the rarity and high habitat quality provided by sycamore and oak woodlands. Central California sycamore alluvial woodlands occur primarily in the Coyote Planning Area at the southern end of the Study Area, outside the UGB.

IMPACTS TO SPECIAL-STATUS PLANTS

Impacts to Federally and State-listed Plant Species

Federally and state-listed plant species that occur, or may occur, within the Study Area include Tiburon Indian paintbrush, Coyote ceanothus, Santa Clara Valley dudleya, Contra Costa goldfields, Metcalf Canyon jewel-flower, and showy Indian clover. All six of these species are protected under the federal Endangered Species Act, and Tiburon Indian paintbrush is also protected under the state Endangered Species Act. Except for Contra Costa goldfields, these species are serpentine endemics expected to occur in high-quality serpentine habitats such as

serpentine bunchgrass grasslands, serpentine rock outcrops, and mixed serpentine chaparral. Contra Costa goldfields is a seasonal wetland species that could potentially occur in vernal pools or alkaline seasonal wetlands near the Bay. All of these species are also proposed to be covered species under the Santa Clara Valley HCP/NCCP (ICF Jones and Stokes 2009), except for Contra Costa goldfields and showy Indian clover, which are proposed to be covered as no-take species.

Direct impacts could occur to such species due to loss of habitat and/or individuals if any occupied serpentine areas or seasonal wetlands near baylands are developed. Direct impacts could also occur to any of these endangered species through development of vacant lands and entitled parcels with occupied habitat, and trampling by construction equipment and personnel during construction and staging. Indirect impacts could occur as a result of changes in grazing regimes (see *Impacts to Grasslands*, above), fire regimes in serpentine chaparral habitats (see *Impacts to Coastal Scrub and Chaparral Habitats*, above), increases in noxious weed populations, increases in non-native grasses in serpentine areas due to increased nitrogen deposition (see *Indirect Impacts to Serpentine Communities from Increased Nitrogen Deposition*, below), or other anthropogenic causes. Additionally, an increased residential population and hence, increased recreational usage of suitable natural habitats within or surrounding the UGB, could lead to increased trampling or soil disturbance impacts.

These species are most likely to be located in areas outside the UGB where serpentine substrates exist, or, in the case of Contra Costa goldfields, in the alkaline-influenced wetlands north of the UGB near the South San Francisco Bay marshes. Planned growth areas where suitable habitat may occur include the New Edenvale and North Coyote Valley Employment Land Areas, and the Communications Hill Specific Plan Area; in the case of Contra Costa goldfields, the only planned growth area that may contain suitable habitat is the Alviso Specific Plan Area. Planned growth areas in the following Planning Areas do not provide suitable habitat for federal or state listed plants: Alum Rock, Berryessa, Cambrian/Pioneer, Central/Downtown, Evergreen, North San Jose, West Valley, and Willow Glen.

Within the UGB, the potential for direct impacts to suitable habitat that may contain these species is expected to be relatively similar under all scenarios, because such impacts may only be caused by development of vacant lands, entitled parcels, roadway improvements, and Employment Land Areas or Specific Plan Areas that contain suitable habitat. With the exception of Contra Costa goldfields, the Employment Land Areas that contain potentially suitable habitat include North Coyote Valley (where impacts under all scenarios will be the same) and New Edenvale (Areas 1, 2, and 4), which is expected to have a higher level of development under the Preferred Scenario and Scenario 4. Thus, there could be a greater impact to serpentine-associated, listed plants under the Preferred Scenario and Scenario 4 and a lesser impact under the remaining scenarios. A higher level of development is allowed under the Preferred Scenario and lower level of development is allowed under Scenario 4 in the Alviso Specific Plan Area, where there is some potential for Contra Costa goldfields to be found. So there may be the highest potential for impacts to Contra Costa goldfields under the Preferred Scenario and the lowest potential for impacts to Contra Costa goldfields under Scenario 4. In any case, scenarios will only cause a lower or greater degree of direct impacts if the habitat within the Alviso Plan Specific Area is actually occupied by Contra Costa goldfields. Indirect impacts to any

populations occurring within the UGB related to recreational usage, trampling, and spread of invasive plants would likely be greatest under Scenario 3, followed closely by Scenario 2, due to the population increases associated with these scenarios.

Outside the UGB, direct impacts have the greatest potential to occur under Scenario 4, which will provide the greatest increase in jobs but lowest increase in new housing, and which therefore may lead to the greatest degree of rural residential and other development outside the UGB. Indirect impacts such as those described above, especially trampling-related impacts, are likely to increase with increasing resident population size, and thus may be maximized under Scenario 3. The Preferred Scenario has a relatively high potential to result in impacts to listed plants outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact listed plants outside the UGB.

Any impacts to any population of Federal and State-listed Plant Species resulting from development under the General Plan update are potentially significant due to the rarity and highly imperiled nature of these species.

Impacts to CNPS-Listed, Serpentine-Adapted Special-status Plant Species

CNPS-listed plants (*i.e.*, special-status plants that are not federally or state-listed) that could occur within serpentine habitats in the Study Area include Franciscan onion, big-scale balsamroot, pink creamsacs, Mt. Hamilton fountain thistle, fragrant fritillary, Loma Prieta hoita, smooth lessingia, and most beautiful jewel-flower. These species are endemic to the harsh, low-nutrient soil conditions that occur in soils derived from serpentine substrates, and as such, are sensitive to competition from other plant species. The Mt. Hamilton fountain thistle and Loma Prieta hoita occur in serpentine seeps and the remaining species occur in upland habitats. Of these species, only the Franciscan onion is not proposed to be covered by the HCP/NCCP. All of the other species listed above are proposed as covered species except pink creamsacs, which is considered a no-take species (ICF Jones and Stokes 2009).

Direct impacts could occur to such species due to loss of habitat or individuals through development of occupied serpentine areas on vacant lands and entitled parcels that contain serpentine substrates, or if any occupied serpentine areas within planned growth areas are developed. Direct impacts could also occur as a result of trampling by construction equipment and personnel during construction and staging. Indirect impacts could occur as a result of changes in grazing regimes (see *Impacts to Grasslands*, above), changes in fire regimes in serpentine chaparral habitats (see *Impacts to Coastal Scrub and Chaparral Habitats*, above), increases in noxious weed populations, increases in non-native grasses in serpentine areas due to increased nitrogen deposition (see *Indirect Impacts to Serpentine Communities from Increased Nitrogen Deposition*, below), or other anthropogenic causes. Additionally, increased recreational

usage of suitable natural habitats within or outside the UGB could lead to increased trampling or soil disturbance impacts.

Planned growth areas that may provide suitable habitat for these species include the New Edenvale and North Coyote Valley Employment Land Areas, and Communications Hill Specific Plan Area. Other areas outside the UGB but within the Study Area that contain a significant amount of serpentine habitats include the portions of Coyote Ridge in the Study Area, Tulare Hill, the Santa Teresa Hills, and serpentine habitats on the west side of Coyote Valley; smaller areas of serpentine grassland are present outside the UGB, but within the city limits, near Alum Rock Park.

Within the UGB, the potential for direct impacts to suitable habitat that may contain these species is expected to be relatively similar under all scenarios, because serpentine-adapted special-status plant species are most likely to be impacted by development on vacant lands and entitled parcels, and roadway improvements within natural areas containing suitable, occupied habitat. However, direct impacts could also occur within planned growth areas that contain suitable habitat, such as the North Coyote Valley Employment Land Area and the Communications Hill Specific Plan Area; development in these areas would be highest under the Preferred Scenario and lower under the others (for which the extent of development would be similar). Also, direct impacts could occur in the New Edenvale Employment Land Area (Areas 1, 2, and 4), which is expected to have a higher level of development under the Preferred Scenario and Scenario 4 than under the other scenarios. Therefore, the Preferred Scenario, followed by Scenario 4, has the greatest potential to have direct impacts of the five scenarios, depending on whether the serpentine habitat on Communications Hill and/or in New Edenvale is occupied by any of the serpentine-adapted special-status plant species or not. Indirect impacts to any populations occurring within the UGB related to recreational usage, trampling, and spread of invasive plants would likely be greatest under Scenario 3, followed closely by Scenario 2, due to the residential population increases associated with these scenarios. As described in our general assumptions, scenarios such as the Preferred Scenario having high levels of both job development and residential development, resulting in large areas of hardscape and, potentially, a relatively large residential footprint, may result in a greater combined direct (loss of habitat) and indirect (increased hardscape, recreational use, and potential for contaminants) impact on serpentine habitats.

Impacts to biological resources outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Outside the UGB, Scenario 4, followed by the Preferred Scenario, has the greatest potential for direct impacts since it will provide the greatest increase in jobs but lowest increase in new housing, which may in turn lead to the greatest degree of rural residential and other development outside the UGB. Indirect impacts such as those described above, especially trampling-related impacts, are likely to increase with increasing resident population size, and thus may be maximized under Scenario 3, closely followed by Scenario 2 then the Preferred Scenario. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents,

and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact serpentine-adapted special-status plant species outside the UGB.

Impacts to any population of CNPS-listed, serpentine-adapted special-status plant species resulting from allowable development under the General Plan update are potentially significant due to the rarity and imperiled nature of these species.

Impacts to CNPS-listed, Scrub, Chaparral, Oak Woodland, and/or Grassland-adapted Special-status Plant Species

CNPS-listed plants that may occur in non-serpentine scrub, chaparral, oak woodland, and/or grassland habitats include bent-flowered fiddleneck, round-leaved filaree, Santa Clara red ribbons, Satan's goldenbush, arcuate bush-mallow, Davidson's bush-mallow, Hall's bush-mallow, Mount Diablo cottonweed, and robust monardella. Of these species, only Hall's bush mallow and robust monardella are proposed to be covered under the HCP/NCCP (ICF Jones and Stokes 2009). We have grouped these species for discussion because many of them occur in multiple habitat types. For example, CNPS (2010) indicates that robust monardella may occur in "broad-leafed upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, and valley and foothill grassland".

Direct impacts could occur to these species due to loss of habitat or individuals through development of suitable, occupied habitat on vacant lands and entitled parcels. Direct impacts could also occur as a result of trampling by construction equipment and personnel during construction and staging. Although no planned growth areas are known to support these species, direct impacts could also occur if suitable, occupied habitat exists in planned growth areas. However, most grassy areas within planned growth areas in the UGB are not expected to provide suitable habitat for grassland species. Indirect impacts could occur as a result of changes in grazing regimes (see *Impacts to Grasslands* and *Impacts to Oak Woodlands,* above), changes in fire regimes in scrub and chaparral habitats (see *Impacts to Coastal Scrub and Chaparral Habitats*, above), or increases in numbers or densities of invasive plant species populations. Additionally, increased recreational usage of suitable natural habitats within the Study Area, could lead to increased trampling or soil disturbance impacts.

Populations of these plant species may occur in scrub, grassland, and woodland habitats of appropriate quality wherever they occur within the Study Area, which are mainly concentrated along the southern and eastern portions of natural habitat outside the UGB but within the Study Area, near Coyote Ridge, the Diablan foothills, and the foothills of the Santa Cruz Mountains. However, populations could occur in planned growth areas, and would be most likely to occur in those areas containing more large parcels with a relatively natural character, such as:

- Almaden Planning Area
    - South Almaden Valley Urban Reserve
- Coyote Planning Area
    - North Coyote Valley Employment Land Area

    - Coyote Valley Urban Reserve
- Edenvale Planning Area
    - New Edenvale Employment Land Area
    - Old Edenvale Employment Land Area
- Evergreen Planning Area
    - Evergreen Campus Industrial Employment Land Area
- North Planning Area
    - North San Jose Employment Land Area
- South Planning Area
    - Communications Hill Specific Plan Area

Within the UGB, the potential for direct impacts to suitable habitat that may contain these special-status species is expected to be relatively similar under all scenarios, because such impacts have the greatest potential to occur due to development of vacant lands and entitled parcels, or due to roadway improvements. However, the Preferred Scenario and Scenario 4, which would entail more development within the Employment Land Areas listed above, may have greater potential for direct impacts to some or all of the above plant species for this reason, depending on whether areas of occupied suitable habitat occur in Evergreen Campus Industrial, Old Edenvale, and New Edenvale Employment Land Areas. If occupied suitable habitat occurs in the North San José Employment Land Area where the Preferred Scenario would have greater development, then direct impacts would be greater under the Preferred Scenario. The potential for indirect impacts to any populations occurring within the UGB related to recreational usage, trampling, and spread of invasive plants would likely be greatest under Scenario 3, followed closely by Scenario 2, due to the population increases associated with these scenarios. As described in our general assumptions, scenarios such as the Preferred Scenario having high levels of both job development and residential development resulting in large areas of hardscape and, potentially, a relatively large residential footprint, may result in a greater combined direct (loss of habitat) and indirect (increased hardscape, recreational use, and potential for contaminants) impact on habitats for scrub, chaparral, oak woodland, and/or grassland-adapted special-status plant species.

Impacts to biological resources outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Outside the UGB, the potential for direct impacts is likely to be highest under Scenario 4, which will provide the greatest increase in jobs while providing the lowest increase in new housing, potentially leading to the greatest pressure for rural residential and other development outside the UGB. Indirect impacts such as those described above, especially trampling-related impacts, are likely to increase with increasing resident population size, and thus may be maximized under Scenario 3, closely followed by Scenario 2. The Preferred Scenario has a relatively high potential to result in impacts to listed plants outside the UGB both due to the increased need for rural residential

housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact CNPS-listed, scrub, chaparral, oak woodland, and/or grassland-adapted special-status plant species outside the UGB.

Impacts to any population of CNPS-listed, scrub, chaparral, oak woodland, and/or grassland-adapted special-status plant species resulting from allowable development under the General Plan update are potentially significant due to the rarity and imperiled nature of these species.

Impacts to CNPS-listed Special-status Plant Species in Wetland and Wet Alkaline Habitats

CNPS-listed species that may occur in wetland and wet alkaline habitats within the Study Area include alkali milk vetch, brittlescale, San Joaquin spearscale, Congdon's tarplant, and Hoover's button celery. Some of these species, such as Congdon's tarplant, brittlescale, and San Joaquin spearscale, may occur in habitats disturbed by prior disking activities. Only Congdon's tarplant has some potential to occur in seasonal wetlands that are not located on soils affected by coastal salt or historic coastal salt, and may be located in more inland areas that are appropriately alkaline.

Direct impacts could occur to such species due to loss of habitat or individuals through development of suitable, occupied habitat, or particularly if any seasonal wetlands near baylands within the Alviso Specific Plan Area are developed. Direct impacts could also occur as a result of trampling by construction equipment and personnel during construction and staging. Indirect impacts could occur as a result of changes in grazing regimes (see *Impacts to Grasslands*, above). Changes in hydrology, such that water from watersheds feeding suitable wetlands is diverted or reduced through ditching or installation of berms or increased significantly, causing freshening of these habitats, could also affect these species. Additionally, increased recreational usage of suitable natural habitats within the Study Area could lead to increased trampling or soil disturbance impacts. These species are most likely to occur in relatively alkaline wetland habitats, most of which would be expected to be located inside the northern extent of the UGB near the San Francisco Bay. There is a small possibility that smaller wetlands in other areas within the UGB, particularly within the Alviso Specific Plan Area or elsewhere on the valley floor, could provide suitable habitat for some species, such as Hoover's button celery and Congdon's tarplant.

If suitable, occupied habitat occurs in development areas within the Alviso Specific Plan Area, the Preferred Scenario is likely to have the greatest potential to impact these species due to greater development in that area. Within the UGB, the potential for direct impacts to suitable habitat that may contain these species is expected to be relatively similar under all other scenarios, which would have similar levels of development in the Alviso Specific Plan Area. While other areas on the valley floor could potentially support some of these species, it is unknown where such occupied habitat would be located, and therefore difficult to determine

which scenario has the greatest potential to impact these species. Outside the UGB, there is no suitable habitat for these species; hence, there is no potential for impact.

Impacts to any population of CNPS-listed special-status plant species in wetland and wet alkaline habitats resulting from allowable development under the General Plan update are potentially significant due to the rarity and highly imperiled nature of these species.

IMPACTS TO SPECIAL-STATUS AND SENSITIVE WILDLIFE

Impacts to the Bay Checkerspot Butterfly

The Bay checkerspot butterfly, being confined to serpentine grasslands (occurring in serpentine bunchgrass or serpentine rock outcrop habitats) with sufficient populations of host plant species, could be directly impacted by development on and, therefore, direct loss of that habitat. Direct impacts could also occur as a result of trampling by construction equipment and personnel during construction and staging. The Bay checkerspot butterfly is also affected indirectly by invasion of serpentine grasslands by non-native plants. This conversion can occur due to the introduction (often unintentional) of non-native grasses and forbs to areas on or near serpentine soils or the enrichment of nutrients in serpentine soils, allowing the non-natives to gain a competitive advantage over native plants (see *Indirect Impacts to Serpentine Communities from Increased Nitrogen Deposition* below). While overgrazing may also reduce Bay checkerspot butterfly populations by reducing the number of host plants, appropriately managed grazing is an effective management tool for controlling the abundance of non-native plants on serpentine habitat. These butterflies are susceptible to pesticides that drift from application areas, fire, and vehicle strikes related to increased traffic, all associated with the proximity of development and/or habitat management. In addition, butterflies disperse somewhat randomly and individual butterflies can be affected while dispersing through adjacent habitats or land use areas. Populations of this species are tenuous and essentially all known potential habitat for this species is critical to its survival.

Bay checkerspot butterfly habitat, as serpentine bunchgrass grassland, only occurs in a planned growth area along the eastern edge of the New Edenvale Employment Land Area where development would result in the direct loss of that habitat. Habitat areas adjacent to development, outside or inside the Employment Land Area, can be indirectly impacted by development in the New Edenvale Employment Land Area.

Under the Preferred Scenario and Scenario 4, the greatest development will occur in the New Edenvale Employment Land Area, so the potential for impacts to Bay checkerspot butterfly habitat would be greatest under these Scenarios. The potential for impacts to Bay checkerspot butterfly habitat would be roughly similar among the remaining scenarios; the impact would depend on the location of development relative to to Bay checkerspot butterfly habitat. Serpentine bunchgrass grassland (1,545 ac) or serpentine rock outcrop (19 additional ac) habitats both occur within the hillside areas of the UGB and could be similarly impacted by development of vacant or entitled parcels, development of which is assumed to be the same under all scenarios. If lost habitat has sufficient host plants, development would result in the loss of Bay checkerspot butterflies and their habitat. In addition, although outside of the UGB, serpentine grassland habitat borders the eastern boundary of the New Edenvale Employment Land Area

where increased human presence could also cause loss of habitat or habitat suitability if used by employees as an ad hoc recreational area and loss of individuals due to pesticides drift from landscape area use, vehicle strikes from increased traffic, increased occurrences of fire, and potential spread of exotic plant species.

Most of the serpentine grasslands in the Study Area occur outside the UGB along Coyote Ridge, in Santa Teresa County Park, on Tulare Hill, on the west side of Coyote Valley, and near Calero Reservoir. Impacts to serpentine grassland outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations (*i.e.*, Non-Urban Hillside, Private Open Space, Private Recreation, Public Park and Open Space, and Rural Residential) in these areas would potentially have all the same impacts as development within the UGB, although the extent of impacts would vary in severity from negligible or even beneficial under an appropriate level of grazing to complete loss of at least some habitat (*e.g.*, from extensive development). The Preferred Scenario has a relatively high potential to result in impacts to Bay checkerspot butterfly habitat outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4, with the high job-to-dwelling-unit ratio, may result in more rural residential development pressure outside the UGB and outside of the Study Area along Coyote Ridge where Bay checkerspot butterfly habitat is concentrated. The scenarios focused on high residential development, Scenario 3 followed by Scenario 2, would have the greatest amount of ad hoc recreation and create the greatest pressure for recreational development on areas outside the UGB. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact Bay checkerspot butterfly habitat outside the UGB. Which of the scenarios would have the greatest impact on Bay checkerspot butterflies outside the UGB is dependent on the location of potential development for dwelling units or recreation.

Impacts to Bay checkerspot butterflies resulting from allowable development under the General Plan are potentially significant because their populations and available habitat are extremely limited and loss of any habitat or individuals will have a substantial effect on the species.

Impacts to the Pacific Lamprey, Green Sturgeon, Central Valley Fall-run Chinook Salmon, Central California Coast Steelhead, and Longfin Smelt

Special-status fish species that occur in the Study Area are the Pacific lamprey, green sturgeon, Central Valley Fall-run Chinook salmon, Central California Coast steelhead, and longfin smelt. These species are assessed as a group because they are similarly associated with aquatic habitats in the Study Area, and the potential for impacts of the General Plan on these species will be similar. Habitat for all five species within the Study Area is similarly located in streams, sloughs, and estuaries connected to the Bay.

Specific characteristics of these species' preferred habitats are somewhat different. The green sturgeon and longfin smelt have the potential to occur in tidal reaches of sloughs in the Alviso area. The Pacific lamprey, steelhead, and Chinook occur in the larger streams flowing into South San Francisco Bay and their tributaries, where they spawn in reaches with suitable substrate and use downstream reaches and tidal reaches for migration between the ocean and spawning and rearing areas. Therefore, special-status fishes can be found in all accessible waterways within the Study Area.

Impacts from allowable development under the General Plan update can affect special-status fish habitat used during their various life phases (*i.e.*, for breeding, rearing, foraging, and migrating). Individuals present in all these various habitats can be harmed or killed during construction activities, and during or after construction there can be increased mortality due to development related effects. Suitable habitat for special-status fish species in the Study Area may be directly impacted as a result of development by filling, culverting, or channelization or through the hydrologic alteration of streams, sloughs, and estuaries that are used for breeding, rearing, migration, or foraging. Decreased flows can lead to loss of suitability of aquatic habitats from concentration of toxics, sedimentation, or decreased oxygenation and increased flows can lead to erosion and downcutting in streams with sedimentation or turbidity increases downstream, transport of contaminants, and flow rate increases. Development and the addition of obstacles or barriers to reaching upstream spawning habitat may increase mortality of dispersing or migrating individuals, or cut off populations from suitable spawning habitat. Loss of riparian vegetation, which provides shade over rivers and creeks and helps to maintain moderate water temperatures during summer and provides organic matter input (leaf drop) and terrestrial insects to the aquatic food chain, has the potential to reduce habitat quality for these fish species. Roadway bridge construction would have many of these potential impacts and may remove important habitat components such as tree roots or deep pools. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in urban-associated native and non-native predators, the incidental disturbance of habitat to planned or ad hoc recreational activities, and a reduction in the quality of foraging, spawning or rearing habitat from the introduction of non-native vegetation. Individuals of these species can be killed or injured during construction activities as a result of crushing by construction personnel or equipment or by being trapped in low water, evaporating pools or within reaches that are dewatered for construction purposes. Sedimentation, contaminated runoff, or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and habitat quality in aquatic habitats on or adjacent to a development site and in aquatic habitats downstream from development areas. Sedimentation may also fill the interstices between salmonid spawning gravels or cover fish eggs downstream from a project site, thus reducing reproductive potential temporarily or permanently. Contamination of aquatic habitats can result from roadway runoff or from other anthropogenic sources such as spills or inappropriate disposal during or after construction. During construction (*e.g.*, of bridges), pile driving and other loud, percussive activities can injure or even kill fish in close proximity to the source of disturbance, or can drive fish from suitable habitat that would otherwise be occupied by the species.

Anadromous fishes (Pacific lamprey, steelhead, and Chinook salmon) may be present in all accessible areas of streams within the UGB, and longfin smelt may occur in the lower reaches of

the Guadalupe River as far upstream as the UGB. These species can be affected by impacts to their aquatic habitats within or adjacent to development areas. In addition, although occurring only as a very rare visitor in tidal habitats within the Study Area and likely not within the UGB, aquatic habitat for green sturgeon can be affected by water quality impacts that could arise from development.

Planned growth areas or development of vacant lands or entitled parcels where stream habitat occurs within or adjacent to the growth area are where impacts to special-status fish can occur. These habitats are mapped as riparian habitats (aquatic habitats are included in habitats mapped as riparian), instream aquatic habitats, unmapped creeks, and tidal sloughs described above as potentially impacted habitats (see *Impacts to Riparian Habitats* and *Impacts to Aquatic and Wetland Habitats* above:

- Alum Rock Planning Area
  - BART/Caltrain Village
    - VT2-1 (Upper Penitencia Creek)
    - VT2-2 (Upper Penitencia Creek)
    - VT2-3 (Upper Penitencia Creek)
  - Light Rail Village/Corridor
    - CR29-31 (Lower Silver Creek)
    - CR29-34 (Lower Silver Creek)
    - CR29-37 (Lower Silver Creek)
    - CR29-38 (Lower Silver Creek)
    - CR29-39 (Lower Silver Creek)
  - Light Rail Village/Corridor VR11 (Upper Penitencia Creek)
  - Commercial Center Village/Corridor
    - C42-4 (Lower Silver Creek)
    - C42-7 (Lower Silver Creek)
    - C42-11 (Lower Silver Creek)
  - Mabury Employment Land Area (Coyote Creek)
- Alviso Planning Area
  - Alviso Specific Plan Area (Coyote Creek, Guadalupe River, and Alviso Slough)
- Berryessa Planning Area
  - BART/Caltrain Village VT2-3 (Upper Penitencia Creek)
  - East Gish Employment Land Area (Coyote Creek)
  - North San José Employment Land Area (Coyote Creek)

        - NSJ13 – east of Interstate 880 between Murphy Avenue and Component Drive
        - NSJ15 – southwest of Murphy Avenue and Oakland Road
        - NSJ12 – east of Interstate 880 between Brokaw Road and Murphy Avenue
        - NSJ18 – southeast of Murphy Avenue and Oakland Road
- Cambrian Pioneer Planning Area
    - Neighborhood Village
        - V68-1 (Ross Creek)
        - V68-2 (Ross Creek)
    - Light Rail Village/Corridor VR17-16 (Guadalupe River)
- Central Planning Area
    - Light Rail Village/Corridor
        - CR28-26 (Coyote Creek)
        - VR9-1 (Los Gatos Creek)
    - Mabury Employment Land Area (Coyote Creek)
    - Specific Plan Areas
        - Tamien Station (Guadalupe River)
        - Midtown (Los Gatos Creek)
    - Senter Road Interchange Project (Coyote Creek)
- Coyote Planning Area
    - North Coyote Valley Employment Land Area (Coyote Creek and Fisher Creek)
- Edenvale Planning Area
    - Light Rail Village/Corridor
        - VR18-2 (Canoas Creek)
        - VR18-4 (Canoas Creek)
    - New Edenvale (Area 1, 3 and 4) Employment Land Area (Coyote Creek)
- Evergreen Planning Area
    - Evergreen Campus Industrial Employment Land Area (Evergreen Creek and Fowler Creek)
    - Evergreen Specific Plan Area (Evergreen Creek, Fowler Creek, and Quimby Creek)
    - Neighborhood Village
        - V54 -1 (Quimby Creek)
        - V54-3 (Thompson Creek)
        - V55-2 (Fowler Creek)

        - V55-5 (Fowler Creek)
- North Planning Area
    - North San José Employment Land Area (Coyote Creek and Guadalupe River)
        - NSJ4 – north of Charcot Avenue and Junction Avenue
        - NSJ5 – west of Interstate 880 between Trimble Road and Charcot Avenue
        - NSJ7 – northeast of Junction Avenue and Brokaw Road
        - NSJ8 – northeast of Zanker Road and Center Road
        - NSJ11 – northeast of River Oaks Parkway and Junction Avenue
        - NSJ23 – southwest of First Street and State Route 237
        - NSJ25 – southwest of Tasman Drive and First Street
        - NSJ26 – south of River Oaks Parkway and First Street
        - NSJ27 – east of Orchard Parkway between Junction Avenue and Component Drive
    - Rincon South Specific Plan Area (portion - Guadalupe River)
- South Planning Area
    - Light Rail Village/Corridor VR10-3 (Canoas Creek)
    - Senter Road Employment Land Areas (Coyote Creek)
- Willow Glen Planning Area
    - Light Rail Village/Corridor (Los Gatos Creek)
        - CR21-1
        - CR21-3
        - CR21-15

Development anywhere in watersheds can affect sedimentation, hydrology, and water quality in fish habitats downstream. In addition, roadway bridges, such as the proposed Senter Road Interchange, can affect riparian and aquatic habitats, and cause water quality impacts.

There are two separate development effects within the UGB that can impact special-status fish: direct habitat effects and indirect effects such as water quality and human presence- or activity-associated effects. Within the UGB, development within planned growth areas, vacant and entitled parcels, and roadways may all affect adjacent habitat; however, the City's existing riparian setback policy will protect most riparian habitat bordering fish habitat. This will not provide protection from most indirect impacts that will be more likely from development in proximity to the watercourses. In the assessment of riparian habitat impacts (see *Impacts to Riparian Habitat* above), looking only at planned growth areas near mapped riparian habitat, it is under Scenario 4, followed by the Preferred Scenario, that the most planned growth areas will experience growth the others do not and likely have more potential for indirect effects on special-status fish. Total development of both jobs and housing will be greatest under the

Preferred Scenario, less under Scenario 2 than Scenario 3, and least under Scenario 1. Based on our assumptions concerning development under the scenarios, Scenario 4, followed by the Preferred Scenario, is likely to have the greatest increase in hardscape throughout the watersheds based on greater job creation than any of the other scenarios, and therefore, the most potential for downstream hydrology, sedimentation, and erosion effects from increased runoff, and higher contamination of runoff from roads with higher levels of vehicular traffic and more parking areas. The higher residential development scenarios, Scenario 3 followed by the Preferred Scenario, are more likely to have associated indirect impacts related to attracting urban-associated predators, increased recreational use, and contamination of aquatic habitats from inappropriate disposal of contaminants and litter.

Habitat for the Pacific lamprey, green sturgeon, Central Valley Fall-Run Chinook salmon, Central California Coast steelhead, and longfin smelt occurs in the Alviso Planning Area in the portion of the Study Area outside the UGB where adjacent land uses are managed saline ponds and the Newby Island landfill. Increased use of the landfill under future urban growth within the UGB could potentially cause degradation of water quality or increased predation on these special-status fish by gulls attracted by the landfill; however, this is currently the subject of a separate environmental review. Habitat for the Pacific lamprey, Chinook salmon, and steelhead occur in the upper reaches of streams in City areas outside the UGB (*e.g.*, Upper Penitencia Creek in Alum Rock Park), where development under allowable land uses could result in some or all of the potential impacts described above. Impacts to habitat of these fish outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities, such as fishing (which is likely proportional to the number of new residents). For the most part, the construction of roadways across aquatic, riparian, or some wetland habitats could adversely impact habitat for special-status fish species. Developments on habitats adjacent to streams that are hydrologically connected to aquatic habitats or developments of bridges, dams, or in-stream structures have greater potential to impact these species under the General Plan. In addition, pressure for residential development outside of the UGB, which may be greatest under Scenario 4, followed by the Preferred Scenario, due to its high job-to–dwelling-unit ratio, and increased recreational activities outside the UGB, which may be greatest under Scenarios 3, followed by Scenario 2, due to their high increases in new dwelling units within the UGB, may result in impacts to habitat of these species outside the UGB. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential for impacts to these fish outside the UGB.

Impacts to Pacific lamprey, green sturgeon, Central Valley Fall-run Chinook salmon, Central California Coast steelhead, and longfin smelt resulting from allowable development under the General Plan are potentially significant because their populations and available habitats are limited locally and regionally, and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the California Tiger Salamander, California Red-legged Frog, and Foothill Yellow-legged Frog

Special-status amphibians that occur in the Study Area are the California tiger salamander, California red-legged frog, and foothill yellow-legged frog. These species are assessed as a group because they are similarly associated with aquatic habitats in the Study Area, and because potential impacts of the General Plan on these species will be similar. Habitat for all three species within the Study Area is also similarly located primarily in the portions of the Study Area outside of the UGB.

Although all of these amphibian species use aquatic habitats at some point in their life cycle, specific characteristics of their preferred habitats are somewhat different. California tiger salamanders breed in temporary or permanent ponds that are surrounded by open upland habitats, preferably grasslands, and take refuge in small mammal burrows during the dry season. California red-legged frogs breed in ponds and streams, and may forage in adjacent riparian, grassland, or wetland habitats particularly in the rainy season. Foothill yellow-legged frogs occur in higher gradient streams with riffles and cobble-sized rocks, and forage in nearby upland or wooded areas. All of these species use aquatic, wetland, riparian, grassland, agricultural, and oak woodland habitats for dispersal between aquatic habitats.

Impacts from allowable development under the General Plan update can affect California tiger salamander, California red-legged frog, and foothill yellow-legged frog habitat (breeding, foraging, or dispersal habitat) and/or individuals (*e.g.*, during construction activities or from increased mortality after construction). Clearing and grading for development may result in the direct loss of habitat or individuals through the filling or hydrologic alteration of ponds, streams and wetlands. Individuals of these species can additionally be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Clearing and grading for development may also result in the loss of upland foraging or dispersal habitat (particularly for red-legged frogs and tiger salamanders) and refugia (particularly for tiger salamanders) in uplands surrounding these waterbodies. The addition of new roads and developments through breeding, foraging, or dispersal habitats may isolate populations from one another, increase mortality of dispersing individuals, and (especially for tiger salamanders and red-legged frogs) cut off populations from suitable breeding or over summering habitats. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, an increase in predation by pets or feral animals, the incidental loss of habitat to planned or ad hoc recreational activities, an increase in mortality on new roads or from increased traffic on existing roads, and a reduction in the quality of breeding, foraging, or dispersal habitat from the introduction of non-native vegetation. Increased night lighting associated with new development may affect the behavior of these species, possibly causing them to avoid well-lighted areas, and could increase predation on these species. Sedimentation or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and habitat quality in aquatic habitats on or adjacent to a development site and in aquatic habitats downstream from development areas. During or after construction, water quality may be degraded by increased flow (with increased erosion), sedimentation, or contamination (*e.g.*, road pollutants in runoff, spills, or inappropriate disposal). Alterations in grazing management or the conversion of grazing habitat to other land uses (*e.g.*, rural residential) may also affect habitat

suitability. Small mammal control, which is often associated with development, may reduce the number of available upland refugia, particularly for California tiger salamanders and potentially for California red-legged frogs.

Due to past development and other impacts, coupled with the unsuitability of the substrate in many valley-floor streams, populations of foothill yellow-legged frogs are not currently known or expected to occur within the UGB, and populations of California tiger salamanders and California red-legged frogs are very limited in number and extent within the UGB. Extant populations of California tiger salamanders are known to occur in the South San José Planning Area in ponds in the Communications Hill Specific Plan Area, in the Coyote Planning Area in ponds south of Bailey Avenue in the North Coyote Valley Employment Land Area, and potentially in the Almaden Planning Area in ponds in southern Almaden Valley and in the Evergreen Planning Area. Populations of California red-legged frogs are not currently known to occur within the UGB, but the species could potentially be present in southern Almaden Valley or on the margins of the UGB in the Evergreen Planning Area.

Under all five scenarios, the impact to California tiger salamander populations within the Communications Hill Specific Plan Area and within the North Coyote Valley Employment Land Area would be similar, as development in these areas is the same under the four original scenarios and similar (although having greater job development and less residential development) under the Preferred Scenario. Thus, development in these areas could potentially result in some or all of the impacts described above where development occurs on or adjacent to the upland or aquatic habitat available to these populations. If the remaining aquatic habitat on Communications Hill is lost or compromised or the remaining upland habitat is further reduced, this population of California tiger salamanders faces extirpation due to lack of sufficient suitable habitat and to its isolation from other populations and habitat areas. The population of California tiger salamanders in the North Coyote Valley Employment Area is limited to the southwestern periphery of the UGB in or near the low foothills due to a long history of extensive agriculture in Coyote Valley. If ponds in this area are used for breeding by California tiger salamanders, that breeding is limited. Therefore, while impacts from increased disturbance are likely to occur in the Coyote Valley Employment Land Area, few California tiger salamanders would be affected, and effects on the regional population of this species would be limited. In addition, some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and some recreational impacts, are less likely or will be less extensive in the Employment Land Area than if Coyote Valley were developed with residential uses.

Also, under all proposed scenarios, impacts to California tiger salamander and California red-legged frog populations in the Almaden and Evergreen Planning Areas will be limited, but may potentially result in some of the impacts described above where development results in increased human activity or disturbance within suitable habitat areas. In the Almaden Planning Area, growth areas and vacant parcels occur within existing developed areas away from California red-legged frog and California tiger salamander habitats; therefore, populations of these species will not be directly affected by these developments. In the Evergreen Planning Area, most of the available habitats have been developed, and California red-legged frogs or California tiger salamanders would occur only in very small numbers on the outer margins of the UGB where small habitats within the UGB are contiguous with expansive habitats outside the UGB that

support breeding populations of these species. The Evergreen Campus Industrial Employment Land Area encompasses a riparian stream corridor and oak woodland habitat, and the potential for California red-legged frogs and California tiger salamanders to occur, while still extremely low, is more likely in these natural areas. As the Evergreen Campus Industrial Area will have greater development under the Preferred Scenario and Scenario 4 (with development of this Industrial Area being equal under these two scenarios), impacts under that scenario may be slightly greater. There is also a very limited potential for California red-legged frogs to be washed down into streams within the UGB from populations in upstream reaches of creeks outside the UGB; however, such individuals would be essentially be removed from any viable population.

Habitat for and multiple populations of California tiger salamanders, California red-legged frogs, and foothill yellow-legged frogs occur in the portions of the Study Area outside the UGB. Impacts to these species outside the UGB could potentially occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Clearing and grading for development under allowable land use designations in these areas could potentially result in some or all of the potential impacts described above, although, the extent of impacts would vary in severity depending on the land use and proximity of habitat. The conversion of aquatic or upland habitats to uses such as roadways, cemeteries, or golf courses would likely result in a complete loss of suitable habitat for these species; in contrast, appropriate levels of grazing of upland habitats and the presence of stock ponds created for livestock would be beneficial to California red-legged frogs and California tiger salamanders. Unless aquatic habitats are directly impacted, allowable land uses that will occur outside the UGB are unlikely to have a substantial effect on dispersal habitat for these species. Because the General Plan update would remove existing allowances for residential development within the Coyote Valley Urban Reserve, the General Plan scenarios could potentially result in lower impacts to California tiger salamander populations at the edges of this portion of Coyote Valley than could occur under existing conditions.

The Preferred Scenario has a relatively high potential to result in impacts to these species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4, with the high job-to-dwelling-unit ratio, may result in more rural residential development pressure outside the UGB. The scenarios focused on high residential development, Scenario 3 followed by Scenario 2, would have the greatest amount of ad hoc recreation and create the greatest pressure for recreational development on areas outside the UGB. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact these special-status amphibians outside the UGB.

Impacts resulting from allowable development under the General Plan on California red-legged frogs, California tiger salamanders, and foothill yellow-legged frogs are potentially significant because their populations and available habitats are limited locally and regionally, and loss of

habitat or individuals may have a substantial effect on local and regional populations of these species.

Impacts to the Western Pond Turtle

Western pond turtles are associated with low-gradient streams and ponds within the Study Area. Suitable habitat for western pond turtles consists of ponds or pools in slow-moving streams with available basking sites, nearby upland areas with clay or silty soils for nesting, and shallow aquatic habitat with emergent vegetation and invertebrate prey for juveniles (Jennings and Hayes 1994).

Impacts from allowable development under the General Plan update can affect aquatic habitat for western pond turtles used for foraging or dispersal, upland habitat used for nesting, and individuals or populations of the species. Suitable habitat for western pond turtles may be directly lost as a result of development through the filling of ponds, the channelization of streams, sedimentation of ponds or pools in streams, the alteration of the hydrology of streams and ponds, or the development or disruption of surrounding riparian or upland habitats; individuals harmed or killed by desiccation or being buried. Populations of western pond turtles may be lost with the loss of significant core aquatic habitat. Riparian and upland areas that provide nesting habitat, dispersal habitat, and refugia for western pond turtles may also be lost during clearing and grading for development. Individuals in refugia or during dispersal and in nests in these upland areas may be lost as development occurs. Loss of important aquatic or upland habitat can reduce the viability of a population to the extent that it is extirpated, and the current status of populations within the more urbanized portions of the Study Area (*e.g.*, the UGB) is already tenuous at best. The addition of new roads and development through breeding, foraging, or dispersal habitats may isolate populations from one another and cut off populations from suitable nesting or perennial aquatic habitats.

Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, an increase in predation by pets or feral animals, the incidental loss of habitat to planned or ad-hoc recreational activities, an increase in mortality of turtles on new roads or from increased traffic, the input of sediment and contaminated runoff into aquatic habitats, and the introduction of non-native vegetation that may reduce the quality of upland nesting, foraging and dispersal habitat, or aquatic foraging and dispersal habitat. Individual western pond turtles can be killed or injured during construction activities as a result of crushing by construction personnel or equipment, dewatering of aquatic habitat, disruption of nests, or separation from perennial aquatic habitat. Sedimentation or hazardous material contamination during or after construction may result in the temporary or permanent degradation of water quality and habitat quality in aquatic habitats on or adjacent to a project site and in aquatic habitats downstream from project areas. Water quality can be degraded by increased turbidity and sedimentation due to erosion, roadway runoff contaminated by vehicular pollutants, hazardous material spills, and inappropriate disposal of hazardous materials.

Due to past development and other impacts, numbers of western pond turtles are limited within the UGB. Records of small numbers of pond turtles occur in the Guadalupe River and Coyote Creek; however, few western pond turtles have been observed in these areas in recent years (S.

Rottenborn, pers. obs.), and these populations may now be breeding in few areas. Western pond turtles may occur at scattered locations in city parks and golf courses within the UGB, however, these populations are small and declining and in many areas may also no longer be breeding. The only known population of western pond turtles within the UGB where evidence of successful breeding (i.e., small turtles) is regularly observed is at Coyote Ranch within the Coyote Valley Urban Reserve. However, development in planned growth areas, vacant lands, and entitled parcels within any Planning Area that occur along the Guadalupe River or its low-gradient tributaries, along Coyote Creek or its low-gradient tributaries, or adjacent to parks, and perhaps golf courses, that support aquatic or upland habitats for western pond turtles has the potential to impact this species. This would include all Planning Areas with the potential exception of the San Felipe Planning Area. Specifically, the following planned growth areas are near the Guadalupe River or Coyote Creek (and their tributaries):

- Alum Rock Planning Area
  - Mabury Employment Land Area (Coyote Creek)
- Alviso Planning Area
  - Alviso Specific Plan Area (Coyote Creek)
- Berryessa Planning Area
  - East Gish Employment Land Area (Coyote Creek)
  - North San José Employment Land Area (Coyote Creek)
    - NSJ13 – east of Interstate 880 between Murphy Avenue and Component Drive
    - NSJ15 – southwest of Murphy and Oakland Road
    - NSJ12 – east of Interstate 880 between Brokaw Road and Murphy Avenue
    - NSJ18 – southeast of Murphy and Oakland Road
- Cambrian Pioneer Planning Area
  - Light Rail Village/Corridor
    - VR17-16 (Guadalupe River)
- Central Planning Area
  - Light Rail Village/Corridor
    - CR28-26 (Coyote Creek)
    - VR9-1 (Los Gatos Creek)
  - Mabury Employment Land Area (Coyote Creek)
  - Specific Plan Areas
    - Tamien Station (Guadalupe River)
    - Midtown (Los Gatos Creek)
  - Senter Road Interchange Project (Coyote Creek)

- Coyote Planning Area
  - North Coyote Valley Employment Land Area (Coyote Creek and Fisher Creek)
- Edenvale Planning Area
  - New Edenvale (Area 1, 3 and 4) Employment Land Area (Coyote Creek)
- North Planning Area
  - North San José Employment Land Area (Coyote Creek and Guadalupe River)
    - NSJ4 – north of Charcot Avenue and Junction Avenue
    - NSJ5
    - NSJ7 – northeast of Junction Avenue and Brokaw Road
    - NSJ8 – northeast of Zanker Road and Center Road
    - NSJ11 – northeast of River Oaks Parkway and Junction Avenue
    - NSJ23 – southwest of First Street and State Route 237
    - NSJ25 – southwest of Tasman Drive and First Street
    - NSJ26 – south of River Oaks Parkway and First Street
    - NSJ27 – east of Orchard Parkway between Junction Avenue and Component Drive
  - Rincon South Specific Plan Area (portion - Guadalupe River)
- South Planning Area
  - Senter Road Employment Land Areas (Coyote Creek)
- Willow Glen Planning Area
  - Light Rail Village/Corridor (Los Gatos Creek)
    - CR21-1
    - CR21-3
    - CR21-15

Within the UGB, the Preferred Scenario has greater allowable development under the General Plan update in almost all of the planned growth areas where western pond turtle habitat exists (listed above) and so potentially a greater overall impact to the species than the other scenarios. Direct impacts of allowable development to western pond turtles, turtle populations and their habitat within the UGB would be greatest under the Preferred Scenario but likely similar among all other proposed scenarios. The effects of development under all of the different scenarios in these locations would vary depending on the habitat being developed, the hydrologic impacts of the development, and the type and location of increased disturbance to pond turtles within the planning area as a result of development. For example, development of residential uses likely would have more potential to impact western pond turtles if immediately adjacent to suitable habitat due to the attraction of urban-associated predators and pet predation than an employment land area. No residential growth will occur in the Coyote Valley Urban Reserve under the

General Plan. However, increased traffic due to commercial development in North Coyote Valley could increase the potential for roadkills of this species. Some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and some recreational impacts are less likely or will be less extensive in Employment Land Areas. Scenario 1 would have the least impact on western pond turtles inside the UGB.

Habitat for and populations of western pond turtles occur in the portion of the Study Area outside the UGB. Impacts to this species outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas could potentially result in some or all of the potential impacts described above, although the extent of impacts would vary in severity depending on the land use and proximity of habitat. The conversion of aquatic or upland habitats available to pond turtles, particularly nesting habitat, to intensive uses such as roadways, cemeteries, or riding stables could result in a loss of important suitable nesting and foraging habitat for this species. Agricultural uses such as grazing are unlikely to significantly affect western pond turtles, but intensive agriculture for row crops could adversely affect the species' habitat. Developments such as the creation of ponds in golf courses may be beneficial to western pond turtles if nesting habitat remains available. Unless aquatic habitats or suitable nesting habitats are directly impacted, allowable land uses that will occur outside the UGB are unlikely to have a substantial effect on dispersal habitat for this species. Based on our assumptions, the Preferred Scenario has a relatively high potential to result in impacts to this species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4 could have greater impacts outside the UGB due to greater pressure for rural residential development, and Scenario 3 followed by Scenario 2 could have greater impacts due to recreational pressure. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to western pond turtles outside the UGB.

Impacts to western pond turtles resulting from allowable development under the General Plan update are potentially significant because their populations and high-quality habitats are limited locally and regionally, and loss of habitat or individuals may therefore have a substantial effect on local and regional populations of the species.

Impacts to the California Horned Lizard

The California horned lizard is associated with a variety of open habitats in the Study Area including chaparral, coastal scrub, and annual grassland, as well as with clearings in riparian woodlands. These habitats are characterized by sandy, loosely textured soils that comprise the lizards' preferred habitat (Jennings and Hayes 1994). Habitat for this species is located only in the portion of the Study Area outside of the UGB, and the species is likely present in the Study Area only in low numbers and limited locations.

Impacts to California horned lizards from allowable development under the General Plan will be limited, but can affect habitat and/or individuals (*e.g.*, during construction activities or from increased mortality after construction) of the species. Clearing and grading for development may result in the direct loss of habitat or individuals through the conversion of habitat to other uses. Individuals of this species can also be killed or injured during construction activities as a result of crushing by construction personnel or equipment. The introduction of non-native Argentine ants, the modification of habitats to favor invasive non-native Argentine ants instead of native harvester ants, and to the introduction of non-native or invasive plants that will degrade habitat quality can impact the species after construction. The addition of new roads and developments through breeding, foraging, or dispersal habitat may isolate populations from one another, increase mortality of dispersing individuals, and cut off populations from suitable habitat. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, predation by pets or feral animals, the incidental loss of habitat to planned or ad hoc recreational activities, an increase in mortality on new roads or from increased traffic on existing roads, the introduction or increase in invasive Argentine ants, or the introduction of non-native vegetation that may reduce the quality of suitable habitat near development.

The California horned lizard is not currently known or expected to occur within the UGB because the specialized habitat for this species does not occur within the UGB. Populations of California horned lizard that might occur within the Study Area outside the UGB are limited in number and extent, and it is likely that few individuals are present within the Study Area. Nevertheless, impacts to this species could occur in areas outside the UGB as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents), if the species is present. Clearing and grading for development under allowable land use designations in areas outside the UGB would potentially result in some or all of the potential impacts described above, although the extent of these impacts are likely to be limited. The conversion of habitat to intensive uses such as roadways, cemeteries, or golf courses would likely result in a loss of suitable habitat for this species. However, the likelihood of these impacts occurring in California horned lizard habitat under the General Plan is extremely low due to the location and limited extent of potential habitat. The potential for roadkills due to increased traffic, particularly on McKean Road (near which the species has been recently recorded), will increase as a result of development under any of the Scenarios, but may be highest under Scenario 4 due to the anticipated increase in commute traffic into the UGB (including North Coyote Valley). Pressure for rural residential development, highest under Scenario 4 followed by the Preferred Scenario, and for recreation, greatest under Scenario 3 followed by Scenario 2, may result in impacts to horned lizards and their habitat. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact this species outside the UGB.

Impacts on California horned lizards resulting from allowable development under the General Plan update are potentially significant because their populations and available habitats are

limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to Special-status, Nonbreeding Birds

Seven bird species that are state and/or federally listed occur in the Study Area as nonbreeding migrants, transients, or foragers but are not known or expected to breed or occur in large numbers in the Study Area; these include the California condor, Swainson's hawk, California black rail, California least tern, willow flycatcher, least Bell's vireo, and bank swallow.

All of these avian species occur in the Study Area as transients, foragers, or migrants, primarily during migration or in the winter months. Many of these species are associated with wetland or aquatic habitats that occur in the Study Area primarily outside of the UGB. California least terns use managed pond habitats that only occur in the Alviso Planning area, while California black rails occur in the Study Area only in salt marshes in the Alviso area. Swainson's hawks occur as infrequent transients during migration in agricultural, grassland and oak woodland habitats most prevalent in the Alviso Planning Area, the Coyote Planning Area, and potentially in the foothills on the periphery of the Study Area. Least Bell's vireos occur in wide riparian corridors (Kus 2002) with dense shrub growth (Brown 1993) that occur in the southern portions of the Study Area in the Coyote Planning Area, but have not expanded their breeding range into this area and so occur there only extremely rarely. Bank swallows can forage aerially throughout the Study Area, most likely in areas with greater numbers of aerial insects such as over ponds and streams, but occur very rarely and only as transients. California condors have not been recorded in the Study Area since their reintroduction to San Benito and Monterey Counties; if they occur in the Study Area at all, now or in the future, they would likely occur as foragers in extensive grasslands in the southern portion of the Study Area outside the UGB. Willow flycatchers occur during migration, primarily in lowland riparian habitats, both within and outside the UGB; very few of these individuals, if any, are likely of the state-listed populations breeding within California.

Development under the General Plan update has some potential to affect foraging habitats and/or individuals of these species. The Study Area does not provide important foraging habitat used regularly or by large numbers of individuals of any of these species, so only a very small amount of potential habitat for any of these species will be lost due to development under the General Plan update, and only very small numbers of individuals of these species may be disturbed as a result of development. Foraging habitat for these species does not occur within any significant portion of the UGB, and thus no planned growth areas under the General Plan overlap with significant areas of foraging habitat. Small areas of marsh, grassland, or riparian habitats that may be impacted by the General Plan are regionally available so that impacts to these foraging habitats would have no substantial impacts to regional populations of these species.

In addition, individuals of these species are unlikely to be affected by allowable development within or outside of the UGB as all occur only very rarely, are mobile and can avoid impacts, or are unlikely to use habitats in proximity to development, and only a small amount of the available habitat will be impacted.

Impacts to these species and their habitats resulting from allowable development under the General Plan update would be very limited, and for some of these species may not occur at all. As a result, development activities would not result in substantial reductions in local or regional populations, and will only affect a very low proportion of regionally available habitat. Such impacts are therefore less than significant.

Impacts to the Northern Harrier, White-tailed Kite, and Loggerhead Shrike

White-tailed kites and loggerhead shrikes nest in open grassland, ruderal, or agricultural habitats that contain suitable brush, shrubs, or trees for nesting. Northern harriers nest on the ground in marshes, grasslands, and some agricultural habitats. These species are assessed together because they breed and forage in similar habitats in the Study Area and because potential impacts of the General Plan on these species will be similar. Northern harriers, white-tailed kites and loggerhead shrikes prefer habitat areas in the vicinity of or contiguous with large expanses of open grasslands, agricultural areas, and, especially in the case of the northern harrier, marshes. Northern harriers and white-tailed kites require more extensive habitat for foraging, while loggerhead shrikes may be present on relatively smaller patches of open grassland. Habitat for all three species within the Study Area is similarly located in grassland, agricultural areas, and extensive marshes, which occur both inside and outside the UGB.

Impacts from allowable development under the General Plan can affect northern harriers, white-tailed kite and loggerhead shrike habitat (breeding or foraging habitat) and/or individuals, most likely nestlings or fledglings. Clearing and grading for development may result in the direct loss of habitat through the disturbance of grassland habitats and through the conversion of these habitats to other uses. The addition of new roads or development areas may isolate or fragment remaining open/grassy habitats and reduce the number of individuals or breeding pairs these patches can support, especially for white-tailed kites and northern harriers that require larger foraging areas. Development may result in the loss of upland foraging habitats and the habitats between foraging and breeding habitats that serve as buffers between breeding areas and nearby human disturbance. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in direct disturbance to nesting pairs, an increase in native and non-native predators, predation by pets or feral animals, and the incidental loss of habitat to planned or ad-hoc recreational activities and a reduction in the quality of breeding or foraging habitat from the introduction of non-native vegetation.

Individuals of these species (especially young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Nesting of all three of these species can be disrupted to the extent that nests fail due to disturbance by people that is too frequent or too severe (*e.g.*, by recreational uses). Alterations in grazing, particularly overgrazing, or the conversion of grazing habitat to other uses may also affect habitat suitability. Small mammal control, which is often associated with development, may reduce the suitability of habitat by reducing available prey for these species. Pesticides and insecticides used in agricultural or landscaping areas can deplete prey, especially for loggerhead shrikes that regularly feed on large insects.

Due to past development and other impacts, populations of northern harriers, white-tailed kites and loggerhead shrikes within the UGB are limited in number and extent. Habitat for loggerhead

shrikes occurs in large, grassy vacant lots with trees and shrubs that shrikes can use for nesting, near larger open grassland habitats. Although open lots are distributed throughout the area within the UGB, mapped as developed, grain and row-crop, parkland, orchard, or golf courses / urban parks, only the larger of these within the UGB are suitable for loggerhead shrikes. White-tailed kites occur in similar habitats; however, this species requires habitats that are more extensive in size. Areas within the UGB large enough to support breeding white-tailed kites (as well as loggerhead shrikes) are located in the Communications Hill Specific Plan Area, the Coyote Planning Area, the Evergreen Planning Area, the Almaden Planning Area, and in the Alviso Specific Plan Area. Breeding pairs of all three species are most likely to occur on the margins of the area within the UGB where grassland areas within the UGB are adjacent to or nearby extensive open areas outside the UGB. Northern harriers nest in the Study Area primarily in marsh habitats outside of the UGB in the Alviso Planning Area, where they are unlikely to be impacted by allowable activities under the General Plan except, perhaps, in the Alviso Specific Plan Area. However, northern harriers forage in more extensive grassland and agricultural habitats throughout the Study Area.

Where development occurs on or adjacent to the open habitats available to northern harrier, white-tailed kite, and loggerhead shrike populations within the UGB, it would potentially result in some or all of the impacts described above under all proposed scenarios. Development in growth areas, most likely in infill or entitled parcels, within any Planning Area that occurs within or adjacent to large, open, grassy habitats that can potentially support loggerhead shrikes and possibly white-tailed kites, has the potential to impact these species. Impacts to all three species are possible in the Alviso Specific Plan Area, in the North Coyote Valley Employment Land Area, in the New Edenvale Employment Land Area, in the Evergreen Campus Industrial Employment Land Area, in the North San José Employment Land Area, and in the Communications Hill Specific Plan Area. Because so many of these are Employment Land Areas, the Preferred Scenario followed by Scenario 4 is likely to have the greatest impact; development is the same within these planned growth areas for the remainder of the Scenarios. Some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and some recreational impacts are less likely or will be less extensive in or near Employment Land Areas. Therefore, indirect impacts within the UGB, especially recreational impacts to grasslands and agricultural areas where these species occur, are expected to be greatest under Scenarios 2 and 3, which will lead to the greatest increase in dwelling units within the UGB. Scenario 1 will lead to fewer agricultural and grassland impacts than expected in Scenarios 2 and 3. Impacts associated with development of vacant parcels, entitled lands, and roadway developments are expected to be the same across all scenarios.

Outside the UGB but within the city limits, impacts to these species could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Based on our assumptions, the Preferred Scenario has a relatively high potential to result in impacts to these species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4 could have greater impacts outside the UGB due to greater pressure for rural residential development, and Scenario 3 followed by Scenario 2 could have greater impacts due

to recreational pressure. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact on these species outside the UGB.

Impacts to populations of northern harriers, white-tailed kites, and loggerhead shrikes from activities under the General Plan update are potentially significant because their populations and available habitats are limited locally, and loss of substantial amounts of habitat or a substantial number of individuals may have a substantial effect on local populations of the species.

Impacts to the Golden Eagle and Bald Eagle

The golden eagle breeds in a range of open habitats in the Study Area, including scrub, woodlands, and grasslands. Golden eagles are known to breed within the Study Area only on an electrical tower below Calero Reservoir. However, additional pairs likely nest in the vicinity of the Study Area near the Santa Teresa Hills, around the north end of Anderson Reservoir, and possibly on Coyote Ridge. These individuals, as well as other nonbreeding golden eagles, forage regularly but in low numbers in large open habitat areas within the Study Area but generally on the periphery where larger areas of natural habitat occur and are adjacent to much larger expanses of open habitat. Habitat for golden eagles is limited to the large areas of open grassland or woodland habitats in the Berryessa (along the eastern perimeter), Evergreen (along the eastern perimeter), Coyote, and Alviso Planning Areas. The North Coyote Valley Employment Land Area is known to be used by foraging golden eagles.

Bald eagles are not known to nest in the Study Area, and it is unlikely that the species would nest within the UGB within the lifespan of the General Plan update. However, the species is known to nest near Calaveras Reservoir and Coyote Reservoir, not far from the Study Area. Given the recent increases in this species' populations in California, the recent discovery (in April 2010) of nesting at Coyote Reservoir, and the species' presence in winter at Anderson and Calero Reservoirs within the Study Area, there is a high probability that one or more pairs will nest in the Study area, likely near Calero or Anderson Reservoir, within the lifespan of the proposed General Plan update.

Impacts from allowable development under the General Plan update are not expected to result in the loss of nesting sites for either of these two eagle species. However, construction or other activities resulting in a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of nests, and possibly the loss of eggs or young as a result. Disturbance of nesting by recreational use outside the UGB is the most likely impact to golden and bald eagles.

Development can also affect eagle foraging habitat. Clearing and grading for development may result in the direct loss of eagle habitat through the conversion of agricultural, grassland, and woodland areas to other uses, and the disturbance of a larger area of habitat by those uses, especially if this occurs within large, natural habitat areas outside the UGB. The addition of new roads and other development in foraging habitat will fragment available habitats and reduce the capacity for these areas to support eagles, or to provide foraging habitat for eagle pairs breeding

within or outside the Study Area. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an incidental loss of habitat to and disturbance of nesting by planned or ad hoc recreational activities, and a reduction in the quality of breeding, foraging, or upland habitat from the introduction of non-native vegetation. Alterations in grazing management or the conversion of grazed upland habitats to other land uses, even more intensive agricultural uses, may also affect habitat suitability. Small mammal control, which is often associated with development and agricultural uses, also reduces available prey for eagles. Because bald eagles in the Study Area likely forage primarily on fish or waterfowl, they are more closely associated with large reservoirs, which are unlikely to be modified as a result of General Plan update activities. As a result, General Plan update-related activities have a greater potential for impacting golden eagle foraging habitat than bald eagle foraging habitat. Nevertheless, bald eagles do occasionally forage on small mammals within grasslands and agricultural areas, as golden eagles do.

Under all potential scenarios, some or all of the impacts described above could occur where development occurs on or adjacent to the habitats available to these species. Development in growth areas that contain suitable habitats that are adjacent to or contiguous with large areas of these habitats outside the UGB have the potential to impact foraging habitat of this species; these occur only in the Evergreen Planning Area, the Coyote Planning Area and the Alviso Planning Area. Impacts to eagle foraging habitat (primarily of the golden eagle) within the UGB are possible in the Alviso Specific Plan Area, in the North Coyote Valley Employment Land Area, in the Evergreen Specific Plan Area, and in the Evergreen Campus Industrial Employment Land Area. There would be greater development in the Alviso Specific Plan Area under the Preferred Scenario than under the other scenarios, and somewhat greater development in the Evergreen Campus Industrial Employment Land Area under the Preferred Scenario and Scenario 4. Thus, impacts to potential foraging habitat for golden eagles within the UGB would be higher under the Preferred Scenario, followed by Scenario 4, than under the other scenarios. Within the UGB, bald eagles forage in small numbers, but somewhat regularly, only in the North Coyote Valley Employment Land Area, where impacts will be similar among all scenarios.

The most extensive habitat for eagles occurs in the portion of the Study Area outside the UGB. There, impacts to eagles and their habitat could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above. The conversion of suitable habitats to almost any use would likely result in loss of suitability for this species in habitat in the vicinity of such development, and could result in loss of nesting territories (although appropriate levels of grazing may be beneficial to eagles). The Preferred Scenario could have a relatively high potential to impact these species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Conversion of habitat to rural residential as a result of development pressures on areas outside of the UGB will likely be greatest under Scenario 4, and would impact foraging habitat for golden eagles. The greatest potential for impact to both species of eagles will be disturbance within nesting territories by increases in recreational use of habitats in the areas outside of the UGB. This

impact is expected to be greatest under Scenario 3, and only slightly less under Scenario 2. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to eagles outside the UGB.

Impacts to bald and golden eagle habitat resulting from allowable development under the General Plan update would be less than significant, as development under the General Plan will only impact relatively small areas of foraging habitat for these species and is unlikely to affect regional populations. Increases in recreational land uses (public and private) and numbers of people recreating in areas outside the UGB, however, would have a potentially significant impact because of the potential for such activities to result in the abandonment of breeding territories or active nests.

Impacts to the American Peregrine Falcon

In natural habitats, American peregrine falcons nest on ledges and in caves on steep cliffs, but there are many human-made structures such as buildings, bridges, and electrical transmission towers throughout the Study Area that would provide potential nesting sites. American peregrine falcons are known to breed and forage in the Study Area, although the only known recent breeding locations are on San José City Hall and on an electrical transmission tower in a saline managed pond near Alviso.

Some pairs of this species are highly adapted to the presence of human development, and as a result, this species may nest on and forage from buildings in urban areas and utilize urban pigeon populations for prey. Urban activities in such areas are unlikely to affect peregrine falcons. No changes in habitat or the degree of human presence are proposed by the General Plan update in the two locations where peregrine falcons are known to be nesting in the Study Area. Although no suitable cliff habitats are present within the Study Area, other buildings and transmission towers in San José provide potentially suitable nest sites. Marsh and upland habitats in the Alviso Planning Area, Coyote Valley, around Calero and Anderson Reservoirs, and possibly in other locations provide foraging habitat for peregrine falcons. Development in such areas could potentially impact foraging habitat and populations of prey species. However, based on the locations of the two known nest sites and the low extent of potential impacts on prey relative to the abundance of prey in Alviso Baylands and (in the form of pigeons) in downtown San Jose, General Plan update-related activities are not expected to have a substantial effect on this species' prey availability. The impacts of development under the different scenarios in this Specific Plan Area would be limited and are not expected to affect foraging birds or new nesting birds in marsh and managed saline pond habitat to the north.

Increases in recreational use of marsh and managed saline habitat, whether ad hoc or planned, could disturb nesting birds; however, because peregrine falcons are aerial foragers and adapted to some extent to human activity, the potential for disturbance to the point of abandonment of an active nest is low.

Given the species' recent population increases in California, there is a high probability that the abundance and distribution of nesting peregrine falcons will increase during the lifespan of the General Plan update. Because such nesting would most likely occur on buildings or in old raptor or corvid nests on electrical towers, nest sites that are unlikely to be physically disturbed by new, General Plan-related activities, physical loss of nesting sites is not expected to occur. However, it is possible that future construction or recreation-related activities near active nests may result in abandonment of nests, possibly resulting in the loss of eggs or young.

Although American peregrine falcon populations are limited locally and regionally, loss of habitat resulting from allowable development under the General Plan update is unlikely to have a substantial effect on local and regional populations of the species given the low number of breeding birds relative to the extent of suitable foraging habitat and abundance of prey. It is also unlikely that individuals at existing nest sites would be affected by allowable development under the General Plan update. However, peregrines are likely to begin nesting in new areas within the lifespan of the General Plan update, and it is possible that future nests could be disturbed by construction or recreation-related activities. The potential for such impacts to occur probably does not differ considerably among potential General Plan update scenarios. The abandonment of an active nest resulting from such disturbance would be a significant impact given the limited size of the local and regional breeding population of this species.

Impacts to the California Clapper Rail, Alameda Song Sparrow, and Bryant's Savannah Sparrow

The California clapper rail, Alameda song sparrow, and Bryant's savannah sparrow are similarly associated with salt marsh habitats in the Study Area, and are assessed as a group because potential impacts of the General Plan on the species will be similar. Habitat for all three species within the Study Area is similarly located within the Alviso Planning Area, primarily outside of the UGB.

The California clapper rail and Alameda song sparrow are associated primarily with tidal salt marsh and brackish marsh habitats, while Bryant's savannah sparrow occurs both there and in diked and muted tidal salt marsh habitats, and (in very limited numbers) in inland grasslands. Clearing and grading for development may result in the loss of habitats that serve as foraging habitat for Bryant's savannah sparrows, as upland refugia for clapper rails and Alameda song sparrows, or as buffer areas between breeding or foraging habitat and human disturbance for all three species in transition habitats near salt marsh. Development could also result in the direct loss of habitats that are used as breeding sites by Bryant's savannah sparrow through the conversion, filling, or hydrologic alteration of marshes and wetland habitats, and the addition of new roads or developments through suitable habitat areas that may fragment remaining patches of habitat. Individuals of this species (especially young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, predation by pets or feral animals, the incidental loss of habitat to planned or ad hoc recreational activities, and a reduction in the quality of breeding, foraging, or upland refuge habitat from the introduction of non-native vegetation if development occurs near suitable habitats for these three species. Increased night lighting and noise associated with new development may affect the behavior of these species,

possibly causing them to avoid well-lighted areas, and could increase predation on these species. Increased human presence in habitats near or in salt marsh habitats, such as recreational use, may cause incidental loss of habitat or disturbance of individuals foraging or nesting. Disturbance during nesting may result in mortality for young birds still in the nest. Sedimentation or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and, hence, habitat quality in marsh or aquatic habitats downstream from development areas and could impact habitat used by these species.

The California clapper rail is not currently known or expected to breed within the UGB; occasional nonbreeding clapper rails may wander upstream along tidal sloughs from their typical salt marsh habitats into tidal brackish/freshwater marsh habitats within the Alviso Specific Plan Area, *e.g.*, near Newby Island Landfill or the Alviso Marina. All song sparrows breeding in tidal marsh habitat in the Alviso Planning Area are of the Alameda song sparrow (*pusillula*) subspecies. It is possible that Alameda song sparrows also occur within Alviso Specific Plan Area in tidal brackish marshes; however, song sparrows in these areas may also be of the *gouldii* subspecies, or intergrades. Bryant's savannah sparrows breed in the UGB primarily in limited, short, pickleweed-dominated portions of diked/muted tidal salt marsh habitats, and adjacent ruderal or grassland habitats in the Alviso Specific Plan Area. Therefore, the only area within the UGB where these three species occur or may occur is the Alviso Specific Plan Area. Bryant's savannah sparrows also breed in grassy hills in the vicinity of the Santa Teresa Hills and the west side of Coyote Valley, though numbers in these areas are low (Rottenborn 2007c) and impacts to them are unlikely.

Under all potential scenarios, development within the Alviso Specific Plan Area could potentially result in some or all of the impacts described above where development occurs adjacent to the breeding, foraging, or wintering habitats available to these populations. However, only the Bryant's savannah sparrow may breed or regularly occur within grassland and muted/diked salt marsh within the Alviso Specific Plan Area, so within the UGB, only this species might be impacted by loss of habitat and/or fragmentation of habitat and/or a reduction in the quality habitat from the introduction of non-native vegetation. Development within the Alviso Specific Plan Area has the potential to affect all three species indirectly by removing habitat areas that serve as buffer areas between breeding or foraging habitat and human disturbance. Increased human activity has the potential to result in increased disturbance to these species, most importantly to nesting which can lead to loss of reproduction and mortality of young. Allowable employment development in the vicinity of suitable habitat has the potential to increase native and non-native urban-associated predators, predation by pets or feral animals, and incidental loss of habitat to planned or ad hoc recreational activities.

Most habitat for and populations of California clapper rails, Alameda song sparrows, and Bryant's savannah sparrows occur in the portion of the Study Area outside the UGB, the majority being in the Alviso Planning Area. In this planning area, development of marsh or muted tidal/diked marsh habitat or habitat adjacent to these habitats will not occur under the General Plan update, so there will be no direct loss of habitat. Indirect impacts due to increased human concentration and activity have the potential to result in increased disturbance to these three species in areas outside the UGB within the Alviso Planning Area. Development under allowable land use designations could result in potential impacts to Bryant's savannah sparrows

nesting on hills adjacent to Coyote Valley. However, the extent of impacts is expected to be very limited based on the limited numbers of savannah sparrows breeding in this area and thus would not differ appreciably among scenarios.

Development within the Alviso Planning Area would be greater under the Preferred Scenario than under the others. Because impacts to these species would result primarily from recreational disturbance, the Preferred Scenario (with the greatest amount of proximal development), followed by Scenario 3 then 2 (which would result in the greatest increase in the resident population of the City), have the greatest potential to impact these species.

Impacts to California clapper rails, Alameda song sparrows, and Bryant's savannah sparrows from activities under the General Plan would not result in substantial reductions in regional populations. However, indirect impacts on these species resulting from allowable development under the General Plan, especially on California clapper rails, are potentially significant because their populations and available habitats are limited locally and regionally; loss of habitat, even incidental loss, or of individuals, particularly during nesting, may have a substantial effect on local and regional populations of the species. Habitat area for these three species is contained primarily within the Don Edwards National Wildlife Refuge and management of access and recreational use of these areas is within the jurisdiction of the USFWS.

Impacts to the Western Snowy Plover and Black Skimmer

Two special-status bird species that occur in the Study Area, the western snowy plover and black skimmer, are assessed together because they are similarly associated with saline managed pond habitats, habitat for both species within the Study Area is similarly located outside of the UGB and only in the Alviso Planning Area, and because potential impacts of allowable development under the General Plan update on these species will be similar and very limited.

Impacts from allowable development under the General Plan will not directly affect western snowy plover and black skimmer habitat, virtually all of which is located within the Don Edwards National Wildlife Refuge. However, development may result in the incidental loss (*e.g.*, due to presence of human activity) of marsh or upland habitats surrounding suitable habitat areas that may serve as a buffer between roosting or foraging habitats and human disturbances. It is also possible that development under the General Plan in the vicinity of suitable habitat could result in a loss of individuals due to increased predation by urban adapted native and non-native predators, pets or feral animals and due to increases in human activity that may result in disturbance of foraging or nesting and the incidental loss of habitat to planned or ad hoc recreational activities.

The western snowy plover and black skimmer are not currently known or expected to breed within the UGB. Nonbreeding snowy plovers may occasionally forage infrequently and in low numbers in the Alviso Specific Plan Area (*e.g.*, possibly in WPCP settling ponds or at the Reach 1A Waterbird Pond). Black skimmers are not expected to occur within the UGB. Therefore, the only potential impacts from General Plan update activities within the UGB would be the disturbance (by WPCP operational activities) of individual plovers that might occasionally forage in the WPCP.

Habitat for and individuals of the western snowy plover and black skimmer occur in the portion of the Study Area outside the UGB, in saline managed ponds in the Alviso area. No development under allowable land use designations under the General Plan will occur in these areas. Development within the UGB in the Alviso Specific Plan Area, however, may impact habitat (suitable or buffering habitats) and individuals of these two species indirectly due to the incidental loss of habitat and disturbance related to presence of human activity such as recreational use of levees within managed pond habitat, or attraction of predators and feral animals. Development within the Alviso Planning Area is greater under the Preferred Scenario than under the other scenarios. Because impacts to these species will result primarily from recreational disturbance, the Preferred Scenario (with the greatest amount of proximal development), followed by Scenario 3 then 2 (which would result in the greatest increase in the resident population of the City), have the greatest potential to impact these species.

Because planned growth under the General Plan will occur along only the southern periphery of available habitat for these species, and because occurrences of these species within the UGB are expected to be infrequent due to a long history of disturbance in the Alviso area, direct impacts to western snowy plovers and black skimmers as a result of development under the General Plan update are expected to be minimal and would not result in substantial reductions in regional or local populations. However, indirect impacts resulting from allowable development under the General Plan in the vicinity of habitats used by western snowy plovers and black skimmers are potentially significant, as their populations and available habitats are limited locally and regionally, and loss of habitat or individuals may have a substantial effect on local and regional populations of these species.

Impacts to the Burrowing Owl

Burrowing owls occur in annual and perennial grassland habitats, typically with sparse or nonexistent tree or shrub canopies. Burrowing owls occur year-round in the Santa Clara Valley (Trulio 2007) and are commonly present in open, agricultural, or grassland areas with active squirrel burrows. Burrowing owls exhibit strong site fidelity and may return to a nesting site and attempt to nest even after a former breeding site has been developed.

Impacts from allowable development under the General Plan can affect burrowing owl habitat (nesting, foraging, or wintering habitat) and/or individuals (*e.g.*, during construction activities or from increased mortality after construction). Burrowing owls can adapt to the presence of humans and are known to nest and forage in open grassland areas adjacent to human developments. However, clearing and grading for development can result in the direct loss of habitat or individuals through the disturbance of grassland areas that support ground squirrel burrows and the conversion of these habitats to other uses; this is true even for grassy infill lots where the species can still occur after surrounded by development. Individual burrowing owls (especially young or adults in burrows) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment because they nest underground. Development can also result in the loss of suitable upland foraging habitats adjacent to breeding habitat to the extent that the result is nest failure. The addition of new roads or developments through breeding, foraging, or wintering habitats may fragment remaining patches of habitat and reduce the capacity for individual patches of habitat to support burrowing owls to the extent that mortality of young in nests occurs. Increases in human concentration and activity in the vicinity

of suitable habitat may result in an increase in native and non-native urban-associated predators, increased predation by pets or feral animals (especially cats), the incidental loss of habitat to planned or ad hoc recreational activities, repeated disturbance of nesting birds, mortality on new roads or higher mortality from increased traffic on existing roads, and a reduction in the quality of breeding, foraging, or wintering habitat from reduced grazing or mowing or the introduction of non-native vegetation. Increased night lighting associated with new development may affect the behavior of this species, possibly causing owls to avoid well-lighted areas, and could increase predation on burrowing owls. Conversion of grassland/ruderal or agricultural habitat to other land uses can also affect habitat suitability, even if changed to different agricultural uses. Small mammal control, which is often associated with development, may reduce the number of available burrows available to burrowing owls as well as numbers of available prey.

Due to past development and other impacts, populations of burrowing owls within the UGB are limited in number and extent. Particular concentrations of burrowing owls occur (or are known to have occurred in the relatively recent past) in grassland habitats of variable size in the following planning areas:

- Alviso Planning Area
  - Alviso Specific Plan Area
    - especially WPCP and proximity
- North Planning Area
  - North San José Employment Land Area
    - SCVTA's Cerone Operating Division
    - San José International Airport and proximity
- Alum Rock Planning Area
  - Reid-Hillview Airport and proximity
- Coyote Planning Area
  - North Coyote Valley Employment Land Area.

Individual pairs of owls may nest or winter in other areas throughout San José in relatively small patches of open ruderal habitat and grassland with ground squirrel burrows. However, this species is increasingly disappearing from such "infill" locations within the UGB.

Under all potential scenarios, the impact to burrowing owl populations within the UGB would potentially result in some or all of the impacts described above where development occurs on or adjacent to the grassland or ruderal habitats or grassy/ruderal infill parcels within developed habitat available to this species. Development in growth areas within any Planning Area that occurs within or adjacent to open, grassy habitats or infill lots that can potentially support burrowing owls has the potential to impact this species. Impacts could particularly occur in the North San José Employment Land Area (especially at or near the SCVTA's Cerone Operating Division), the Alviso Specific Plan Area (especially at or near the WPCP), in the Alum Rock Planning Area (especially near Lake Cunningham and the Reid-Hillview Airport such as in C42,

V52, and nearby vacant lots and undeveloped parcels) and the North Coyote Valley Employment Land Area. Impacts to potential burrowing owl habitat under the scenarios will be similar except in C42, where development and associated footprint increases under each successive scenario, and in the Alviso Specific Plan Area, where the Preferred Scenario would result in a greater impact to potential owl habitat than the other scenarios. The impacts of development under the different scenarios in these locations would vary depending on the habitat being developed and the type and location of increased disturbance that occurs as a result of development.

Outside the UGB, burrowing owls are still occasionally recorded in the grasslands surrounding the Coyote Valley and in grasslands at higher elevations, such as on Coyote Ridge, but they seem to occur in such areas primarily during the nonbreeding season. Impacts to these species could occur outside the UGB as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above to nonbreeding owls, although, the extent of impacts would vary in severity depending on the land use. The conversion of upland foraging habitat to intensive uses such as roadways, RV parks, or equestrian centers would result in a complete loss of suitable habitat for this species; whereas, at the other extreme, appropriate levels of grazing of upland habitats could be beneficial to burrowing owls. Only limited numbers of burrowing owls would be affected in habitats outside the UGB, and effects on regional population from these impacts would be limited. As with most impacts outside the UGB, the Preferred Scenario has a relatively high potential to result in impacts due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4 could have greater impacts outside the UGB due to greater pressure for rural residential development, and Scenario 3 followed by Scenario 2 could have greater impacts due to recreational pressure. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact on burrowing owls outside the UGB.i

As the remaining grassland habitat in San José is developed, populations of burrowing owls in San José face extirpation due to lack of sufficient suitable nesting and foraging habitat and isolation from other populations and habitat areas. Therefore, impacts from increased disturbance and development are likely to occur in these growth areas, and burrowing owl populations in these areas may be significantly affected. Impacts to individual burrowing owls and their habitats resulting from allowable development under the General Plan could result in a significant impact to regional burrowing owl populations because this species has experienced substantial regional losses in habitat and populations.

Impacts to the Vaux's Swift

The Vaux's swift is the only special-status bird species that breeds exclusively in residential areas in the Study Area. Vaux's swifts nest in small numbers in coniferous forest habitats in the Santa Cruz Mountains west of the Study Area; however, within the Study Area, Vaux's swifts are

known to nest only in chimneys in residential areas in the western part of the Study Area in the West Valley Planning Area.

There is a low potential for nesting sites of Vaux's swifts to be directly lost as a result of development through the removal of homes with chimneys in western San José. However, increases in human concentration and activity associated with development in the vicinity of Vaux's swift breeding habitat may result in an increase in native and non-native predators and predation from pet or feral animals, particularly cats.

Populations of Vaux's swifts within the UGB are very limited in number and extent. Vaux's swifts breed in residential chimneys in the foothills of the Santa Cruz Mountains, and a pair was confirmed breeding in a chimney near the southwestern edge of the Study Area (Rottenborn 2007a). Confirmed breeding in chimneys and other locations in the Los Gatos/ Campbell/ Cupertino areas, outside the Study Area, suggests that Vaux's swifts likely breed in small numbers in residential areas in the western part of the Study Area. Vaux's swifts may occur in the West Valley Planning Area where the General Plan provides for extensive redevelopment with two Transit-Oriented Villages and Corridors, five Commercial Center Villages and Corridors and two Neighborhood Villages.

Under all proposed scenarios, the potential for impacts to Vaux's swifts within the UGB will be limited due to the limited occurrence of the species and low probability of removal of single-family residences in which this species predominantly breeds within the UGB. Vaux's swifts could potentially nest in chimneys in the portion of the Study Area outside the UGB as well, though their abundance is very limited. Vaux's swifts forage aerially on insects over a variety of habitats. As a result, it is unlikely that any General Plan update-related activities will result in a substantial impact on foraging habitat or prey.

Impacts resulting from allowable development under the General Plan update on Vaux's swift's habitats do not rise to a level of significance. Vaux's swifts nest only in very low numbers in the Study Area. Furthermore, demolition of houses with occupied chimneys would be the activity most likely to impact the species, yet such demolition is not expected to occur (at least, not on a large scale) as a result of General Plan update-related activities. Therefore, there is a very low probability of direct loss of Vaux's swifts, and the number of Vaux's swifts that could potentially be lost would represent a very low proportion of the regional population. Impacts to this species would be less than significant.

