



H. T. HARVEY & ASSOCIATES

Ecological Consultants



**Equinix Data Center Project
Tree Survey Report**

Project # 3804-01

Prepared for:

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November 17, 2015

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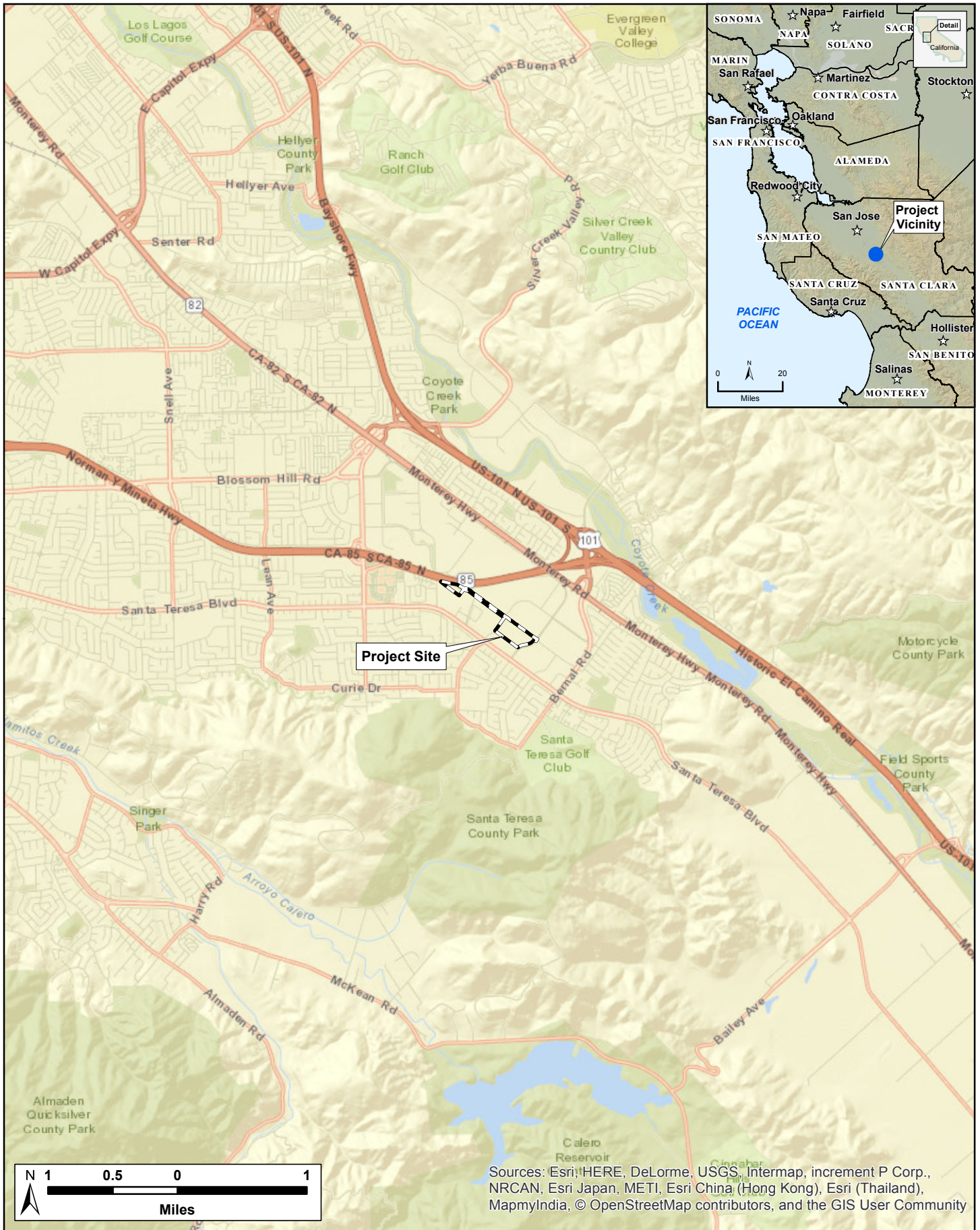
Section 1.0 Introduction

H. T. Harvey & Associates conducted a tree survey for the Equinix Data Center Project. The project entails the construction of the Equinix Data Center, the Santa Teresa Pacific Gas and Electric (PG&E) Substation, and a new PG&E distribution route, which will connect the new substation to the Equinix Data Center.

1.1 General Project Area Description

The 31.27-acre (ac) project site is located in the City of San Jose (City) in Santa Clara County, California. It is located in the *Santa Teresa Hills, California* U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 1). The Project region experiences a Mediterranean climate, characterized by dry, hot summers and wet, mild winters with the majority of annual precipitation falling between the months of October and April.

The project is embedded in an urban matrix in the Edenvale area of the City and is surrounded by commercial development, residential neighborhoods, and roadways. The Equinix Data Center portion of the project, which will consist of three data center buildings, each approximately 180,000 square feet (sq ft) in size, is proposed to be constructed on a vacant lot bound by Via Del Oro, San Ignacio Avenue, Santa Teresa Boulevard, and Great Oaks Boulevard. The Santa Teresa Substation portion of the project is located immediately south of California State Route 85 (SR 85) within the existing PG&E Edenvale Service Center, approximately 2,200 feet (ft) to the northwest of the proposed Equinix Data Center. The new PG&E distribution route, which will originate from the new PG&E substation, will pass under the Santa Clara Valley Transportation Authority (VTA) light rail tracks and run down the center of Via Del Oro for approximately 0.35 mile (mi).