Impacts to the Olive-sided Flycatcher

The olive-sided flycatcher does not breed on the Santa Clara Valley floor but it is known to nest along Upper Penitencia Creek in Alum Rock Park, and occasionally around Calero Reservoir, just within the Study Area. Both of these areas are in the portion of the Study Area outside of the UGB where the coniferous forest habitats with open canopies and forest margins they prefer occur.

Allowable development under the General Plan update can affect olive-sided flycatcher habitat outside the UGB and may affect individuals, but most likely only during nesting. Suitable habitat for olive-sided flycatchers may be directly lost as a result of the removal of trees and

through the conversion of breeding or foraging habitat to other uses. Development may also result in the loss of other upland or woodland habitats surrounding these areas, which may serve as foraging habitat or as buffer habitat between breeding areas and adjacent human disturbance. The addition of new roads and developments may fragment olive-sided flycatcher breeding and foraging habitats, and reduce the capacity for these habitats to support breeding pairs. Individual olive-sided flycatchers (especially eggs or young in nests) can be killed or injured during tree removal as a result of crushing. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, increased predation by pets or feral animals, the incidental loss of habitat to planned or ad hoc recreational activities, and a reduction in the quality of breeding, foraging, or upland habitat from tree removal.

Olive-sided flycatchers do not breed within the UGB; they occur within the UGB only as migrants and nonbreeding foragers. Therefore, activities under the General Plan within the UGB will have only limited, indirect effects on nonbreeding olive-sided flycatchers.

Habitat for and populations of olive-sided flycatchers that occur in the portion of the Study Area outside the UGB can be affected both directly and indirectly. Impacts to this species outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above. Tree harvesting in coniferous habitat, for example, would result in at least a temporal if not permanent loss of habitat and roadways can cause permanent fragmentation of suitable habitat. Activities that may occur in Alum Rock Park such as major renovation of existing facilities may also remove suitable habitat. Repeated disturbance of nesting by people and increased presence of urban associated predators and pets or feral animals would also impact olive-sided flycatchers. The Preferred Scenario could potentially impact habitat for this species due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). Scenario 4 could have greater impacts outside the UGB due to greater pressure for rural residential development, and Scenario 3 followed by Scenario 2 could have greater impacts due to recreational pressure. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact this species.

Impacts to olive-sided flycatchers resulting from allowable development under the General Plan update are less than significant because the amount of suitable habitat that could be impacted, and the number of individuals that could potentially be impacted, by General Plan update-related activities represent a very small fraction of the regional availability of such habitat and populations.

Impacts to the Yellow Warbler and Yellow-breasted Chat

The yellow warbler is an uncommon breeder, and the yellow-breasted chat is a very scarce breeder, in riparian habitats within the Study Area. Both yellow warblers and yellow-breasted chats occur in riparian habitats, and both prefer habitats with dense understory and open canopy. These species are assessed together because they breed and forage in similar habitats in the Study Area and because potential impacts of the General Plan update on these species will be similar.

Impacts from allowable development under the General Plan update can affect yellow warbler and yellow-breasted chat habitat (breeding, or foraging habitat) and/or individuals (*e.g.*, during construction activities or by increasing mortality after construction). Suitable habitat for yellow warblers and yellow-breasted chats may be directly lost as a result of development through the conversion of riparian habitat to other uses or through the hydrologic alteration of streams that are used as breeding sites. Development may also result in the loss of upland habitat surrounding riparian areas, which may serve as foraging habitat or as buffer habitat between riparian areas and nearby human disturbance. Individuals of these species (especially eggs or young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. The construction of new roads or developments through breeding or foraging habitats may reduce the size of riparian habitats, increase disturbance along edges, and reduce the potential for these areas to support breeding pairs of yellow warblers and yellow-breasted chats. This is especially true for yellow-breasted chats, as this species requires large areas of riparian habitat for breeding. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, in increased predation by pets or feral animals, in the incidental loss of habitat to planned or ad hoc recreational activities, in increased parasitism by brown-headed cowbirds, and in a reduction in the quality of breeding and foraging habitat from the introduction of non-native vegetation. Sedimentation or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and habitat quality in stream riparian habitats on or adjacent to a project site and in riparian habitats downstream from project areas.

Due to past development and other impacts, populations of yellow warblers and yellow-breasted chats within the UGB are very limited in number and extent. Yellow warblers are uncommon breeders within the UGB, while yellow-breasted chats are extremely rare breeders. Yellow warblers breed in very low numbers along the lower reaches of South Bay streams, and are somewhat more common in the upper reaches of the cottonwood/willow-dominated zone. In recent years, yellow-breasted chats have been recorded nesting in the Study Area only along Coyote Creek upstream from U.S. 101 near Hellyer Park (S. Rottenborn, pers. obs.), and possibly along Coyote Creek near Coyote Ranch, at the northern end of the Coyote Valley (De Anza College Wildlife Corridor Stewardship Team, unpublished data).

Under all proposed scenarios, direct impacts to yellow warbler and yellow-breasted chat populations within the UGB would be similar and potentially result in some or all of the impacts described above where development occurs on or adjacent to riparian habitats available to these species. Direct riparian impacts are expected to be similar under all scenarios, due to protections from the existing riparian setback policy. Most direct impacts to riparian habitats within the UGB are expected to occur from

road development, which will be the same under all scenarios, as are actions within vacant lands and entitled parcels. Both yellow warblers and yellow-breasted chats could potentially breed in high-quality riparian habitats in the North Coyote Valley Employment Land Area and the Coyote Valley Urban Reserve where development would be the same under all scenarios. Yellow warblers could also potentially occur in high-quality riparian habitats throughout the Study Area. In particular, this species is potentially likely to breed in riparian habitats in the Almaden Planning Area (where no development is planned along Randol Creek), along lower Coyote Creek in the Edenvale Planning Area, and along lower Thompson Creek in the Evergreen Planning Area. Growth areas within any Planning Area that occur along areas of dense riparian habitat that support potential breeding habitat for yellow warblers or yellow-breasted chats have the potential to impact these species. The Preferred Scenario, Scenario 4, and Scenario 3 are expected to contribute to the highest degree of indirect impacts due to adjacency to riparian habitat because indirect impacts will be more likely from development in proximity to the watercourses. Due to the expected increase in the resident population, Scenario 3, followed by Scenario 2, may lead to greater recreational or casual usage and disturbance impacts, especially in areas with increased residential populations. Scenario 1 will have the least impact.

The impacts of development under the different scenarios in these locations would vary depending on the habitat being developed and the type and location of increased disturbance to yellow warblers and yellow-breasted chats as a result of development. No growth will occur under the General Plan in the Coyote Valley Urban Reserve and the South Almaden Valley Urban Reserve, and impacts in the North Coyote Valley Employment Land Area will be similar under all scenarios. Development in the Edenvale, and Evergreen Planning Areas, including growth area V54 and the New Edenvale and Evergreen Campus Industrial Employment Land Areas where riparian habitats occur, would vary under the different scenarios. The extent and nature of impacts to yellow warblers and yellow-breasted chats in these planning areas would depend on the type and location of development or increased disturbance. Some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and some recreational impacts are less likely or will be less extensive in the Urban Reserves and Employment Land Areas.

Habitat for and populations of breeding yellow warblers and yellow-breasted chats are greater in the portion of the Study Area outside the UGB than within the UGB. Impacts to these species outside the UGB could potentially occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although, the extent of impacts would vary in severity depending on the land use. The conversion of riparian habitats or adjacent upland habitats to other uses would likely result in a complete loss of suitable habitat for these species. Riparian areas with reduced understory due to grazing or disturbance are generally not used by these species, and riparian corridors lacking open ruderal or herbaceous vegetation along the edges of the corridors or with development up to the corridor edge are often avoided as well. The construction of riding stables or increases in grazing would encourage the presence of brown-headed cowbirds, which would preclude the presence of successful breeding populations of yellow warblers and yellow-breasted chats. The Preferred Scenario could potentially result in relatively high impacts to habitats for these species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new

dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage. Scenario 4, which will provide the greatest increases in jobs but the least increase in housing, may lead to the greatest degree of rural residential development outside the UGB. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact on these species outside the UGB.

Impacts on yellow warblers and yellow-breasted chats, including riparian habitat loss, resulting from allowable development under the General Plan update are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the San Francisco Common Yellowthroat

The San Francisco common yellowthroat inhabits emergent vegetation, such as fresh and brackish marshes, and moist floodplain vegetation around the San Francisco Bay. Impacts from allowable development under the General Plan update can affect common yellowthroat habitat (breeding, foraging, or wintering habitat) and/or individuals (*e.g.*, during construction activities or from increased mortality after construction). Suitable habitat for common yellowthroats may be directly lost as a result of development through the filling or hydrologic alteration of ponds, streams, and wetlands that are used as breeding sites or through the development or disruption of surrounding riparian, wetland, or upland habitats. Upland habitats surrounding breeding areas may serve as foraging habitat or as buffer habitat between breeding areas and nearby human disturbance. Individual common yellowthroats (especially eggs or young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. The addition of new roads or developments through breeding and foraging habitats may fragment remaining patches of habitat and reduce the potential for these areas to support breeding pairs. Increases in human concentration and activity associated with development in the vicinity of common yellowthroat habitat may result in an increase in native and non-native predators, in increased predation by pets or feral animals, in the incidental loss of habitat to planned or ad hoc recreational activities, and in a reduction in the quality of breeding or foraging habitat from the introduction of non-native vegetation. Sedimentation or hazardous material spills from construction activities may result in temporary or permanent degradation of water quality and habitat quality in aquatic habitats on or adjacent to a project site and in aquatic habitats downstream from project areas.

Within the UGB, common yellowthroats are common breeders near the edges of the South Bay in the Alviso Specific Plan Area, and in herbaceous riparian habitat and ruderal floodplain habitat along lower Coyote Creek in the Alviso and North Planning Areas and along the lower Guadalupe River in the North Planning Area. Common yellowthroats are also known to breed in marshy habitat elsewhere in the UGB and farther inland, including a number of areas outside the UGB. Whether such individuals represent the San Francisco common yellowthroat or the more widespread, inland-breeding race is unknown. Based on Grinnell and Miller (1944) and Gardali

and Evens (2008), we have assumed that birds breeding in the southern part of the Study Area are not San Francisco common yellowthroats. However, yellowthroats breeding at locations such as Alamitos Creek in the Almaden Planning Area and Silver Creek near Lake Cunningham in the Alum Rock Planning Area could represent either subspecies, or could be intergrades.

Under the Preferred Scenario, the impact to common yellowthroat populations within the Alviso and North Planning Areas would be greater than the other scenarios and potentially result in some or all of the impacts described above where development occurs on or adjacent to the marsh or riparian habitats available to these populations. Under all four remaining proposed scenarios, the impact to common yellowthroat populations within the Alviso and North Planning Areas would be similar The impacts of development under the different scenarios in these locations would vary depending on the habitat being developed and the type and location of increased disturbance that occurs as a result of development.

Habitat for and several populations of San Francisco common yellowthroats occur in the portion of the Study Area outside the UGB in the Alviso area. Development is unlikely in those areas, but recreational impacts (*i.e.*, disturbance of nesting birds) could increase as a result of an increase in the City's human population. The Preferred Scenario (with the greatest amount of proximal development), followed by Scenario 3 then 2 (which would result in the greatest increase in the resident population of the City), have the greatest potential to impact thisspecies.

Impacts to San Francisco common yellowthroats resulting from allowable development under the General Plan are potentially significant because their populations and available habitats are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the Grasshopper Sparrow

Grasshopper sparrows breed in large, unfragmented areas of grassland habitats that are characterized by patches of bare ground, clumps of shrubby vegetation, and surrounding dense grass cover that provides singing perches and nest sites (Vickery 1996, Lyon 2000, Sutter and Ritchison 2005).

Impacts from allowable development under the General Plan can affect grasshopper sparrow habitat (breeding or foraging habitat) and/or individuals (*e.g.*, during construction activities or by increasing mortality after construction). Development may result in the direct loss of habitat or individuals through the grading, development, or conversion of grassland breeding habitat to other uses. Individual grasshopper sparrows (especially young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Development may also result in the loss of upland habitat surrounding breeding areas, which may serve as foraging habitat or as buffer habitat between breeding habitat and nearby areas of human activity. The addition of new roads and developments through breeding habitat may result in an increase in native and non-native predators, in increased predation by pets or feral animals, in the incidental loss of habitat to planned or ad hoc recreational activities, and in a reduction in the quality of breeding or foraging habitat from the introduction of non-native vegetation. Alterations in grazing management or the conversion of grazing habitat to other land uses can also affect habitat suitability.

The grasshopper sparrow is known to nest within the UGB on northern Coyote Ridge, and it may nest within the UGB in the Santa Teresa Hills as well. Populations of grasshopper sparrows that occur within City areas outside the UGB are limited in number and extent. Development in Evergreen, Edenvale, Coyote, and Calero Planning Areas in grassland areas may impact grasshopper sparrows.

Within the UGB, planned growth in the New Edenvale Employment Land Area in the Edenvale Planning Area is the only planned growth that may impact grasshopper sparrows. Transportation improvements and vacant and entitled parcel development within the UGB will be similar under all scenarios. Therefore, the Preferred Scenario and Scenario 4, which would have the greatest planned growth in the New Edenvale Land Employment Area, have the greatest potential for impacts to this species, followed by Scenarios 1 and 2, then 3.

Development under allowable land use designations outside the UGB would potentially result in some or all of the potential impacts described above. Impacts to grasshopper sparrows outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). The conversion of grassland habitat to uses such as roadways, cemeteries, or golf courses would likely result in a complete loss of suitable habitat for this species in the affected areas. However, appropriate levels of grazing may be beneficial to grasshopper sparrows. The Preferred Scenario could potentially result in relatively high impacts to this species outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage. Scenario 4, which will provide the greatest increases in jobs but the least increase in housing, may lead to the greatest degree of rural residential development outside the UGB. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to grasshopper sparrows outside the UGB.

Impacts to grasshopper sparrows resulting from allowable development under the General Plan update are expected to be less than significant. The number of individuals that could be lost, and the extent of suitable habitat that could be lost, due to General Plan update-related activities is low relative to regional populations and regionally available habitat, and thus, the update would not substantially affect regional populations of this species.

Impacts to the Tricolored Blackbird

Tricolored blackbirds are found primarily in the Central Valley and in central and southern coastal areas of California. This species occurs within the Study Area primarily during the nonbreeding season, and breeding records within the Study Area have been scarce and sporadic in recent decades. The tricolored blackbird is highly colonial in its nesting habits, and forms dense breeding colonies that, in some parts of the Central Valley, may consist of up to tens of

thousands of pairs. This species typically nests in tall, dense, stands of cattails or tules, but also nests in blackberry, wild rose bushes, and tall herbs. Nesting colonies are usually located near fresh water.

Impacts from allowable development under the General Plan can affect tricolored blackbird habitat (breeding, foraging, or wintering habitat) and/or individuals (*e.g.*, during construction activities or from increased mortality after construction). Suitable habitat for tricolored blackbirds may be directly lost as a result of development through the filling or hydrologic alteration of ponds, streams, and wetlands that may potentially be used as breeding sites. Individual tricolored blackbirds (especially eggs or young in nests) can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Development may also result in the loss of upland habitat surrounding potential breeding areas, which may serve as foraging habitat or as buffer habitat between breeding areas and nearby human disturbance. Because remaining habitats for this species are extremely isolated, the development of tricolored blackbird breeding or foraging habitat would reduce or eliminate their habitat such that tricolored blackbirds may no longer have the potential to breed in the Study Area. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators, in increased predation by pets or feral animals, in the incidental loss of habitat to planned or ad hoc recreational activities, and in a reduction in the quality of breeding or foraging habitat from the introduction of non-native vegetation. Sedimentation or hazardous material spills from construction activities may result in temporary or permanent degradation of water quality and habitat quality in wetland habitats on or adjacent to a project site and in wetland habitats downstream from project areas.

Historically, the tricolored blackbird has always been an uncommon resident in Santa Clara County, and populations of the tricolored blackbird within the UGB are limited in number and extent. Nesting habitat for this species is short-lived due to disturbance, and colonies are generally not present at a given location for more than a few years. Additionally, because tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available. As a result, colonies of tricolored blackbirds may appear in the Study Area if new areas of emergent vegetation are established (*e.g.*, due to wetland restoration or in stormwater detention basins or other ponds that are recently constructed or modified) in areas surrounded by extensive open foraging habitat. Possible areas where tricolored blackbird breeding habitat may occur within the UGB include the Almaden Valley, the Coyote Valley, and freshwater wetlands along the lower reaches of creeks in the Alviso Specific Plan Area.

Under all proposed scenarios, impacts to tricolored blackbird populations in the Study Area would be limited primarily due to the infrequency with which this species breeds in the Study Area. In the Alviso Specific Plan Area, where the Preferred Scenario will have substantially more development, and the North Coyote Valley Employment Area, where development will be similar under all the scenarios, populations of tricolored blackbirds are expected to breed infrequently. Some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and perhaps, recreational impacts are less likely or

will be less extensive in the Employment Land Area and the Alviso Specific Plan Area, where most allowable development is in added jobs.

Habitat for and several populations of tricolored blackbirds have potential to occur in the portion of the Study Area outside the UGB. Impacts to this species outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although, the extent of impacts would vary in severity depending on the land use. The conversion of aquatic breeding and upland foraging habitats to uses such as roadways, cemeteries, or golf courses would likely result in a complete loss of suitable habitat for this species. However, appropriate levels of grazing of upland habitats and the presence of stock ponds created for livestock may be beneficial to tricolored blackbirds. Outside the UGB, tricolored blackbirds could potentially be impacted by recreational disturbance of breeding colonies (which would be expected to be greatest under Scenario 3 followed by Scenario 2, which provide for the greatest increases in residential units) and by new rural residential development (which would be greatest under Scenario 4 followed by the Preferred Scenario). As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the lowest potential to impact tricolored blackbirds outside the UGB.

Impacts on tricolored blackbirds resulting from allowable development under the General Plan update are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the Salt Marsh Wandering Shrew and Salt Marsh Harvest Mouse

The salt marsh harvest mouse and salt marsh wandering shrew are similarly associated with tidal marsh habitat in the northern portion of the Study Area, primarily outside the UGB, and potential impacts of the General Plan update on these species will be similar. Habitat for both salt marsh harvest mice and salt marsh wandering shrew consists of pickleweed-dominated areas of tidal marshes and diked and muted tidal marshes. Salt marsh harvest mice have also recently been found in dense vegetation within brackish marshes in the South Bay (H. T. Harvey & Associates 2006). Of particular importance to these species is upland habitat surrounding marshes that provides upland refugia for these species during high tides.

Suitable habitat for salt marsh harvest mice and salt marsh wandering shrews may be directly lost as a result of filling or hydrologic alteration of marshes that provide habitat for these species. Fill is unlikely in much of the potential habitat in the Study Area that is within the Don Edwards San Francisco Bay National Wildlife Refuge as restoration of habitat for these species is one of the goals of the refuge. Hydrologic alteration of marshes can follow development of more hardscape throughout the watershed that causes more freshwater runoff into salt marshes along channels. Development may also result in the loss of upland habitats surrounding tidal marshes, which serve as foraging habitat or dispersal habitat or, most importantly, provide upland refugia

for these species during high tides. Levees within suitable habitat areas may require repair which would temporarily remove protective vegetation that provides cover in upland refuge areas during high tides by removing established habitat. Diked and muted tidal marsh remnants provide habitat but are adjacent to or within potential development areas and can be affected by construction related to development of those areas. Individuals of these species can be killed or injured during construction activities as a result of crushing by construction personnel or equipment and sedimentation or hazardous material spills during construction that may result in temporary or permanent degradation of water quality and habitat quality in marsh habitats on or adjacent to a development site and in marsh habitats downstream. Increased night lighting associated with new development may affect the behavior of these species, possibly causing them to avoid well-lighted areas, and could increase predation on these species. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in an increase in native and non-native predators. For example, if landfill uses are intensified, secondary impacts could occur such as increased predation on salt marsh harvest mice or salt marsh shrews by an increased number of gulls that are attracted to the landfill. If development occurs near marsh habitat increased predation by pets or feral animals is likely and these very small mammals are particularly susceptible to predation. The incidental loss of habitat to planned or ad hoc recreational activities can occur from increased use of levees for recreation or wildlife that use adjacent habitats may be disturbed by increased human presence. The addition of new roads and development through suitable habitats may isolate populations from one another, increase mortality of dispersing individuals, and cut off populations from suitable breeding habitat.

Due to past development and other impacts, populations of the salt marsh harvest mouse and the salt marsh wandering shrew within the UGB are very limited in number and extent. Extant populations of salt marsh harvest mice are known to occur in suitable habitats within the Alviso Specific Plan Area. Salt marsh wandering shrews likely occur in similar habitats as the salt marsh harvest mouse, but this species' distribution is poorly understood.

Under the Preferred Scenario, development near salt marsh harvest mouse and the salt marsh wandering shrew populations within the Alviso Planning Area would be greater than under the other scenarios. Some or all of the impacts described above could occur where development occurs on or adjacent to the marsh habitats available to these populations. Under all four remaining proposed scenarios, the impact to salt marsh harvest mouse and the salt marsh wandering shrew populations within the Alviso Planning Areas would be similar (and low). The effects of development under the different scenarios in the Alviso Specific Plan Area might vary depending on the habitat actually developed or that is adjacent to new development, the hydrologic impacts of the development, and the type and location of increased disturbance to and predation on salt marsh harvest mice and salt marsh wandering shrews as a result. The WPCP is also within the Alviso Specific Plan Area, and there is potential habitat along the northern perimeter of the site, so that potential expansion of activity in the vicinity of the WPCP could affect these species depending on location and extent.

Most of the salt marsh harvest mice and salt marsh wandering shrews and their habitat occur in the portion of the Study Area outside the UGB in the Alviso Planning Area. These areas are currently along sloughs and managed pond perimeters where salt marsh remains and within

muted and diked marsh bordering the Alviso Specific Plan Area. Development or conversion of marsh habitat or adjacent upland habitats to other uses would result in a complete loss of habitat for these species; however, such impacts are unlikely to occur under the General Plan. Indirect impacts are likely from increased recreational use of levees with attendant incidental loss of habitat, particularly loss of upland refugia near tidal marshes, increased disturbance; increased hydrologic output in creeks and sloughs that converts salt marsh to freshwater marsh; and increased predation by urban-associated predators from adjacent development. Under the Preferred Scenario, development within the Alviso Planning Areas would be greater than the other scenarios and may lead to greater recreational impacts in the vicinity of the habitats used by these species. Recreational impacts could also increase as a result of an increase in the City's residential population, particularly under Scenarios 2 and 3.

The impacts on salt marsh harvest mice and salt marsh wandering shrews resulting from allowable development under the General Plan update are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat is a special-status mammal species that may occur in natural areas in the remaining areas of woodland, scrub, or riparian habitats with dense understory or think scrub for cover. Within the Study Area, this habitat is limited primarily to the upper reaches of creek corridors, the Santa Teresa Hills, and higher elevations of the foothills around the valley where forest edges and, particularly, scrub habitats are dense.

Impacts from allowable development under the General Plan can affect San Francisco dusky-footed woodrat habitat and/or individuals. Suitable habitat for dusky-footed woodrats may be directly lost as a result of clearing and grading for development through the conversion or modification of suitable riparian, woodland, or scrub habitat, although generally, riparian habitat would be protected by the existing Riparian Corridor Policy. Development may also result in the loss of upland habitats adjacent to woodland, riparian or scrub habitat areas, which may provide foraging or dispersal habitats for woodrats and may buffer their primary habitat from human activity. The addition of new roads and development through suitable habitats may isolate populations from one another, increase mortality of dispersing individuals, and cut off populations from usable, suitable habitats. Individual dusky-footed woodrats can be killed or injured during construction activities as a result of crushing by construction personnel or equipment, particularly when taking refuge in their stick nests. Increases in human concentration and activity associated with developments may result in an increase in native and non-native predators, increased predation by pets or feral animals, the incidental loss of habitat to planned or ad hoc recreational activities, implementation of rodent control (poisoning or trapping), increased mortality on new roads or from increased traffic on existing roads, or a reduction in the quality of habitat from the introduction of non-native vegetation and landscaping. Increased night lighting associated with new development may affect the behavior of this species, possibly causing woodrats to avoid well-lighted areas, and could increase predation on woodrats. Increased grazing management in wooded or scrub areas may reduce understory vegetation, making the habitat unsuitable for woodrats.

Due to past development and other impacts, populations of dusky-footed woodrats within the UGB are limited in number and extent. Woodrats are absent from most developed areas within the UGB, though they are known to occur along the lower reaches of Coyote Creek near the WPCP in the Alviso Specific Plan Area, and they likely occur in riparian corridors and in dense scrub in a number of areas near the perimeter of the UGB. There is also a population along Bailey Avenue between Monterey Road and Santa Teresa Boulevard in the North Coyote Valley Employment Land Area in landscape trees where there is little human activity. There are no planned growth areas within any Planning Area that occurs along portions of creeks that potentially support riparian or woodland habitats that are suitable habitats for dusky-footed woodrats; however, woodrats could occur along the upper reaches of Fisher, Thompson, Coyote, Calero, Guadalupe and other creeks, where they could also occur in dense chaparral or scrub habitat and along the perimeter of forest habitat where the understory is dense.

In the Alviso Specific Plan Area, the Coyote Creek riparian corridor is isolated by surrounding development and the lack of suitable habitat nearby and so could be easily extirpated by development and increased human activity bordering the corridor. In the North Coyote Valley Employment Land Area, woodrats are using landscape trees along the perimeter of the future employment areas where increases in human activity are inevitable with any level of development so that continuation of this population is unlikely. In the remaining Planning Areas, relatively few planned growth areas are along riparian corridors. In the Cambrian Planning Area (V17), Edenvale Planning Area (New Edenvale Employment Land Area), and Evergreen Planning Area (Evergreen Campus Industrial, Evergreen Specific Plan Area, V54 and V55), impacts are likely to occur.

Under all proposed scenarios, riparian habitat available to woodrats should generally be protected by the existing Riparian Corridor Policy; however, woodrats are particularly affected by predation by feral or pet cats so that development and human concentration where cat populations are high will not continue to have woodrat populations. It is likely that populations of dusky-footed woodrats within the UGB may be significantly reduced or extirpated due to lack of sufficient suitable habitat, isolation from other populations and habitat areas, increased human concentration and activity, and predation by urban adapted predators and pets or feral animals, with the exception possibly in the Coyote Valley Urban Reserve and the South Almaden Valley Urban Reserve where development will not occur under any scenario. Some impacts that would occur after construction, such as attraction of urban predators, predation by pets or feral animals, and perhaps, indirect recreational impacts are less likely or may be less extensive in the Employment Land Area than in residential developments. The scenario with the greatest development near potential riparian habitat varies by Planning Area. In the Cambrian Planning area, the Preferred Scenario has the greatest development near riparian habitat. In the Edenvale Planning Area, both the Preferred Scenario and Scenario 4 have the greatest. In the Evergreen Planning Area, it is Scenario 4 with the greatest development, but Scenario 3 and the Preferred Scenario would also have high development and may have greater impacts on woodrats by virtue of the development favoring residential or having more development adjacent to riparian corridors. Scenario 2 followed by Scenario 1, will have the least impact on woodrats within the UGB.

Habitat for and populations of San Francisco dusky-footed woodrats occur in a number of areas in the portions of the Study Area outside the UGB, such as the upper reaches of Fisher, Thompson, Coyote, Calero, Guadalupe, and perhaps Berryessa creeks, natural areas near Anderson and Calero reservoirs, and on the ridges above Alum Rock Park. These are the populations most likely to persist in the future. Impacts to this species outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations outside the UGB would potentially result in some or all of the potential impacts described above. The conversion of riparian woodland or scrub habitat or adjacent upland habitats to uses such as roadways, cemeteries, or golf courses would likely result in a reduction or complete loss of habitat for this species, whereas recreational activities adjacent to riparian woodlands may have minimal impact on woodrats. Increases in grazing in woodland or riparian areas would reduce or eliminate understory vegetation and also result in a loss of habitat for woodrats. The Preferred Scenario could potentially result in relatively high impacts to woodrats outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage, and will possibly lead to a greater risk of spread of the pathogen responsible for sudden oak death, which could affect the quality of woodrat habitat. However, Scenario 4, which will provide the greatest increases in jobs but the least increase in housing, may lead to the greatest degree of rural residential development outside the UGB. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to woodrats outside the UGB.

Impacts to San Francisco dusky-footed woodrats resulting from allowable development under the General Plan are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the Pallid Bat, Townsend's Big-eared Bat, and Western Red Bat

Special-status bat species that occur in the Study Area are the pallid bat, the Townsend's big-eared bat, and the western red bat. Pallid bats are most commonly found in oak savannah and in open dry habitats with rocky areas, trees, buildings, or bridge structures that are used for roosting. Colonies of Townsend's big-eared bats also occur in structures or large tree cavities, but caves and old mine shafts may be the preferred roost sites. Western red bats do not breed in the Study Area but roost in the foliage in trees during winter or migration, and are strongly associated with intact cottonwood and sycamore valley riparian habitats in low elevations but may roost anywhere in the Study Area. Therefore impacts to trees or structures such as bridges, overpasses, building attics, abandoned buildings with large enclosed spaces, or abandoned mines potentially affect these special-status bats.

Suitable habitat for pallid bat, Townsend's big-eared bat, and western red bat may be directly lost as a result of development through the demolition of buildings, bridges, or other structures or the removal of trees used as breeding or roosting sites. Redevelopment of old or abandon structures as is likely under this General Plan may impact roosts for pallid or Townsend's big-eared bats. Individual bats can be killed or injured during construction activities when trees or structures that contain roosting colonies or individual bats are removed or demolished as a result of crushing, being disturbed during torpor, separation or disturbance related abandonment of nursing young by their mothers, or being exposed to predation in daylight. Development may also result in the loss or reduction of foraging habitats, such as streams and open grassland areas over which the bats forage. Because bats are sensitive to disturbance, increased human concentrations or activities may also disturb roosting habitats nearby to an extent that they are no longer suitable as roosting sites. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may also result in an increase in native and non-native predators and increased predation by pets or feral animals. Road improvements that include the demolition of bridges can also impact individual or colonies of bats.

Pallid bats are not known to breed within the Study Area though several maternity roosts are located just outside the eastern edge of the Study Area. Potential breeding habitat is present in barns or old oak trees in areas such as the Evergreen and Silver Creek areas of the Evergreen Planning Area, Metcalf Creek in the Coyote Planning Area, the San Felipe Planning Area, and the Santa Teresa Hills and undeveloped portions of the Almaden Valley in the Almaden Planning Area. The species can roost in many areas of the Study Area particularly in or near open space or less developed areas around the periphery of the Study Area. Potential breeding habitat for Townsend's big-eared bats is likely very limited. Although this species could potentially roost in barns, mines, or large oak trees in the Evergreen and Silver Creek areas of the Evergreen Planning Area and in undeveloped portions of Almaden Valley in the Almaden Planning Area, this species is very limited in its distribution, and it is possible that it no longer breeds here. Individual Townsend's big-eared bats may occasionally wander through any portion of the Study Area, where they may roost in cavities and forage in a variety of habitats. Western red bats may roost in trees virtually anywhere throughout the Study Area but are particularly associated with the sycamore alluvial habitat that occurs in the southern reaches of Coyote Creek in the Coyote Planning Area.

Within the UGB, impacts to pallid bat, Townsend's big-eared bat, and western red bat populations would potentially result in some or all of the impacts described above where development occurs on or adjacent to breeding, roosting or foraging habitats available to these species (riparian habitats, large open spaces, large trees, abandoned structures, attics, bridges, and overpasses). Development in any growth area that contains large trees or suitable structures has the potential to impact these species. In particular, these special-status bat species are most likely to occur in the Almaden Planning Area and in the Evergreen Planning Area or riparian habitats in any planning area (see *Impacts to Riparian Habitats* above). In the Almaden Planning area, no growth is planned in the undeveloped Almaden Urban Reserve or elsewhere with high-quality bat roosting habitat. In the Evergreen Planning Area, V54 borders Thompson Creek with a riparian corridor and the Evergreen Campus Industrial Employment Land Area and the Evergreen Specific Plan Area both border riparian corridors on smaller tributaries, although the large natural habitat areas of the Evergreen Campus Industrial Area makes it the most likely

of any growth area in the general plan to have special-status bats present. Depending on the location of redevelopment in V54, Scenarios 3 or 4, as they have greater amounts of development, are most likely to affect habitat and Scenario 1 the least with no change in V54 and comparable development under all scenarios in the Evergreen Campus Industrial Area. The Preferred Scenario, followed by Scenario 2, should have less impacts to potential bat habitat than Scenarios 3 and 4, but greater than Scenario 1, depending on the location of redevelopment in V54. Vacant lots and entitled parcels with the potential to support special-status bat species are present throughout all planning areas, and the effects of development under the four scenarios in these locations would vary depending on the habitat being developed and the location of the development.

Habitat for and several populations of pallid bats, and possibly Townsend's big-eared bats, occur in the portion of the Study Area outside the UGB, and western red bats occur as migrants or winter visitors most likely in lower elevation riparian habitats with less disturbance. Outside the UGB but within the Study Area, special-status bats likely occur in the Berryessa, Alum Rock, Evergreen, San Felipe, Coyote, and Almaden Planning Areas. Impacts to special-status bats outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land uses in these areas would potentially result in some or all of the potential impacts described above, although, the extent of impacts would vary in severity depending and the intensity of land use, and the amount of habitat removed or disrupted and, amount of removal of large trees or abandoned structures. Any development that results in the removal of trees or structures that provide breeding or roosting habitat for special-status bat species would result in the loss of potential habitats for bats. Disruption of riparian corridors, for example for roadways or rural housing, would impact foraging habitat. Outside the UGB, bat roosts could potentially be impacted by recreational disturbance of roosts (which would be expected to be greatest under Scenarios 3 followed by Scenario 2, which provide for the greatest increases in residential units) and by new rural residential development (which would be greatest under Scenario 4, followed by the Preferred Scenario). Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to special-status bats outside the UGB.

Impacts resulting from allowable development under the General Plan update on pallid bats and Townsend's big-eared bats are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species. Impacts to western red bats are considered less than significant, because the species is present only as a nonbreeder, individuals are unlikely to be killed or injured (due to their ability to fly away before injury or mortality can occur, for example if a roost tree is being removed), and the regional proportion of habitat for this species that could be impacted by General Plan update-related activities is very low.

Impacts to the American Badger

The American badger typically occurs in annual grasslands, oak woodland savannas, scrublands, and most habitats with stable ground squirrel populations or other fossorial rodents (*e.g.*, gophers). Badgers occur to a lesser extent in agricultural areas, where intensive cultivation inhibits den establishment and reduces prey abundance, but they are known to use agricultural habitat for dispersal, and they may den in pastures or fallow fields. Within the Study Area, badgers occur most commonly in the Coyote Valley Planning Area, around Calero Reservoir, on Coyote Ridge and Tulare Hill, and in grassy foothills elsewhere within the Study Area.

Suitable habitat for American badgers may be directly lost as a result of development through the conversion of upland areas that provide breeding, foraging, or dispersal habitats. Individuals of this species, especially young in dens, can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. The addition of new roads and developments through suitable habitats may isolate populations from one another, increase mortality of dispersing individuals, and cut off populations from suitable breeding, foraging, or dispersal habitats. Increases in human concentration and activity associated with development in the vicinity of suitable habitat may result in the incidental loss of habitat to planned or ad hoc recreational activities and increased mortality on new roads or from increased traffic on existing roads. Increased night lighting associated with new development may affect the behavior of this species, possibly causing badgers to avoid well-lighted areas, and could increase predation on badgers. Rodent control, which is often associated with development, may reduce the number of available prey for American badgers and result in a reduction or loss of habitat that is suitable.

Due to past development and other impacts, populations of American badgers within the Study Area are limited in number and extent. Badgers are known to occur within the UGB primarily in grasslands along the edges of the Coyote Valley, though they also occur occasionally in agricultural areas on the Coyote Valley floor in the North Coyote Valley Employment Land Area and the Coyote Valley Urban Reserve as well, particularly when dispersing. Badgers may also be present within the UGB in grasslands on northern Coyote Ridge in the Evergreen Planning Area. Badgers occur in most grassland, woodland and scrub habitat in the Study Area outside the UGB.

Under all four proposed scenarios, the impact to the few American badgers that occur within the UGB would be limited, but would potentially result in some or all of the impacts described above where development occurs on or adjacent to the upland habitats available to badgers. The development of grassland habitats in the Evergreen Campus Industrial and North Coyote Valley Employment Land Areas has the potential to impact badgers; development in these areas would be similar under the four scenarios (only slightly greater development would occur under the Preferred Scenario and Scenario 4). No growth will occur under the General Plan in the Coyote Valley Urban Reserve, and impacts to badgers in this area under the General Plan will be limited. The most significant impact to badgers within the UGB is from increased traffic on roads passing through relatively undeveloped, grassy and agricultural areas (See *Impacts to Wildlife Movement* below). Included in the General Plan is the expansion of Santa Teresa Boulevard to accommodate increased traffic through the Coyote Valley, which has the potential to increase mortality for badgers, as does the increased traffic on Monterey Highway, Bailey Avenue and U.S. 101.

Most habitat for American badgers in the Study Area occurs in the portion that is outside the UGB; individuals on the periphery of populations outside the Study Area and small numbers of resident badgers are expected to occur in these areas. Impacts to badgers outside the UGB could potentially occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although, the extent of these impacts would vary in severity depending on the land use. The conversion of grassland habitats to uses that replace that habitat permanently or have high levels of human activities would result in loss of habitat suitable for American badgers. The Preferred Scenario could potentially result in relatively high impacts to badgers outside the UGB both due to the increased need for rural residential housing (due to a relatively high increase in new jobs) and due to recreational impacts (due to the moderately high increase in new dwelling units, at least compared to Scenarios 1 and 4). The scenarios leading to greater increases in resident population, Scenario 3 and to a lesser extent Scenario 2, will likely lead to greater degrees of impacts resulting from increased recreational usage. Scenario 4, which will provide the greatest increases in jobs but the least increase in housing, may lead to the greatest degree of rural residential development outside the UGB. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to badgers outside the UGB.

Impacts on American badgers resulting from allowable development under the General Plan update are potentially significant because their populations and available habitat are limited locally and regionally and loss of habitat or individuals may have a substantial effect on local and regional populations of the species.

Impacts to the Ringtail

The status and distribution of the ringtail in the Study Area is unknown. Although this species' strictly nocturnal habits may be at least partially responsible for the lack of information on this species' distribution in the project vicinity, it is likely very rare given the lack of sightings, and the scarcity of roadkill records (*e.g.*, compared to the nocturnal American badger, which is much more frequently detected by roadkills). It is possible that ringtails could be present in small numbers in less developed, wooded areas such as around the north end of Anderson Reservoir and south and west of Calero Reservoir, but it is not expected to occur in the UGB, and it is likely very scarce in portions of the Study Area outside the UGB.

If ringtails are present in areas outside the UGB, impacts could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Ringtails outside the UGB could be impacted by destruction of dens (*e.g.*, due to tree removal); disturbance of dens due to construction or recreational activities; increased road mortality as a result of an increase in traffic resulting from increases in jobs and population within the City; and habitat loss and fragmentation resulting from road construction and new rural residential

construction. Impacts from recreational disturbance are expected to be greatest under Scenario 3, followed by Scenario 2, as these two scenarios provide for the greatest increases in residential units, while impacts from new rural residential development would be greatest under Scenario 4, followed by the Preferred Scenario. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to ringtails outside the UGB.

Due to the very low abundance and limited distribution of ringtails in the Study Area, and the consequently low probability of any impacts to this species, impacts of allowable development under the General Plan update on this species are considered less than significant.

Impacts to the Harbor Seal

Harbor seals occur in the Study Area only in tidal waters of South San Francisco Bay. They occasionally wander up tidal sloughs, and thus may occur in (or immediately outside the UGB) on rare occasions in upper Alviso Slough or Coyote Slough. Otherwise, they occur in the Study Area only in the reaches of these sloughs and Guadalupe Slough outside the UGB.

Sedimentation, contaminated runoff, or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and habitat quality in aquatic habitats downstream from development areas, and an increase in the residential and working population of the City may result in an overall increase in contaminant inputs into streams that flow into the Bay. As a result, General Plan update-related activities may affect water quality, which could potentially result in direct impacts to the health of harbor seals and result in a reduction in fish preyed upon by harbor seals. These impacts may be greatest under the Preferred Scenario, which would result in substantial increases in new jobs and new residential units, particularly as development within the Alviso and North Planning Areas, the areas in closest proximity to bay and estuarine habitats, are greater under the Preferred Scenario than under the other scenarios. Otherwise, Scenario 4 has the greatest increase in both jobs and housing. Impacts would be the lowest under Scenario 1, which would provide the lowest combined number of new jobs and residential units.

In addition, harbor seals may be impacted by recreational disturbance. Increases in the City's population will likely lead to increases in use of levee trails along tidal sloughs, and possibly increases in recreational boating, in areas used by harbor seals. Impacts from recreational disturbance is expected to be greatest under Scenarios 2 and 3, which provide for the greatest increases in residential units. However, under the Preferred Scenario, development within the Alviso and North Planning Areas would be much than under the other scenarios and may lead to greater recreational impacts in the vicinity of the habitats used by harbor seals.

Although the harbor seal is not on any special-status species list, this species is protected by the Marine Mammal Protection Act. Also, because the primary haul-out and pupping area in the South Bay is located near the mouth of Mowry Slough, not far to the north of the Study Area, adverse effects on seals within the Study Area could translate into population-level effects. As a

result, impacts to the health or abundance of prey of harbor seals as a result of General Plan update-related activities would constitute a significant impact.

IMPACTS TO NON-SPECIAL-STATUS ANIMALS

Impacts to Non-special-status Invertebrate Species

Non-special-status invertebrate species within the Study Area may be affected by development under the General Plan update. Such species include a wide diversity of insects, including beetles (Coleoptera), bees and wasps (Hymenoptera), butterflies and moths (Lepidoptera), flies (Diptera), true bugs (Hemiptera), caddisflies (Trichoptera), and dragonflies and damselflies (Zygoptera). Other common invertebrates include arachnids (spiders and mites); mollusks such as snails (Gastropoda), including the invasive New Zealand mud snail (*Potamopyrgus antipodarum*); nematodes (*e.g*. earthworms [Annelida]); common freshwater crustaceans such as water fleas (*Daphnia* spp.); seed shrimp (Ostrocoda); clam shrimp (Conchostraca); and non-listed fairy and tadpole shrimp (*Branchinecta, Linderiella, Triops*, and other spp.). Marine and brackish-water invertebrates occur within the Study Area such as sand fleas (*Emerita* spp.), as well as the non-native invasives red swamp crayfish (*Procambarus clarkii*) and Chinese mitten crab (*Eriocheir sinensis*), both of which occur in the downstream reaches of several creeks and rivers within the Study Area (CDFG 1998).

Direct impacts may occur to invertebrates due to loss of habitat or if individuals are killed during construction or after development. Habitat impacts could occur if, for example, natural vegetation and host plants are removed and replaced with hardscaping or inappropriate landscape species that do not provide the same food or cover resources as the native plants. Aquatic habitats that support common branchinectids and other freshwater invertebrates such as seed shrimp may be filled for development. Additionally, impacts to water quality (increased herbicide, pesticide, or fertilizer runoff, petrochemicals in stormwater, soil erosion, or other effects) could harm aquatic invertebrates or the aquatic larvae of some terrestrial insects, such as dragonflies and caddisflies. If pesticide use in general increases (or in previously agricultural areas, decreases), the result can be changes in abundance and species composition of common insect and arachnid communities. For example, areas where mosquito vector control activities are increased or initiated may experience a decrease in abundances of many insect groups, such as dragonflies and beneficial insects such as native and non-native pollinating bees. Flying invertebrates (mostly insects) are also impacted by vehicle strike along roadways, and may increase on roadways where traffic increases or in areas where new roads are added or existing roads upgraded. Other, more indirect impacts could occur as a result of increased human use of natural and semi-natural areas. For example, ground-dwelling beetles such as tiger beetles (Cicindelinae) and common ground beetles (Carabidae) may be affected by trampling, from increases in activities such as hiking, mountain biking, or off-road vehicle use. Such activities may also create favorable bare ground and trail habitat for some species. Increased human activities in aquatic habitats may aid the spread of such invasive aquatic invertebrates that displace native invertebrates, such as the New Zealand mud snail, which easily attaches to shoes, equipment, boats, and vehicles and can then detach in new waterbodies even after a week or more. Finally, an increase in invasions of non-native plant species, especially where such invasions form monocultures, can lead to a decrease in invertebrate diversity or change in species assemblages in an area, because so many species are specifically adapted to utilizing

certain plants or plant groups and many non-native, invasive plants do not provide resources for native invertebrates. When native plants are lost from the area, insects or other invertebrates that can tolerate the weed species increase substantially in abundance, while groups adapted to native species decrease or are lost. In fact, many of these species are adapted to microhabitat conditions and small changes in microhabitats can severely affect them. In general, common invertebrate species that are more generalist in the microhabitats that they tolerate, utilize fewer different habitat types or more common habitats over a life cycle, and/or are more resistant to pesticides and other anthropogenic effects on the environment (*e.g*., houseflies [*Musca domestica*]) will be least negatively impacted by General Plan actions. Conversely, invertebrates that specialize in their resource or habitat requirements (*e.g*. specialist native bees), require multiple habitat types during their life cycles (*e.g*., dragonflies), and/or are more susceptible to pesticides will be the most negatively affected.

Given the wide variety of habitats and life histories of various common invertebrate species, direct or indirect impacts may occur everywhere within the Study Area, although in general impacts are expected to be most severe within vacant lots or natural communities within planned growth areas in the UGB, where the majority of development will occur.

Within the UGB, impacts to common invertebrates could occur due to loss of habitats, and land use changes. For example, if a golf course is installed in an area, while hardscape is not increased and habitat for some common invertebrates will remain intact, there will be a marked decrease in plant diversity, floral resources, and bare ground in that area, in conjunction with a marked increase in the use of fertilizers and herbicides. Such changes could negatively affect beneficial insects such as bees. Similarly, if an area is developed as a neighborhood, an increase in the amount of pesticide use in that area is to be expected and would directly impact species found in these areas. Indirectly, some pesticide would also be picked up by runoff leading to decreased water quality where it collects (e.g., streams, ponds, and marshes) resulting in potentially less suitable aquatic habitat for invertebrates elsewhere. Increases in hardscape will remove habitat for many common invertebrate species. Such direct and indirect impacts within the UGB are likely to be the most severe under the Preferred Scenario and Scenarios 3 and 4. Greater housing development under Scenario 3, closely followed by Scenario 2, will lead to larger areas where plant communities are changed or lost, pesticides and herbicides are used, and greater impacts associated with an increased population. Greater job development under Scenario 4 will lead to an expected greater increase in hardscape and consequent decrease in habitat, and more development in certain semi-natural Employment Land Areas, such as North San Jose and Old Edenvale. Based on lower levels of development, Scenario 1 will have a lesser degree of the negative impacts described above than the other scenarios. The effects of development under the different scenarios would vary depending on the habitat being developed and the type and location of increased disturbance as a result of development. Additional impacts could occur due to roadway improvements, leading to increased vehicle strike, which would be similar under all scenarios. Impacts due to development of vacant lands, entitled parcels, and road improvements are expected to be the similar under all scenarios.

Impacts to invertebrates outside the UGB could occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). These primarily include

impacts associated with loss of habitats and land use changes. If currently natural areas are developed as rural residential, an impact which may be the greatest under Scenario 4, followed by the Preferred Scenario, in most cases impacts will be localized, but increases in landscaping, composting piles, animal manure, compacted soil, and other changes in the habitats could lead to an increase in some species which utilize these resources and a decrease in other species that cannot tolerate them (*e.g.*, compacted soil). As inside the UGB, roads built within or to reach new developments outside the UGB will lead to increased vehicle strikes in these areas. As we have assumed, Scenario 3, followed by Scenario 2, may result in greater impact due to recreational activities in natural areas outside the UGB. As described in our general assumptions, determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to non-special-status invertebrates outside the UGB.

Due to their abundance and widespread distribution, impacts to non-special-status invertebrate individuals and populations resulting from allowable development under the General Plan are not expected to result in substantial reductions in regional populations and so are at a level that is less-than-significant.

Impacts to Non-special-status Fish

Non-special-status fish species that occur in streams and reservoirs in the Study Area include many species of native fish and introduced freshwater fish. Native fish species found in these habitats include the California roach, Sacramento sucker, and sculpins; common non-natives include the mosquitofish, bluegill, and inland silverside. These fish species also occur in instream ponds, such as Almaden Lake and the Parkway Lakes. Most fish species that occur in off-channel ponds and lakes are non-natives, such as the green sunfish, mosquitofish, and golden shiner. Lake Cunningham is stocked with rainbow trout and channel catfish, and also contains bass, common carp, sunfish, and bluegill (Fishing Bytes 2009). Fish species that occur in low-salinity ponds in the Alviso Planning Area include topsmelt, yellowfin gobies, longjaw mudsuckers, rainwater killifish, and staghorn sculpin.

Impacts from allowable development under the General Plan have some potential to directly affect non-special-status, native fish species in aquatic habitats, mostly in instream habitats, in the Study Area. The potential impacts are the same as potential impacts to special-status fish and, necessarily, potential impacts to the habitats on which these fish rely: aquatic, wetlands and riparian (see *Impacts to the Pacific Lamprey, Green Sturgeon, Central Valley Fall-Run Chinook Salmon, Central California Coast Steelhead, and Longfin Smelt*, *Impacts to Aquatic and Wetland Habitats*, and *Impacts to Riparian Habitats* above). Suitable habitat for these fish species may be directly lost as a result of filling, culverting, or channelization or due to hydrologic alteration of streams that provide breeding or foraging habitats, or of sloughs and estuaries that provide foraging and dispersal habitats. Development of bridges across streams may remove important specific habitat features; for example, large tree roots providing deep cover may be removed to allow construction of an abutment or sedimentation could fill spawning gravel. The addition of new barriers or obstacles preventing fish, especially anadromous fish, from reaching upstream spawning habitat may isolate populations from one another, increase mortality of dispersing

individuals, or cut off populations from suitable spawning habitat. Individual fish can be killed or injured during construction activities as a result of crushing by construction personnel or equipment or by being trapped in low water, evaporating pools or within stream reaches that are intentionally dewatered for construction purposes or inadvertently due to hydrology changes. Increases in human concentration and activity associated with development in the vicinity of aquatic habitat may result in an increase in native and non-native urban-associated predators such as raccoons and crows, increased predation by pets or feral animals, the disturbance of habitat or loss of individuals from planned or ad hoc recreational activities such as fishing, the introduction of nonnative fish species that may outcompete, displace or depredate native species (*e.g.*, mosquitofish for mosquito control), and in a reduction in the quality of foraging or spawning habitat due to changes in hydrology or sedimentation. Sedimentation, contaminated runoff, or hazardous material spills from construction activities may result in the degradation of water quality and habitat quality in aquatic habitats on, adjacent to, or downstream from a development site. Sedimentation may also fill the interstices between spawning gravels downstream from a project site, or cover fish eggs in downstream areas, thus reducing reproductive potential. Hazardous materials that contaminate aquatic habitat can come from road runoff or can enter stormdrains from anthropogenic sources (*e.g.*, spills or inappropriate disposal). A loss of riparian vegetation (*e.g.*, removal for bridge construction or loss to ad hoc or planned recreation) that provides shade over rivers and creeks and keeps them cooler also reduces habitat quality for native fish species. Habitat for native fish species is located in streams and reservoirs throughout the Study Area, and impacts to fish are possible in any development area that occurs along or is hydrologically connected to stream or reservoir habitats within planned growth areas, on vacant or entitled parcels, or as part of roadway improvements.

Within the UGB, impacts to habitat, direct and indirect, of non-special-status native fish species would be similar to impacts to special-status fish and to aquatic, wetland and riparian habitats (see *Impacts to the Pacific Lamprey, Green Sturgeon, Central Valley Fall-Run Chinook Salmon, Central California Coast Steelhead, and Longfin Smelt, Impacts to Aquatic and Wetland Habitats*, and *Impacts to Riparian Habitats* above) both in location and relative to water quality. Impacts to individuals will also be similar to special-status fish potentially resulting in some or all of the impacts described above in locations where development occurs in, adjacent to, or upstream of stream and aquatic habitats. Habitat for native fish species would also be impact (*i.e.*, reduced) if stream habitat within the UGB is further channelized, sedimentation eliminates in-stream habitat, barriers are constructed that restrict upstream movements, important habitat features are lost, and/or development removes trees in riparian areas that provide shaded habitat. Because of the importance of hardscape in runoff patterns and effects on aquatic and wetland habitats, General Plan scenarios that are expected to introduce more hardscape are likely to have a greater impact on the watershed and aquatic habitats and therefore on native fish. Based on our assumptions, Scenario 4 will result in the greatest increase in hardscape and therefore the greatest impact on hydrology of fish habitats, and the greatest traffic increases with attendant pollution of storm runoff. Scenario 3, followed by Scenario 2, would result in high numbers of new residents and thus may have a greater chance for human associated impacts such as increased predation, recreational effects and inappropriate disposal of contaminants in stormdrains. The number of vacant lands, entitled parcels, and roadways subject to development does not change under any scenario, and such impacts are expected to be consistent among all scenarios. While impacts to non-special-status fish habitat within the UGB are similar to

special-status fish, the populations of these species are not as limited as special-status fish and extensive impacts to available stream habitat throughout the Study Area will not occur.

Habitat for and populations of native fish species occur in the portion of the Study Area outside the UGB. Impacts to these fish outside the UGB may occur as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities, such as fishing or boating (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although the extent of impacts would vary in severity depending on the land use, location of development, and amount of hardscape. Development and the construction of roads and structures adjacent to or over stream or wetland habitats have the potential to impact fish species. Based on our assumptions described in the introduction to this section, Scenario 4, followed by the Preferred Scenario, may have the greatest potential to influence increased rural residential development, and Scenario 3, followed by Scenario 2, has greater potential for planned development of recreational facilities and ad hoc recreational impacts due to higher resident population number. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to non-special-status fish outside the UGB.

The impacts to non-special-status native fish species resulting from allowable development under the General Plan update are not expected to result in substantial reductions in regional or local populations and so are at a level that is less-than-significant.

Impacts to Non-special-status Amphibians and Reptiles

Numerous species of non-special-status amphibians (*e.g.*, salamanders, newts, frogs, and toads) and reptiles (*e.g.*, turtles, lizards, skinks, and snakes) occur in habitats throughout the Study Area. Animals in these taxa are assessed together because they are present throughout most of the Study Area, and potential impacts of the General Plan on species within these taxa will be similar. Habitats in the Study Area that support communities of amphibians and reptiles include developed, agricultural, grasslands, riparian forest and scrub, chaparral and coastal scrub, oak woodland, freshwater (seasonal and perennial) wetlands, and aquatic/open water.

Developed habitats in the Study Area support viable populations of some amphibian and reptile species, especially where developed areas occur adjacent to more natural habitat types. Amphibian species that are likely to occur in developed areas include the Pacific treefrog, western toad, nonnative bullfrog, arboreal salamander, and California slender salamander. Reptile species that may occur in developed areas, especially where development is adjacent to grassland habitats, include the western fence lizard and the common garter snake. Nonnative turtles such as red-eared sliders and painted turtles may occur in developed habitats with streams or ponds. These species of nonnative turtles are also present in low numbers in streams and ponds mapped as aquatic or seasonal wetland habitats in the Study Area. Seasonal wetlands that provide standing water for a suitable duration can support successful breeding by western toads and Pacific treefrogs, while seasonal wetland swales that do not provide such ponding may provide only foraging habitat and moist refugia for these amphibians. Common garter snakes

and western terrestrial garter snakes may forage in these wetlands for amphibian larvae. Leaf litter, downed tree branches, and fallen logs in riparian corridors throughout the Study Area provide cover for native amphibian species such as the arboreal salamander, western toad, and Pacific treefrog, as well as for the nonnative bullfrog. Several lizards may also occur in riparian areas, including the western fence lizard, western skink, and southern alligator lizard. Small, remaining patches of grassland habitats and agricultural areas within the Study Area may support these reptile species in addition to common grassland species such as gopher snakes, racers, common kingsnakes, and southern alligator lizards. Similar reptile species are found on the margins of the Study Area where grassland habitats are located adjacent to extensive grassland, scrub, or oak woodland areas outside the Study Area. Reptile species likely to occur in these more extensive grassland or woodland areas include the western rattlesnake.

Impacts from allowable development under the General Plan update have potential to affect habitats used by amphibians and reptiles for breeding, wintering, foraging, and dispersal. Suitable habitat for amphibian or reptile species may be directly lost as a result of development through such activities as the filling of ponds and wetlands, the alteration of the hydrology of streams and ponds, the development or disruption of riparian habitats, and the clearing, grading and disturbance of upland habitats. Increases in human concentration and activity associated with development in any of the habitats supporting amphibians and reptiles may result in affects on habitats and/or individuals through an increase in native and non-native predators, the incidental loss of habitat to planned or ad-hoc recreational activities, increased mortality of these species on new roads or from increased traffic on existing roads, increased predation by pets or feral animals, the introduction of nonnative amphibians and reptile species that may displace or depredate native species, and the introduction of non-native vegetation that may reduce the quality of breeding, foraging, or dispersal habitat. Individual amphibians and reptiles can be killed or injured during construction activities as a result of crushing by construction personnel or equipment. Sedimentation or hazardous material spills from construction activities may result in the temporary or permanent degradation of water quality and habitat quality in aquatic habitats on or adjacent to a project site and in aquatic habitats downstream from project areas. Small mammal control, which is often associated with development, may reduce the number of available upland refugia, particularly for reptiles inhabiting open grassland areas. Due to the wide distribution of amphibians and reptiles throughout the Study Area, most development activities or associated affects have potential to impact species within these taxa.

Under all proposed scenarios, the habitats and types of impacts to populations of amphibian and reptile species within the UGB potentially include some or all of the impacts described above where development occurs. Habitat for amphibian and reptile species occurs throughout the Study Area, and impacts to these species are possible in any planned growth area, vacant or entitled parcel or transportation improvement under the General Plan. If remaining natural habitats within the Study Area are reduced by development, populations of native amphibians and reptiles in urbanized areas are likely to be reduced or eliminated. However, on the margins of the Study Area where development occurs in the vicinity of expansive, natural areas outside the Study Area, effects on amphibian and reptile populations will be limited and these species will likely continue to be present. The effects of development under the different scenarios would vary depending on the habitat being developed and the type and location of increased disturbance as a result of development; however, in general the more development and the more

hardscape, the greater the impact will be. Scenario 4, the scenario with greatest amount of resulting hardscape, will likely have the greatest hardscape impact followed by the Preferred Scenario with the second greatest amount of hardscape. Scenario 3 would have somewhat less impact, followed by Scenario 2 and Scenario 1 with the least hardscape and smallest footprint would have the least impact.

Most natural habitat for and populations of non-special-status amphibian and reptile species occur in the portion of the Study Area outside the UGB. Impacts to these species outside the UGB are expected as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although the extent of impacts would vary in severity depending on the land use. The conversion of aquatic or upland habitats to intensive uses or those with more hardscape uses such as roadways and parking lots would likely result in a complete loss of suitable habitat for these species; whereas many amphibians and reptiles would coexist with most rural residential if the property is left in a near natural state. Many additional land uses, such as golf courses, riding stables, and cemeteries may be used by some common reptile and amphibian species, though the suites of species present and their numbers in these areas would change relative to those in natural areas. If Scenario 4, followed by the Preferred Scenario, encourages development to accommodate employees, greater rural residential development may occur outside of the UGB under it, and if Scenario 3, followed by Scenario 2, has the greatest influence on development of recreational facilities or ad hoc recreational use of natural habitat areas, these impacts may be greater. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to non-special-status amphibians and reptiles outside the UGB.

Due to the broad ranges of these amphibian and reptiles and their presence in widely available habitats that occur outside the Study Area, impacts under the General Plan will not substantially impact regional populations. Thus, while impacts to natural habitats that support these species within the UGB are likely to occur under the General Plan update, extensive impacts to available habitats throughout the Study Area will not affect regional populations. Impacts to these species resulting from allowable development under the General Plan update are not expected to result in substantial reductions in regional or local populations and so are at a level that is less-than-significant.

Impacts to Non-special-status Birds

Numerous, diverse species of non-special-status birds occur in habitats throughout the Study Area. Developed, agricultural, grassland, riparian forest and scrub, chaparral and coastal scrub, and oak woodland habitats support variable communities of terrestrial avian species, while aquatic/open water habitats support communities of waterbirds. Wetlands, salt and freshwater, support waterbirds and terrestrial species.

Many non-special-status bird species that are adapted to urbanized areas occur in developed habitats throughout the Study Area. Some of the most common are the house finch, northern mockingbird, mourning dove, Anna's hummingbird, and California towhee. The European starling is a common nonnative species that nests in both artificial cavities and natural cavities in trees, and nonnative house sparrows typically nest under eaves or on similar artificial substrates near human habitation. Edge species such as black phoebes and cliff swallows forage in developed areas and nest on buildings or bridges. The presence of non-native plants and trees in developed areas precludes the presence of many native bird species; however, eucalyptus and other flowering non-native trees provide nesting and foraging opportunities for nectivorous birds, such as Anna's hummingbirds, and for numerous species of insectivorous birds, such as warblers. Even red-tailed and red-shouldered hawks will forage in smaller grassy patches, for example, in freeway interchanges, especially in winter when local populations are higher. Agricultural and grassland habitats in the Study Area provide nesting and foraging habitat for many species of birds and raptors. Western meadowlarks, killdeer, and red-winged blackbirds nest and forage in grassland habitats, while migrants such as sparrows and American pipits forage in grassland and open agricultural habitats during the nonbreeding season. Diurnal raptors such as red-tailed hawks, American kestrels, and northern harriers forage over grassland and open agricultural habitats during the day, and at night nocturnal raptors, such as barn owls, forage for nocturnal rodents. Riparian habitats in the Study Area provide one of the most important foraging and breeding habitat for several functional groups of birds including insectivores (*e.g.*, warblers, flycatchers), seed-eaters (*e.g.*, finches), raptors, and cavity-nesters (*e.g.*, swallows and woodpeckers). Among the numerous species of birds that use riparian corridors in the Study Area for breeding are the Bewick's wren, Nuttall's woodpecker, black-headed grosbeak, warbling vireo, song sparrow, and western scrub jay. Raptors, such as red-shouldered hawks and Cooper's hawks, may nest within the riparian corridor and forage in adjacent habitats. Waterbirds such as the mallard, green heron, great egret and belted kingfisher nest in riparian habitats and forage in streams and wetlands within them. Numerous other bird species use riparian habitats for foraging and cover during migration and winter; these include the golden-crowned sparrow, white-crowned sparrow, Lincoln's sparrow, yellow-rumped warbler, ruby-crowned kinglet (*Regulus calendula*), and others. Bird species that nest in chaparral and coastal scrub habitats in the Study Area include the California thrasher, California towhee, wrentit, lesser goldfinch, and Anna's hummingbird. Oak woodland habitat in the Study Area provides breeding habitat for many common oak-associated species such as the western scrub-jay, ash-throated flycatcher (*Myiarchus cinerascens*), oak titmouse, chestnut-backed chickadee, and white-breasted nuthatch.

Common resident waterbird species that occur in or around wetlands, marshes, ponds, lakes, and reservoirs throughout the Study Area include the pied-billed grebe, double-crested cormorant, great egret, snowy egret, Canada goose, mallard, common merganser, American coot, and killdeer, among others. Numerous species of wintering ducks, such as the northern shoveler, lesser scaup, and bufflehead, occur in these habitats during fall and winter. Shorebirds such as the greater yellowlegs and spotted sandpiper forage within and roost at the edges of these habitats during migration and winter. Large mixed-species flocks of shorebirds, gulls, terns, cormorants, pelicans, herons, and other waterbirds often roost on levees, in shallow water, or on exposed mud in saline managed ponds. During the nonbreeding season, diving ducks are abundant near the mouths of the larger tidal sloughs, while dabbling ducks are present in high

densities in the smaller and shallower channels. Terns forage in the larger and mid-sized stream channels for fish, while herons and egrets will forage in shallower areas. Shorebirds, gulls, terns, American white pelicans, and ducks often use exposed mudflats as roosting or loafing areas. In addition, marshes and wetlands support specialized terrestrial species such as marsh wrens and common yellowthroats, and more generalist species such as red-winged blackbirds.

In part because they occur in all habitats within the Study Area, impacts from allowable development under the General Plan have potential to affect habitats essential to many of these avian species, and may affect individuals directly, especially during the nesting season, or indirectly. Because birds are relatively mobile, with the exception of eggs and young, individuals are less likely to be harmed than species of other taxa. Development may result in the direct loss of habitat through the conversion of habitats to other uses, clearing and grading may remove habitat components used by particular species, and disturbance of habitats by human presence may reduce the viability of the habitat. While avian species may be present after development, the same species or native species may no longer be present. The addition of new roads or developments through breeding areas may isolate or fragment remaining available habitats in the Study Area (especially for raptors) and reduce the number of breeding pairs these areas can support. Development may result in the loss of foraging habitats adjacent to breeding areas; these habitats may also serve as buffers between breeding areas and nearby human disturbance. Increases in human concentration and activity associated with development in or in the vicinity of suitable habitat may result in affects on habitats and/or individuals through direct disturbance to nesting pairs, the incidental loss of habitat to planned or ad-hoc recreational activities, increased mortality of these species on new roads or from increased traffic on existing roads, increased predation by pets or feral animals, and the introduction of non-native vegetation that may reduce the quality of breeding, foraging, or dispersal habitat. Individuals of these avian species (especially young in nests) may also be killed or injured during construction activities as a result of crushing by construction personnel or equipment or due to abandonment of nests from excessive disturbance. Nest abandonment is also likely the primary indirect effect of recreational development. Alterations in grazing or the conversion of grazing habitat to other uses may also affect habitat suitability. Small mammal control, which is often associated with development, may reduce the suitability of foraging habitat for raptor species by reducing available prey. For waterbirds, there are additional potential impacts to water quality from pollution related to contaminated runoff from roads and parking areas or the inappropriate disposal of contaminants.

As with common species of other taxa, the habitats and types of impacts to populations of avian species within the UGB would be similar under all four proposed scenarios, and potentially include some or all of the impacts described above where development occurs. Habitat for avian species occurs throughout the Study Area, and impacts to these species are possible in any planned growth area, vacant or entitled parcel or transportation improvement under the General Plan. If remaining natural habitats within the Study Area are reduced by development, populations of native bird in urbanized areas are likely to be reduced and non-native species such as house sparrows and starlings are more likely to be present, although some native species such as American crow and Brewer's blackbird thrive in urbanized settings. On the margins of the Study Area where development occurs in the vicinity of expansive, natural areas outside the Study Area, effects on bird populations will be more limited and these species will likely continue to be present. The effects of development under the different scenarios would vary

depending on the habitat being developed and the type and location of increased disturbance as a result of development; however, in general the more development and the more hardscape, the greater the impact will be. Thus, the Preferred Scenario and Scenarios 2, 3, and 4 will all have relatively high levels of impact to non-special-status birds due to the combined effects of new jobs and new residential development. Scenario 1, with the least hardscape and smallest footprint, would have the least impact.

Most natural habitat for and the highest populations of native, non-special-status birds occur in the portion of the Study Area outside the UGB. Impacts to these birds outside the UGB are expected as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the potential impacts described above, although the extent of impacts would vary in severity depending on the land use. The conversion of aquatic or upland habitats to intensive uses or uses with more hardscape such as roadways or parking lots would likely result in a complete loss of suitable habitat for these species; whereas many birds would coexist with most rural residential particularly if most of the property is left in a near natural state. The conversion of natural habitats to uses such as golf courses and cemeteries would likely reduce the presence of many native species that require natural habitats; however, many species that are adapted to the presence of humans and human development would readily breed in these areas. If Scenario 4, followed by the Preferred Scenario, encourages development to accommodate employees, greater rural residential development may occur outside of the UGB under that scenario, and if Scenario 3, followed by Scenario 2 has the greatest influence on development of recreational facilities or ad hoc recreational use of natural habitat areas, recreation related impacts, such as nest disturbance by intrusion, may be greater. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to non-special-status birds outside the UGB.

Impacts under the General Plan will not substantially impact regional populations due to the broad ranges of most non-special-status avian species and their presence in widely available habitats that occur outside the Study Area. Thus, while impacts to natural habitats that support these species within the UGB are likely under the General Plan, extensive impacts to available habitats throughout the Study Area will not affect regional populations. Impacts to these species resulting from allowable development under the General Plan are not expected to result in substantial reductions in regional or local populations and would be less-than-significant.

Impacts to Non-special-status Mammals

Non-special-status mammals that occur in the Study Area include many species of terrestrial mammals (*e.g.*, shrews, bats, rabbits, squirrels, mice, foxes, coyotes, raccoons, skunks, bobcats, and deer) and several species of marine mammals (*e.g.*, seals and sea lions). Habitats that support various communities of terrestrial mammals in the Study Area are developed, agricultural, grassland, riparian forest and scrub, wetland, chaparral and coastal scrub, and oak woodland, while tidal aquatic habitats, including mudflats, support marine mammal species.

Nonnative mammals such as the Virginia opossum, house mouse, eastern gray squirrel, fox squirrel, Norway rat, and black rat are common in landscaped and developed portions of the Study Area, and native species such as the deer mouse, raccoon, and striped skunk occur in developed areas as well, particularly those areas closely associated with natural habitats in the foothills or along riparian corridors. Riparian corridors in the Study Area provide habitat for these urban-adapted mammal species in addition to native small mammal species such as the ornate shrew, California vole, and Audubon's cottontail. Common mammals expected to use ruderal habitats near developed portions of the Study Area are the California ground squirrel, deer mouse, and California vole. Small, remaining areas of ruderal/grassland or agricultural habitats throughout the Study Area may support any of the urban-adapted mammal species that can be found associated with developed areas, in addition to native black-tailed jackrabbits, California ground squirrels, California voles, valley pocket gophers, and deer mice. Larger terrestrial mammal species that are associated with grassland habitats do not occur in the urbanized areas of San José, but are likely to be present in Almaden and Coyote Valleys, as well as on the margins of the UGB where grassland areas are located adjacent to extensive open areas outside the UGB or the Study Area. These include the coyote, black-tailed deer, and bobcat. Open grasslands also provide foraging habitat for big brown bats, Brazilian free-tailed bats, and hoary bats. Chaparral, coastal scrub, and oak woodland habitats located on the margins of the Study Area also support many of the mammal species found in grasslands.

There are some common or fairly common mammal species that are particularly important ecologically and deserve special consideration: small fossorial mammals and colonial bats. California ground squirrels, California voles, and valley pocket gophers are important components of grassland communities. These species provide a prey base for diurnal raptors and terrestrial predators, and California ground squirrel burrows provide available nesting sites for burrowing owls. Raptors such as diurnal red-tailed hawks, northern harriers, white-tailed kites, and American kestrels and nocturnal barn and great-horned owls forage for small rodents over grassland habitats within the Study Area. Large mammal species, such as American badgers and coyotes, also depend on populations of small, fossorial mammals for prey. Many species of amphibian species, particularly the special-status species California tiger salamander, use small mammal burrows as upland refugia.

Common bat species are unique among mammals and also deserve special consideration in that the potential size of their colonies means an impact in one location, if to a colony of bats, could be an impact to a significant proportion of the local population. Colonies of non special-status species of bats, most likely Brazilian free-tailed bats, big brown bats, yuma myotis, California myotis, or hoary bats, can be present in trees, bridges, unoccupied buildings, or other structures throughout the Study Area. Bats enter buildings through small openings and can establish colonies within the walls/ceilings of unoccupied buildings. Colonies of bats can roost in trees beneath exfoliating bark or in cavities, especially of oak and sycamore trees. Tree removal and building demolition have the potential to take individuals and young if a colony (of any size), particularly a maternity colony, were present within the tree or building. While take of a small colony of bats would not be significant to regional populations, take of multiple colonies or of a particularly large colony of bats may impact regional populations of any of these species.

Impacts from allowable development under the General Plan update have potential to affect habitats used by many non-special-status mammalian species, and may also affect individuals because these species occur in all terrestrial habitats within the Study Area. Development may result in the direct loss of habitat through the conversion of habitats to other uses and disturbance of habitats by human presence may reduce the viability of the habitat, particularly for larger mammals. Because there are urban-adapted mammals, mammalian species may be present after development but they are unlikely to be the same species or to be native species present in natural habitats before development. The addition of new roads or developments through larger habitat areas may isolate or fragment remaining available foraging habitats, home ranges or breeding territories for larger mammals in the Study Area, may isolate populations from one another, increase mortality of dispersing individuals, and cut off populations from suitable habitat (see *Impacts to Wildlife Movement* below), and will likely reduce the number of animals these areas can support. Development may result in the loss of buffer habitat between natural habitat areas and nearby human disturbance. Increases in human concentration and activity associated with development in or in the vicinity of suitable habitat may result in affects on habitats and/or individuals through direct disturbance to animals, the incidental loss of habitat to planned or ad-hoc recreational activities, increased mortality of these species on new roads or from increased traffic on existing roads, increased predation by pets or feral animals, and the introduction of non-native vegetation that may reduce the quality of foraging or dispersal habitat. Individuals of these mammalian species may also be killed or injured during construction activities as a result of crushing by construction personnel or equipment especially of animals using dens or burrows. Alterations in grazing or the conversion of grazing habitat to other uses may also affect habitat suitability. Small mammal control, which is often associated with development, may also affect native species. Increased numbers of urban-associated, mammalian predators associated with allowable development is an impact that affects other mammals, and species of all other taxa.

Under all proposed scenarios, impacts to populations of mammal species within the UGB would occur and potentially result in some or all of the impacts described above where development occurs in or adjacent to suitable habitat. Habitat for native mammal species occurs in remaining natural areas throughout the Study Area, and, because mammals occur even in developed habitats, impacts to mammal species from activities under the General Plan are possible in any growth area, vacant lot or entitled parcel within the UGB. If remaining natural habitats within the Study Area are reduced by development, populations of native mammals in urbanized areas are likely to be reduced and non-native species such as black rats, house mice and eastern gray squirrels are more likely to be present, although some native species such as raccoons are well adapted to urbanized settings. The effects of development under the different scenarios in these locations would vary depending on the habitat being developed and the type and location of increased disturbance that results from development. Following our assumptions about the scenarios, Scenario 4, followed by the Preferred Scenario, then Scenario 2, is likely to have the greatest impact on common wildlife species because development of job sites is likely to have more hardscape and less landscaping suitable for common mammals. Scenario 3 may have somewhat less impact. Scenario 1 with the least hardscape and smallest footprint would have the least impact. On the margins of the Study Area where development occurs in the vicinity of natural areas outside the Study Area, the effects of development on mammal populations will be limited and native mammal species associated with adjacent large, open habitats will likely

continue to be present. The majority of the non-special-status mammal species that occur in the Study Area are widely distributed, and the habitats that occur within the Study Area represent a very small proportion of habitats that are available regionally. Thus, while impacts to natural habitats that support these mammal species within the UGB are likely under the General Plan, extensive impacts to regional populations will not occur.

Habitat for and populations of native, non-special-status mammals occur, particularly in larger areas of natural habitat, in the portion of the Study Area outside the UGB. Impacts to these mammals outside the UGB are expected as a result of increased rural residential development (which is likely proportional to the number of new jobs) and increased recreational activities (which is likely proportional to the number of new residents). Development under allowable land use designations in these areas would potentially result in some or all of the impacts described above, although the extent of impacts would vary in severity depending on the land use. The conversion of suitable habitats to uses such as roadways, structures or parking areas would result in a complete loss of habitat for these species in localized areas. Appropriate levels of grazing of upland habitats would be beneficial to many common mammal species such as ground squirrels. Many allowable land uses, such as golf courses, riding stables, and cemeteries may provide some habitat for common native mammal species, though the suite of species present in these areas will be different from the suite of species that would be present in a more natural setting, and many mammalian species are adapted to the presence of humans and human development. As discussed previously, if Scenario 4, followed by the Preferred Scenario, encourages development to accommodate employees, greater rural residential development may occur outside of the UGB under that scenario. If Scenario 3, followed by Scenario 2, has the greatest influence on development of recreational facilities or ad hoc recreational use of natural habitat areas, recreation related impacts, such as daytime disruption of roosting bats, may be greater. Determining the relative level of impact to biological resources outside the UGB that might result from Scenarios 2, 3, and 4, and the Preferred Scenario, is difficult because the effects of a large increase in new jobs might be offset by a smaller increase in new residents, and vice versa. However, we do expect that Scenario 1 will have the least impact to non-special-status mammals outside the UGB.

Impacts to most non-special-status mammal species under the General Plan will not substantially impact regional populations due to the broad ranges of most of these mammal species and their presence in widely available habitats that occur outside the Study Area. Thus, while impacts to natural habitats that support these species within the UGB are likely under the General Plan, extensive impacts to available habitats throughout the Study Area will not affect regional populations with the exception of colonial bats. Impacts to most common mammal species resulting from allowable development under the General Plan are not expected to result in substantial reductions in regional or local populations and so are at a level that is less-than-significant (but see also *Impacts to Wildlife Movement* below).

While impacts to California ground squirrels and other small mammals within the Study Area would not significantly impact regional populations of these species, the development of grassland habitats or the control of small mammals as pests, which is often associated with development, would reduce or eliminate local occurrences of small mammal species and potentially result in indirect impacts to other species in the Study Area. However, habitat for

large, predatory mammal species and for raptor species is widely available in the region, and reductions in local occurrences of nesting and foraging raptor species due to reduced prey availability will not impact regional populations of these species, and therefore, impacts are at a level that is less than significant.

Tree removal and demolition or modification of buildings and bridges have the potential to injure or kill individual bats if a colony (of any size), particularly a maternity colony, were present within the tree or building. While take of a small colony of bats would not be significant to regional populations, take of multiple colonies or of a particularly large colony of bats may impact regional populations of any of these species, and therefore, impacts to roosting non-special-status bats are potentially significant.

COLLISION IMPACTS TO BIRDS

The Study Area is located along the Pacific Flyway for migratory birds, and the juxtaposition of wetland, riparian, grassland, and other habitats used by large numbers of birds results in large-scale movements of birds around the Study Area, both during long-distance movements (such as migration) and during daily movements between roosting and foraging habitats. There is potential for injury or mortality of birds due to collisions with artificial structures such as buildings and powerlines as birds engage in such movements.

Many birds migrate at night, when it is difficult for them to see structures in their paths. In addition, birds migrating at night are often attracted to sources of artificial light, particularly during periods of inclement weather. Exposure to night lighting can cause alteration of flight paths and can attract birds to the light source (Keyes 2005, Gauthreaux and Belser 2006). As a result, bright lights on buildings can result in bird collisions with the buildings. Even during the day, birds may collide with windows or with tall, glass-covered buildings. Large-scale collisions resulting in mortality of large numbers of birds have been documented in eastern and Midwestern North America (Avery 1979), but it is possible that such mortality could occur in the West as well.

Within the Study Area, birds are expected to collide with structures such as windows of residential and office buildings, powerlines, and vehicles daily. An increase in the number of structures and vehicles within the City as a result of the General Plan update is expected to result in an increase in injury and mortality of birds due to collisions. However, because the majority of new development proposed under the General Plan update will consist of infill development, the bird species with the greatest potential to be impacted represent regionally abundant, widespread, relatively urban-adapted species that are currently using habitats within these urban areas. As a result, collisions within these urban areas are not expected to have substantial impacts on regional bird populations. Although rural residential development, which is expected to be greatest under Scenario 4, would introduce new structures into more natural habitat, the low densities of such structures due to zoning restrictions on rural residential development would limit the number of new structures that could result in bird collisions. Therefore, bird collisions impacts in rural portions of the Study Area, outside the UGB, would also be less than significant.

Only near San Francisco Bay, in the Alviso area, is the potential for collisions by large number of birds great enough to result in a potentially significant impact. In the portion of Alviso north

of State Route 237, the juxtaposition of saline managed ponds, tidal marsh, grasslands on WPCP buffer lands, WPCP settling ponds, and riparian habitat along lower Coyote Creek creates very attractive conditions for breeding, wintering, and migrating birds. Very high bird densities have been documented in the Alviso area by the San Francisco Bay Bird Observatory (*e.g.*, on both managed ponds and at the Coyote Creek Field Station), Wildlife Refuge personnel, local birders, and others. Although most waterbirds confine their activities to wetlands, managed ponds, and tidal habitats, some species such as gulls, American white pelicans, and double-crested cormorants make regular daily flights between Baylands roosting sites and inland foraging areas (S. Rottenborn, pers. obs.). In addition, migrating waterfowl and shorebirds may either leave San Francisco Bay heading southward or arrive at the Bay during their northbound migrations through the Alviso area. Songbirds using the riparian habitat along lower Coyote Creek and the grasslands, ruderal habitats, and marshes of the Alviso area also fly in and out of the Alviso area during migration. Although the migratory flights of these birds generally occur at altitudes higher than any buildings or powerlines that would be constructed in the Alviso area, such structures may provide obstacles as birds are ascending from or descending to Alviso area habitats.