N:\Projects\38001\3804-01\Reports\Tree Survey Report\Fig 1 Vicinity Map.mxd



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Figure 1. Vicinity Map

Equinix Data Center and Santa Teresa Substation Project
Tree Survey Report (3804-01)

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Section 2.0 Methodology

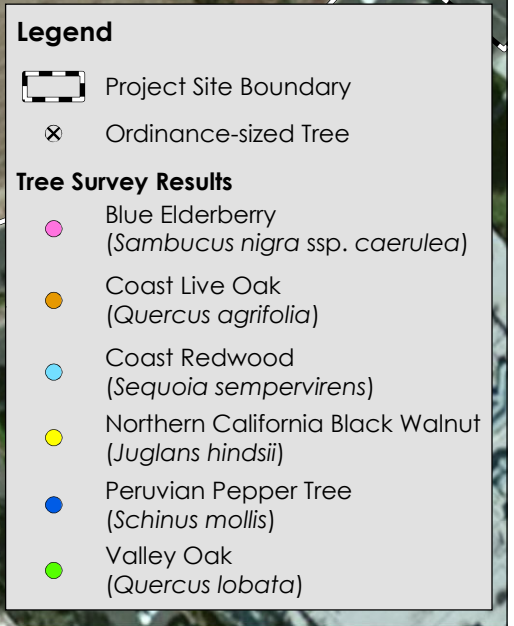
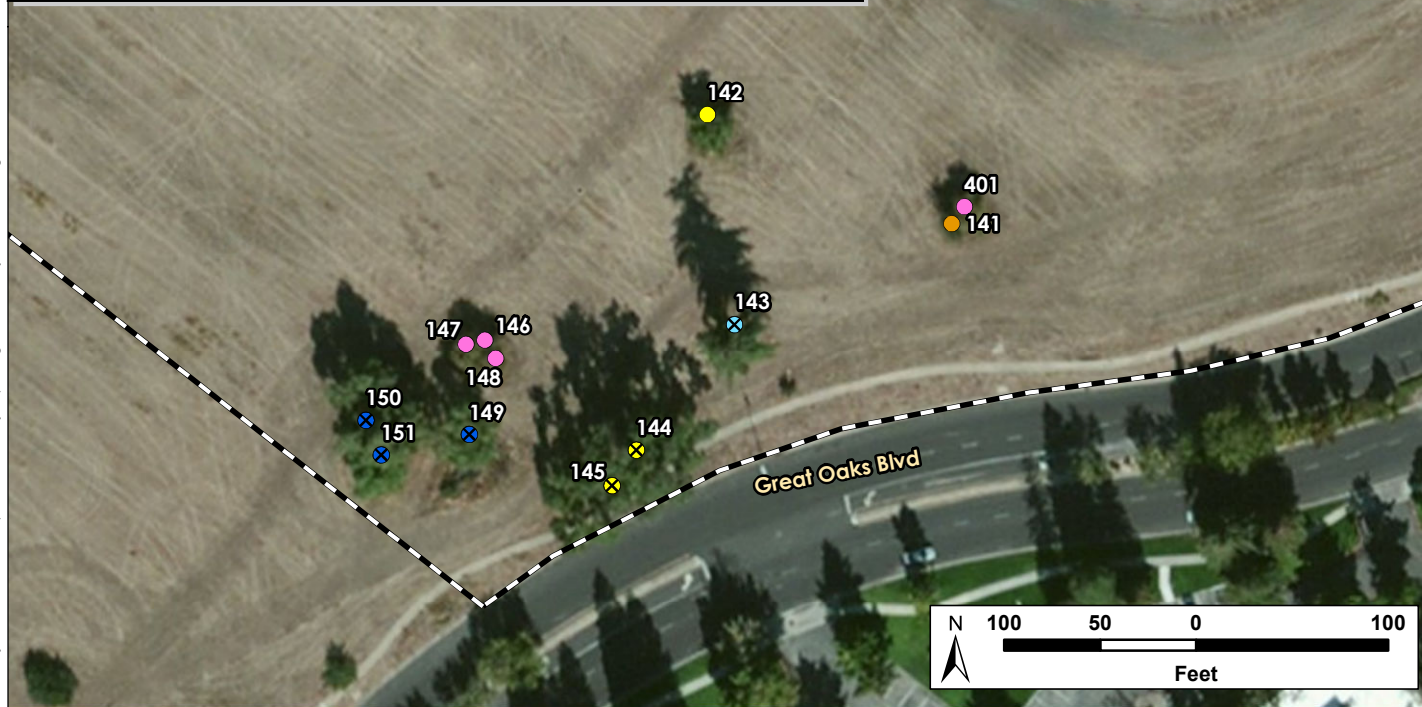
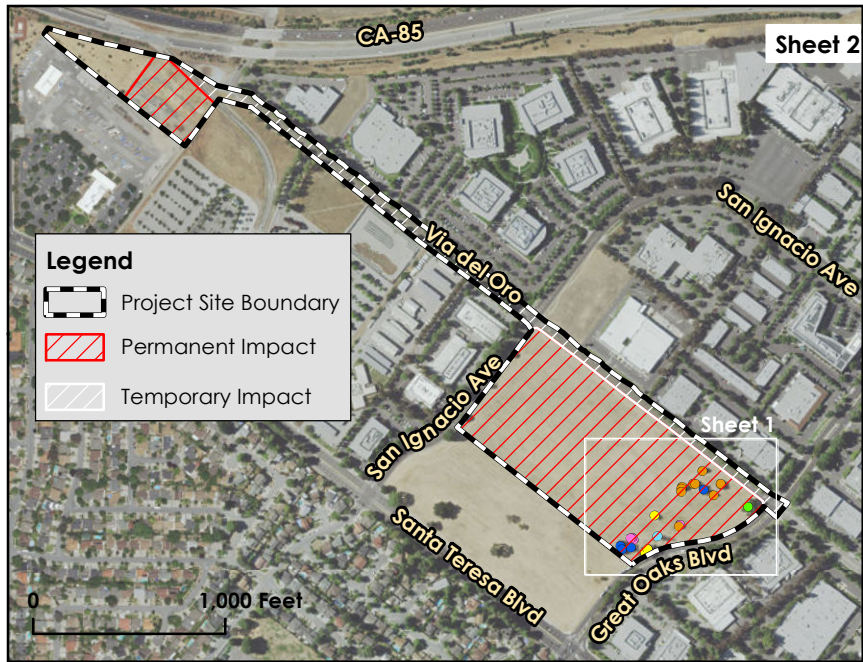
H. T. Harvey & Associates plant ecologist Maya Goklany, M.S., conducted the tree survey on October 30, 2015 and November 4, 2015 in the 31.27-ac project site. Prior to conducting fieldwork, H. T. Harvey & Associates ecologists reviewed project plans and the project description provided by David J. Powers & Associates, and conducted an impact assessment to determine areas of the site that would be temporarily and permanently impacted by the proposed activities (Figure 2).

In areas of the project site that would be permanently impacted (23.74 ac), all trees with diameter-at-breast-height (DBH) measurements of 2 inches or larger were mapped using a sub-meter Global Positioning System (Trimble GeoXT™ GPS unit). “Breast-height” is assumed to be 4.5 ft above the ground surface under the City’s Municipal Code. Each tree was identified to species using *The Jepson Manual, Vascular Plants of California, Second Edition* (Baldwin et al. 2012) and tagged with a unique identification number, either with new or existing aluminum labels on the tree trunks. Methodologies described in the *Guidelines for Developing and Evaluating Tree Surveys* (Bernhardt & Swiecki 1991) were utilized to measure DBH with a 28-inch Biltmore stick to the nearest 1-inch. While standing squarely in front of each tree, the Biltmore stick was held in a horizontal position 25-inches from the observer’s eye. Measurements of DBH were recorded on the upslope side of the tree trunk; however, there were a number of circumstances in which complications arose with measuring DBH in this straightforward manner. Common complications included (1) leaning trees, (2) trees forking below or near DBH, and (3) multi-stemmed trees. For each of these situations, standard procedures as outlined in Bernhardt & Swiecki (1991) were followed. For multi-stemmed trees, the total DBH was determined by squaring the DBH of each stem, summing those values, and taking the square root of the sum to arrive at a single additive value. Trees were considered multi-stemmed when a fork in the main stem was observed aboveground, but below breast height.

Tree health was also scored for each tree rooted in areas that would be permanently impacted by project activities. Health was scored by visual inspection using a four-tiered scoring system:

1. Trees with *excellent* health, as indicated from evidence of substantial annual canopy growth and a lack of thinning of the canopy, branch or twig dieback, epicormic growth¹, and other signs of disease.
2. Trees with *good* health, as indicated from evidence of a small to moderate amount of annual canopy growth and a lack of epicormic growth and other signs of disease. Some trees with a small amount of canopy or dieback of branches and twigs were placed in this tier, but not individuals that displayed both of these qualities.

¹ Epicormic sprouts are known as “suckers” and emerge from dormant buds beneath the bark of a tree. Under normal, “healthy” conditions their growth is suppressed by hormones from active shoots located higher up in the tree canopy. Under stressful conditions, epicormic sprouts develop in response to increased light levels or other stressful conditions or events (such as storm damage, fire, or improper pruning) that decrease the total leaf surface of the tree.



N:\Projects\38000\3804-01\Reports\Tree Survey Report\Fig 2. Tree Survey Results with Tags.mxd

3. Trees with *fair* health, as indicated from evidence of little to no annual canopy growth and a lack of epicormic growth and other signs of disease. Trees in this tier exhibited a *small* amount of canopy thinning *and* dieback of branches and twigs, but did not include individuals that displayed just one of these qualities.
4. Trees with *poor* health, as indicated from evidence of little to no annual canopy growth and little to no epicormic growth and other signs of disease. Trees in this tier exhibited a *moderate* amount of canopy thinning *and* dieback of branches and twigs.

Per the request of the project proponent, in areas of the project site that would be temporarily impacted (i.e., trees lining Via Del Oro along the new PG&E distribution route and the area north of the proposed substation), tree species and the number of individuals rooted within the boundaries of the site were documented; however, DBH and tree health were not recorded and these trees were not tagged.

Section 3.0 Results

A total of 22 trees with a DBH of 2 inches or greater were recorded in the areas of the project site where permanent impacts are proposed (Figure 2). Twelve trees had a DBH greater than or equal to 18 inches, and meet the size criteria of ordinance-sized trees under the City's Municipal Code. Figure 2 shows the location and species of each individual tree documented in the permanent impacts areas of the project site, and indicates which trees are ordinance-sized.

Trees in the permanent impact area occurred within ruderal grassland. This area had been mowed during the weeks prior to the October 30, 2015 site visit (Photo 1, Appendix A); however, the plant community appeared to have been dominated by non-native grasses, primarily wild oats (*Avena* sp.), and non-native forbs such as stinkwort (*Dittrichia graveolens*), mustard (*Brassica* sp.) and horehound (*Marrubium vulgare*). In addition, several scattered cotoneaster (*Cotoneaster* sp.) shrubs were observed. Trees in the permanent impact area of the project site were scattered and did not form a dense overstory. Species that are native to the Santa Clara Valley include valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Tree species that are native to California, but do not occur naturally in the Santa Clara Valley, include coast redwood (*Sequoia sempervirens*) and Northern California black walnut (*Juglans hindsii*). One non-native tree, Peruvian pepper tree (*Schinus molle*), was also recorded on the site. Table 1 on the following page summarizes all the trees within the permanent impact areas of the project site, and includes their tag number, species, DBH measurement, and health rating.

Coast live oak trees were the most common species documented in the tree survey (nine individuals) (Photo 1, Appendix A). All were in excellent health; they displayed no evidence of physiological stress, exhibited substantial annual vegetative growth, and in addition, many coast live oaks had produced a large annual crop of acorns. One exceptionally large valley oak with a DBH measurement of 66 inches is located near the corner of Great Oaks Boulevard and Via Del Oro (Figure 2). This tree has a large canopy spread and a moderate amount of annual canopy growth, but was considered to be in good health due to the loss of a large limb (Photo 2, Appendix A). Several other exceptionally large Northern California black walnuts and Peruvian pepper trees with DBH measurements ranging from 60 inches to 81 inches, and large, spreading canopies were documented (Table 1; Photos 3-6, Appendix A). Owing to the presence of Peruvian pepper trees amongst these individuals, the largest trees recorded in the tree survey were likely planted, but are potentially more than 150 years old. The Peruvian pepper trees were all in excellent health. In contrast, the Northern California black walnuts received lower health ratings (fair) due to some evidence of both canopy thinning, loss of large limbs, and twig die-off. Smaller, blue elderberry trees were all in fair health; although a small amount of both canopy thinning and twig die-off was recorded, these trees still had produced a substantial annual crop of fruit. One coast redwood tree in the permanent impact area of the project site was rated as having poor health, and exhibited signs of drought stress, such as dead needles and a very sparse canopy.