Under the Preferred Scenario, development within the Alviso Planning Area would be greater than under all of the other scenarios, which are relatively similar to one another. Therefore, the Preferred Scenario would have the greatest potential for development of structures that could result in bird collisions.

Although large-scale injury or mortality of birds due to collisions with buildings has not been reported from the West Coast, there is some potential for such mortality to occur. Given the high concentrations of a variety of birds occurring in the Alviso area, the General Plan update could potentially have a significant impact to migratory birds if structures that are particularly likely to provide obstacles (such as tall and/or well-lit buildings or high powerlines) are constructed in the Alviso area.

IMPACTS TO WILDLIFE MOVEMENT

Development, increases in traffic, and increased recreational activities resulting from the General Plan update could potentially impact wildlife movement within and through the Study Area. New development in existing natural or agricultural areas can inhibit wildlife movement both by providing physical impediments to movement and by requiring animals to move longer distances around such development. Construction of new roads and increases in traffic on existing roads may reduce wildlife movement by deterring more sensitive animals from crossing roads, fragmenting habitat, and reducing successful dispersal attempts as a result of vehicular strikes and mortality. Increased recreational activities in natural areas may reduce movement by deterring more sensitive animals from moving through areas of increased human use.

Impacts to certain aspects of wildlife movement as a result of the General Plan update were discussed previously. *Impacts to the Pacific Lamprey, Green Sturgeon, Central Valley Fall-run Chinook Salmon, Central California Coast Steelhead, and Longfin Smelt* described the potential impacts to movement of these species within watercourses in the Study Area as a result of General Plan update-related activities, and *Collision Impacts to Birds* discussed the potential obstacles that new structures could pose to birds.

As described in the section *Movement of Native Fish and Wildlife Species and Movement Corridors* above, wildlife movement through the Study Area takes many forms, occurring at a number of scales and in a number of locations within the Study Area. Although the effects of new development and increases in traffic and recreational activities may adversely affect wildlife movement throughout much of the Study Area, these effects are expected to be relatively minor, in terms of effects on regional populations and movements, in most areas. Within the UGB, most development will consist of infill development that occurs in areas that are not important for regional movement of reptiles, amphibians, mammals, or other wildlife species. Although some new development will occur at the edges of the UGB, such as in the Evergreen area, most such development will simply expand the existing urban areas; wildlife will still be able to move freely within natural areas immediately outside the limits of such new development. Even with increased traffic and recreational activities, portions of the Study Area outside the UGB will be subject to only low-density development since the General Plan update is not proposing new development in those areas. As a result, ample opportunities for wildlife movement within and along Coyote Ridge, the Diablo Range, and the Santa Cruz Mountains will still be able to occur.

The one location where the General Plan update has potential to result in substantial impacts to wildlife movement is Coyote Valley. As described in *Movement of Native Fish and Wildlife Species and Movement Corridors* above, Highway 101 and Monterey Highway represent considerable impediments to wildlife movement across the valley. However, multiple crossings (particularly culverts) of Highway 101, and a few locations where breaches in the median barrier within Monterey Highway occur, allow mammals the ability to cross Coyote Valley, thereby allowing for dispersal between the Santa Cruz and Diablo ranges.

Currently, development is approved in North Coyote Valley, north of Bailey Avenue, and on several parcels (including the proposed Gavilan College Coyote Valley campus) south of Bailey Avenue and west of Santa Teresa Boulevard. These developments were the subject of project-specific environmental review that determined that these projects, either alone or in combination, would not result in significant impacts to wildlife movement. One of the primary reasons why these projects were determined not to significantly impact wildlife movement across Coyote Valley was that they did not preclude wildlife from crossing Monterey Highway at the Bailey Avenue intersection. That intersection provides the longest break in the Monterey Highway median barrier, and thus provides the best location for wildlife to cross Monterey Highway moving east or west. However, as discussed below, development allowed under the General Plan will inhibit wildlife movement through this intersection, thus introducing an impediment that was not assumed during the project-specific review of those previous projects.

The General Plan update includes three main components that will make it more difficult for mammals to move across Coyote Valley (*i.e.*, in a west-east or east-west direction):

- New commercial/office development is proposed not only on the north side of Bailey Avenue, but also in a strip along the south side of this road, from the west side of Coyote Valley east to Monterey Highway. Development on both the north and south sides of Bailey Avenue will limit the ability of wildlife to access the break in the Monterey Highway median barrier when attempting to move east or west through the valley.

Although mammals will not be physically prevented from accessing this area, the increased development, lighting, noise, and human presence on both sides of Bailey Avenue (as compared to the existing agricultural land uses currently present) will deter more sensitive species from attempting this crossing.

- Traffic within Coyote Valley will increase substantially as a result of new commercial/office development allowed in North Coyote Valley. Traffic increases along Highway 101, Monterey Highway, Santa Teresa Boulevard, and Bailey Avenue will be considerable, resulting in increased injury and mortality of wildlife, and deterring more sensitive species from attempting crossings of these roads.
- Santa Teresa Boulevard will be widened, which will both allow it to carry more traffic and provide a broader area of developed area that must be crossed by animals attempting movements across Coyote Valley.

In addition, increases in human population within the City, and increases in the number of people working in North Coyote Valley, will result in increased recreational use of the Coyote Creek Trail, potentially inhibiting wildlife movements along this trail (at least, during the daytime).

It is important to note that the 2040 General Plan update would change allowable development in the Coyote Valley Urban Reserve, such that approximately 10,000 dwelling units that could be built in Coyote Valley under the 2020 General Plan, and that could thus be constructed even in the absence of the 2040 General Plan update, could not be constructed under the General Plan update. Thus, the General Plan update would reduce allowable residential development in Coyote Valley and preserve (at least, for the time being) the agricultural land uses within this Urban Reserve. This change in allowable development does not necessarily offset the adverse effects of proposed General Plan update activities in Coyote Valley from a CEQA perspective, since the effects of such activities must be compared to existing conditions. However, this change would reduce the potential impacts resulting from both new General Plan update-related development activities and existing development allowances within Coyote Valley.

Development allowed under the General Plan update in Coyote Valley will not completely preclude the ability of wildlife to move across the valley. Many mammals are most active at night, when traffic, recreational activities, and human presence within commercial/office development are at their lowest. As a result, some animals are expected to move through Coyote Valley, find means of crossing impediments such as Monterey Highway, and eventually make a successful crossing of the valley. Allowable development in the Coyote Planning Area is the same under all scenarios; therefore, the potential for resultant impacts is the same.

Coyote Valley is the only area north of the Pajaro River Valley, and the narrowest point, at which there is potential for animals to move between the Santa Cruz Mountains and the Diablo Range. As a result of its geographic importance, and the fact that the low level of development in Coyote Valley allows some level of trans-valley wildlife movement to occur, this landscape linkage has been identified as an important linkage by the developing Santa Clara Valley HCP/NCCP (ICF Jones & Stokes 2009). Even though development of North Coyote Valley allowed under the General Plan update will not completely eliminate wildlife movement across the valley, the reduction in the magnitude of successful dispersal across the valley, coupled with

the importance of this landscape linkage in supporting regional populations of mammals, leads to the conclusion that the General Plan update will result in a significant impact to wildlife movement across Coyote Valley.

INDIRECT IMPACTS TO SERPENTINE COMMUNITIES FROM INCREASED NITROGEN DEPOSITION

An increase in nitrogen deposition on serpentine grasslands has been reported to favor the establishment and growth of non-native annual grasses and forbs (Weiss 1999). In the absence of appropriately timed livestock grazing, the growth of these species can result in a reduction in the extent and density of serpentine endemic plant species. This is because such species are adapted to harsh soils with a low nutrient availability, and do not fare well under intense plant-plant competition. Nitrogen is thought to be deposited in the soil profile from air pollution-based sources (typically from vehicle traffic and other combustion), and thus can increase the nutrient availability of the soil such that it is suitable for thick or tall growth of non-native grasses. Such grass cover, if not grazed, can have deleterious impacts for populations of the host plants known to support species such as the Bay checkerspot butterfly (see *Impacts to Bay Checkerspot Butterfly*, above), as well as a variety of serpentine-endemic, special-status plant species (see *Impacts to Federal and State-listed Plant Species* and *Impacts to CNPS-Listed, Serpentine-Adapted Special-Status Plant Species*, above).

Indirect impacts associated with development under the General Plan include the deposition of atmospheric nitrogen-containing compounds on serpentine grasslands within and outside of the Study Area, mostly from increased levels of traffic. The amount of such nitrogen deposited due to San Jose and the additional development in particular are difficult to accurately estimate. A recent analysis estimates that the total nitrogen deposited annually upon the serpentine grasslands located within Santa Clara County is 6 kg-N/ha/y. This value was reported in a recent study[4] that was undertaken as part of the Santa Clara Valley HCP/NCCP planning process (Appendix F in ICF Jones & Stokes 2009). This estimate includes deposition resulting from existing development and vehicle traffic. This study reports that total nitrogen deposition in the serpentine habitat areas could increase to 8 kg-N/ha/y in 2035. Currently, 63% of the annual nitrogen deposited in Santa Clara County derives from sources located within the County (of which the San Jose area is expected to contribute a significant amount), with the remaining deposited nitrogen derived from sources outside the County. This relative contribution, estimated from modeling based on assumed growth projections, is expected to grow over the next few decades as local populations increase. No estimates specific to the City of San Jose currently exist, either specifically within the UGB or within the entire Study Area for the General Plan.

Indirect impacts may include decreasing habitat suitability for native plants in serpentine grasslands in the UGB, in the larger Study Area, and, to a lesser degree, elsewhere in the County and the State. This would be due to an increase in non-native grass growth in these areas, which could lead to decreasing population size and density of such native forb species as dwarf plantain, dudleya, and lessingia, and subsequent decreases in population size and density of species that depend on these species, such as the Bay checkerspot butterfly. These impacts are

[4] http://www.scv-habitatplan.org/www/site/alias__default/292/administrative_draft_habitat_plan.aspx

less likely to occur under specific grazing regimes designed to remove additional non-native grass cover.

These indirect impacts could occur in any area containing serpentine grassland or serpentine outcrop habitats. Within the Study Area, this includes planned growth areas within the UGB containing parcels mapped as serpentine grasslands, which occur in the North Coyote Valley Employment Land Area in the Coyote Planning Area, New Edenvale (Areas 1, 2, and 4) Employment Land Areas in the Edenvale Planning Area, and in the Communications Hill Specific Plan Area in the South Planning Area. Outside the UGB but within the Study Area, Coyote Ridge, the Santa Teresa Hills, Tulare Hill, and the hills on the west side of Coyote Valley and in the Calero Reservoir area contain a significant amount of serpentine grassland habitats, all of which could be impacted indirectly.

Direct impacts related to increased traffic resulting from both job development and population growth under the General Plan are expected to be most substantial within the UGB, but because air pollution effects are air basin effects and are not confined within the UGB or the Study area, nitrogen deposition effects are also not confined to habitats within these areas. Serpentine areas throughout the air basin, such as those along Coyote Ridge that are within the Highway 101 corridor, are thus likely to be subject to substantial amounts of vehicular-based nitrogen deposition resulting from an increase in commuter traffic into the City due to job development. For these reasons, ,the Preferred Scenario which involves the largest combined amount of both planned residential development and job growth, followed by Scenarios 2 and 3, may lead to greater increases in nitrogen deposition within the UGB. Scenario 4, which plans for the greatest degree of job growth without correspondingly high increases in residential growth, may cause the largest increase in commuter traffic along the Highway 101 corridor, and thus lead to a greater level of Plan-related impacts to serpentine grasslands outside the UGB but within the Study Area. The impacts resulting from Scenario 1, which would lead to the lowest levels of combined job growth and residential development, may lead to the lowest degree of Plan-related increases in nitrogen deposition.

Impacts to serpentine grasslands resulting from increased nitrogen deposition related to allowable General Plan development are potentially significant because of the extreme rarity and sensitivity of serpentine grassland habitats, and the number of special-status species that depend on the integrity and quality of such habitats.

IMPACTS IN COMBINATION WITH CLIMATE CHANGE/SEA LEVEL RISE

The California Energy Commission predicts that sea level will rise by 12-18 inches by 2050, as compared to 2000 levels, as a result of global climate change (Cayan et al. 2009). As sea level rises, there is some potential for habitats subject to tidal fluctuations (such as tidal marshes) to change as a result of increased tidal flooding, and for habitats that are currently not subject to tidal flooding but within 12-18 inches of tidal areas to come under tidal influence.

Plant species within tidal marshes are segregated by elevation as a result of varying tolerance to inundation duration and frequency and salt concentrations. Tidal marsh plants at lower elevations are subjected to greater inundation duration and frequency than plants of the high marsh, and soil salinity is generally greater in the high marsh as a result of evaporative

concentrations of salts (whereas regular flushing by tidal action maintains lower salinities at lower elevations). As sea level rises, lower-elevation areas may become inundated too frequently and/or for too long a duration to support vegetation, and new areas at the upper edge of the marsh become subjected to tidal action (typically being converted from upland vegetation dominated by peripheral halophytes, upland grasses, or ruderal vegetation to tidal marsh vegetation such as pickleweed). Thus, the vegetation profile moves vertically upward, and laterally inward (farther inland), as sea level rises. However, because most of the marshes in the Study Area are backed by steep levees separating tidal and non-tidal areas, most marsh "migration" as a result of sea level rise is expected to occur vertically, with relatively little opportunity for inland migration of salt marshes as long as levees are maintained and remain intact.

In the absence of sediment accumulation within the marshes, sea level rise in levee-backed marshes could result in the loss of tidal marsh due to the "drowning" of lower-elevation areas without a concomitant increase in marsh at the upland edge. However, a geomorphic assessment performed for the SBSP Restoration Project predicted that sedimentation is expected to keep pace with sea level rise even as many of the saline managed ponds in the South Bay are restored to tidal action (Philip Williams & Associates, Ltd. 2006). Tidal marshes trap sediment, accumulating sediment and raising the elevation of the marsh plain as sea level rises. As a result, the relative elevation of the marsh plain (compared to mean sea level) is able to remain relatively unchanged as sea level rises, minimizing the loss of tidal marsh.

The greatest impact to tidal marshes from sea level rise may be the loss of upland transitional habitat. This habitat, which consists of the interface between tidally influenced marshes and upland habitat, may be very broad where tidal marsh borders on natural grassland or other habitats, but typically consists of a narrow band of habitat on the outboard side of levees surrounding virtually all of the tidal habitats in the Study Area. In some existing marshes, even where backed by levees, upland transitional habitat consists of well vegetated, gently sloping areas. As sea level rises, such areas may be converted to narrower, steeper bands of habitat at the toe of the levee. Upland transitional habitat is important to marsh species such as salt marsh harvest mice, salt marsh wandering shrews, California clapper rails, and California black rails during extremely high tides. During such tides, vegetation within upland transitional zones provides cover for these animals, which otherwise would suffer high rates of predation from raptors, gulls, corvids, egrets, and herons. Loss of upland transitional habitat will result in increased predation due to lack of cover, and could potentially lead to fragmentation of populations of the harvest mouse and wandering shrew due to extirpation of these species from marshes lacking adequate upland transitional habitat.

The SBSP Restoration Project is planning the phased restoration of tidal marsh within existing managed ponds. This project would restore thousands of acres of vegetated tidal marsh, channels, and mudflats (in addition to upland transitional habitat) to the South Bay, including many of the managed ponds within the Study Area in Alviso. The SBSP Restoration Project incorporates a monitoring and adaptive management program to monitor sediment accumulation and marsh development, such that sediment accumulation in South Bay marshes (including both existing marshes and salt ponds that are opened to tidal action as part of the Restoration Project) keeps pace with environmental conditions, including anticipated and actual sea level rise. The

SBSP Restoration Project will also enhance and manage some ponds specifically for pond-associated birds, including shorebirds that forage extensively on mudflats. In this way, the SBSP Restoration Project will ensure that suitable habitat is managed for these birds in the event that sea level rise reduces the extent of valuable intertidal mudflat habitats. The related U.S. Army Corps of Engineers Shoreline Study will assist with tidal marsh restoration while ensuring appropriate flood control; the two issues are strongly interrelated because restoration of tidal marsh in a number of areas, including Alviso managed ponds, requires the construction or augmentation of flood control levees on the upland edge of the restored areas.

The City of San Jose's General Plan update will not be responsible for sea level rise, and sea level rise will not be within the City's control. In the event that sea level rise impacts the distribution of marshes or upland transitional habitats in the Study Area, there are few feasible options for actions that the City might take to maintain such habitat at its current location.

A question arises whether future development of land within the Alviso Planning Area under the General Plan update could exacerbate the effects of sea level rise by precluding the movement of tidal marsh inland as sea level rises. A key consideration is the identification of areas that are potentially suitable sites for marsh habitat in the light of predicted sea level rise. We assume that areas that are currently developed within the UGB would not be suitable for conversion to new marsh habitat. The built environment includes existing residential, commercial and light industrial development and infrastructure in the Alviso Village area and two landfills and the WPCP on Los Esteros Road and a tall, former landfill area west of Gold Street that are at higher elevations than surrounding lands. Some areas in Alviso that are currently undeveloped, such as portions of the WPCP bufferlands (within the UGB) and the area around the Coyote Creek Reach 1A waterbird pond (outside of the UGB), are within the appropriate elevation range for future marsh development assuming sea level rise of 12-18 inches by 2050. In these areas, the City could choose to avoid development and restore or facilitate tidal action to allow for tidal marshes to "migrate" inland as sea level rises (though some road realignment would be required, and additional flood control levees would likely be required to protect developed areas from tidal flooding).

As recognized in General Plan Policy NC-4.3, the opportunities for the creation of new marsh and upland transitional area are greatest in the Alviso Planning Area outside the UGB within existing saline managed ponds and levee areas. Because there are long-term opportunities for marsh restoration outside the UGB within existing levees and the restoration and maintenance of tidal marsh in the South Bay by the SBSP Restoration Project has already begun, retaining the existing WPCP buffer lands south of Los Esteros Road and west of Zanker Road for future marsh or upland habitat is not required. Future development planned within the UGB in the Alviso Planning Area would not preclude the formation of new marsh habitat in the South Bay or substantially worsen impacts to marsh habitat associated with predicted sea level rise.

INDIRECT IMPACTS RELATED TO ENERGY/WATER SOURCES

Indirect Impacts to the Bay and Delta Due to Procuring Water Supply

The demand for water will increase considerably as a result of the increase in jobs, residences, and residents of the City due to the General Plan update. More than half of the water currently

supplied by the SCVWD is imported from the Sacramento-San Joaquin River Delta[5]. Much of the water flowing down the Sacramento and San Joaquin Rivers is diverted in the Delta into canals that carry the water southward to the San Joaquin Valley, southern California, and users such as the SCVWD in the South Bay. .

Even with existing rates of water diversion from the Delta, these diversions are having adverse effects on aquatic ecosystems in the Delta, San Francisco Bay, and even in the Pacific Ocean. Pumping of water as a result of the State Water Project (SWP) and Central Valley Project (CVP) has resulted in adverse effects on a number of listed fish, such as the Delta smelt (*Hypomesus transpacificus*). The effects of these pumping projects on the Delta smelt were the subject of a Biological Opinion issued by the USFWS on 15 December 2008[6]. Similarly, on 4 June 2009, the NMFS issued a Biological Opinion regarding the effects of these pumping projects on three federally listed salmonid runs, the green sturgeon, and Southern Resident killer whales (*Orcinus orca*)[7]. These Biological Opinions include strict monitoring requirements and conditions on pumping of water to minimize adverse effects of water diversions on these species. Restrictions imposed by the biological opinions affect the ability of the SWP and CVP to deliver imported water to multiple parts of the state, including Santa Clara Valley.[8]

To address the biological impacts of continued Delta pumping by the SWP and CVP, the Bay Delta Conservation Plan (BDCP) is being prepared by State, federal and local agencies.[9] A final Plan is not currently available for public review. The BDCP's purpose is to provide for the conservation of at-risk species in the Delta and improve the reliability of the State's water supply system. The BDCP is being developed under the FESA and the California Natural Community Conservation Planning Act (NCCPA) and will:

- Identify conservation strategies to improve the overall ecological health of the Delta;
- Identify ecologically friendly ways to move fresh water through and/or around the Delta;
- Address toxic pollutants, invasive species, and impairments to water quality; and
- Provide a framework and funding to implement the plan over time.

The California Department of Water Resources is the lead agency for an EIR/EIS that is being prepared to evaluate the potential effects of the BDCP. The BDCP is scheduled to be delivered early in 2011and draft EIR/EIS is expected to be ready for public review and comment by mid-2012.[10]

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[5] http://www.valleywater.org/Services/WhereDoesYourWaterComeFrom.aspx

[6] http://www.fws.gov/sacramento/es/documents/SWP-CVP_OPs_BO_12-15_final_OCR.pdf

[7] http://swr.nmfs.noaa.gov/ocap/NMFS_Biological_and_Conference_Opinion_on_the_Long-Term_Operations_of_the_CVP_and_SWP.pdf

[8] CA Dept. of Water Resources, Bay-Delta Office *Draft State Water Project Delivery Reliability Report, 2009.* Available at http://baydeltaoffice.water.ca.gov/swpreliability/.

[9] State and Federal lead agencies for the EIR/EIS are the California Department of Water Resources, the Bureau of Reclamation, the U.S. Fish and Wildlife Service, and NOAA's National Marine Fisheries Service, in cooperation with the California Department of Fish and Game, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers. Source: http://baydeltaconservationplan.com/default.aspx

[10] CA Dept. of Water Resources Bay-Delta Conservation Plan website, http://baydeltaconservationplan.com/BDCPPages/aboutBDCP.aspx.

The SCVWD is currently updating its 2005 Urban Water Management Plan. The updated Plan will address sources of water and water conservation measures required to meet projected water demand in Santa Clara County, including the City of San Jose, through 2035. With the uncertainties inherent in future imported water supplies, the City currently plans to meet future demand growth by pumping additional groundwater, relying on more recycled water, and increased conservation. Water conservation is anticipated to occur through replacement of more water-efficient appliances (i.e. clothes washers, dishwashers, toilets) and programs to encourage drought-tolerant landscaping on private property and on city properties. Mandatory conservation during a multiple year drought may also require prohibitions on outdoor use (irrigation, car washing, washing down pavement, etc.) and water rationing.

It is anticipated that the agencies operating the Delta pumps will continue to adjust future water diversions to limit or reduce substantial adverse effects on listed species based upon planning efforts currently in progress. As the City of San Jose does not have a guaranteed entitlement of increasing water supply, additional impacts to aquatic species in the Delta are not anticipated to result from implementation of the proposed General Plan Update.

Indirect Impacts to Natural Habitats and Species from Alternative Energy Sources

As described for the water supply in the preceding section, demands for energy within the City of San Jose could increase as a result of General Plan update-related growth, yet the City will not be able to meet these increased demands via local energy sources. As a result, energy will have to be transmitted to the City from external sources. In 2007, the City adopted the Green Vision, a 15-year plan for implementing environmental sustainability along with economic growth in the City. In addition to setting a goal to reduce per capita energy use by 50%, the Green Vision set a goal of receiving 100% of electrical power from clean, renewable sources.

Currently, San Jose receives most of its electricity from PG&E, which produces energy via nuclear, hydroelectric, wind, geothermal, biomass, and solar sources in addition to burning of natural gas and coal. With a goal of converting its energy sources entirely to clean, renewable sources by 2022, it is expected that the City will depend on sources such as wind, geothermal, biomass, and solar (and possibly tidal) to meet the demands of General Plan update-related growth.

Each of these renewable energy sources has potential to result in adverse effects on biological resources. For example, wind turbines may result in injury and mortality of birds and bats, and solar energy plants require large footprints that modify habitat within the solar arrays. Infrastructure associated with the capture, collection, and transmission of electricity is necessary for all energy sources, and the footprint occupied by such infrastructure can result in impacts to sensitive habitats and special-status species.

As is the case with the City's water supply, the City is not in control of the effects that energy production has on biological resources. Rather, the energy producer is responsible for environmental review, permitting, and environmental compliance for each individual energy source (such as a solar energy plant or a wind farm). As a result, it is expected that impacts to biological resources will be mitigated by individual energy producers, rather than by the City,

and thus increases in the City's energy demands as a result of General Plan update-related growth will result in less than significant impacts on biological resources.

MITIGATION

This section describes measures that will mitigate impacts to biological resources resulting from the General Plan update. Mitigation measures are described for each impact that was determined in the preceding section to be potentially significant. In addition, many of these measures will further reduce impacts that were previously described as being less than significant.

Many of the new General Plan Policies would help ensure protection of existing natural vegetation and wildlife resources in the City. Thus, implementation of these policies will contribute to mitigation of impacts of future development allowed by the proposed General Plan. In addition, there are other programs (such as state or federal regulations or permitting processes) in place that will also accomplish mitigation for impacts to natural resources by requiring avoidance, minimization, and in some cases compensatory mitigation for certain impacts.

In the following sections, we first describe the applicable General Plan Policies and/or regulatory programs that mitigate potential impacts to biological resources. In some cases, these policies and regulatory programs are expected to reduce potentially significant impacts to less-than-significant levels, and we have indicated when this is the case. For some significant impacts we have indicated examples of more specific mitigation measures that should be implemented at the time of future development to reduce impacts to a less-than-significant level.

Some new General Plan Policies provide overall protection of natural resources and thus apply generally to mitigation of all (or many) impacts to natural resources. Other new policies provide mitigation of impacts to specific habitats and, therefore, to the sensitive plant and wildlife species associated with those habitats, while others are even more specific and provide mitigation of impacts to very specific resources. This section is organized to describe first those policies and programs that apply broadly, then habitat-specific mitigation, and then mitigation that is resource specific.

GENERAL PLAN POLICIES AND EXISTING PROGRAMS THAT PROVIDE OVERALL OR BROAD PROTECTION FOR NATURAL RESOURCES

As mentioned, implementation of many of the new General Plan Policies and Actions would help ensure protection of existing natural vegetation and wildlife resources and contribute to mitigation of impacts of future development allowed by the proposed General Plan. Among the Policies are those that encourage general protections and contribute to minimizing development of natural areas or support maintenance of natural vegetation and hence associated wildlife. This is also the case for existing programs based on federal, state or local laws or regulations.

Community Forest

Policy CF-1.1 Manage the Community Forest to achieve the City's environmental goals for water and energy conservation, wildlife habitat preservation, stormwater retention, heat reduction in urban areas, energy conservation, and the removal of carbon from the atmosphere.

Policy CF-1.2 Provide the appropriate resources to preserve, protect and expand the City's Community Forest.

Policy CF-1.3 Ensure that San Jose's Community Forest is comprised of species that have low water requirements and are well adapted to the city's Mediterranean climate, and plant diverse species to prevent monocultures that are vulnerable to pest invasions. Furthermore, consider the appropriate placement of tree species and their lifespan to ensure the perpetuation of the Community Forest.

Policies CF-1.10 Where urban development occurs adjacent to natural plant communities (*e.g.*, oak woodland, riparian forest), landscape plantings should incorporate tree species native to the area.

Balanced Resource Conservation

Policy NC-1.1 Continue to maintain the Greenline/UGB and focus development and redevelopment within the existing urban envelope of the City.

Grasslands, Oak Woodlands, Chaparral, and Coastal Scrub Habitats

Policy NC-2.3 Cooperate with other agencies in the preservation and management of native hillside vegetation.

Policy NC-2.4 Minimize the removal of ecologically valuable vegetation during development and grading for projects within the City.

Policy NC-2.8 Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.

Action NC-2.9 Continue to work with Local Partners (the County of Santa Clara, SCVTA, SCVWD, and the Cities of Gilroy and Morgan Hill) and three Wildlife Agencies (CDFG, USFWS, and the NMFS) on completion of the HCP/NCCP project. Once completed and adopted, implement an HCP/NCCP that that both mitigates for land and stream development impacts and provides additional conservation, restoration, and enhancement efforts.

Baylands

Policy NC-4.2 Cooperate with the County, USACE, EPA, CDFG, Bay Conservation and Development Commission (BCDC), and other appropriate jurisdictions to prevent the degradation of baylands by discouraging new filling or dredging of Bay waters and baylands.

Policy NC-4.3 In cooperation and, where appropriate, in consultation with other interested agencies and with projects such as the South Bay Salt Ponds

Restoration Project, encourage the restoration of diked historic wetlands, including salt ponds, to their natural state by opening them to tidal action.

Urban/Natural Interface

Policy NC-7.1 Encourage fencing between residential areas and natural lands to minimize the encroachment of people, pets, and non-native vegetation into natural lands.

Policy NC-7.2 Design development at the urban/natural community interface of the Greenline/UGB to minimize the length of the shared boundary between urban development and natural areas through clustering of development and locating development closest to existing development. Key areas where natural communities are found adjacent to the UGB include the Baylands in Alviso, the Santa Teresa Hills, Alum Rock Park, and Evergreen.

Policy NC-7.5 Prohibit use of invasive species, citywide, in required landscaping as part of the discretionary review of proposed development.

Policy NC-7.8 Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.

Policy IN-1.11 Locate and design utilities to avoid or minimize impacts to environmental sensitive areas and habitats.

Policy IN-5.11 Plan, maintain and operate Materials Recovery Facility (MRF) and Landfill facilities in a manner that mitigates potential negative environmental and land use impacts, including surface water or ground water contamination, issues related to birds, insects, rodents or other wildlife, increased traffic and traffic hazards, noise and odor problems, pollution and potential littering of traffic routes, and windborne and waterborne litter.

Environmental Stewardship

Policy PR-6.5 Design and maintain park and recreation facilities to minimize water, energy and chemical (e.g. pesticides and fertilizer) use. Incorporate native and/or drought-resistant vegetation and ground cover where appropriate.

Policy PR-6.7 In design and construction, consider the role of parks, trails, and open space in preserving or enhancing existing ecosystems/wildlife habitat or restoring where appropriate.

Policy PR-6.8 Encourage development of public and private recreational uses in rural and hillside areas that is low intensity and sensitive to geologic hazards, water resources, natural habitats, and visual impacts.

MITIGATION OF IMPACTS TO HABITATS

Impacts associated with allowable development under the General Plan to most of the habitats within the Study Area are expected to be at a level that is less than significant; however, impacts to some particularly sensitive or rare habitats are potentially significant. General Plan Policies or other programs applicable to mitigation for habitat impacts are listed below, followed by a section describing Policies or other programs applicable to specific sensitive habitat types where impacts of allowable development under the General Plan are potentially significant.

General Plan Policies that Mitigate Impacts to Habitats

In addition to mitigation provided by all of the Policies listed above that protect natural resources in general, natural habitats will benefit from implementation of Parks, Trails, Open Space, and Recreation Amenities Programs Policies. These policies provide recreational opportunities within the UGB near existing and future development, thus reducing recreational pressures on natural habitat areas. In addition, impacts to habitats in general will be mitigated by and benefit from the reduction in invasive vegetation through the Community Forest Policy:

Policy CF-1.10 Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings should incorporate tree species native to the area.

Policy CF-1.12 Discourage the planting of invasive non-native trees and encourage removal of existing invasive non-native trees through the development review process or through capital improvement projects, where feasible.

Policies designed to protect Grasslands, Oak Woodlands, Chaparral, and Coastal Scrub Habitats, which are the primary natural habitats that surround the UGB, will provide benefits to common and sensitive habitats. In addition, the following policies constraining public access and use of natural habitat areas will mitigate potential impacts to these habitats.

Policy NC-2.1 The nature and amount of public access to wooded areas and grasslands, when allowed, shall be consistent with the environmental characteristics of these areas.

Policy NC-2.2 Prohibit the use of motorized off-road vehicles for recreation purposes in oak woodland, grassland, and hillside areas within the City to protect these limited resources.

Habitat-Specific Mitigation of Impacts to Sensitive Habitats

There are five sensitive habitat types for which impacts from allowable development by the General Plan are potentially significant: serpentine grasslands, oak woodlands, aquatic and wetland habitats, riparian habitats, and serpentine chaparral. General Plan Policies and existing programs provide measures that will specifically reduce impacts to or otherwise benefit these habitats individually.

Serpentine Grasslands

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies NC-2.1, NC-2.2, NC-2.4, NC-2.8**, **NC-7.1, NC-7.2., NC-7.5,** and **PR-6.8**, will provide some protection for serpentine grasslands. In addition, the following General Plan Policy more specifically focuses on the protection of serpentine habitats:

Policy NC-2.7 Preserve, protect, and manage serpentine grasslands, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.

Oak Woodlands

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies CF-1.10**, **NC-2.1, NC-2.2**, **NC-2.4, PR-6.8, NC-7.1** and **NC-7.2**, will provide some protection for oak woodlands. In addition, the following General Plan Policies more specifically focus on the protection of oak woodland habitats:

Policy NC-2.5 Preserve and protect oak woodlands, and individual oak trees, to the greatest extent feasible. Any loss of oak woodland and/or native oak trees must be fully mitigated.

Policy NC-2.8 Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.

Policy NC-7.8 Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. The City of San José Tree Ordinance (San José City Code, Sections 13.31.010 to 13.32.100) that protects all trees having a trunk measuring 56 inches or more in circumference (18 inches in diameter) at the height of 24 inches above the natural grade of slope would provide applicable mitigation for some trees. The ordinance protects native tree species such as native oaks. A tree removal permit is required from the City of San José for the removal of ordinance-sized trees.

Aquatic and Wetland Habitats

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies CF-1.1, PR-6.8,**

and **NC-7.8**, will provide some protection for aquatic and wetland habitats. In addition the following General Plan Policies provide mitigation through protection of all aquatic and wetland habitats specifically through the protection of water quality by reduction of stormwater runoff, which will in turn also reduce erosion and sedimentation, and reduction of contamination of aquatic habitats, *e.g.,* through reduction of inappropriate disposal of hazardous materials:

Policy SW-1.1 Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.

Policy SW-1.3 Ensure that private development in San José includes adequate measures to treat stormwater runoff to the maximum extent practicable.

Policy SW-1.4 Ensure that all development projects in San José maximize opportunities to filter, infiltrate, store and reuse or evaporate stormwater runoff onsite; implement Low Impact Development (LID) stormwater management to the maximum extent feasible.

Policy SW-1.7 Consider the characteristics and condition of the local watershed and identify opportunities for water quality improvement when developing new or updating existing development plans or policies including, but not limited to, specific or area land use plans.

Policy ZW-5.6 Provide convenient locations for collection of household hazardous wastes and bulk wastes.

Policy ZW-5.10 Target control of litter and illegal dumping.

Baylands **- Applicable General Plan Policies.** The following General Plan Policies more specifically focus on the protection of baylands, a subset of aquatic and wetland habitats. In addition, it should be noted that the General Plan's Zero Waste Policies provide mitigation for impacts related to expansion of existing landfill sites that could impact baylands by reducing, ultimately, the amount of putrescible waste generated by the City and disposed of in landfills near the baylands.

Policy NC-4.1 The baylands ecosystem shall be protected, preserved and restored in a manner consistent with the fragile environmental characteristics of this area and the interest of the citizens of San José in a healthful environment.

Policy NC-4.5 No development which creates adverse impacts on the Don Edwards San Francisco Bay National Wildlife Refuge or results in a net loss of baylands habitat value shall be permitted.

Policy NC-4.6 Prohibit planting of invasive non-native plant species in or near baylands habitats.

Policy IN-5.11 Plan, maintain and operate MRF and Landfill facilities in a manner that mitigates potential negative environmental and land use impacts, including surface water or ground water contamination, issues related to birds, insects, rodents or other wildlife, increased traffic and traffic hazards, noise and odor problems, pollution and potential littering of traffic routes, and windborne and waterborne litter.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Programs that will provide mitigation through the regulatory process for impacts to aquatic and wetland habitats are as follows:

- Clean Water Act Sections 404 and 401
- Porter-Cologne Water Quality Control Act
- Rivers and Harbors Act
- §1602 of the California Fish and Game Code
- City of San José City Council Post-Construction Urban Runoff Management Policy
- City of San José City Council Post-Construction Hydromodification Management Policy

Riparian Habitats

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies NC-2.4, NC-7.1, NC-7.5, NC-7.6**, **NC-7.8**, and **PR-6.3**, will provide some protection for riparian habitats. In addition, water quality mitigation described for aquatic and wetland habitats (see *Applicable General Plan Policies* under *Aquatic and Wetland Habitat* above) through General Plan Policies and other programs provide mitigation of impacts in riparian habitats, particularly related to stormwater runoff, sedimentation, and erosion. The following General Plan Policies more specifically focus on the protection of riparian habitats:

Community Forest

Policy CF-1.10 Where urban development occurs adjacent to natural plant communities (*e.g.*, oak woodland, riparian forest), landscape plantings should incorporate tree species native to the area.

Policy CF-1.12 Discourage the planting of invasive non-native trees and encourage removal of existing invasive non-native trees through the development review process or through capital improvement projects, where feasible.

Riparian Corridors

Policy NC-3.1 Ensure that new public and private development adjacent to riparian corridors in San José are consistent with the provisions of the City's Riparian Corridor Policy Study and the HCP/NCCP.

Policy NC-3.2 Ensure that the 100-foot setback is the standard to be achieved in all but a limited number of instances.

Policy NC-3.3 Require that new development seeking exception to the 100-foot setback be set back from the outside edge of riparian habitat (or top of bank, whichever is greater) a distance sufficient to buffer the impacts of adjacent human activities and provide avenues for wildlife dispersal.

Policy NC-3.4 Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.

Policy NC-3.5 When disturbances to riparian corridors cannot be avoided, implement appropriate measures to restore, and/or mitigate damage.

Policy NC-3.6 Restore riparian habitat through native plant restoration and removal of non-native/invasive plants along riparian corridors and adjacent areas.

Policy IN-3.13 The "modified floodplain design" is the preferred design for future flood control facilities. Use the "widen-one-bank" and "trapezoidal channel" designs only when funding or right-of-way limitations make the use of the modified flood plain design impractical.

Riparian Actions

Action NC-3.7 Develop a City Council Policy based on the City's Riparian Corridor Policy Study and HCP/NCCP to successfully implement the riparian goals and policies of the General Plan, which recognizes that the 100-foot setback is the standard to be achieved in all but a limited number of instances.

Action NC-3.8 Partner with public, private, and non-profit agencies on public outreach and education on the importance of protecting our riparian corridor resources.

Action NC-3.9 Develop and require the use of a criteria checklist from the Riparian Corridor Policy Study to evaluate new developments that propose to use riparian setback exceptions**.**

Urban/Natural Interface

Policy NC-7.3 Lighting in developed areas adjacent to natural areas will consist of lowglare lighting. Any high-intensity lighting used near natural areas will be placed as close to the ground as possible and directed downward or away from natural areas.

Policy NC-7.4 Public facilities such as ballparks and fields that require high-intensity night lighting will be sited at least 0.5 mile from sensitive habitats to minimize light pollution, unless it can be demonstrated that lighting systems will not substantially increase lighting within natural areas (*e.g.*, due to screening topography or vegetation).

Policy NC-7.7 In areas where movement of wildlife through a developed area (*i.e.*, between patches of natural habitat) is not ecologically desirable, barriers to movement of pets out of the developed area and movement of sensitive species into the developed area will be encouraged.

Policy IN-3.13 The "modified floodplain design" is the preferred design for future flood control facilities. Use the "widen-one-bank" and "trapezoidal channel" designs only when funding or right-of-way limitations make the use of the modified flood plain design impractical.

California Sycamore Alluvial Woodland. Because impacts to California sycamore alluvial woodland particularly would be significant, minor additions to proposed policy language is recommended that will provide additional mitigation of impacts to California Sycamore Alluvial Woodland and native sycamore trees.

Policies CF-1.5 As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Any adverse affect on the health and longevity of protected or other significant trees should be avoided through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, appropriate tree replacement should be included.

In addition, the following minor changes in General Plan Policy language would clarify what is considered a local source of native trees for propagation, specifically encourage the planting of native sycamores where appropriate.

Policy CF-1.10 Where urban development occurs adjacent to natural plant communities (e.g., oak woodland, riparian forest), landscape plantings ~~should~~shall incorporate tree species native to the area propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).

Policy CF-1.11 Encourage the planting of native oak trees and native sycamores in new development, where appropriate.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section above. Programs that will provide mitigation through the regulatory process for impacts to aquatic and wetland habitats will also provide mitigation for impacts to riparian habitats; in addition, there are programs that provide mitigation specifically for riparian habitats:

- Clean Water Act Sections 404 and 401
- Porter-Cologne Water Quality Control Act
- §1602 of the California Fish and Game Code
- City of San José Riparian Corridor Policy
- City of San José City Council Post-Construction Urban Runoff Management Policy
- City of San José City Council Post-Construction Hydromodification Management Policy

The other programs described for mitigation to riparian impacts, in particular California Fish and Game Code, also may provide more extensive mitigation for California Sycamore Alluvial Woodland, for example, in that CDFG generally requires high ratios of replacement habitat to lost habitat in this sensitive habitat in compensatory mitigation.

Applicable Additional Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically avoid impacts to California Sycamore Alluvial Woodland in the Coyote Planning Area.

- London plane tree shall be prohibited from being planted in the Coyote Planning Area, which is located near the most significant stands of sycamore alluvial woodland in the City. Planting of this species is discouraged elsewhere, particularly near riparian areas.

Serpentine Chaparral

Due to the rarity and sensitivity of serpentine habitats, impacts to serpentine chaparral are potentially significant.

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies NC-2.2, NC-2.3, NC-2.4 NC-2.6, NC-2.8**, **NC-7.1, NC-7.5, NC-7.2, NC-7.6,** and **PR-6.8**, will provide some protection for serpentine chaparral. In addition, the following minor changes in General Plan Policy language would more specifically focus on the protection of serpentine chaparral:

Policy NC-2.1 The nature and amount of public access to wooded areas, scrublands, and grasslands, when allowed, shall be consistent with the environmental characteristics of these areas.

Policy NC-2.7 Preserve, protect, and manage serpentine grasslands and serpentine chaparral, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands or chaparral supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately, managed grazing is encouraged on serpentine grasslands.

Finding:

The General Plan Policies and Actions and recommended modifications of General Plan Policies along with existing regulatory programs will mitigate impacts to serpentine grasslands, oak woodlands, riparian habitats, aquatic and wetland habitats, and serpentine chaparral to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts to these habitats.

MITIGATION FOR IMPACTS TO TREES

Impacts associated with allowable development under the General Plan to trees within the urban forest, native trees in natural habitats, and to native tree populations resulting from hybridization with non-native species are potentially significant.

General Plan Policies that Mitigate Impacts to Urban Forest and Ordinance/Heritage Trees

Policy **NC-2.4,** designed to provide general protection for habitats and biological resources listed above, will provide some protection for urban forest and potentially ordinance/heritage trees. In addition, General Plan Policies and Actions that particularly protect riparian habitats described above (see *Applicable General Plan Policies* under *Riparian Habitats* above) provide mitigation for urban forest impacts where riparian habitat is part of the urban forest. The General Plan also includes Community Forest Policies to protect and enhance the urban forest that provide mitigation of impacts to trees within the City.

Policy CF-1.4 Encourage the maintenance of mature trees on public and private property as an integral part of the Community Forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to effectively preserve the tree.

Policy CF-1.5 As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Any adverse affect on the health and longevity of protected or other significant trees should be avoided through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks. When tree preservation is not feasible, appropriate tree replacement should be included.

Policy CF-1.6 As a condition of new development, require, where appropriate, the planting and maintenance of both street trees and trees on private property.

Policy CF-1.7 Manage infrastructure to ensure that the placement and maintenance of street trees, streetlights, signs and other infrastructure assets are integrated. Give priority to tree placement in designing or modifying streets.

Policy CF-1.8 Encourage the selection of trees appropriate for a particular urban site. Tree type and placement should consider energy saving values, nearby power lines, and root characteristics.

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Policy CF-1.9 Where appropriate, incorporate native trees into urban plantings in order to provide food and cover for native wildlife species.

Policy CF-1.12 Discourage the planting of invasive non-native trees and require removal of existing invasive non-native trees through the development review process or through capital improvement projects, where feasible.

General Plan Policies that Mitigate Impacts to Native Trees in Natural Areas

Several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies CF-1.1, CF-1.10, NC-1.1, NC-2.1, NC-2.2**, **NC-2.3, NC-2.4, NC-7.1,** and **NC-7.8**, will provide some protection for native trees in natural areas**.** In addition, General Plan Policies and Actions that particularly protect riparian habitats described above (see *Applicable General Plan Policies* under *Riparian Habitats* above) provide mitigation for impacts to native trees within riparian habitat.

The following General Plan Policies more specifically focus on the protection of native oak trees, particularly in oak woodlands, and native trees in natural areas in protected habitats such as parks, preserves, and refuges, and so provide some mitigation of impacts to native trees, particularly oaks in natural habitats:

Policy NC-2.5 Preserve and protect oak woodlands, and individual oak trees, to the greatest extent feasible. Any loss of oak woodland and/or native oak trees must be fully mitigated.

Policy NC-2.8 Prohibit planting of invasive non-native plant species in oak woodlands, grasslands, chaparral and coastal scrub habitats, and in hillside areas.

Policy NC-5.2 Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.

In addition, the following minor changes in General Plan Policy language would more specifically focus on the protection of native sycamores trees:

Policy CF-1.5 As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Any adverse affect on the health and longevity of protected or other significant trees should be avoided through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, appropriate tree replacement should be included.

Policy CF-1.10 Where urban development occurs adjacent to natural plant communities (*e.g*., oak woodland, riparian forest), landscape plantings shall incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).

Policy CF-1.11 Encourage the planting of native oak trees and native sycamores, propagated from local sources (see CF-1.10), in new development, where appropriate.

Policy CF-1.12 Prohibit the planting of invasive non-native trees and require removal of existing invasive non-native trees through the development review process or through capital improvement projects, where feasible.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Impacts to native oak trees in oak woodlands under County jurisdiction must conform to State Bill 1334, an amendment to CEQA (Chapter 732, Statutes of 2004), Public Resources Code 21083.4, which state that in such a case the County shall require one or more project-specific oak woodland mitigation alternatives. In order to achieve compliance with SB1334, site condition, significance of the impacts of projects compliant with the General Plan that occur in areas with oak woodlands, and mitigation appropriate for the impact should be assessed as described in the Oak Woodland Impact Decision Matrix (Giusti et al. 2008).

General Plan Policies that Mitigate Impacts of Hybridization of Native Trees with Non-natives

In all areas, but particularly in areas where California sycamores occurring within the rare and unique habitat of California sycamore alluvial woodlands or native oaks in natural habitats may be at risk, impacts to native tree populations resulting from hybridization with non-native species associated with allowable development under the General Plan are potentially significant due to their rarity and the high potential for significant change. Several of the General Plan Policies cited in other context above will provide some mitigation of impacts of hybridization of native trees in natural areas with non-native species as follows:

Policies CF-1.9 Where appropriate, incorporate native trees into urban plantings in order to provide food and cover for native wildlife species.

Policy CF-1.11 Encourage the planting of native oak trees in new development, where appropriate.

Policy CF-1.12 Discourage the planting of invasive non-native trees and encourage removal of existing invasive non-native trees through the development review process or through capital improvement projects, where feasible.

Policy NC-7.6 Encourage the use of native plants in the landscaping of developed areas adjacent to natural lands.

In addition, the following, minor changes in General Plan Policy language would more specifically focus on the protection of native sycamores trees;

Policies CF-1.5 As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Any adverse affect on the health and longevity of protected or other significant trees should be avoided through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, appropriate tree replacement should be included.

Policy CF-1.10 Where urban development occurs adjacent to natural plant communities (*e.g.*, oak woodland, riparian forest), landscape plantings shall incorporate tree species native to the area and propagated from local sources (generally from within 5-10 miles and preferably from within the same watershed).

Policy CF-1.11 Require the planting of native oak trees and native sycamores in new development, where appropriate.

Applicable Additional Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically avoid hydridization impacts to native trees.

- London plane tree shall be prohibited from being planted in the Coyote Planning Area, which is located near the most significant stands of sycamore alluvial woodland in the City. Planting of this species is discouraged elsewhere, particularly near riparian areas.

Regulatory Programs that Mitigate Impacts to Urban Forest Trees, and Native Trees in Natural Areas

Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Programs that will provide mitigation through the regulatory process for impacts to riparian habitats will also provide mitigation for impacts to urban forest, ordinance and heritage trees, and native trees in natural areas where they coincide with riparian habitat:

- Porter-Cologne Water Quality Control Act
- §1602 of the California Fish and Game Code

In addition, a City program will provide mitigation specifically for large trees that are removed:

- City of San José Tree Ordinance

Finding:

The General Plan Policies and Actions and recommended modifications of and additions to General Plan Policies along with existing regulatory programs will mitigate impacts to urban forest, ordinance and heritage trees, and native trees in natural areas. Additional program mitigation (see *Additional Mitigation*. above**)** to protect sycamores and oaks from hybridization with non-native trees will reduce hybridization impacts to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies and do not implement the additional mitigation to minimize hybridization may have significant impacts to trees.

MITIGATION FOR IMPACTS TO SPECIAL-STATUS PLANTS

Impacts associated with allowable development under the General Plan to special-status plants that are federally or state-listed, serpentine-adapted, found in scrub, chaparral, oak woodland, and/or grassland, or found in wetland and wet alkaline habitat are potentially significant.

General Plan Policies that Mitigate Impacts to Special-status Plants

In addition to mitigation provided by all of the Policies listed above that protect natural resources and natural habitats in general, several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies NC-2.1, NC-2.2, NC-2.3, NC-2.4 NC-2.6, NC-2.8**, **NC-7.1, NC-7.5, NC-7.2, NC-7.6, NC-7.8, PR-6.3, PR-6.8**, **CF-1.1** and **CF-1.10** will provide some protection for special-status plants. Also, special-status plants will benefit from implementation of Parks, Trails, Open Space, and Recreation Amenities Programs Policies that provide recreational opportunities within the UGB near existing and future development, thus reducing recreational pressures on natural habitat areas. In addition, the following General Plan Policies more specifically focus on the protection of special-status plants:

Policy NC-5.1 Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.

Policy NC-5.2 Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.

Policy NC-5.3 Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.

Federal and State-listed Plant Species

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Programs that will provide mitigation through the regulatory process for impacts to federal and state listed plants are as follows:

- Federal Endangered Species Act
- California Endangered Species Act

CNPS-Listed, Serpentine-Adapted Special-Status Plant Species

Applicable General Plan Policies. General Plan Policies designed to provide protection for serpentine grasslands (see *Applicable General Plan Policies* under *Serpentine Grasslands* above), in particular **Policy NC-2.7**, will provide additional mitigation specific to serpentine adapted plants. In addition, the recommended modifications of General Plan Policy language to provide mitigation for serpentine chaparral habitat will protect serpentine adapted plants in that habitat.

CNPS-Listed, Scrub, Chaparral, Oak Woodland, and/or Grassland-Adapted Special-Status Plant Species

Applicable General Plan Policies. General Plan Policies designed to provide protection for natural areas such as chaparral, oak woodlands, and grasslands (see *Applicable General Plan Policies* under *Grasslands, Oak Woodlands, Chaparral, and Coastal Scrub Habitats* above), and also in particular adherence to the provisions set forth by SB1334, will provide additional mitigation specific to non-serpentine, upland special-status plants.

CNPS-Listed Special-status Plant Species in Wetland and Alkaline Habitats

Applicable General Plan Policies. General Plan Policies designed to provide protection for wetland habitats (see *Applicable General Plan Policies* under *aquatic and wetland habitats* above), in particular **Policies NC-7.8** and **PR-6.3,** will provide additional mitigation specific to wetland adapted plants.

Applicable Additional General Plan Mitigation. Of particular importance in mitigation of impacts to Tiburon Indian paintbrush, Coyote ceanothus, Santa Clara Valley dudleya, Contra Costa goldfields, Metcalf Canyon jewel-flower, showy Indian clover, big-scale balsamroot, pink creamsacs, Mt. Hamilton thistle, fragrant fritillary, Loma Prieta hoita, smooth lessingia, Hall's bush-mallow, robust monardella, most beautiful jewel-flower, and caper-fruited tropidocarpum, is the following General Plan Action.

Action NC-2.9 Continue to work with Local Partners (the County of Santa Clara, SCVTA, SCVWD, and the Cities of Gilroy and Morgan Hill) and three Wildlife Agencies (CDFG, USFWS, and the NMFS) on completion of the HCP/NCCP project. Once completed and adopted, implement an HCP/NCCP that that both mitigates for land and stream development

impacts and provides additional conservation, restoration, and enhancement efforts.

It is anticipated that the HCP/NCCP will provide the necessary mitigation for all of those species that are covered species or no take species under the plan. If the process fails to result in an approved HCP/NCCP, comparable mitigation measures that protect populations of special-status plants will be needed. Impacts to those species that are federally or state-listed species will have protections through existing regulatory programs, *i.e.,* FESA and CESA.

In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individual special-status plants:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

In accordance with this policy/action, the following measures are typical for special-status plants and should be considered at the time of future planning or development for those species with the potential to be significantly impacted by allowable development under the General Plan which are not covered by the HCP/NCCP (Franciscan onion, bent-flowered fiddleneck, alkali milk-vetch, brittlescale, San Joaquin spearscale, round-leaved filaree, Congdon's tarplant, Santa Clara red ribbons, Hoover's button-celery, Satan's goldenbush, arcuate bush-mallow, Davidson's bush-mallow, and Mt. Diablo cottonweed), or for all special-status plants, should the HCP/NCCP process not result in an approved plan. These measures include:

- Conducting appropriately timed surveys during the blooming period of special-status species in areas of suitable habitat that will be subject to loss or conversion.
- Minimization or avoidance measures if special-status species are found within or directly adjacent to a proposed work area such as
    - The population(s) will be avoided and adequately buffered from site development
    - Compensatory preservation of off-site population(s) only if on-site avoidance is infeasible

Finding:

The General Plan Policies and Actions and recommended modifications of and additions to General Plan Policies along with existing regulatory programs and the mitigation framework provided by the draft HCP/NCCP will mitigate impacts to special-status plants. In conformance with proposed General Plan policies, mitigation for individual development or infrastructure projects to protect non-HCP covered special-status plants, or all special-status plants in the event that the HCP/NCCP is not adopted, will reduce impacts to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies and do not implement mitigation to minimize loss of special-status plant populations may have significant impacts to these species.

MITIGATION FOR IMPACTS TO SPECIAL-STATUS ANIMALS

Allowable development by the General Plan has potentially significant impacts on many species of special-status animals.

General Plan Policies that Mitigate Impacts to Special-status Animals

As with impacts to habitats, several of the policies designed to provide general protection for habitats and biological resources listed above, including **Policies NC-1.1, NC-2.1, NC-2.2, NC-2.4, NC-7.1, NC-7.2,** and **NC-7.6**, will provide some protection for wildlife in general in natural areas**.** Also, General Plan Policies that particularly protect and enhance the urban forest (see *General Plan Policies that Mitigate Impacts to Urban Forest and Ordinance/Heritage Trees* above) will provide some protection generally for wildlife in urban areas, particularly **Policies CF-1.1, CF-1.9, CF-1.10 CF-1-11 and CF-1.12.** Most wildlife species that may be significantly impacted are confined to natural areas and some to particular habitats within those areas; therefore, policies or programs protecting particular habitats will also mitigate, at least in part, impacts to those wildlife species and will be cited under the species-specific headings below. For example, impacts to aquatic species such as fish, frogs, salamanders and turtles are mitigated in large part by measures that protect their aquatic habitat.

In addition, the following General Plan Policies specifically focus on the protection of special-status species and provide particular protections that mitigate impacts to special-status wildlife:

Policy NC-5.1 Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.

Policy NC-5.2 Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.

Policy NC-5.3 Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.

Mitigation of Impacts to Bay Checkerspot Butterfly

Impacts to bay checkerspot butterflies resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. Policies providing general protection for wildlife as listed above will provide some protection for bay checkerspot butterflies, particularly those designed for protection of special-status species**.** In addition, General Plan Policies and Actions that particularly protect serpentine habitats described above (see *Applicable General Plan Policies* under *Serpentine Grassland* above) provide mitigation for impacts to this species particularly the following:

Policy NC-2.7 Preserve, protect, and manage serpentine grasslands, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.

In addition, of particular importance in mitigation of impacts to bay checkerspot butterflies is the following General Plan Action.

Action NC-2.9 Continue to work with Local Partners (the County of Santa Clara, SCVTA, SCVWD, and the Cities of Gilroy and Morgan Hill) and three Wildlife Agencies (CDFG, USFWS, and the NMFS) on completion of the HCP/NCCP project. Once completed and adopted, implement an HCP/NCCP that that both mitigates for land and stream development impacts and provides additional conservation, restoration, and enhancement efforts.

The HCP/NCCP will provide the necessary mitigation for bay checkerspot butterflies as a covered species under the plan. If the process fails to result in an approved HCP/NCCP, comparable mitigation measures will be needed. Impacts to bay checkerspot butterflies as a federally listed species will have protections through existing regulatory programs, *i.e.*, FESA.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. The program that will provide mitigation through the regulatory process for impacts to bay checkerspot butterflies is the Federal Endangered Species Act. For this mitigation, development in the Coyote Planning Area and portions of the Edenvale Planning Area where serpentine grasslands persist would undergo Section 10 consultation under FESA if Section 7, when a federal action is involved, does not apply.

Finding:
The General Plan Policies and Actions along with the existing regulatory program, *i.e.*, FESA compliance, will mitigate impacts to bay checkerspot butterflies to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies, the HCP/NCCP, or alternatively in compliance with FESA, may have significant impacts to the species.

Mitigation of Impacts to the Pacific Lamprey, Green Sturgeon, Central Valley Fall-run Chinook Salmon, Central California Coast Steelhead, and Longfin Smelt

Impacts to Pacific lamprey, green sturgeon, Central Valley fall-run Chinook salmon, central California coast steelhead, and longfin smelt resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. General Plan Policies and Actions that particularly protect aquatic (*i.e.*, creeks, streams, rivers, and sloughs) and riparian habitats described above (see

Applicable General Plan Policies under *Aquatic and Wetland Habitat* and *Riparian Habitat* above) provide mitigation for impacts to these species. In addition, the following policies provide mitigation for infrastructure use and development (i.e., for transportation development through roads and operation of landfills):

Policy NC-8.3 Where new road crossings of streams are constructed, or existing culverts are replaced or improved, design all culverts to allow movement of aquatic species present in any watercourse crossed by the road. Use clear-span bridges in place of culverts where feasible.

Policy IN-5.11 Plan, maintain and operate MRF and Landfill facilities in a manner that mitigates potential negative environmental and land use impacts, including surface water or ground water contamination, issues related to birds, insects, rodents or other wildlife, increased traffic and traffic hazards, noise and odor problems, pollution and potential littering of traffic routes, and windborne and waterborne litter.

Also, of particular importance in mitigation of impacts to Pacific lamprey, Central Valley fall-run Chinook salmon, and Central California Coast steelhead is General Plan **Action NC-2.9,** completion of the HCP/NCCP. Although the HCP/NCCP Local Partners and the resource agencies (the USFWS, NMFS, and CDFG) have discussed removing fish from coverage by the HCP/NCCP, the HCP/NCCP will still provide mitigation for impacts to aquatic and riparian habitats important to these species. If the HCP/NCCP ultimately does not cover these fish, or if the process fails to result in an approved HCP/NCCP altogether, comparable mitigation measures will be needed. Impacts to green sturgeon and Central California Coast Steelhead as federally listed species, and longfin smelt as a state-listed species, will have protections through existing regulatory programs (*i.e.*, FESA and CESA, respectively). Measures protecting those listed fish will also generally protect the habitat of other fish, including the Pacific lamprey and Central Valley fall-run Chinook salmon.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Because these species are aquatic species, the regulatory programs that will provide mitigation through the regulatory process are as follows:

- Clean Water Act Sections 404 and 401
- Porter-Cologne Water Quality Control Act
- Clean Water Act NPDES Program
- Federal Endangered Species Act
- California Endangered Species Act
- Magnuson-Stevens Fishery Conservation and Management Act
- California Fish and Game Code
- City of San José City Council Post-Construction Urban Runoff Management Policy
- City of San José City Council Post-Construction Hydromodification Management Policy

These programs provide protections for water quality; stream, wetland, and riparian habitat; and the individual species. The program that will provide mitigation through the regulatory process for impacts to green sturgeon and Central California Coast steelhead is the FESA. The Magnuson-Stevens Fishery Conservation and Management Act provides mitigation protection for Central Valley fall-run Chinook salmon.

Applicable Additional General Plan Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individuals of these special-status fish species:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

In accordance with this policy/action, at the time of future development mitigation could include the following measures to reduce impacts to native fish, such as Pacific lamprey:

- Measures to avoid or minimize loss of individuals of the species such as preconstruction surveys, translocation of individuals during in-water work, worker education, and construction monitoring

These may be conditions of approval under existing regulatory programs such as §1602 of the California Fish and Game Code but may need to be implemented for development within aquatic habitats containing these fish.

Finding:

The General Plan Policies and Actions along with the existing regulatory program, *i.e*., FESA and CESA compliance, will mitigate impacts to Pacific lamprey, green sturgeon, Central Valley fall-run Chinook salmon, Central California Coast steelhead, and longfin smelt to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies, the HCP/NCCP, and FESA, may have significant impacts to the species.

Mitigation of Impacts to California Tiger Salamander, California Red-Legged Frog, Foothill Yellow-Legged Frog, and Western Pond Turtle

Impacts to California red-legged frogs, California tiger salamanders, foothill yellow-legged frogs and western pond turtles resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. Similar to impacts described above for fish, because these species are tied to aquatic habitats, General Plan Policies and Actions that particularly protect aquatic (*i.e*., creeks, streams, ponds and perhaps reservoirs) and riparian habitats described above (see *Applicable General Plan Policies* under *Aquatic and Wetland Habitat* and *Riparian Habitat* above) provide mitigation for impacts to these species. In addition, as for fish, **Policy NC-8.3** (see *Mitigation of Impacts to the Bay Checkerspot Butterfly* above) provides mitigation for

transportation development through roads. Western pond turtles may also benefit through protection/provision of habitat by the following policy:

Policy IN-3.13 The "modified floodplain design" is the preferred design for future flood control facilities. Use the "widen-one-bank" and "trapezoidal channel" designs only when funding or right-of-way limitations make the use of the modified flood plain design impractical.

Of particular importance in mitigation of impacts to all of these species is General Plan **Action NC-2.9,** completion of the HCP/NCCP. The HCP/NCCP will provide the necessary mitigation for California red-legged frogs, California tiger salamanders, foothill yellow-legged frogs and western pond turtles as covered species under the plan. If the process fails to result in an approved HCP/NCCP, comparable mitigation measures will be needed. Impacts to California red-legged frogs and California tiger salamanders as federally listed species will have protections through existing regulatory programs that will mitigate General Plan impacts.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Because these species are aquatic species, the regulatory programs that will provide mitigation through the regulatory process protect water quality in addition to species-specific protections and are as follows:

- Clean Water Act Sections 404 and 401
- Clean Water Act NPDES Program
- Porter-Cologne Water Quality Control Act
- Federal Endangered Species Act
- California Endangered Species Act
- California Fish and Game Code
- City of San José City Council Post-Construction Urban Runoff Management Policy
- City of San José City Council Post-Construction Hydromodification Management Policy

Mitigation through the regulatory process for impacts to California red-legged frogs and California tiger salamanders will be provided by FESA which can be accessed through the Clean Water Act Section 404 and for California tiger salamanders also through CESA. For western pond turtles and yellow-legged frogs, in addition to California red-legged frogs and California tiger salamanders, these protections may be conditions of approval under existing regulatory programs such as §1602 of the California Fish and Game Code or Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act.

Applicable Additional General Plan Mitigation. If the HCP/NCCP is implemented, adherence to the conditions of the HCP/NCCP will adequately address impacts to individuals of these species. If the HCP/NCCP is not implemented, then in addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individuals of these special-status species:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

These may be conditions of approval under existing regulatory programs such as §1602 of the California Fish and Game Code but may need to be implemented for development adjacent to aquatic habitats as described above (see Impacts to the *California Tiger Salamander, California Red-legged Frog, and Foothill Yellow-legged Frog* and *Impacts to the Western Pond Turtle* above**).**

Finding:
The General Plan Policies and Actions along with existing the regulatory program, i.e., FESA compliance, will mitigate impacts to California red-legged frogs and California tiger salamanders to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies, the HCP/NCCP, and FESA, may have significant impacts to the species. For foothill yellow-legged frogs and western pond turtles, if **Action NC-2.9** is accomplished, the Policies and Actions will mitigate impacts to a less-than-significant level; however, if it is not, additional mitigation to avoid or minimize affect on individual western pond turtles and yellow-legged frogs and provide compensation for lost habitat (as described above) will reduce impacts to less-than-significant levels.

Mitigation of Impacts to the California Horned Lizard

Impacts on California horned lizards resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. Because this species is confined to natural habitat areas outside of the UGB, General Plan Policies designed to provide general protection for habitats and biological resources listed above, particularly **Policies NC-2.1, NC-2.2, NC-2.3, NC-2.4, NC-2.5, NC-2.6, NC-7.1, NC-7.2**, **NC-7.3**, and **NC-7.4,** will provide protection for habitats California horned lizards use. Most particularly those designed for protection of special-status species, especially **Policy NC-5.1,** will also mitigate impacts to this species.

Applicable Additional General Plan Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individuals of this species:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

Finding:
The General Plan Policies will mitigate impacts to California horned lizards to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts to the species.

Mitigation of Impacts to Special-status Birds

Impacts on many special-status birds resulting from allowable development under the General Plan are potentially significant; these include the following.

- Northern harrier
- White-tailed kite
- Loggerhead shrike
- Golden eagle
- Bald eagle
- American peregrine falcon
- California clapper rail
- Alameda song sparrow
- Bryant's savannah sparrow
- Western snowy plover
- Black skimmer
- Burrowing owl
- Yellow warbler
- Yellow-breasted chat
- San Francisco common yellowthroat
- Tricolored blackbird

Common to all these species is that mitigation to reduce impacts to a level that is less than significant must protect their natural habitats and protect individuals from disturbance, particularly during nesting.

Applicable General Plan Policies. In addition to mitigation provided by the Policies listed above that protect natural resources and natural habitats in general, several of the policies designed to provide general protection for habitats and biological resources listed above, particularly those providing protections to natural habitat areas (see *General Plan Policies that Mitigate Impacts to Habitats* and *Habitat-Specific Mitigation of Impacts to Sensitive Habitats* above) will provide some protection for special-status birds generally by protecting the specific habitats they occupy. Also, special-status birds will benefit from implementation of Parks, Trails, Open Space, and Recreation Amenities Programs Policies that provide recreational opportunities within the UGB near existing and future development, thus reducing recreational pressures on natural habitat areas. In addition, the following General Plan Policies and Actions that protect habitats specifically used by these species have been described previously. General Plan Policies and Actions that protect riparian habitats described above (see *Applicable General Plan Policies* under *Riparian Habitat* above) provide mitigation for impacts to Yellow Warbler and Yellow-breasted Chat; General Plan Policies and Actions that protect aquatic habitats, wetland habitats, and bayland habitats described above (see *Applicable General Plan Policies* under *Aquatic and Wetland Habitat* and the subheading *Baylands - Applicable General Plan Policies* above) provide mitigation for impacts to northern harriers, bald eagles peregrine falcons, California clapper rail, Alameda song sparrow, Bryant's savannah sparrow, western snowy plover, black skimmer, San Francisco common yellowthroat, and tricolored blackbird; General Plan Policies and Actions that protect oak woodlands described above (see *Applicable General Plan Policies* under *Oak Woodlands* above) provide mitigation for impacts to white-tailed kites,

loggerhead shrikes, golden eagles, and perhaps for northern harriers. Burrowing owl habitat is unlikely to receive much protection from General Plan Policies protecting habitat although some of the habitats in which they can be found will not be developed under the General Plan at the San José International Airport and in the Coyote Valley Urban Reserve.

Several of the policies designed to provide general protection for habitats and biological resources listed above, particularly **Policies NC-1.1, NC-2.3, NC-7.1, and NC-7.2**, and several of the policies designed for protection of sensitive habitats, including **Policies NC-2.1, NC-2.2, NC-2.5, NC-2.7, NC-3.1, NC-3.3 and NC-3.4,** will provide some protection from disturbance. Some of the policies protecting special-status species (see introduction to *Mitigation for Impacts to Special-Status Wildlife* above) provide particular protections for some special-status birds. Thus many of the policies designed to provide general protection for natural areas intentionally or incidentally will provide some protection from disturbance in natural habitat areas where most of these special-status birds reside and in particular, nest.

In addition, the following General Plan Policies provide mitigation to reduce impacts to migratory birds and will provide mitigation of impact to special-status birds:

Policy NC-6.1 Avoid implementing activities that result in the loss of active native birds' nests, including both direct loss and indirect loss through abandonment, of native birds. Avoidance of activities that could result in impacts to nests during the breeding season or maintenance of buffers between such activities and active nests would avoid such impacts.

Policy NC-6.2 Require that development projects incorporate measures to avoid impacts to nesting migratory birds.

Also, of particular importance in mitigation of impacts to burrowing owl and potentially to golden eagle and tricolored blackbird is General Plan **Action NC-2.9**, completion of the HCP/NCCP. The HCP/NCCP will provide the necessary mitigation for golden eagle, burrowing owl, and tricolored blackbird as covered species under the plan. If the process fails to result in an approved HCP/NCCP, comparable mitigation measures will be needed for burrowing owls. For burrowing owls additional measures will provide mitigation:

- Compensatory mitigation for occupied habitat following the Burrowing Owl Consortium Guidelines.
- Measures to avoid or minimize loss of individuals of the species such as avoidance of construction during the breeding season, preconstruction surveys, passive relocation during the non-breeding season, and worker education.

These may be conditions of approval under existing regulatory programs such as §1602 of the California Fish and Game Code but may need to be implemented for development adjacent to any grassland or ruderal habitats in infill lots or natural areas as described above (see *Impacts to the Burrowing Owl* above).

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under

Regulatory Setting in the *Existing Conditions* section. Regulatory programs apply to some or all of these species. The species and process for which addition mitigation will be provided through the regulatory process are as follows:

- California Endangered Species Act (California clapper rail and bald eagle)
- Bald and Golden Eagle Protection Act (bald eagle and golden eagle)
- Federal Migratory Treaty Act (all)
- California Fish and Game Code §§3503, 2513, and 3800 (all)
- California Fish and Game Code §3503.5 (northern harrier, white-tailed kite, golden eagle, bald eagle, American peregrine falcon, and burrowing owl)
- City of San José Tree Ordinance (habitat)
- City of San José Riparian Corridor Policy (habitat)

It should also be noted that much of the baylands habitats used by many of these species, sometimes or always, are within the Don Edwards San Francisco Bay National Wildlife Refuge and within the purview of the USFWS so that protection from disturbance by recreational visitors is under their control.

Finding:
The General Plan Policies and Actions along with the existing regulatory programs, and in the case of bayland species, management responsibility of the USFWS, will mitigate impacts to most special-status birds, to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies, the HCP/NCCP, and CESA, may have significant impacts on these species.

Impacts to the Salt Marsh Wandering Shrew and Salt Marsh Harvest Mouse

The impacts on salt marsh harvest mice and salt marsh wandering shrews resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. These species are tied to salt marsh habitats in bayland areas so General Plan Policies that particularly protect bayland habitats (i.e., tidal salt and muted tidal/diked marsh) described above (see *Applicable General Plan Policies* under *Aquatic and Wetland Habitat* and *Baylands - Applicable General Plan Policies* above) provide mitigation for impacts to these species through habitat protection. Also, General Plan Policies that protect or improve water quality in the aquatic habitats such as creeks, rivers, sloughs that flow into the tidal marshes, including **Policies SW-1.3, SW-1.7,** and **ZW-5.6**, provide additional mitigation for these species. **Policy IN-5.11** will mitigate impacts resultant from the attraction of predators to landfills.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Because these species are marsh species, the regulatory programs that will provide mitigation through the regulatory process are as follows:

- Clean Water Act Sections 404 and 401
- Porter-Cologne Water Quality Control Act

- Federal Endangered Species Act
- California Endangered Species Act
- California Fish and Game Code

These programs provide protections for water quality, wetland habitat and the salt marsh harvest mouse. Both the FESA and the CESA provide specific mitigation through the regulatory process for impacts to salt marsh harvest mice. Mitigation specific to salt marsh harvest mice will also benefit salt marsh wandering shrew.

Applicable Additional General Plan Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individuals of these special-status fish species:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

As a part of implementation of this action/policy, at the time of future development project-level mitigation could include the following measures to reduce impacts to salt marsh wandering shrews:

- Measures to avoid or minimize loss of individuals of the species such as preconstruction surveys, exclusion fencing, worker education, and construction monitoring

These may be conditions of approval under existing regulatory programs such as §1602 of the California Fish and Game Code but may need to be implemented for development adjacent to tidal and muted tidal/diked marsh habitats as described above (see *Impacts to Salt Marsh Harvest Mice and Salt Marsh Wandering Shrews* above).

Finding:
The General Plan Policies along with the existing regulatory programs will mitigate impacts to salt marsh harvest mice and salt marsh wandering shrews to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies, FESA, may have significant impacts to the species. For salt marsh wandering shrews additional mitigation to avoid and minimize effects on individuals and provide compensation for lost habitat (as described above) will reduce impacts to less-than-significant levels.

Impacts to the San Francisco Dusky-footed Woodrat

Impacts on San Francisco dusky-footed woodrats resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. General Plan Policies designed to provide general protection for habitats and biological resources listed above, particularly **Policies NC-2.3, NC-2.4, NC-3.1, NC-3.2, NC-3.3, NC-3.4, NC-3.5, NC-3.6, NC-7.1, NC-7.2**, **NC-7.3**, and **NC-7.4,** will provide protection of riparian and scrub habitats where most woodrats are found. In addition, those

General Plan Policies designed for protection of special-status species, especially **Policy NC-5.1,** will also mitigate impacts to this species.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Because these species are often found in riparian habitats, California Fish and Game Code will frequently provide mitigation through the regulatory process in this habitat as conditions of approval in the §1602 process.

Applicable Additional General Plan Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individual woodrats and their active nests:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

As a part of implementation of this policy/action , the following project-level mitigation could be employed at the time of future development to specifically reduce impacts to woodrats:

- Measures to avoid or minimize loss of individuals of the species or their nests such as preconstruction surveys, nest relocation, worker education, and construction monitoring.
- Compensation for lost habitat by nest relocation to suitable riparian (potentially to newly restored riparian habitat) or suitable scrub depending on the habitat lost.

These may be conditions of approval under the existing regulatory program for §1602 of the California Fish and Game Code but may need to be implemented for development within or adjacent to riparian and scrub habitats as described above (see *Impacts to San Francisco Dusky-footed Woodrats* above).

Finding:
The General Plan Policies and Actions along with existing regulatory programs will mitigate impacts to San Francisco dusky-footed woodrats to a less-than-significant level. Projects that are not in complete compliance with the General Plan Policies and do not implement the additional mitigation to minimize effects on woodrats may have significant impacts.

Mitigation for Impacts to the Pallid Bat, Townsend's Big-Eared Bat, and Non-special-status Bat Colonies

Impacts of allowable development under the General Plan on pallid bats and Townsend's big-eared bats are potentially significant. In addition, tree removal and building demolition that results in take of multiple colonies or of a particularly large colony of bats of common bat species could have potentially significant impacts.

Applicable General Plan Policies. General Plan Policies designed to provide general protection for habitats and biological resources listed above, particularly **Policies CF-1.4, CF-1.5, NC-2.4,**

NC-2.5, NC-3.1, NC-3.2, NC-3.3, NC-3.4, NC-3.6, NC-7.3, and **NC-7.4,** will provide protection of riparian habitats and large trees where bats may be found. In addition, those General Plan Policies designed for protection of special-status species, especially **Policy NC-5.1,** will also provide some mitigation of impacts to these species.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section.

- California Fish and Game Code
- City of San José Tree Ordinance
- City of San José Riparian Corridor Policy

While the California Fish and Game Code protects bats, there is no regulatory process in place to accomplish this. Because these species are often found in riparian habitats, the California Fish and Game Code will frequently provide mitigation (including mitigation to avoid or minimize impacts to individuals) through the regulatory process in this habitat as conditions of approval in the §1602 process.

Applicable Additional General Plan Mitigation. Because destruction of an occupied bat roost could result in the loss of numerous individuals, thus affecting regional abundance of the species involved, avoidance and minimization of impacts to individual bats at occupied roost sites is important. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to bats within active roosts:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

As a part of implementation of this policy/action, the following project-level mitigation could be employed at the time of future development to specifically reduce impacts to bats:

- Avoidance or minimization of affects on individual special-status bats or colonies, particularly maternity colonies, of any bats
  - Avoid tree or structure removal during the breeding season
  - Pre-construction surveys for roosting bats
  - Evict special-status bats or bat colonies only during the nonbreeding season
  - A construction-free buffer around any colony until the young are flying
- Compensatory mitigation by providing ecologically suitable alternative roosts

These may be conditions of approval under the existing regulatory program for §1602 of the California Fish and Game Code but may need to be implemented for development that will remove trees or structures as described above (see *Impacts to the Pallid Bat, Townsend's Big-Eared Bat, and Western Red Bat* and *Impacts to Non-special-status Mammals* above).

Finding:

The General Plan Policies along with existing regulatory programs will mitigate impacts to the pallid bat, Townsend's big-eared bat, and non-special-status bat colonies to a less-than-significant level.

Impacts to the American Badger

Impacts on American badgers resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. Several of the policies designed to provide general protection for habitats and biological resources listed above, particularly **Policies NC-2.1, NC-2.2, NC-2.3, NC-7.1, NC-7.2, NC-7.3**, **NC-7.4**, **NC-7.6**, and **NC-7.7,** will provide some protection for badgers. In general, these policies provide for open habitat isolated from development. In addition, General Plan **Action NC-8.4** is essential to safe badger dispersal through the Coyote Valley.

Applicable Additional General Plan Mitigation. Because destruction of an occupied badger den, particularly a pupping den, could result in the loss of multiple individuals, thus potentially affecting regional abundance of the species, avoidance and minimization of impacts to occupied badger dens is important. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts to individual badgers:

- Require that development projects incorporate measures to avoid and minimize impacts to individuals of special-status species.

As a part of implementation of this policy/action, the following mitigation could be implemented at the time of future development to specifically reduce impacts to badgers:

- Avoidance or minimization of affects on badger pupping dens
    - Pre-construction surveys for badger dens
    - Avoidance of badger dens during the pupping season
    - Construction-free buffers around pupping dens
    - Badgers will be evicted by excavation of the den using hand tools outside of the pupping season only

Finding:
The General Plan Policies and Actions will mitigate impacts to badgers to a less-than-significant level. Within the Coyote Valley Planning Area, mitigation to allow safe movement of badgers across Monterey Highway is also required to mitigate impacts of development in the Coyote Valley on American badgers to a level that is less than significant if Action NC-8.4 is not accomplished. Projects that are not in complete compliance with the General Plan Policies and do not implement the additional mitigation to minimize effects on badgers may have significant impacts.

Impacts to the Harbor Seal

Impacts to harbor seals resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. General Plan Policies and Actions that particularly protect aquatic (*i.e.*, creeks, streams, rivers, and sloughs) bayland, and riparian habitats described above (see *Applicable General Plan Policies* under *Aquatic and Wetland Habitat, Bayland Habitat,* and *Riparian Habitat* above) provide mitigation for impacts to harbor seals. Also, harbor seals will benefit from implementation of Parks, Trails, Open Space, and Recreation Amenities Programs Policies that provide recreational opportunities within the UGB near existing and future development, thus reducing recreational pressures on natural habitat areas within the bayland habitat area. In addition, the following policies provide mitigation for recreational use and operation of landfills that occur near the bay:

Policy NC-5.2 Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.

Policy IN-5.11 Plan, maintain and operate MRF and Landfill facilities in a manner that mitigates potential negative environmental and land use impacts, including surface water or ground water contamination, issues related to birds, insects, rodents or other wildlife, increased traffic and traffic hazards, noise and odor problems, pollution and potential littering of traffic routes, and windborne and waterborne litter.

Applicable Regulatory Programs. Existing regulatory programs that will provide mitigation for impacts from allowable development by the General Plan are described in detail under *Regulatory Setting* in the *Existing Conditions* section. Because the harbor seal is an aquatic species, the regulatory programs that will provide mitigation through the regulatory process protect water quality in addition to species-specific protections will provide protection for the species and are as follows:

- Clean Water Act Sections 404 and 401
- Clean Water Act NPDES Program
- Federal Endangered Species Act
- California Endangered Species Act
- California Fish and Game Code
- City of San José City Council Post-Construction Urban Runoff Management Policy
- City of San José City Council Post-Construction Hydromodification Management Policy
- Marine Mammal Protection Act

These programs provide protections for water quality, wetland habitat and the individual species. The program that will provide mitigation through the regulatory process for impacts to harbor seals is the Marine Mammal Protection Act.

Finding:

The General Plan Policies and Actions along with the existing regulatory programs and management responsibility of the USFWS will mitigate impacts to harbor seals, to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts on these species.

MITIGATION FOR COLLISION IMPACTS TO BIRDS

The impact of bird collision with buildings of allowable development by the General Plan is potentially significant.