Table 1. Summary of Tree Survey Results

Tag #	Scientific Name	Common Name	Total DBH (inches)	Ordinance -size	Health and Vigor Rating
130	<i>Quercus agrifolia</i>	coast live oak	22	Yes	1
131	<i>Quercus agrifolia</i>	coast live oak	23	Yes	1
132	<i>Quercus agrifolia</i>	coast live oak	15	No	1
133	<i>Quercus agrifolia</i>	coast live oak	32	Yes	1
134	<i>Quercus agrifolia</i>	coast live oak	10	No	1
135	<i>Quercus agrifolia</i>	coast live oak	8	No	1
138	<i>Quercus agrifolia</i>	coast live oak	27	Yes	1
139	<i>Quercus lobata</i>	valley oak	66	Yes	2
141	<i>Quercus agrifolia</i>	coast live oak	13	No	1
142	<i>Juglans hindsii</i>	Northern California black walnut	16	No	3
143	<i>Sequoia sempervirens</i>	coast redwood	65	Yes	4
144	<i>Juglans hindsii</i>	Northern California black walnut	72	Yes	3
145	<i>Juglans hindsii</i>	Northern California black walnut	60	Yes	3
146	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	9	No	3
147	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	8	No	3
148	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	13	No	3
149	<i>Schinus mollis</i>	Peruvian pepper tree	74	Yes	1
150	<i>Schinus mollis</i>	Peruvian pepper tree	81	Yes	1
151	<i>Schinus mollis</i>	Peruvian pepper tree	18	Yes	1
401	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	12	No	3
402	<i>Quercus agrifolia</i>	coast live oak	10	No	1
403	<i>Schinus mollis</i>	Peruvian pepper tree	74	Yes	1

As mentioned above under Section 2.0, tree species and the number of individuals rooted within the boundaries of the site were recorded in areas that would be temporarily impacted by project activities (Figure 2). Temporary impact areas include some ruderal grassland, but are generally composed of developed/landscaped habitat. Developed areas of the site are devoid of vegetation and include hardscape (asphalt and concrete surfaces) along Via Del Oro, the VTA light rail tracks, and a PG&E maintenance and storage yard. In addition, the northernmost portion of the site (to the west of the PG&E Edenvale Center) was graded prior to the November 4, 2015 site visit, and thus, was overlain by bare soil and mapped as developed/landscaped habitat. At the time of the survey, three trees remained in the northernmost parcel: Mexican fan palm (*Washingtonia robusta*), elm (*Ulmus* sp.), and European olive (*Olea europaea*). Landscaped areas on the project site are located in the right-of-way of Via Del Oro. These vegetated strips lining the road are composed of irrigated lawn and 59 planted trees, including 44 London plane trees (*Platanus hybrida*), eight shamel ash trees (*Fraxinus uhdei*), two coast redwoods, and five sweet gum trees (*Liquidambar styraciflua*) (Photo 7, Appendix A).

Literature Cited

Baldwin, B., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken. 2012. The Jepson Manual: Vascular Plants of California. 2nd Edition. University of California Press, Berkeley.

Bernhardt, E. and T.J. Swiecki. 1991. Guidelines for developing and evaluating tree ordinances. Prepared for: Urban Forestry Program, California Department of Forestry and Fire Protection, Sacramento, CA.

Appendix A. Photos



Photo 1. Coast live oak tree in ruderal grassland habitat.

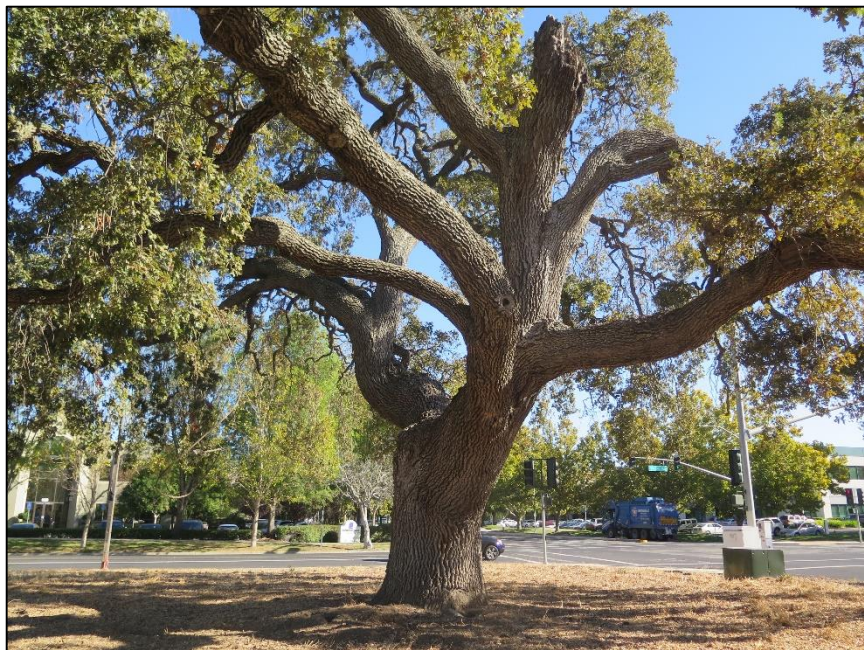


Photo 2. Large valley oak at the corner of Great Oaks Boulevard and Via Del Oro.



Photo 3. Large Northern California black walnut.



Photo 4. The base of a large Northern California black walnut with a Biltmore stick for reference.



Photo 5. The base of a large Peruvian pepper tree with a Biltmore stick for reference.



Photo 6. View into the canopy of a large Peruvian pepper tree.



Photo 7. Sweet gum trees along the right-of-way of Via Del Oro in developed/landscaped habitat.