Applicable General Plan Policies. The following General Plan Policy specifically focuses on mitigating bird collisions with buildings in the area of highest potential impact:

Policy NC-8.1 In the area north of Highway 237 design and construct buildings to reduce the potential for bird strikes for species associated with the baylands or the riparian habitats of lower Coyote Creek.

Finding:
The General Plan Policy NC-8.1 will mitigate collision impacts to birds to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts to birds due to collisions with buildings.

MITIGATION FOR IMPACTS TO WILDLIFE MOVEMENT

Impact of the General Plan on wildlife movement is potentially significant.

Applicable General Plan Policies. The following General Plan Policies specifically focuses on mitigation of impacts on wildlife movement:

Policy NC-7.7 In areas where movement of wildlife through a developed area (*i.e.*, between patches of natural habitat) is not ecologically desirable, barriers to movement of pets out of the developed area and movement of sensitive species into the developed area will be encouraged.

Policy NC-8.2 In areas important to terrestrial wildlife movement, design new or improved existing roads so that they allow wildlife to continue to move across the roads (*e.g.*, either over the road surface or through undercrossings or overcrossings designed for the animals moving through the area). Enhance undercrossings used for wildlife movement (*e.g.*, by enlargement) when roads are improved.

Action NC-8.4 To facilitate the movement of wildlife across Coyote Valley, work with the appropriate transportation agencies to replace at least portions of the median barrier on Monterey Road with a barrier that maintains human safety while being more permeable to wildlife movement.

Finding:

The General Plan **Policies NC-7.7** and **NC-8.2** and **Action NC-8.4** will mitigate impacts to wildlife movement to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts wildlife movement. Action NC-8.4 must be accomplished in order to mitigate impacts of development in the Coyote Valley on wildlife movement to a level that is less than significant.

MITIGATION OF INDIRECT IMPACTS TO SERPENTINE COMMUNITIES FROM INCREASED NITROGEN DEPOSITION

Indirect impacts on serpentine communities resulting from allowable development under the General Plan are potentially significant.

Applicable General Plan Policies. General Plan policies, particularly those designed for protection of serpentine habitats including **Policy NC-2.7** and **Action NC-2.9**, and special-status species, including **Policies NC-5.1, NC-5.2**, and **NC-5.1**, will also mitigate this impact to serpentine communities. Should **Action NC-2.9** not result in an approved HCP/NCCP, additional compensatory mitigation in line with the study undertaken as part of the Santa Clara Valley HCP/NCCP planning process would be necessary to reduce impacts to less-than-significant levels.

Applicable Regulatory Programs. In addition, analysis of traffic and air quality impacts may offer mitigations that will reduce air pollution sources of nitrogen and nitrogen deposition. For example, existing federal, state, and local regulations that would reduce or avoid possible indirect impacts of nitrogen deposition include National Low-Emission Vehicle and fuels regulations, California Low-Emission Vehicle (LEV) regulations for new passenger vehicles and regulations for heavy-duty vehicles, and California Air Resources Board emission reduction programs for off-road sources, such as stationary diesel engines, locomotives, and ground support equipment at airports.

Applicable Additional Mitigation. In addition to the General Plan Policies and the applicable regulatory programs discussed above, the following mitigation included as a policy or action in the General Plan would specifically reduce impacts from nitrogen deposition on serpentine habitats should the HCP/NCCP (Action NC-2.9) not be completed.

- In the event an HCP/NCCP which includes measures to off-set indirect impacts to serpentine grassland habitats is not adopted by January 30, 2013 the City will independently set up a program for quantifying the effects of proposed development projects on serpentine grasslands through nitrogen deposition and establishing one or more serpentine grassland preserves within the County of Santa Clara. This program will establish the methods for quantifying impacts from an individual project on a project-by-project basis, determining the acreage of serpentine grassland that would need to be managed to offset the project's impacts, and the fee required for the City to preserve and manage that acreage of serpentine habitat. A Preserve Management Plan shall be prepared for each serpentine grassland preserve that focuses on alleviating potential effects of increased nitrogen deposition. The preserve program shall be funded by fees on new development that results in a net increase in air emissions of nitrogen compounds (e.g., nitrogen oxides) in the air basin.

Finding:
The General Plan Policies and Actions will mitigate nitrogen deposition impacts to serpentine communities to less-than-significant levels. Projects that are not in complete compliance with the General Plan Policies may have significant impacts to the species. In addition, if the HCP/NCCP (**Action NC-2.9**) is not completed, additional compensatory mitigation as described above will be needed to reduce this impact to less-than-significant levels.

LITERATURE CITED

Accurso LM. 1992. Distribution and abundance of wintering waterfowl on San Francisco Bay 1988-1990 [Master's thesis]. Arcata, CA: Humboldt State University. 252 p.

Adams, P. B., C. Grimes, J. E. Hightower, S. T. Lindley, M. L. Moser, and M. J. Parsley. 2007. Population Status of North American Green Sturgeon, *Acipenser medirostris.* Environmental Biology of Fishes 79:339–356.

Altman, B., and R. Sallabanks. 2000. Olive-sided Flycatcher (*Contopus cooperi*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/502. Accessed 31 December 2008.

Avery, M. L. 1979. Review of Avian Mortality due to Collisions with Manmade Structures. Wildlife Damage Management, Internet Center for Bird Control Seminars Proceedings.

Barbour, R. W., and W. H. Davis. 1969. Bats of America. University of Kentucky Press, Lexington. 286 pp.

Baron, T., and J. Takegawa. 1994. California Least Tern *Sterna antillarum browni*. Pp 184-187 *In*: C. G. Thelander, D. C. Pearson, and G. E. Olson (eds.). Life on the Edge: A Guide to California's Endangered Natural Resources. 550 pp.

Basham, M. P., and L. R. Mewaldt. 1987. Salt water tolerance and the distribution of south San Francisco Bay Song Sparrows. Condor 89:697-709.

Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. Journal of Wildlife Management 59:228-237.

Black, S. H., and D. M. Vaughn. 2005. Species Profile: *Euphydryas editha bayensis*. *In*: Shepard, M. D., D. M. Vaughn, and S. H. Black (eds.). *Red List of Pollinator Insects of North America*. CD-ROM version 1 (May 2005). Portland, OR: Xerces Society for Invertebrate Conservation. Accessed on 8 October 2008, via the internet: http://www.xerces.org/Pollinator_Red_List/.

Bousman, W. G. 2007a. Breeding Bird Atlas of Santa Clara County, California. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007b. Yellow-headed Blackbird *Xanthocephalus xanthocephalus*. Pp 512-513 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007c. Short-eared Owl *Asio flammeus*. P. 509 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007d. Swainson's Hawk *Buteo swainsoni*. Pp 506-507 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007e. Black Skimmer *Rhynchops niger*. Pp 218-219 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007f. Long-eared Owl *Asio otus*. Pp 238-239 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007g. Olive-sided Flycatcher *Contopus cooperi*. Pp 272-273 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007h. Loggerhead Shrike *Lanius ludovicianus*. Pp 288-289 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007i. Purple Martin *Progne subis*. Pp 310-311 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007j. Yellow Warbler *Dendroica petechia*. Pp 376-377 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007k. Bald Eagle *Haliaeetus leucocephalus*. Pp 517-518 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007l. Bank Swallow *Riparia riparia*. Pp 511-512 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007m. Northern Harrier *Circus cyaneus*. Pp 174-175 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007n. Yellow-breasted Chat *Icteria virens*. Pp 390-391 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bousman, W. G. 2007o. Golden Eagle *Aquila chrysaetos*. Pp 184-185 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Brown, B. T. 1993. Bell's Vireo (*Vireo bellii*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/035.

Browning, P. M. 2007. Redhead *Aythya americana*. Pp 122-123 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Bryiski, P., R. Duke, and H. Shellhammer. 1990. Dusky-footed Woodrat (*Neotoma fuscipes*). Pp. 246-247 *In*: D. Zeiner, W. Laudenslayer, Jr., K. Mayer, and M. White (eds.). California's Wildlife, Vol. 3. Mammals. California Department of Fish and Game.

Buehler, D. A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell lab of Ornithology. http://bna.birds.cornell.edu/bna/species/506. Accessed 17 December 2008.

Bulger, J. B., N. J. Scott, Jr., and R. B. Seymour. 2003. Terrestrial Activity and Conservation of Adult California red-legged Frogs *Rana aurora draytonii* in Coastal Forests and Grasslands. Biological Conservation 110:85-95.

Bull, E. L., and C. T. Collins. 2007. Vaux's Swift (*Chaetura vauxi*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/077. Accessed 29 December 2008.

Burhans, D. E., and F. R. Thompson III. 1999. Habitat patch size and nesting success of yellow-breasted chats. Wilson Bulletin 111(2):210-215.

Bury, R. B., and D. J. Germano. 2008. *Actinemys marmorata* (Baird and Girard 1852) – Western Pond Turtle, Pacific Pond Turtle. *In*: A. G. J. Rhodin, P. C. H. Pritchard, P. P. van Dijk, R. A. Saumure, K. A. Buhlmann, and J. B. Iverson, Eds. Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs 5:001.2-001.9. http://www.iucn-tftsp.org/cbftt.

Cade, T. J. 2007. Exposure of California condors to lead from spent ammunition. Journal of Wildlife Management 71(7):2125-2133.

Cade, T. J., and C. P. Woods. 1997. Changes in Distribution and Abundance of the Loggerhead Shrike. Conservation Biology 11(1):21-31.

Cain, J. W., M. L. Morrison, and H. L. Bombay. 2003. Predator Activity and Nest Success of Willow Flycatchers and Yellow Warblers. Journal of Wildlife Management 67(3):600-610.

Cayan, D., M. Tyree, M. Dettinger, H. Hidalgo, T. Das, E. Maurer, P. Bromirski, N. Grahan, and R. Flick. 2009. Climate change scenarios and sea level rise estimates for the California 2009 climate change scenarios assessment. California Climate Change Center.

California Fish and Game Commission. 2007. http://www.fgc.ca.gov/regulations/new/2007/apfntcrecpet.pdf.

California Fish and Game Commission. 2008. California Fish and Game Commission: Notice of Findings. Declare the Longfin Smelt (Sprinichus thaleichthys) as a Candidate Species for Listing. J. Carlson, Jr. Executive Director. Released on February 19, 2008.

California Herps. California Herps Homepage. via internet: http://www.californiaherps.com/frogs/pages/r.boylii.html. Accessed 15 December 2008.

California Resources Agency. 2009. http://www.resources.ca.gov/

Canavelli, S. B., M. J. Bechard, B. Woodbridge, M. N. Kochert, J. J. Maceda, and M. E. Zaccagnini. 2003. Habitat use by Swainson's hawks on their austral wintering grounds in Argentina. Journal of Raptor Research 37(2):125-134.

[CDFG] California Department of Fish and Game. 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607. Environmental Services Division.

[CDFG] California Department of Fish and Game. 1995. Staff report on Burrowing Owl mitigation. 9 pp.

CDFG. 1998. Life history and background information on the Chinese mitten crab. http://www.dfg.ca.gov/delta/mittencrab/life_hist.asp 5 August, 1998.

[CDFG] California Department of Fish and Game. 2007. Vegetation Classification and Mapping Program List of California Vegetation Alliances and Rarity Ranking.

[CDFG] California Department of Fish and Game. 2008. Bald Eagles in California. http://www.dfg.ca.gov/wildlife/species/t_e_spp/bald_eagle/index.html. Accessed 17 December 2008.

Carraway L. N., and B. J. Verts. 1991. *Neotoma fuscipes*. Mammalian Species No. 386, The American Society of Mammalogists. 10 pp.

Chan, Y., and H. Spautz. 2008. Alameda Song Sparrow (*Melospiza melodia pusillula*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate

Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

City of San José. 1994. Focus on the Future: San José 2020 General Plan. http://www.sanjoseca.gov/planning/gp/gptext.asp.

City of San José. 1998. Final Program Environmental Impact Report (EIR) for the Alviso Master Plan.

City of San José. 2005. North San José Development Policies Update Program EIR. http://www.sanjoseca.gov/planning/nsj/environment.asp. March 2005.

City of San José. 2006. DEIR for Evergreen – East Hills Vision Strategy Project, Vol. III, Appendix H. http://www.sanjoseca.gov/planning/evergreen/eir.asp. February 2006.

City of San José. 2007a. Coyote Valley Specific Plan DEIR. http://www.sanjoseca.gov/coyotevalley/publications_DEIR.htm. March 2007.

City of San José. 2007b. Coyote Valley Specific Plan DEIR Comments Received. http://www.sanjoseca.gov/coyotevalley/DEIR_Comments.htm. June 2007.

City of San José. 2008. Draft Supplemental EIR for Revsion of othe Evergreen Development Policy. http://www.sanjoseca.gov/planning/eir/EEHDP_PP08-121/DEIR/draft SEIR 8_27_08.pdf

[CNDDB] California Natural Diversity Data Base. 2010. Rarefind. California Department of Fish and Game.

[CNPS] California Native Plant Society. 2010. Inventory of Rare and Endangered Plants of California (7th edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi.

Collins, C., and K. Garrett. 1996. The Black Skimmer in California: an overview. Western Birds 27:127-135.

Comrack, L. A. 2008. Yellow-breasted Chat (*Icteria virens*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

[CCH] Consortium of California Herbaria. 2010. Regents of the University of California. http://ucjeps.berkeley.edu/consortium/.

Corelli, T., and Z. Chandik. 1995. The Rare and Endangered Plants of San Mateo and Santa Clara County. Monocot Press. Half Moon Bay, California. 139pp.

De Anza College Wildlife Corridor Stewardship Team. 2009. Unpublished data provided to H. T. Harvey & Associates by Ryan Phillips and Tanya Diamond.

Dunk, J. R. 1995. White-tailed Kite (*Elanus leucurus*). *In*: A. Poole (ed.). The Birds of North America Online. Ithaca: Cornell Lab of Ornithology: http://bna.birds.cornell.edu/bna/species/178

Dunk, J. R., and R. J. Cooper. 1994. Territory-size Regulation in Black-shouldered Kites. Auk 111(3):588-595.

Eckerle, K. P. and C. F. Thompson. 2001. Yellow-breasted Chat (*Icteria virens*). *In*: A. Poole, ed. Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/575. Accessed 26 December 2008.

EDAW, Inc. 2007. Draft Alviso Slough Restoration Project Fisheries And Aquatic Resources Technical Report. Prepared for Santa Clara Valley Water District, San José, California. 57 pp.

EDAW, Philip Williams and Associates, Ltd., H. T. Harvey & Associates Harvey and Associates, Brown and Caldwell, and Geomatrix. 2007. South Bay Salt Pond Restoration Project Final Environmental Impact Statement/ Report.

England, A. S., M. J. Bechard and C. S. Houston. 1997. Swainson's Hawk (*Buteo swainsoni*). *In*: A Poole (ed.). The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/265. Accessed 16 January 2009.

Environmental Laboratory. 1987. U.S. Corps of Engineers Wetlands Delineation Manual. Department of the Army.

Erichsen, E. L., S. K. Smallwood, A. M. Commandatore, B. W. Wilson, and M. D. Fry. 1996. White-tailed Kite Movement and Nesting Patterns in an Agricultural Landscape. Pp 165-175 *In*: D. Bird, D. Varland, and J. Negro (eds.). Raptors in Human Landscapes. San Diego, CA: Academic Press.

Evens, J. G., G. W. Page, S. A. Laymon, and R. W. Stallcup. 1991. Distribution, relative abundance, and status of the California black rail in western North America. Condor 93:952-966.

Fancher, L. E., and D. J. Alcorn. 1982. Harbour seal census in South San Francisco Bay (1972-1977 and 1979-1980). Calif Fish and Game 68(2):118-121.

Feeney, L. R., and W. A. Maffei. 1991. Snowy Plovers and their habitat at the Baumberg Area and Oliver Salt Ponds Hayward, California March 1989 through May 1990. Hayward, California: Report prepared for the City of Hayward. 162 p.

Fellers, G. M. 2005. *Rana draytonii* California Red-legged Frog. *In*: M. Lannoo, ed. Amphibian Declines: The Conservation Status of United States Species. University of California Press. CA: Berkeley. Pp 552-554.

Fellers, G. M., and P. M. Kleeman. 2007. California Red-legged Frog (*Rana draytonii*) Movement and Habitat Use: Implications for Conservation. Journal of Herpetology 41(2):276-286.

Ferguson, H., and J. M. Azerrad. 2004. Management Recommendations for Washington's Priority Species: Volume V. Mammals, Pallid Bat (*Antozous pallidus*). Washington Department of Fish and Wildlife.

Fitton, S. D. 2008. Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Findley, J. S. 1955. Speciation of the Wandering Shrew. Occasional Papers of the Museum of Natural History 9:1-68.

Fisher, R. N., A. V. Suarez, and T. J. Case. 2002. Spatial Patterns in the Abundance of the Coast Horned Lizard. Conserv. Biol. 16(1):205-215.

Fishing Bytes. 2009. http://www.geocities.com/lakecunninghamregionalpark/fishingx/fishing.htm. Accessed 9 March 2009.

Foin, T.C., E.J. Garcia, RE. Gill, S.D. Culberson, and J.N. Collins 1997. Recovery strategies for the California clapper rail (*Rallus longirostris obsoletus*) in the heavily-urbanized San Francisco estuarine ecosystem. Landscape and Urban Planning 38(3):229-243.

Franzreb, K., J. Greaves, and R. McKernan. 1994. Least Bell's Vireo. Pages 216-217. *In*: Thelander, C. G., and M. Crabtree, Eds. Life on the Edge: A Guide to California's Endangered Natural Resources: Wildlife. BioSystems Books, Santa Cruz, CA. 550 p.

Gaman, T., and J. Firman, 2006. The Status and Future of Oaks in California: Oaks 2040. California Oak Foundation. http://www.californiaoaks.org/.

Gardali, T., and J. Evens. 2008. San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Garrison, B. A. 1999. Bank Swallow (*Riparia riparia*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/414. Accessed 25 November 2008.

Garrison, B. A., J. M. Humphrey, and S. A. Laymon. 1987. Bank swallow distribution and nesting ecology on the Sacramento River, California. Western Birds 18:71-76.

Gauthreaux, S.A., Jr. and C. Belser. 2006. Ecological Consequences of Artificial Night Lighting: Effects of Artificial Night Lighting on Migrating Birds, Island Press, Washington.

Gill, R. J. 1977. Breeding avifauna of the South San Francisco Bay estuary. Western Birds 8(1):1-12.

Giusti, G. A., A. Merenlender, R. Harris, T. Scott, D. Applebee, J. Marr, B. Stewart, R. Walker, J. Vance, D. McCreary, and B. Motroni. 2008. Oak Woodland Impact Decision Matrix: A Guide to Planners to Determine Significant Impact to Oaks as Required by SB 1334 (PRC 21083.4). Prepared by the UC Integrated Hardwood Range Management Program and CDFG.

Goals Project. 1999. Baylands Ecosystem Habitat Goals. A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. First Reprint. San Francisco, CA/Oakland, CA: U.S. Environmental Protection Agency/San Francisco Bay Regional Water Quality Control Board. 209 p.

Good, R. E., R. M. Nielson, H. Sawyer, and L. L. McDonald. 2007. A Population Estimate for Golden Eagles in the Western United States. Journal of Wildlife Management 71(2):395-402.

Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna 27. Cooper Ornithological Club.

Grossinger, R. M., R. A. Askevold, C.J. Striplen, E. Brewster, S. Pearce, K. N. Larned, L. J. McKee, and J. N. Collins, 2006. Coyote Creek Watershed Historical Ecology Study: Historical Condition, Landscape Change, and Restoration Potential in the Eastern Santa Clara Valley, California. Prepared for the Santa Clara Valley Water District. A report of SFEI's Historical Ecology, Watersheds, and Wetlands Science Programs, SFEI Publication 426, San Francisco Estuary Institute, Oakland CA

Guzy, M. J., and G. Ritchison. 1999. Common Yellowthroat (*Geothlypis trichas*). *In*: A Poole (ed.). The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/448. Accessed 31 December 2008.

Hall, E. R. 1981. The Mammals of North America. Second edition, 2 vols. John Wiley and Sons, New York. 2:699-700.

Harrington B., and E. Perry. 1995. Important shorebird staging sites meeting Western Hemisphere Shorebird Reserve Network criteria in the United States. Washington, D.C.: Department of Interior, Fish and Wildlife Service.

Harvey, T. E. 1980. A breeding season survey of the California Clapper Rail (*Rallus longirostris obsoletus*) in south San Francisco Bay, California. Newark, CA: Final Report, U.S. Fish & Wildlife Service, San Francisco Bay National Wildlife Refuge.

Haynie, M. L., C. F. Fulhorst, M. Rood, S. G. Bennett, B. D. Hess, and R. D. Bradley. 2007. Genetic Variation in Multilocus Microsatellite Genotypes in Two Species of Woodrats (*Neotoma macrotis and N. fuscipes*). California Journal of Mammalogy 88:745-758.

Heath, S. K. 2008. Yellow Warbler (*Dendroica petechia*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Heller, G. G. 2007. Grasshopper Sparrow *Ammodramus savannarum.* Pp 410-411 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547pp.

Hickman, J. C. 1993. The Jepson Manual: Higher Plants of California. University of California Press.

Hilty, J. A., W. Z. Lidicker, and A. M. Merenlender. 2006. Corridor ecology: the science and practice of connectivity for biodiversity conservation. Island Press, Washington, D.C.

Holland, R. F. 1986. Preliminary Description of the Terrestrial Natural Communities of California. California Department of Fish and Game.

H. T. Harvey & Associates. 1990a. San José permit assistance program California Clapper Rail 1990 breeding survey. Prepared for CH2M Hill.

H. T. Harvey & Associates. 1990b. San José permit assistance program California Clapper Rail 1990 winter survey. Prepared for CH2M Hill.

H. T. Harvey & Associates. 1991 Sunnyvale permit assistance program California Clapper Rail breeding survey 1990 and 1991, Guadalupe Slough. Prepared for EOA, Inc.

H. T. Harvey & Associates. 1997. Red-Legged Frog Distribution and Status – 1997. Prepared for the Santa Clara Valley Water District.

H. T. Harvey & Associates. 1998. North Coyote Valley General Plan Amendment Environmental Impact Report Biological Resources Section.

H. T. Harvey & Associates. 1999a. Santa Clara Valley Water District Western Pond Turtle Distribution and Status – 1999. Prepared for the Santa Clara Valley Water District.

H. T. Harvey & Associates. 1999b. Santa Clara Valley Water District California Tiger Salamander Distribution and Status – 1999. Prepared for the Santa Clara Valley Water District.

H. T. Harvey & Associates. 1999c. Santa Clara Valley Water District Foothill Yellow-legged Frog Distribution and Status – 1999. Prepared for the Santa Clara Valley Water District.

H. T. Harvey & Associates. 2000. Lands of Sobrato California Tiger Salamander Report. Prepared for Sobrato Development Companies.

H. T. Harvey & Associates. 2005. South Bay Salt Pond Restoration Project Biology and Habitats Existing Conditions Report. Submitted to California State Coastal Conservancy, U.S. Fish & Wildlife Service, California Department of Fish and Game. Prepared in Association with Philip Williams and Associates Ltd, EDAW, and Brown and Caldwell. March 2005.

H. T. Harvey & Associates. 2006. Marsh Studies in South San Francisco Bay: 2005-2008. California Clapper Rail and Salt Marsh Harvest Mouse Survey Report, 2006. Prepared for the City of San José.

H. T. Harvey & Associates. 2008a. Adobe Creek Reach 5 Woodrat Mitigation Project Report. Project No. 2961-02. Prepared for the Santa Clara Valley Water District and the California Department of Fish and Game.

H. T. Harvey & Associates. 2008b. Marsh Plant Associations of South San Francisco Bay: 2008 Comparative Study. Project No. 477-28. Prepared for the City of San Jose Environmental Services Department.

Huenneke, L. F., S. P. Hamburg, R. Koide, H. A. Mooney, and P. M. Vitousek. 1990. Effects of soil resources on plant invasion and community structure in Californian serpentine grassland. Ecology 71:478-491.

Humphrey, S. R., and T. H. Kunz. 1976. Ecology of a Pleistocene relict, the western big-eared bat (Plecotus townsendii) in the southern Great Plains. Journal of Mammalogy 57:470-494.

Hunter, J. E. 2008. Vaux's Swift (*Chaetura vauxi*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Hunter, J. E., and M. J. Mazurek. 2003. Characteristics of trees used by nesting and roosting Vaux's swifts in northwestern California. 34:225-229.

Hunter, J. E., D. Fix, G. A. Schmidt, and J. C. Power. 2005. Atlas of the Breeding Birds of Humboldt County, California. Eureka, CA: Redwood Region Audubon Society. 440 pp.

Humple, D. 2008. Loggerhead Shrike (*Lanius ludovicianus*). *In*: Shuford, W. D. and T. Gardali (eds.). California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Hurt, R. 2004. (USFWS) email message to S. Rottenborn and L. Henkel, dated 6 August 2004.

ICF Jones & Stokes. 2009. Santa Clara Valley Habitat Plan 2nd Administrative Draft. Prepared for the County of Santa Clara Planning Office. http://www.scv-habitatplan.org/www/site/alias__default/329/default.aspx

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California. iii+255 p.

Johnston, D. S., B. Hepburn, J. Krauel, T. Stewart and D. Rambaldini. 2006. Winter Roosting and Foraging Ecology of Pallid Bats in Central Coastal California. Bat Research News 47:4, p. 115.

Keeler-Wolf, T., K. Lewis, and C. Roye. 1996. The Definition and Location of Sycamore Alluvial Woodland in California. Prepared by The Natural Heritage Foundation Bay-Delta and Special Water Projects Division, and the California Department of Fish and Game for the California Department of Water Resource's Division of Planning. vii+109 pp.

Keyes, T. 2005. Building Bird Strike Study, The Citizen Scientist, Non-game-Endangered Wildlife Program.

Kochert, M. N., and K. Steenhof. 2002. Golden Eagles in the U.S. and Canada: Status, Trends, and Conservation Challenges. Journal of Raptor Research 36(1 Suppl):32-40.

Kochert, M. N., K. Steenhof, C. L. Mcintyre, and E. H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/684. Accessed 8 January 2009.

Kopec AD, Harvey JT. 1995. Toxic pollutants, health indices and population dynamics of harbor seals in San Francisco Bay, 1989-1992. Moss Landing Marine Laboratories Technical Pub. 96-4:138.

Kruckeberg, A. R. 1984. California serpentines: Flora, vegetation, geology, soils, and management problems. University of California Press, Berkeley, California. 180pp.

Kunz, T. H., and R. A. Martin. 1982. *Plecotus townsendii*. Mammalian Species 175:1-6.

Kus, B. E. 1998. Use of Restored Riparian Habitat by the Endangered Least Bell's Vireo (*Vireo bellii pusillus*). Restoration Ecology 6 (1):75–82.

Kus, B. E. 2002. Least Bell's Vireo (*Vireo bellii pusillus*). *In*: The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.

Layne, V. L., R. J. Richmond, and P. Metropulos. 1996. First nesting of Black Skimmers on San Francisco Bay. Western Birds 27(3):159-162.

Lee, D. E., and W. D. Tietje. 2005. Dusky-footed Woodrat Demography and Prescribed Fire in a California Oak Woodland. Journal of Wildlife Management 69(3):1211-1220.

Leidy, R. A., G. S. Becker, and B. N. Harvey. 2003. Historical Distribution and Current Status of Steelhead (*Oncorhynchus mykiss*), Coho Salmon (*Oncorhynchus kisutch*), and Chinook Salmon (*Oncorhynchus tshawytscha*) in Streams of the San Francisco Estuary, California. San Francisco, California: Unpubl. report, U.S. Environmental Protection Agency.

Leidy, R. A., G. Becker, and B. N. Harvey. 2005. Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California. California Fish and Game 91(4):219-254.

Leidy, R. A. 2007. Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary, California. San Francisco Estuary Institute. 194 pp.

Lidicker, W. Z. J, and D. G. Ainley. 2000. Harbor seal, *Phoca vitulina richardsi*. *In*: Olofson PR, editor. Goals Project. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board. p 243-246.

Life Science. 2003. South Bay Salt Ponds Initial Stewardship Plan. Prepared for U.S. Fish and Wildlife Service and California Department of Fish and Game.

Liu, L., J. Wood, N. Nur, D. Stralberg, and M. Herzog. 2009. California Clapper Rail (*Rallus longirostris obsoletus*) Population monitoring: 2005-2008. PRBO Conservation Science. Prepared for California Department of Fish and Game.

Lowther, P. E., C. Celada, N. K. Klein, C. C. Rimmer, and D. A. Spector. 1999. Yellow Warbler (*Dendroica petechia*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/454.

LSA Associates. 1999. Biological Report and Wetland Characterization, Cisco Site 6. Alviso, Santa Clara County, California: City of San Jose.

Lyon, V. 2000. Grasshopper Sparrow (*Ammodramus savannarum*). *In*: CalPIF (California Partners in Flight). 2000. Version 1.0. The draft grassland bird conservation plan: a strategy for protecting and managing grassland habitats and associated birds in California (B. Allen, lead author). Point Reyes Bird Observatory, Stinson Beach, CA. http://www.prbo.org/calpif/plans.html.

MacDonald, J. S., I. K. Birtwell, and G. M. Kruzynski. 1987. Food and habitat utilization by juvenile salmonids in the Campbell River Estuary. Canadian Journal of Fisheries and Aquatic Sciences 44:1233-1246.

Mammoser, M. 2007. White-tailed Kite *Elanus leucurus*. Pp 172-173 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547pp.

Maragni, L. D. B. 2000. Chinook Salmon *Oncorhynchus tshawytscha*. Pp. 277-280 *In*: P. Olofson (ed.). Goals project 2000. Baylands ecosystem species and community profiles: life histories and environmental requirements of key plants, fish and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

Marriott, M. A. 2003. Microhabitat Characteristics Predictive of Snowy Plover (*Charadrius alexandrinus nivosus*) Nest Site Selection in South San Francisco Bay. Thesis (M.S.) Humboldt State University, 2003.

Marschalek, D. A. 2008. California Least Tern Breeding Survey, 2007 Season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2008-01. Sacramento, CA. 24 pp. + app.

Menges, T. 1998. Common Yellowthroat (*Geothlypis trichas*). *In*: The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.

Meretsky, V. J., N. F. R. Snyder, S. R. Beissinger, D. A. Clendenen, and J. W. Wiley. 2000. Demography of the California condor: implications for reestablishment. Conservation Biology 14(4):957-967.

Messick, J. P., and M. G. Hornacker. 1981. Ecology of the badger in southwestern Idaho. Wildlife Monographs No 76. 53 pp.

Miller, K. J. 1994. Endangered and threatened wildlife and plants; proposed endangered status for the California red-legged frog. Federal Register, 59(22):4888-4895.

Mills, G. S., J. B. Dunning, Jr., and J. M. Bates. 1989. Effects of urbanization on breeding bird community structure in southwestern desert habitats. Condor 91:416-429.

Miner K. L., and D. C. Stokes. 2005. Bats in the South Coast Ecoregion: Status, Conservation Issues, and Research Needs. USDA Forest Service Gen. Tech. Rep. PSW-GTR-195.

Morrell, S. 1975. Life history of the San Joaquin kit fox (*Vulpes macrotis mutica*). Calif. Fish and Game Bull. 58:162-174.

[NMFS] National Marine Fisheries Service. 1998. Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon, and California; Final Rule. Federal Register 63(53):13347-13371.

[NMFS] National Marine Fisheries Service. 2005. Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Steelhead and Salmon in California. Final Rule. Federal Register 70(170):52488-52626.

[NMFS] National Marine Fisheries Service. 2006. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon; Final Rule. Federal Register 71(67):17757-17766

[NMFS] National Marine Fisheries Service. 2008. Endangered and Threatened Wildlife and Plants: Proposed Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of the North American Green Sturgeon; Proposed Rule. Federal Register 73(174):52084-52110.

Neuman, K. K, G. W. Page, L. E. Stenzel, J. C. Warriner, and S. Warriner. 2004. Effect of Mammalian Predator Management on Snowy Plover Breeding Success. Waterbirds 27(3):257-263.

Noble, P. L. 2007. Long-eared Owl *Asio otus*. Pages 238-239 *In*: Bousman, W. G. (ed.). Breeding Bird Atlas of Santa Clara County, California. Santa Clara Valley Audubon Society.

Nur, N., S. Zack, J. Evans, and T. Gardali. 1997. Tidal Marsh Birds of the San Francisco Bay Region: Status, Distribution, and Conservation of Five Category 2 Taxa. Final draft report to the United States Geological Survey. Petaluma: PRBO Conservation Science. 66 pp.

Pacific Fisheries Management Council 1999

Page, G.W., L,E, Stenzel, and J.E. Kjelmyr. 1999. Overview of shorebird abundance and distribution in wetlands of the Pacific Coast of the contiguous United States. Condor 101:461-471.

Page, G. W, C. M. Hickey, and L. E. Stenzel. 2000. Western Snowy Plover. Pp. 281-283 *In*: Olofson, P.R. (ed.). Goals Project. Baylands Ecosystem Species and Community

Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland, CA: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board.

Pearson, O. P., M. R. Koford, and A. K. Pearson. 1952. Reproduction of the lump-nosed bat (*Corynorhinus rafinesquei*) in California. Journal of Mammalogy 33:273-320.

Peeters, H. and P. Peeters. 2005. Raptors of California. California Natural History Guide Series No. 82. University of California Press, Berkeley and Los Angeles, California. 294pp.

Philip Williams & Associates, Ltd. 2006. South Bay Salt Ponds Restoration Project South Bay geomorphic assessment.

Pierson, E. D. and W. E. Rainey. 1998. Distribution, status, and management of Townsend's big-eared bat (*Corynorhinus townsendii*) in California. State of California Department of Fish and Game. Bird and Mammal Conservation Program Technical Report Number 96-7. 34 p.

Pierson, E. D., W. E. Rainey, and C. Corben. 2006. Distribution and Status of Western Red Bats (*Lasiurus blossevillii*) in California. California Department of Fish and Game, Habitat Conservation Branch, Species Conservation and Recovery Program Report 2006-04, Sacramento, CA. 45 pp.

Polite, C. 1990. Black-shouldered Kite *Elanus caeruleus*. Pp 120-121. *In*: D. C. Zeiner, W. F. Laudenslayer Jr, K. E. Mayer, and M. White (eds.). California's Wildlife, Vol II: Birds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Polite, C., and J. Pratt. 1990. Peregrine Falcon *Falco peregrinus*. Pp 148-149. *In*: D. C. Zeiner, W. F. Laudenslayer Jr, K.E. Mayer, and M. White (eds.). California's Wildlife, Vol II: Birds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

PWA and H.T. Harvey & Associates. 2006. Status of Invasive Spartina Distribution and Control in the South Bay Salt Pond Restoration Project Area. San Francisco, CA.: Prepared for: California State Coastal Conservancy, U.S. Fish and Wildlife Service, California Department of Fish and Game.

Ricketts, M., and B. Kus. 2000. Yellow-breasted Chat (*Icteria virens*). *In:* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. Point Reyes, CA: California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian.html. Accessed 26 December 2008.

Ricketts, M. S., and G. Ritchison. 2000. Nesting success of yellow-breasted chats: effects of nest site and territory vegetation structure. Wilson Bulletin 112(4):510-516.

Rigney, M., and S. L. Granholm. 1990. Least tern *Sterna antillarum*. Pp 278-279 *In*: Zeiner, D.C., W.F.Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). California's Wildlife. Vol. II: Birds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Roberson, D. 2002. Monterey Birds (2nd edition). Monterey Peninsula Audubon Society, Carmel, CA.

Roberson, D., and C. Tenney. 1993. Atlas of the Breeding Birds of Monterey County. Monterey, CA: Monterey Peninsula Audubon Society. 434 pp.

Robertson, B. A., and R. L. Hutto. 2007. Is Selectively Harvested Forest an Ecological Trap for Olive-sided Flycatchers? Condor 109:109-121.

Rosenberg, D. K., L. A. Trulio, D. Catlin, D. Chromczack, J. A. Gervais, N. Ronan, and K. A. Haley. 2007. The Ecology of the Burrowing Owl in California. Unpubl. report to Bureau of Land Management.

Rosier, J. R., N. A. Ronan, and D. K. Rosenberg. 2006. Post-breeding Dispersal of Burrowing Owls in an Extensive California Grassland. American Midland Naturalist 155:162-167.

Rottenborn, S. C. 1997. The impacts of urbanization on riparian bird communities in central California. Unpublished Ph.D. dissertation, Stanford University.

Rottenborn, S. C. 2007a. Vaux's Swift *Chautura vauxi*. Pp 244-245 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Rottenborn, S. C. 2007b. Song Sparrow *Melospiza melodia*. Pp 412-413 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Rottenborn, S. C. 2007c. Savannah Sparrow *Passerculus sandwichensis*. Pp 408-409 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Rottenborn, S. C. 2007d. Tricolored Blackbird *Agelaius tricolor*. Pp 426-427 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Rottenborn, S. C. 2007e. Bell's Vireo *Vireo bellii*. Pp 290-291 *In*: Bousman, W.G. (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Ryan, T. P., and J. L. Parkin. 1998. The Western Snowy Plover in southern San Francisco Bay: summary of detections made during colonial waterbird monitoring surveys from 1981 to 1997. Alviso, CA: San Francisco Bay Bird Observatory. 19 p.

Santa Clara County Bird Data, unpublished. Data compiled and provided by William G. Bousman regarding birds reported by birders in Santa Clara County.

[SCVWD] Santa Clara Valley Water District. 2007. Fish Functions and Values Analysis 2006. http://scv-habitatplan.org/www/site/alias__default/documents_science_advisors_report/336/science_advisors_report.aspx.

[SCVWD] Santa Clara Valley Water District. 2009. Water in the Valley Information Page. http://www.scvwd.dst.ca.us/Water/index.shtm

Santa Cruz Predatory Bird Research Group. 2010. Santa Cruz Predatory Bird Research Group at Long Marine Lab, University of California, Santa Cruz Homepage. Accessed via the Internet: http://www2.ucsc.edu/scpbrg/index.htm.

[SCS] Soil Conservation Service. 1968. Soils of Santa Clara County, California. U.S. Department of Agriculture.

Sharp, B. L., and B. E. Kus. 2006. Factors Influencing the Incidence of Cowbird Parasitism of Least Bell's Vireos. Journal of Wildlife Management 70(3):682-690.

Shellhammer, H. S. 2000. Salt Marsh Wandering Shrew, *Sorex vagrans halicoetes*. Pp 231-233 *In*: Olofson, P. R. (ed.). Goals Project. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland, CA: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board.

Shellhammer, H. S., and R. Duke. 2004. Salt Marsh Harvest Mouse Habitat of the South San Francisco Bay: an analysis of habitat fragmentation and escape cover. San Francisco Estuarine Institute: 26 + maps.

Shuford, W. D. and T. Gardali. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

Simenstad, C. A., K. L. Freshm, and E. O. Salo. 1982. The role of Puget Sound and Washington coastal estuaries in the life history of Pacific salmon: an unappreciated function. *In*: Kennedy V. S., editor. Estuarine Comparisons. New York: Academic Press. p. 343-364.

Skonieczny, M. F., and J. R. Dunk. 1997. Hunting Synchrony in White-tailed Kites. Journal of Raptor Research 31(1):79-81.

Smallwood, K. S. 1995. Scaling Swainson's hawk population density for assessing habitat use across an agricultural landscape. Journal of Raptor Research 29(3):172-178.

Snyder, N. F., and N. J. Schmitt. 2002. California Condor (*Gymnogyps californianus*). *In*: A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/610. Accessed 17 December 2008.

South Coast Wildlands. 2008. South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion. Produced in cooperation with partners in the South Coast Missing Linkages Initiative.

Spence, B. C., S. L. Harris, W. E. Jones, M. N. Goslin, A. Agrawal, and E. Mora. 2005. Historical Occurrence of Coho Salmon in Streams of the Central Coastal California Evolutionarily Significant Unit. Technical Memorandum NOAA-TM-SWFSC-383.

Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians. Third edition, revised. Houghton Mifflin Company, Boston, MA. 336 pp.

Stenzel, L. E., G. W. Page. 1988. Results of the first comprehensive shorebird census of San Francisco and San Pablo bays. Wader Study Group Bulletin 54:43-48.

Strong, C. M. 2003. Coyote Creek flood control project Reach 1A waterbird pond monitoring program 1992-2003 final report. Prepared for the Santa Clara Valley Water District.

Strong, C. M. 2004. A summary of nesting waterbirds in the San Francisco Bay, from 1982 to 2004. Unpubl. report, San Francisco Bay Bird Observatory, Alviso, California. Alviso: San Francisco Bay Bird Observatory.