Table 1. Summary of Tree Survey Results
October 2016

Tag #	Scientific Name	Common Name	Total DBH (inches)	Ordinance-size	Health and Vigor Rating	Removal
130	<i>Quercus agrifolia</i>	coast live oak	22	Yes	1	Yes
131	<i>Quercus agrifolia</i>	coast live oak	23	Yes	1	Yes
132	<i>Quercus agrifolia</i>	coast live oak	15	No	1	Yes
133	<i>Quercus agrifolia</i>	coast live oak	32	Yes	1	Yes
134	<i>Quercus agrifolia</i>	coast live oak	10	No	1	Yes
135	<i>Quercus agrifolia</i>	coast live oak	8	No	1	Yes
138	<i>Quercus agrifolia</i>	coast live oak	27	Yes	1	Yes
139	<i>Quercus lobata</i>	valley oak	66	Yes	2	No
141	<i>Quercus agrifolia</i>	coast live oak	13	No	1	Yes
142	<i>Juglans hindsii</i>	Northern California black walnut	16	No	3	No
143	<i>Sequoia sempervirens</i>	coast redwood	65	Yes	4	No
144	<i>Juglans hindsii</i>	Northern California black walnut	72	Yes	3	No
145	<i>Juglans hindsii</i>	Northern California black walnut	60	Yes	3	No
146	<i>Sambucus nigra ssp. caerulea</i>	blue elderberry	9	No	3	No
147	<i>Sambucus nigra ssp. caerulea</i>	blue elderberry	8	No	3	No
148	<i>Sambucus nigra ssp. caerulea</i>	blue elderberry	13	No	3	No
149	<i>Schinus mollis</i>	Peruvian pepper tree	74	Yes	1	No
150	<i>Schinus mollis</i>	Peruvian pepper tree	81	Yes	1	No
151	<i>Schinus mollis</i>	Peruvian pepper tree	18	Yes	1	No
401	<i>Sambucus nigra ssp. caerulea</i>	blue elderberry	12	No	3	Yes
402	<i>Quercus agrifolia</i>	coast live oak	10	No	1	Yes
403	<i>Schinus mollis</i>	Peruvian pepper tree	74	Yes	1	Yes



November 17, 2015

John Schwarz
David J. Powers & Associates
1871 The Alameda, Suite 200
San Jose, CA 95126

Subject: Equinix Data Center Project Biological Resources Report (HTH # 3804-01)

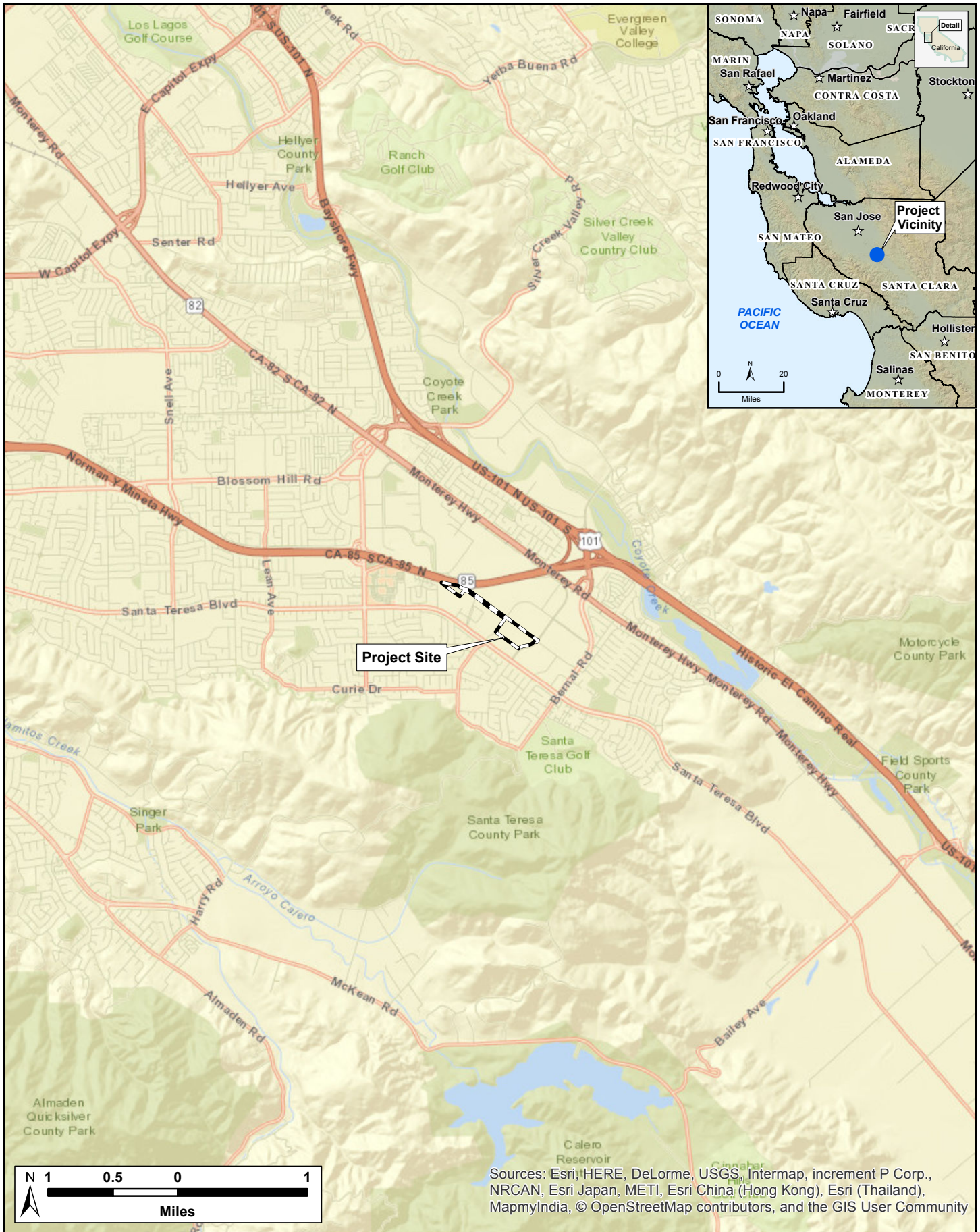
Dear Mr. Schwarz:

Per your request, this biological resources report provides H. T. Harvey & Associates' assessment of the existing biological conditions on the site located at the corner of San Ignacio Avenue and Via Del Oro in the Edenvale area of San Jose, California, and the potential impacts on sensitive biological resources as a result of the proposed construction of the Equinix Data Center and Santa Teresa Substation project. This assessment is based upon the project plans provided to H. T. Harvey & Associates by David J. Powers & Associates in July 2015.

Project Location and Description

The 31.27-acre (ac) project site is located in the City of San Jose in Santa Clara County, California. The project is embedded in an urban matrix in the Edenvale area of the City and is surrounded by commercial development, residential neighborhoods, and roadways. The project entails the construction of the Equinix Data Center, the Santa Teresa Pacific Gas and Electric (PG&E) Substation, and a new PG&E distribution route, which will connect the new substation to the Equinix Data Center. The Equinix Data Center portion of the project, which will consist of three data center buildings, each approximately 180,000 square feet (ft) in size, is proposed to be constructed on a vacant lot bound by Via Del Oro, San Ignacio Avenue, Santa Teresa Boulevard, and Great Oaks Boulevard. The Santa Teresa Substation portion of the project is located immediately south of California State Route 85 (SR 85) within the existing PG&E Edenvale Service Center, approximately 2,200 ft to the northwest of the proposed Equinix Data Center. The new PG&E distribution route, which will originate from the new PG&E substation, will pass under the Santa Clara Valley Transportation Authority (VTA) light rail tracks and run down the center of Via Del Oro for approximately 0.35 mile (mi).

The proposed project is a "covered project" under the approved Santa Clara Valley Habitat Plan (VHP) (ICF International 2012). As a result, the proposed project is required by the City of San Jose to pay VHP fees for



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Figure 1. Vicinity Map

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land impacts in accordance with the types and acreage of habitat impacted, and to implement conservation measures specified by VHP conditions. This biological resources report, therefore, incorporates VHP avoidance, minimization, and compensatory mitigation measures as appropriate, in the context of measures that we believe to be appropriate to reduce impacts to less-than-significant levels under the California Environmental Quality Act (CEQA).

Methods

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed project plans and the project description provided by David J. Powers & Associates, the *Santa Teresa Hills, California* U.S. Geological Survey (USGS) 7.5-minute topographic map, aerial photos (Google Inc. 2015), the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB 2015), and VHP information on special-status species and sensitive habitats (ICF International 2012) to assess the potential distribution of special-status plants and animals in the project vicinity. For the purposes of this report, the project vicinity is defined as the area within a 5-mi radius of the project site.

In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the *Santa Teresa Hills* USGS quadrangle and the surrounding eight quadrangles (*San Jose West, San Jose East, Lick Observatory, Los Gatos, Morgan Hill, Laurel, Loma Prieta, and Mount Madonna*) (CNPS 2015). Quadrangle-level results are not maintained for CRPR 3 and 4 species, so we also conducted a search of the CNPS records for these species occurring in Santa Clara County (CNPS 2015). In addition, we queried the CNDDDB (2015) for special-status plant species and natural communities of special concern that occur within the project region.

A reconnaissance-level field survey of the project site was conducted by H. T. Harvey & Associates plant ecologist Maya Goklany, M.S., and wildlife ecologist Craig Fosdick, M.S., on October 30, 2015 and November 4, 2015. The purpose of this survey was to provide a project-specific impact assessment for the development of the site as described above. Specifically, the survey was conducted to (1) assess existing biotic habitats and plant and animal communities on the project site, (2) assess the site for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional habitats (such as waters of the U.S./state), although a formal wetland delineation was not conducted.

A focused survey for burrowing owls (*Athene cunicularia*), a California Species of Special Concern, and their habitat (i.e., burrows of California ground squirrels [*Spermophilus beecheyi*]) was conducted by Mr. Fosdick concurrently with the reconnaissance survey. He walked the entirety of the project site searching for burrows of California ground squirrels, burrowing owls, or evidence of recent owl presence (e.g., the presence of feathers, whitewash, or pellets). In addition, he conducted a focused survey for evidence of previous raptor nesting activity (i.e., large stick nests) in trees, and for potential bat roosting habitat on the site.

In addition, Ms. Goklany conducted a formal tree survey concurrently with the reconnaissance site survey. All trees in the project site with a diameter-at-breast-height (DBH) greater than 2 inches were mapped using a sub-meter Global Positioning System (Trimble GeoXT™ GPS unit). Each tree was identified to species using *The Jepson Manual, Vascular Plants of California, Second Edition* (Baldwin et al. 2012) and tagged with a unique identification number. Methodologies described in the *Guidelines for Developing and Evaluating Tree Surveys* (Bernhardt & Swiecki 1991) were utilized to measure DBH with a Biltmore stick to the nearest inch. A detailed description of the methodologies employed in the tree survey and the survey results are presented in a separate Tree Survey Memorandum (H. T. Harvey & Associates 2015).

Existing Biological Conditions

The Project site is underlain by three non-native soil types: (1) Urbanland-Elpaloalto complex, 0 to 2 percent slopes; (2) Urbanland-Stevens Creek complex, 0 to 2 percent slopes; and (3) Urbanland-Campbell complex, 0 to 2 percent slopes, protected. The Urbanland series includes imported fill, and is found in developed areas over much of the San Francisco Bay region. These soil types include clay, sandy, and silty loams that occur in alluvial fans. They are well-drained, and have the potential to be the Urbanland-Elpaloalto and Urbanland-Campbell complexes are sometimes slightly saline (Natural Resources Conservation Service 2015). The region experiences a Mediterranean climate, characterized by dry, hot summers and wet, mild winters with the majority of annual precipitation falling between the months of October and April.

General Habitat Conditions and Wildlife Use

The reconnaissance-level field survey identified two general biotic habitat types on the project site, ruderal grassland and developed/landscaped. These habitats are described in detail below. Table 1 provides a summary of the habitat acreages on the site, and their distribution within the site is depicted in Figure 2; representative photos of each habitat type are also provided below.

Table 1. Habitat Acreages on the Project Site

Habitat	Area (acres)	Percentage of Site
Ruderal grassland	22.99	74%
Developed/landscaped	8.28	26%
Total	31.27	100

Ruderal Grassland

Vegetation. The ruderal grasslands occupying the proposed Equinix Data Center portion of the project site were mowed during the weeks prior to the October 30, 2015 site visit (Photo 1); however, the plant community



Figure 2. Habitat and Impacts Map
Equinix Data Center and Santa Teresa Substation Project
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appeared to have been dominated by non-native grasses, primarily wild oats (*Avena* sp.), and non-native forbs such as stinkwort (*Dittrichia graveolens*), mustard (*Brassica* sp.) and horehound (*Marrubium vulgare*). In addition, several scattered cotoneaster (*Cotoneaster* sp.) shrubs and 22 healthy and mature trees were observed scattered throughout the grasslands (Photo 2). Tree species documented on the project site that are native to the Santa Clara Valley include valley oak (*Quercus lobata*), coast live oak



Photo 1. Ruderal grassland habitat on the project site.