Strong, C.M., N. Wilson, and J. Albertson. 2004. Western Snowy Plover numbers, nesting success, and avian predator surveys in the San Francisco Bay, 2004. Unpubl. report. Alviso: San Francisco Bay Bird Observatory.

Sutter, B., and G. Ritchison. 2005. Effects of grazing on vegetation structure, prey availability, and reproductive success of Grasshopper Sparrows. J. Field Ornithol. 76(4):345-351.

Takekawa, J. Y., C. Lu, and R. Pratt. 2001. Avian communities in baylands and artificial salt evaporation ponds of the San Francisco Bay estuary. Hydrobiologia 466:317-328.

Taylor, W. P. 1954. Food habits and notes on life history of the ring-tailed cat in Texas. J. Mammal. 35:55-63.

Thelander, C. G., and M. Crabtree. 1994. Life on the edge: a guide to California's endangered natural resources. Santa Cruz, CA.: BioSystems Books. 550 pp.

Thomas, J. H. 1961. Flora of the Santa Cruz Mountains of California. Stanford University Press, Stanford, CA. 434 pp.

Trapp, G. R. 1978. Comparative behavioral ecology of the ringtail and gray fox in southwestern Utah. Carnivore 1:3-32.

Trulio, L. A. 2007. Burrowing Owl *Athene cunicularia*. Pp 236-237 *In*: Bousman, W.G., (ed.). Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California. 547 pp.

Trulio, L. A., and J. G. Evens. 2000. California Black Rail. Pp. 342-345 *In*: Olofson, P. (ed.). Goals Project. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland, CA: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board.

Unglish, W. E. 1937. A few unusual records from Central California. Condor 39:39-40.

Unitt, P. 1987. *Empidonax Traillii Extimus*: An Endangered Species. Western Birds 18:137-162.

Unitt, P. 2008. Grasshopper Sparrow (*Ammodramus savannarum*). *In*: Shuford, W. D., and T. Gardali (eds.). California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.

[USFWS] U.S. Fish and Wildlife Service. 1967. Native Fish and Wildlife: Endangered Species. Federal Register 32(48):4001.

[USFWS] U.S. Fish and Wildlife Service. 1970. Conservation of Endangered Species and Other Fish or Wildlife: Appendix D. United States List of Endangered Native Fish and Wildlife. Federal Register 35(199):16047-16048.

[USFWS] U.S. Fish and Wildlife Service. 1976. Endangered and Threatened Wildlife and Plants: Determination of critical habitat for American crocodile (*Crocodulus acutus*), California condor (*Gymnogyps californianus*), Indiana bat (*Myotis sodalis*), and Florida manatee (*Trichcchus manatus*). Federal Register 41(187):41914-41916.

[USFWS] U.S. Fish and Wildlife Service. 1984. Salt marsh harvest mouse and California Clapper Rail Recovery Plan. Portland: U. S. Fish and Wildlife Service. 141 pp.

[USFWS] U.S. Fish and Wildlife Service. 1986. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Least Bell's Vireo. Final Rule. Federal Register 51(85):16474-16482.

[USFWS] U.S. Fish and Wildlife Service. 1987. Endangered and Threatened Wildlife and Plants: Determination of Threatened Status for the Bay Checkerspot Butterfly (*Euphydryas editha bayensis*); Final Rule. Federal Register 52 (181):35366-35378.

[USFWS] U.S. Fish and Wildlife Service. 1991. National Oceanic and Atmospheric Administration: Policy on Applying the Definition of Species under the Endangered Species Act to Pacific Salmon; Note of Policy. Federal Register 56 (224):58612-58618.

[USFWS] U.S. Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo. Final Rule. Federal Register 59(22):4845-4867.

[USFWS] U. S. Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Red-legged Frog. Final Rule. Federal Register 61(101):25813-25833.

[USFWS] U. S. Fish and Wildlife Service. 1998a. Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area. Portland, Oregon. 330+ pp.

[USFWS] U.S. Fish and Wildlife Service. 1998b. Recovery plan for upland species of the San Joaquin Valley, California. U.S. Fish and Wildlife Service Region 1.

[USFWS] U.S. Fish and Wildlife Service. 1999a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover; Final Rule. Federal Register 64(234):68508-68544.

[USFWS] U.S. Fish and Wildlife Service. 1999b. Endangered and Threatened Wildlife and Plants; Final Rule to Remove the American Peregrine Falcon From the Federal List of Endangered and Threatened Wildlife, and To Remove the Similarity of Appearance Provision for Free-Flying Peregrines in the Conterminus United States; Final Rule. Federal Register 64(164):46542-46558.

[USFWS] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. viii + 173 pp.

[USFWS] U.S. Fish and Wildlife Service. 2004a. Recovery Plan for *Chorizanthe robusta* var. *robusta* (Robust Spineflower). U.S. Fish and Wildlife Service, Portland, Oregon. vii + 71 pp.

[USFWS] U.S. Fish and Wildlife Service. 2004b. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Sonoma County Distinct Population Segment of the California Tiger Salamander. Final Rule. Federal Register 68(53):13498-13520.

[USFWS] U.S. Fish and Wildlife Service. 2004c. Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition To List Three Species of Lampreys as Threatened or Endangered. Proposed Rules. Federal Register 69(247):77158–77167.

[USFWS] U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population. Final Rule. Federal Register 70(162):49380-49458.

[USFWS] U. S. Fish and Wildlife Service. 2006a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Red-legged Frog, and Special Rule Exemption Associated with Final Listing for Existing Routine Ranching Activities. Final Rule. Federal Register 71(71):19244-19342.

[USFWS] U.S. Fish and Wildlife Service. 2006b. Least Bell's Vireos Return. http://www.fws.gov/sacramento/ea/news_releases/2006%20News%20Releases/LBV_return_SJNWR_NR.htm. Accessed 7 January 2009.

[USFWS] U.S. Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). In 2 volumes. Sacramento, California. xiv + 751 pp.

[USFWS] U.S. Fish and Wildlife Service. 2008a. Endangered and Threatened Wildlife and Plants: Final Determination of Critical Habitat for the Bay Checkerspot Butterfly (*Euphydryas editha bayensis*); Final Rule. Federal Register 73 (166):50406-50452.

[USFWS] U.S. Fish and Wildlife Service. 2008b. Endangered and Threatened Wildlife and Plants; Petition to List the San Francisco-Bay Delta Population of the Longfin Smelt (*Spirinchus thaleichthys*) as Endangered; Notice of 90-day Petition Finding and Initiation of Status Review. Federal Register 73(88):24911-24915.

[USFWS] U. S. Fish and Wildlife Service. 2008c. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the California Red-legged Frog (*Rana aurora draytonii*). Proposed Rule. Federal Register 73(180):53492-53680.

[USFWS] U.S. Fish and Wildlife Service. 2008d. Endangered and Threatened Wildlife and Plants; Removing the Bald Eagle in the Lower 48 States from the List of Endangered and Threatened Wildlife; Final Rule. Federal Register 72(130):37345-37372.

Vickery, P. D. 1996. Grasshopper Sparrow (*Ammodramus savannarum*). *In*: A Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/239. Accessed 15 January 2009

Walker, E. P., F. Warnick, and S. E. Hamlet. 1968. Mammals of the world. 2nd ed. 2 Vols. Johns Hopkins Press, Baltimore, MD. 1500pp.

Warwick, R. M., and R. Price. 1975. Macrofauna production in an estuarine mud flat. Journal of the Marine Biological Association of the United Kingdom 55(1):1-18.

Weiss, S. B. 1999. Cars, cows, and checkerspot butterflies: Nitrogen deposition and management of nutrient-poor grasslands for a threatened species. Conservation Biology 13:1476–1486

Wernette, F. G. 2000. Longfin smelt. *In*: P. R. Olofson, editor. Goals Project. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland, CA: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board. p 109-113.

Weslar, H. B. 1987. The range of the San Joaquin kit fox (*Vulpes macrotis mutica*) north of Kings County, California. M.S. Thesis, California State University, Hayward, CA.

West Valley – Mission Community College District. 2009. Draft Environmental Impact Report Mission College Education and Facilities Master Plan. http://www.missioncollege.org /gen _info/pdf/MC_EIR/MC_draft_EIR_2009-01.pdf

Western Bat Working Group. 2005. *Lasiurus blossevillii*, Western Red Bat. Western Bat Working Group Species Accounts. http://www.wbwg.org/speciesinfo/species_ accounts/vespertilonidae/labl.pdf.

Wheeler, C. A., H. H. Welsh, and T. Roelofs. 2006. Oviposition Site Selection, Movement and Spatial Ecology of the Foothill Yellow-legged Frog (*Rana boylii*). Final Report for the California Department of Fish and Game Contract No. P0385106. Funded by California Rare and Endangered Species Program.

Wheelock, I. G. 1916. Birds of California. Chicago: A. C. McClurg & Co. Chicago, Illinois.

Widdowson, W.P. 2008. Olive-sided Flycatcher (*Contopus cooperi*). *In*: Shuford, W. D., and T. Gardali, Eds. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in

Williams, D. F. 1986. The Mammalian Species of Special Concern in California. California Department of Fish and Game. Sacramento, CA. 112 pp.

Wilson, D. E., and S. Ruff. 1999. The Smithsonian Book of North American Mammals. Smithsonian Institution Press, Washington D.C.

Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). *In*: The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). *In* A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology: http://bna.birds.cornell.edu/bna/species/231.

Zeiner, D. C., W. F. Laudenslayer, K. E. Mayer, and M. White. 1990. California's Wildlife, Volume III: Mammals. California Department of Fish and Game, Sacramento, California.

Zezulak, D. S., and R. G. Schwab. 1980. Bobcat biology in a Mojave Desert community. California Department of Fish and Game, Fed. Aid Wildl. Rest. Proj. W-54-R-12, Job 1V-4. 25pp.

PERSONAL COMMUNICATIONS

Krause, J. 2005. (CDFG) pers. comm. to S. Rottenborn at a meeting of the South Bay Salt Ponds Restoration Project Team, 10 January 2005.

Merrill, Nina. 2009. (Santa Clara Valley Water District) pers. comm. to J. Klingmann during Santa Clara Valley Water District Dams Rodent Burrow Removal (Phase I) Project, 18 November 2009.

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APPENDIX A.
SPECIAL-STATUS AND LOCALLY SIGNIFICANT PLANT SPECIES CONSIDERED BUT REJECTED FOR OCCURRENCE, OR THAT WERE REJECTED DUE TO UNLIKELY SIGNIFICANT IMPACTS IN THE STUDY AREA

Scientific Name	Common Name	No suitable habitat	Absence of any local records	Outside of the elevation range	Believed to be extirpated from Santa Clara County	Lack of associated species	Widely distributed CNPS List 4 species
Acanthomintha lanceolata	Santa Clara thorn-mint						X
Allium sharsmithiae	Sharsmith's onion	X		X			
Androsace elongata ssp. *acuta*	California androsace						X
Arctostaphylos andersonii	Anderson's manzanita	X	X				
Arctostaphylos regismontana	Kings Mountain manzanita		X			X	
Azolla mexicana	Mexican mosquito fern						X
Calandrinia breweri	Brewer's calandrinia						X
Calochortus umbellatus	Oakland star-tulip						X
Calyptridium parryi var. *hesseae*	Santa Cruz Mountains pussypaws	X	X				
Calystegia collina ssp. *venusta*	South Coast Range morning-glory						X
Campanula exigua	Chaparral harebell	X	X	X			
Campanula sharsmithiae	Sharsmith's harebell	X	X	X			
Cirsium praeteriens	Lost thistle		X				
Clarkia breweri	Brewer's clarkia						X
Coreopsis hamiltonii	Mt. Hamilton coreopsis	X	X	X			
Cypripedium fasciculatum	Clustered lady's-slipper						X
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	X	X	X			
Dirca occidentalis	Western leatherwood	X	X				
Eriastrum brandegeeae	Brandegee's eriastrum	X	X	X			
Eriastrum tracyi	Tracy's eriastrum			X			
Eriogonum argillosum	Clay buckwheat						X
Eriogonum nudum var. *decurrens*	Ben Lomond buckwheat						X
Eriogonum umbellatum var. *bahiiforme*	Bay buckwheat						X
Eriophyllum jepsonii	Jepson's woolly sunflower						X
Erysimum franciscanum	San Francisco wallflower						X
Fritillaria agrestis	Stinkbells						X
Fritillaria falcata	Talus fritillary	X	X				
Galium andrewsii ssp. *gatense*	Phlox-leaf serpentine bedstraw						X
Helianthus exilis	Serpentine sunflower						X
Iris longipetala	Coast iris						X
Legenere limosa	Legenere	X	X				
Leptosiphon acicularis	Bristly leptosiphon						X
Leptosiphon ambiguus	Serpentine leptosiphon						X
Leptosiphon grandiflorus	Large-flowered leptosiphon						X

Scientific Name	Common Name	No suitable habitat	Absence of any local records	Outside of the elevation range	Believed to be extirpated from Santa Clara County	Lack of associated species	Widely distributed CNPS List 4 species
Lessingia hololeuca	Woolly-headed lessingia		X				
Lessingia tenuis	Spring lessingia						X
Lomatium observatorium	Mt. Hamilton lomatium	X	X	X			
Malacothrix phaeocarpa	Dusky-fruited malacothrix						X
Meconella oregana	Oregon meconella	X					
Microseris sylvatica	Sylvan microseris						X
Monardella antonina ssp. *antonina*	San Antonio Hills monardella	X	X	X			
Navarretia cotulifolia	Cotula navarretia						X
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	X	X	X			
Pentachaeta exilis ssp. *aeolica*	San Benito pentachaeta	X	X	X			
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah						X
Phacelia phacelioides	Mt. Diablo phacelia	X	X	X			
Piperia candida	White-flowered rein orchid	X				X	
Piperia leptopetala	Narrow-petaled rein orchid						X
Piperia michaelii	Michael's rein orchid						X
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcorn-flower						X
Plagiobothrys myosotoides	Forget-me-not popcorn-flower	X	X	X			
Plagiobothrys uncinatus	Hooked popcorn-flower	X	X	X			
Potamogeton filiformis	Slender-leaved pondweed	X	X	X	X		
Psilocarphus brevissimus var. *multiflorus*	Delta woolly-marbles						X
Senecio aphanactis	Rayless ragwort	X	X				
Sidalcea malachroides	Maple-leaved checkerbloom						X
Streptanthus callistus	Mt. Hamilton jewel-flower	X	X	X			
Trifolium depauperatum var. *hydrophilum*	Saline clover	X					

APPENDIX B.
SPECIAL-STATUS SPECIES PROPOSED FOR COVERAGE OR NO-TAKE STATUS BY THE SECOND ADMINISTRATIVE DRAFT SANTA CLARA VALLEY HCP/NCCP

Appendix B. Special-Status Species Proposed for Coverage or No-Take Status by the Second Administrative Draft Santa Clara Valley HCP/NCCP.

Species	Scientific Name	Status[a]		
		State/CNPS	Federal	HCP/NCCP
Invertebrates				
Bay checkerspot butterfly	*Euphydryas editha bayensis*	-	FT	Covered
Fish[b]				
Pacific lamprey	*Lampetra tridentata*	-	-	Covered
South-Central California Coast steelhead	*Oncorhynchus mykiss*	-	-	Covered
Central California Coast steelhead	*Oncorhynchus mykiss*	-	FT	Covered
Central Valley fall-run Chinook salmon	*Oncorhynchus tshawytscha*	CSSC	SOC	Covered
Amphibians and Reptiles				
California tiger salamander	*Ambystoma californiense*	CSSC, SCT	FT	Covered
California red-legged frog	*Rana draytonii*	CSSC	FT	Covered
Foothill yellow-legged frog	*Rana boylii*	CSSC	-	Covered
Western pond turtle	*Actinemys marmorata*	CSSC	-	Covered
Birds				
Golden eagle	*Aquila chrysaetos*	SP	BGPA, MBTA	Covered
California condor	*Gymnogyps californianus*	SE	FE, MBTA	No Take
Western burrowing owl	*Athene cunicularia hypugea*	CSSC	MBTA	Covered
Least Bell's vireo	*Vireo bellii pusillus*	SE	FE, MBTA	Covered
Tricolored blackbird	*Agelaius tricolor*	CSSC	MBTA	Covered
Mammals				
Townsend's big-eared bat	*Corynorhinus townsendii townsendii*	CSSC	-	Covered
San Joaquin kit fox	*Vulpes macrotis mutica*	ST	FE	Covered
Plants				
Big scale balsamroot	*Balsamorhiza macrolepis* var. *macrolepis*	1B	-	Covered
Chaparral harebell	*Campanula exigua*	1B	-	Covered
Tiburon Indian paintbrush	*Castilleja affinis* subsp. *neglecta*	ST, 1B	FE	Covered
Coyote ceanothus	*Ceanothus ferrisae*	1B	FE	Covered
Pink creamsacs	*Castilleja rubicundula* ssp. *rubicundula*	1B	-	No Take
Mount Hamilton thistle	*Cirsium fontinale* var. *campylon*	1B	-	Covered
San Francisco collinsia	*Collinsia multicolor*	1B	-	Covered
Robust spineflower	*Chorizanthe robusta* var. *robusta*	1B	FE	No Take
Santa Clara Valley dudleya	*Dudleya setchellii*	1B	FE	Covered
Contra Costa goldfields	*Lasthenia conjugens*	1B	FE	No Take
Showy Indian clover	*Trifolium amoenum*	1B	FE	No Take
Fragrant fritillary	*Fritillaria liliacea*	1B	-	Covered
Loma Prieta hoita	*Hoita strobilina*	1B	-	Covered
Smooth lessingia	*Lessingia micradenia* var. *glabrata*	1B	-	Covered
Hall's bush mallow	*Malacothamnus hallii*	1B	-	Covered
Robust monardella	*Monardella villosa* subsp. *globosa*	1B	-	Covered
Rock sanicle	*Sanicula saxatilis*	SR, 1B	-	Covered
Metcalf Canyon jewelflower	*Streptanthus albidus* subsp. *albidus*	1B	FE	Covered

Species	Scientific Name	Status[a]		
		State/CNPS	Federal	HCP/NCCP
Most beautiful jewelflower	*Streptanthus albidus* subsp. *peramoenus*	1B	-	Covered
Hairless popcorn-flower	*Plagiobothrys glaber*	1A	-	No Take
Caper-fruited topidocarpum	*Tropidocarpum capparideum*	1B	-	No Take

[a]Status

State

SE – State Listed as Endangered

ST – State Listed as Threatened

SR – State Listed as Rare

CSSC – California Special Concern Species

SCT – State Candidate for Listing as Threatened

SP – State Fully Protected

California Native Plant Society

1A – Presumed Extinct in California

1B – Rare, Threatened, or Endangered in California and Elsewhere

Federal

FE – Federally Endangered

FT – Federally Threatened

BGPA – Bald and Golden Eagle Protection Act

MBTA – Migratory Bird Treaty Act

SOC – Species of Concern (National Marine Fisheries Service only)

HCP/NCCP

Covered – Covered under the HCP/NCCP

No Take – Listed as "no take" species under the HCP/NCCP

[b] The HCP/NCCP Local Partners and the resource agencies have discussed the possibility of removing coverage of all fish by the HCP/NCCP.

Appendix E-2

Heritage Tree List

RESOLUTION NO. 72274

A RESOLUTION OF THE COUNCIL OF THE CITY OF SAN JOSE DESIGNATING CERTAIN TREES AS HERITAGE TREES, PLACING SAID TREES ON THE HERITAGE TREE LIST, AND DELETING CERTAIN TREES THEREFROM, AND REPEALING RESOLUTION NO. 69745.

WHEREAS, Section 13.28.330 of the Municipal Code of the City of San Jose provides protective status for trees found by the City Council to have special significance to the community based on history, girth, height, species or unique qualities, and further provides for a Heritage Tree List which shall be adopted by the City Council by resolution; and

WHEREAS, Section 13.28.330 further provides that the Heritage Tree List may be amended from time to time to add to or delete certain trees therefrom; and

WHEREAS, since the last such amendment by Resolution No. 69745, adopted by the City Council on June 27, 2000, the City Arborist has identified certain trees for addition to the Heritage Tree List and certain trees for deletion therefrom; and

WHEREAS, this Council desires to amend the City's Heritage Tree List in accordance with the recommendations of the City Arborist.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SAN JOSE:

SECTION 1. Pursuant to Section 13.28.330 and Section 13.32.090 of the San Jose Municipal Code, the following trees, as the term "tree" is defined in Section 13.28.010(k), are hereby found, because of factors including but not limited to, history, girth, height, species or unique quality, to have a special significance to the community

and are hereby designated Heritage Trees and placed on the Heritage Tree List. Said trees are:

Identifier	Location	Tree Type/Size (diameter)
HT-01-001	Saratoga Creek Park (tree is adjacent to 5275 Forest Creek Court)	74" *Quercus agrifolia* (Coast Live Oak) - large spreading specimen
HG-02-001	Blossom Hill CalTrain Station, Monterey Highway at Ford Road	Eleven various diameter *Eucalyptus acaciaformis* and *E. punctata* (Eucalyptus) - unusual species planted by Max Watson
HT-02-001	Median at Delridge and Coyote Roads	52" *Quercus lobata* (Valley Oak)
HT-02-002	195 Dogaway Drive	Two 48" *Quercus lobata* (Valley Oak)
HT-02-003	200 Edenvale Avenue, Hayes Mansion	34" *Pinus canariensis* (Canary Island Pine) - large specimen
HT-02-004	200 Edenvale Avenue, Hayes Mansion	18" *Torreya californica* (California Nutmeg) - unusual species
HT-02-005	436 Fullerton Drive	54" *Quercus lobata* (Valley Oak)
HT-02-006	Great Oaks Boulevard at Via Del Oro	52" *Quercus lobata* (Valley Oak)
HT-02-007	333 Henderson Drive	72" *Quercus lobata* (Valley Oak)
HT-02-008	507 Latona Court	50" *Quercus lobata* (Valley Oak)
HT-02-009	341 Manila Drive	40" *Quercus lobata* (Valley Oak)
HT-02-010	133 Manton Drive	54" *Quercus lobata* (Valley Oak)
HT-02-011	355B Nature Drive	64" *Quercus lobata* (Valley Oak)
HT-02-012	201 Paraiso Court	50" *Quercus lobata* (Valley Oak)
HT-02-013	San Ignacio Avenue and Santa Teresa Boulevard (open field)	72" *Quercus agrifolia* (Coast Live Oak) very large specimen
HT-02-014	San Ignacio Boulevard	48" *Quercus lobata* (Valley Oak)
HT-02-015	Via Del Oro	50" *Quercus agrifolia* (Coast Live Oak)
HT-02-016	200 Edenvale Avenue, Hayes Mansion	18" *Cupressus guadalupensis* (Tecate Cypress) – unusual tree
HG-03-002	St. James Park along N. 1st Street	Twenty-one 24" *Washington filifera* (California Fan Palm)
HG-03-003	180 Woz Way - behind the Children's Discovery Museum along the Guadalupe River	Nine 14"-36" *Casuarina equisetifolia* (River She-Oak) - unusual species
HT-03-001	Market Street and W. San Carlos	10" *Cedrus deodara* (Deodar Cedar) planted in 1976 to commemorate the City's bicentennial. Time capsules beneath the tree will be opened in 2076.
HT-03-002	405 N. 4th Street - Salvation Army	48" *Umbellularia californica* (California Bay) - large specimen
HT-03-003	368 N. 17th Street	46" *Platanus x acerifolia* (London Plane) - unusually large specimen
HT-03-004	536 N. 17th Street	56" *Ulmus americana* (American Elm) - unusually large specimen
HT-03-005	809 N. 17th Street	38" *Catalpa speciosa* (Western Catalpa) - large specimen
HT-03-006	460 S. 16th Street	60"+ *Platanus racemosa* (California Sycamore) very large specimen
HT-03-007	485 S. 6th Street	24" *Carya illinoensis* (Pecan) - unusual self-seeding pecan

Identifier	Location	Tree Type/Size (diameter)
HT-03-010	323 S. 18th Street	26" *Brachychiton populneus* (Bottle Treet) - unusual specimen and species
HT-03-011	William St. Park, along Coyote Creek	60" *Sambucus mexicana* (Blue Elderberry) On the National Register of Big Trees as the largest specimen in the country of this species.
HT-03-012	770 Lincoln Avenue - Roberto Adobe	38" *Ficus carica* (Black Mission Fig) - one of the oldest fig trees in Santa Clara County.
HT-03-013	730 Miller Street	40" *Umbellularia californica* (California Bay) - very large specimen
HT-03-014	St. James Park along N. 1st Street	Two 30" *Quercus macrocarpa* (Bur Oak) - unusual species
HT-03-015	St. James Park in front of Senior Center	54" *Ulmus americana* (American Elm) - large specimen
HT-03-016	University Street (vacant lot) approximately 300 feet west of Ruff Street	40" *Brachychiton populneus* (Bottle Tree) - unusual specimen
HT-03-017	897 E. Jackson St.	30" *Salix babylonica* (Weeping Willow) and 30" Phoenix canariensis (Canary Island Date Palm) – both associated with historic residence on site.
HT-03-019	58 E. Younger Avenue	48" *Quercus agrifolia* (Coast Live Oak)
HT-03-020	1381 S. First St.	38" *Washington robusta* (Mexican Fan Palm)
HT-03-021	1381 S. First St.	54" *Platanus racemosa* (California Sycamore), large specimen associated with property known as the Zanger property.
HT-04-001	890 Cape Verde Drive	50" *Quercus agrifolia* (Coast Live Oak)
HT-04-002	1781 Fox Drive	Two 48" *Jubea chilensis* (Chilean Wine Palm) - unusual species
HT-04-003	1550 Lundy Drive	100" *Platanus racemosa* (California Sycamore)
HT-04-004	1769 Old Oakland Road	Two 44" *Jubea chilensis* (Chilean Wine Palm) - unusual species
HT-04-005	1505 Schallenberger Road	120" *Eucalyptus globulus* (Blue Gum) - very large specimen
HT-04-006	2341-43 N. First St.	40" *Sequoia sempervirens* (Coast Redwood) – large specimen near historic Emily J. Horne house
HT-04-007	3336 Tronson Court	48" *Quercus agrifolia* (Coast Live Oak)
HT-04-008	NW/C Falling Tree Drive and Capitol Avenue	36" *Olea europaea* (Olive)
HT-05-001	227 N. Jackson Ave. (in parking lot east of medical building)	95" *Schinus molle* (California Pepper) – a remnant from the Overfelt Ranch
HG-06-003	1601, 1627, 1634, 1661, 1671, 1681(2) and 1743 Shasta Avenue	Eight large diameter *Platanus x acerifolia* (London Plane Tree)
HG-06-004	1252, 1305, 1341, 1357, 1366 and 1367 Sierra Avenue	Six large diameter *Castanea sativa* (European Chestnut) - planted by John McLaren, large and unusual species
HG-06-005	1440 (2), 1441, 1461, 1481, 1500, 111520, 1521, 1540, 1561, 1581 (2) and 1598 (3) University Avenue	Fifteen large diameter *Quercus agrifolia* (Coast Live Oak)

Identifier	Location	Tree Type/Size (diameter)
HG-06-006	1009 (2), 1017 (2), 1018 (2), 1021 (2), 1030, 1032 (3), 1034, 1046 (2), 1056 (3), 1071 (2), and 1090 Westwood Drive	Twenty-one 30" and greater diameter *Cinnamomum camphora* (Camphor Tree) – large specimens
HG-06-007	Martin Avenue between Park Ave. and The Alameda	Eighty *Washingtonia robusta* (Mexican Fan Palm) which are part of original neighborhood design by John McClaren (superintendent and designer of San Francisco's Golden Gate Park)
HG-06-008	Palm Haven (see detailed list below)*	Three hundred fifty-six trees, mainly *Washingtonia robusta,* along the streets of Palm Haven, most of which were planted circa 1913.
HT-06-001	1237 Brace Street	42" *Umbellularia californica* (California Bay)
HT-06-002	1093 Camino Ricardo	46" *Cedrus deodara* (Deodara Cedar) - unusually large specimen.
HT-06-003	764 Clinton Place	52" *Ulmus americana* (American Elm) - unusually large specimen
HT-06-004	1615 Dry Creek Road	Two 48" *Magnolia grandiflora* (Southern Magnolia) - large specimens
HT-06-005	1885 Georgetta Drive	50" *Cinnamomum glanduliferum* (Nepal Camphora) - unusual species
HT-06-006	1225 Hanchett Avenue	48" *Magnolia grandiflora* (Southern Magnolia)
HT-06-007	340 Hull Avenue	48" *Juglans hindsii* (California Black Walnut) - large specimen
HT-06-008	800 Malone Road	Three large diameter cedars: *Cedrus atlantica, C. libani, C. deodara* (Atlas Cedar, Cedar of Lebanon, Deodar Cedar)
HT-06-009	446 Mayellen Drive - Luther Burbank School	30" *Acer macrophyllum x pennyslvanicum*) - reported to be original Luther Burbank Hybrid, planted at the school dedication
HT-06-010	1198 McKendrie Street	36" *Liriodendron tulipifera* (Tulip Tree) - very large specimen
HT-06-011	917 Morse Street	48" *Schinus molle* (California Pepper) - large specimen, hollow in the center.
HT-06-012	1201 Malone Road	44" *Acer saccharinum* (Silver Maple) – very large specimen
HT-06-013	2449 Lansford Avenue	48" *Albizia julibrissin* (Silk Tree) – largest specimen in San José
HT-06-014	2147 Ardis Drive	54" *Populus fremontii* (Fremont Poplar) – unusually large native specimen
HT-06-015	997 Ramona Court	44" *Eucalyptus ficifolia* (Red Flowering Gum) – largest one in the City
HT-06-016	1167 Settle Avenue	48" *Schinus molle* (California Pepper) – large specimen
HT-06-017	1465 Shasta Avenue	42" *Cedrus deodara* (Deodara Cedar)
HT-06-018	1537 Shasta Avenue	48" *Cedrus deodara* (Deodara Cedar)
HT-06-019	1570 The Alameda	64" *Quercus lobata* (Valley Oak) – large specimem
HT-06-020	1278 University Avenue	42" *Oleo europaea* (Olive) – large specimen

Identifier	Location	Tree Type/Size (diameter)
HT-06-021	2041 University Avenue	60" *Sequoiadendron giganteum* (Giant Sequoia) – large specimen
HT-06-022	660 Willow Glen Way	72" *Platanus racemosa* (California Sycamore) – very large specimen
HT-06-023	1244 Lennon Way	42" *Quercus coccinea* (Scarlet Oak) – large specimen
HT-06-024	1590 The Alameda, near Schiele Ave. (Garden Alameda)	43" *Sequoia sempervirens* (Coast Redwood), large specimen
HT-06-025	1590 The Alameda (Garden Alameda)	24" *Ulmus americana* (American Elm), large specimen
HT-06-026	1520 The Alameda, in parking lot (Garden Alameda)	42" *Cedrus deodara* (Deodar Cedar), large specimen
HT-06-027	1550 The Alameda (Garden Alameda)	30" *Ulmus americana* (American Elm), large specimen
HT-06-028	1510 The Alameda (Garden Alameda)	32" *Grevillea robusta* (Silk Oak), large specimen
HT-06-029	1590 The Alameda, in courtyard near lake (Garden Alameda)	48" *Phoenix canariensis* (Canary Island Date Palm), large specimen
HT-06-030	1570 The Alameda, in courtyard near fountain (Garden Alameda)	24" & 30" multi-trunk *Cedrus deodara* (Deodar Cedar)
HT-06-031	1570 The Alameda (Garden Alameda)	Multi-trunk *Juglans hindsii* (California Black Walnut) with six interconnected trunks
HT-06-032	1590 The Alameda, near Schiele Ave. (Garden Alameda)	42" *Schinus molle* (California Pepper), large specimen
HT-06-034	1550 The Alameda (Garden Alameda)	34" *Sequoia sempervirens* (Coast Redwood), large specimen
HT-06-035	1192 Norval Way	54" *Acer saccharinum* (Silver Maple), large specimen
HT-07-001	1165 Bellingham Drive	54" *Quercus lobata* (Valley Oak) - unusually large specimen
HT-07-002	1702-1716 Bevin Brook Drive	68" *Platanus racemosa* (California Sycamore) - planted by the Grilli family
HT-07-003	3067 Cray Court	72" *Quercus lobata* (Valley Oak) - very large specimen
HT-07-006	2500 Monterey Highway, Santa Clara County Fairgrounds, Gate B Entrance	34" *Araucaria araucana* (Monkey Puzzle Tree) - unusual species
HT-07-007	1006 Idlewood Court	36" *Liquidambar formosana* (Chinese Sweet Gum), large specimen
HT-08-001	519 Century Oaks Way	72" *Quercus lobata* (Valley Oak), very large specimen
HT-08-003	1825 Mt. Pleasant Road (Moose Lodge #401)	Three 48" *Schinus molle* (California Pepper)
HT-08-004	Wehner Mansion, circa. 1890 (Prestwick Circle, The Villages)	50" *Araucaria araucana* (Monkey Puzzle Tree) - unusual species
HT-08-005	Wehner Mansion, circa. 1890 (Prestwick Circle, The Villages)	Two 52" *Cedrus deodara* (Deodar Cedar)
HT-08-006	Wehner Mansion, circa. 1890 (Prestwick Circle, adjacent to 7787 Beltrane Drive, The Villages)	72" *Cedrus deodara* (Deodar Cedar)
HT-08-007	Wehner Mansion, circa. 1890 (Prestwick Circle, The Villages)	48" *Pinus pinea* (Italian Stone Pine)

Identifier	Location	Tree Type/Size (diameter)
HT-09-001	2425 Good Samaritan Drive (located at the front entrance of Good Samaritan Hospital)	52" *Quercus agrifolia* (Coast Live Oak)
HG-10-001	5730 Chambertin Drive	Five 36" *Olea europaea* (Olive) - associated with the original Almaden Winery
HT-10-001	N/E corner of Branham Lane and Tampico Way	50" *Quercus lobata* (Valley Oak) - unusually large landmark specimen – San José's Bicentennial Tree
HT-10-002	East side of Crossprings Dr. at Crosspoint Ct.	76" *Platanus racemosa* (California Sycamore)
HT-10-003	Crossprings Dr. median	Three 36" *Platanus racemosa* (California Sycamore)
HT-10-004	Crossprings Dr. and Winfield Blvd.	68" *Platanus racemosa* (California Sycamore)
HT-10-005	5972 Crossview Court	Two 60" and 72" diameter *Platanus racemosa* (California Sycamore)
HT-10-006	750 Rielly Court	44" *Quercus lobata* (Valley Oak)
HT-10-007	7090 Calcatera Way	36" *Quercus lobata* (Valley Oak)
HT-10-008	6590 Stonehill Drive	36" *Umbellularia californica* (California Bay) - associated with large rock outcroppings and Historical Indian grinding stone remains
HT-10-009	5958 Thorntree Drive	50" *Quercus agrifolia* (Coast Live Oak)
HT-10-010	5994 Thorntree Drive	72" *Quercus agrifolia* (Coast Live Oak)
HT-10-011	6842 Trinidad Drive	40" *Quercus lobata* (Valley Oak)
HT-10-012	5948 Sterling Oaks Drive	48" *Quercus agrifolia* (Coast Live Oak)
HT-10-013	1891 Blossom Hill Road (Old Almaden Winery Site)	72" *Schinus molle* (California Pepper) – associated with original mansion on winery site
HT-10-014	1891 Blossom Hill Road	48" *Ficus carica* (Fig) – associated with original mansion on winery site

* Detail of Palm Haven Heritage Trees HG-06-008:

Address and Species	Palm Haven Ave.	Plaza Dr.	Clintonia Ave.	Hartford Ave.	Riverside Dr.	Bird Ave.	Coe Ave.
***Washingtonia robusta* (Mexican Fan Palm)**							
779 Bird Ave.						2	
781 Bird Ave.						2	
791 Bird Ave.					6	3	
615 Riverside Dr.					2		
625 Riverside Dr.					2		
635 Riverside Dr.					1		
645 Riverside Dr.					1		
655 Riverside Dr.					2		
739 Riverside Dr.					2		
745 Riverside Dr.					2		
751 Riverside Dr.					2		

805 Plaza Dr.		3					
821 Plaza Dr.		2					
845 Plaza Dr.		2					
869 Plaza Dr.		3					
875 Plaza Dr.		4					
846 Plaza Dr.		3					
840 Plaza Dr.		3					
820 Plaza Dr.		2					
801 Clintonia Ave.			2				
815 Clintonia Ave.			1				
835 Clintonia Ave.			3				
847 Clintonia Ave.			2				
857 Clintonia Ave.			2				
701 Palm Haven Ave.	3		6				
725 Palm Haven Ave.	4						
729 Palm Haven Ave.	2						
735 Palm Haven Ave.	2	5					
815 Hartford Ave.				3	2		
825 Hartford Ave.				1			
833 Hartford Ave.				2			
843 Hartford Ave.				2			
853 Hartford Ave.				2			
857 Hartford Ave.				2			
655 Palm Haven Ave.	3			5			
665 Palm Haven Ave.	2						
675 Palm Haven Ave.	3						
685 Palm Haven Ave.	3		5				
868 Clintonia Ave.			2				
858 Clintonia Ave.			1				
848 Clintonia Ave.			1				
838 Clintonia Ave.			2				
828 Clintonia Ave.			1				
818 Clintonia Ave.			2				
810 Clintonia Ave.			1				
809 Bird Ave.					5	2	
821 Bird Ave.						2	
829 Bird Ave.						1	
839 Bird Ave.						1	
849 Bird Ave.						1	
853 Bird Ave.						2	
865 Bird Ave.						2	
609 Palm Haven Ave.	3					5	
625 Palm Haven Ave.	2						
633 Palm Haven Ave.	2						
645 Palm Haven Ave.	3			4			
866 Hartford Ave.				2			
856 Hartford Ave.				2			
844 Hartford Ave.				2			
830 Hartford Ave.				2			
820 Hartford Ave.				2			
810 Hartford Ave.				2	5		
686 Palm Haven Ave.	4		5				

676 Palm Haven Ave.	2						
666 Palm Haven Ave.	2						
656 Palm Haven Ave.	3						
650 Palm Haven Ave.	2						
644 Palm Haven Ave.	2						
636 Palm Haven Ave.	2						
600 Palm Haven Ave.	4					1	6
635 Coe Ave.							4
655 Coe Ave.							2
665 Coe Ave.							2
671 Coe Ave.							2
697 Coe Ave.			3				5
942 Clintonia Ave.			2				
936 Clintonia Ave.			2				
928 Clintonia Ave.			4				
911 Clintonia Ave.			2				
925 Clintonia Ave.			2				
927 Clintonia Ave.			1				
929 Clintonia Ave.			2				
935 Clintonia Ave.			2				
995 Clintonia Ave.			2				
725 Coe Ave.			2				5
747 Coe Ave.		2					4
970 Plaza Dr.		2					
960 Plaza Dr.		2					
730 Palm Haven Ave.	3	4					
722 Palm Haven Ave.	2						
714 Palm Haven Ave.	2						
704 Palm Haven Ave.	3		4				
899 Plaza Dr.		2					
915 Plaza Dr.		2					
919 Plaza Dr.		2					
955 Plaza Dr.		2					
965 Plaza Dr.		2					
975 Plaza Dr.		2					
985 Plaza Dr.		2					
769 Coe Ave.		2					4
950 Plaza Dr.		2					
930 Clintonia Ave.			2				
925 Plaza Dr.		2					
935 Plaza Dr.		2					
945 Plaza Dr.		2					
901 Plaza Dr.		2					
905 Plaza Dr.		2					
940 Plaza Dr.		4					
930 Plaza Dr.		3					
Total by Street	63	72	66	33	32	24	34

Phoenix canariensis **(Canary Island Date Palm)**							

Palm Haven Ave. median			11	9			
The "Plaza"	4						
Total by Street	4	0	11	9	0	0	0
***Cedrus deodara* (Deodar Cedar)**							
The "Plaza"	5						
Total by Street	5	0	0	0	0	0	0
***Morus alba 'Pendula'* (Weeping Mulberry)**							
The "Plaza"	2						
Total by Street	2	0	0	0	0	0	0
***Torreya californica* (California Nutmeg)**							
The "Plaza"	1						
Total by Street	1	0	0	0	0	0	0
TOTAL NUMBER OF HERITAGE TREES IN PALM HAVEN: 356							

SECTION 2. Resolution No. 69745, adopted June 27, 2000, is hereby repealed in its entirety.

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ADOPTED this 10th day of August, 2004, by the following vote:

AYES:	CAMPOS, CHAVEZ, CHIRCO, CORTESE, DANDO, GREGORY, LeZOTTE, REED, WILLIAMS, YEAGER; GONZALES
NOES:	NONE
ABSENT:	NONE
DISQUALIFIED:	NONE

RON GONZALES
Mayor

ATTEST:

LEE PRICE, CMC
City Clerk