(*Quercus agrifolia*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Tree species that are native to California, but do not occur naturally in the Santa Clara Valley, include coast redwood (*Sequoia sempervirens*) and Northern California black walnut (*Juglans hindsii*). Non-native trees, such as English walnut (*Juglans regia*) and Peruvian pepper tree (*Schinus molle*) were also recorded on the site. Twelve trees had a DBH greater than or equal to 18 inches, and of these trees, several were exceptionally large, having DBH measurements ranging from 60 inches to 81 inches and large canopy spreads. Owing to the presence of Peruvian pepper trees amongst these individuals, these large trees were likely planted, but are potentially more than 150 years old. A full description of the results of the tree survey is provided in a separate Tree Survey Memorandum (H. T. Harvey & Associates 2015).



Photo 2. Large valley oak at the corner of Great Oaks Boulevard and Via Del Oro.

The ruderal grasslands occurring within the PG&E Edenvale Center portion of the project site are disturbed by facility operations, and heavy equipment has compacted the soil; however, much of this portion of the site still supports vegetation and is dominated by non-native grasses and forbs such as wild oats and stinkwort. Both wild oats and stinkwort are rated as “moderately” invasive by the California Invasive Plant Council (Cal-IPC), and can have a substantial and apparent ecological impact on physical processes, plant and animal communities, and vegetation structure (Cal-IPC 2015).

Wildlife. The ruderal grasslands on the project site are limited in extent, have relatively simple vegetation structure, and are isolated from more extensive grasslands and other natural areas in the region, and as such provide relatively low-quality habitat for wildlife species typically associated with grasslands. Wildlife species associated with more extensive grassland habitats in the region, such as the grasshopper sparrow (*Ammodramus savannarum*) and loggerhead shrike (*Lanius ludovicianus*), are absent from this small habitat patch. Many of the species that occur on the site are common species that occur in adjacent urban areas and use the site for foraging, such as the American crow (*Corvus brachyrhynchos*), Anna’s hummingbird (*Calypte anna*), cedar waxwing (*Bombycilla cedrorum*), black phoebe (*Sayornis nigricans*), Say’s phoebe (*Sayornis saya*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaidura macroura*), all of which were observed during the site visit. In addition, two relatively common bird species that are not typically associated with urban/developed landscapes, the western meadowlark (*Sturnella neglecta*) and American pipit (*Anthus rubescens*), were also observed in the ruderal grasslands during the site visit. Few birds are likely to nest in these grasslands due to their limited extent and structural simplicity, but species such as the Anna’s hummingbird, American crow, and western scrub-jay (*Aphelocoma californica*) may nest in the scattered large trees on the site.

The mature trees scattered throughout the ruderal grasslands support common bird species such as the western scrub-jay, oak titmouse (*Baeolophus inornatus*), and bushtit (*Psaltriparus minimus*). These trees also provide perches for hunting raptors, such as the red-tailed hawk (*Buteo jamaicensis*), Cooper’s hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*). One red-tailed hawk was observed perched on the ground in the ruderal grasslands, apparently foraging, though no nests of tree-nesting raptors were observed on the site. Multiple California ground squirrels and California ground squirrel burrows, most of which appeared to be active, were observed in the ruderal grasslands. However, no burrowing owls or sign of burrowing owl use was observed.

In general, wildlife use of the ruderal grassland habitat is limited by the high levels of human disturbance that occur on the site, and in the urban matrix surrounding it. During the site visit, H. T. Harvey & Associates ecologists observed three different people visit the site to fly radio-controlled quadcopters, and there was evidence of multiple vehicle tracks and of a temporary homeless encampment under one of the Peruvian pepper trees.

Developed/Landscaped

Vegetation. The project site includes 8.28 ac of developed/landscaped habitat. Developed areas of the site are devoid of vegetation and include hardscape (asphalt and concrete surfaces) along Via Del Oro, the VTA light rail tracks, and a PG&E maintenance and storage yard. In addition, the northernmost portion of the site (to

the west of the PG&E Edenvale Center) was graded prior to the November 4, 2015 site visit, and thus, was overlain by bare soil and mapped as developed/landscaped habitat. At the time of the survey, three trees remained in the northernmost parcel: Mexican fan palm (*Washingtonia robusta*), elm (*Ulmus* sp.), and European olive (*Olea europaea*). Landscaped areas on the project site are located in the right-of-way of Via Del Oro. These vegetated strips lining the road are comprised of irrigated lawn and 59 planted trees, including London plane (*Platanus hybrida*), shamel ash (*Fraxinus uhdei*), coast redwood, and sweet gum (*Liquidambar styraciflua*) (Photo 3).

Wildlife. The developed/landscaped habitat on the project site supports some common animal species, although the diversity is lower than in nearby less disturbed habitats. The species that are found here include the house finch (*Haemorrhous mexicanus*), California towhee (*Melospiza crissalis*), and white-crowned sparrow (*Zonotrichia leucophrys*), as well as introduced, non-native species such as the rock pigeon (*Columba livia*). One of the two red-tailed hawks observed during the site visit was perched in the top of a coast redwood tree located along Via Del Oro, and a likely red-tailed hawk nest also was observed approximately 80 ft high on a cell tower located in the Oak Grove School District bus yard, adjacent to Via Del Oro but outside the project



Photo 3. Sweet gum trees along the right-of-way of Via Del Oro in developed/landscaped habitat.

boundary. Several California ground squirrel burrow clusters were also observed along Via Del Oro, within 10 ft of the edge of the street, and several old, partially collapsed California ground squirrel burrows were observed at the proposed substation site. However, no burrowing owls or sign of burrowing owl use was observed.

Special-status Plant and Animal Species

As described in *Methods* above, information concerning threatened, endangered, or other special-status species that could occur on the project site was collected from several sources and reviewed by H. T. Harvey & Associates ecologists prior to the site visit. The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the list of species potentially occurring on the site. Figures 3 and 4 are maps of the CNDDDB's special-status plant and animal species records in the general vicinity of the project site, defined for the purposes of this report as the area within a 5-mi radius. These generalized maps are valuable on a historic basis, as they show areas where special-

status species occur or have occurred previously, but they do not necessarily represent current conditions or indicate where species are absent.

Special-status Plants. The CNPS (2015) and CNDDDB (2015) identify 116 special-status plant species as potentially occurring in the nine USGS quadrangles containing and/or surrounding the project site for CRPR 1 and 2 plants, and in Santa Clara County for CRPR 3 and 4 plants, as described in the *Methods* section above. CNDDDB records within the general project site vicinity are shown in Figure 3. Of these 116 species, 115 were determined to be obviously absent from the project site due to one or more of the following reasons:

- A lack of specific habitat (e.g., coastal salt marsh) and/or edaphic requirements (e.g., serpentine or alkaline soils) for the species in question
- The elevation range of the species is outside of the range on the project site
- The species is known to be extirpated from the site vicinity

Marginally suitable habitat for the 116th species, Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*, CRPR 1B.1), does occur on the project site, and this species has been recently documented in disturbed ruderal grasslands in more northern portions of Santa Clara County. However, the majority of the ruderal grassland on the project site is underlain by soil in the Urbanland-Stevens Creek complex, and is not saline or alkaline, the latter of which is an edaphic requirement of Congdon's tarplant. In addition, the one CNDDDB record in the project site vicinity is from 1908, and the population has since been extirpated. Further, no evidence of this species' presence was detected during the site visit. Thus, this species is not expected to occur on the project site.

Special-status Animals. The CNDDDB (2015) identified several special-status animal species as occurring in the nine USGS quadrangles containing and/or surrounding the project site, as described in the *Methods* section above. CNDDDB records within the project vicinity are shown in Figure 3. All special-status wildlife species identified during the background review were determined to be absent from the project site. Species considered for occurrence but rejected, as well as the reasons for their rejection, include the following (among others):

- The California tiger salamander (*Ambystoma californiense*), federally and state listed as threatened, and the California red-legged frog (*Rana draytonii*), federally listed as threatened and a California species of concern, occurred historically in the project region. However, the project site lacks suitable aquatic breeding habitat for these species. In addition, over the past 150 years California tiger salamanders and California red-legged frogs have been largely extirpated from the majority of the urbanized Santa Clara Valley floor in Santa Clara County, including the project site and surrounding vicinity. Although there are recorded occurrences of California tiger salamanders and California red-legged frogs within potential dispersal distance of the project site (i.e., 1.2 mi for the tiger salamander and 1.0 mi for the red-legged frog), the project site is separated from the nearest known occurrences of these species by U.S. 101, Monterey Road, and dense urbanization within the City of San Jose, all of which are effective dispersal barriers for both species. Further, the project site is not mapped as potential primary or

secondary habitat for either species by the VHP. Thus, neither species is expected to occur on the project site.

- The Bay checkerspot butterfly (*Euphydryas editha bayensis*), federally listed as threatened, occurs on serpentine grasslands approximately 1.5 mi to the southeast of the project site at Tulare Hill, and approximately 1.7 mi east of the project site, on the east side of U.S. 101 (CNDDDB 2015). However, the project site lacks serpentine grasslands and the butterfly's two larval food plants: California plantain (*Plantago erecta*) and owl's clover (*Orthocarpus densiflorus*). Further, the project site is not mapped as potential Bay checkerspot butterfly habitat by the VHP. Thus, the Bay checkerspot butterfly is not expected to occur on the project site.
- The project site lacks suitable habitat for the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California species of special concern. Further, no nests of this species were detected during a focused survey of the project site. Thus, the San Francisco dusky-footed woodrat is determined to be absent.
- The limited extent of grassland on the project site and its isolation from more extensive open habitats in the region preclude the presence of wildlife species such as the grasshopper sparrow, loggerhead shrike, and northern harrier (*Circus cyaneus*), all of which are California species of special concern, as well as the white-tailed kite (*Elanus leucurus*), a fully protected species.
- The project site lacks aquatic habitat for the western pond turtle (*Actinemys marmorata*), a California species of special concern, and is separated from the nearest known occurrence of the species by several major roads and Valley floor commercial and residential development. Further, the project site is not mapped as potential western pond turtle habitat by the VHP. Thus, this species is determined to be absent.
- Ostensibly suitable habitat for one special-status wildlife species, the burrowing owl, a California species of special concern, is present on the proposed project site. However, neither burrowing owls nor signs of recent burrowing owl use (e.g., fecal material or feathers) were observed within the proposed project site during a focused survey. Further, the project site is not mapped as potential burrowing owl habitat (nesting or wintering) by the VHP, nor is it adjacent to mapped burrowing owl habitat (ICF International 2012), and there are no current or historical burrowing owl records from the project site. Thus, the burrowing owl is not expected to occur on the project site.
- An examination of trees on the site failed to find any large cavities that might provide potentially suitable bat roosting habitat. Therefore, the trees on site do not provide suitable habitat for a large roosting or maternity colony of bats.

Sensitive and Regulated Habitats

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in the CNDDDB. Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDDB and using NatureServe's (2015) standard heritage program methodology. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity

and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program’s currently accepted list of vegetation alliances and associations (CDFW 2010).

Furthermore, aquatic, wetland and riparian habitats are also afforded protection under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the U.S. Army Corps of Engineers under Section 401 of the Clean Water Act (CWA) (waters of the U.S.), the Regional Water Quality Control Board under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (waters of the state), the CDFW under Sections 1601–1603 of the Fish and Game Code, and/or the U.S. Fish and Wildlife Service (USFWS).

CDFW Sensitive Habitats. A query of sensitive habitats in the CNDDDB (2015) identified one natural community of special concern, serpentine bunchgrass (G2/S2.2), as occurring in the project vicinity; however, the Urbanland soils that occur on the site (Natural Resources Conservation Service 2015) are not derived from serpentine parent material. Furthermore, few native plant species occur on the project site. In conclusion, the project site does not support riparian habitat, natural communities of concern, or sensitive vegetation alliances that are subject to the jurisdiction of the CDFW.

Waters of the U.S./State. No habitat observed within the project site possesses the field characteristics used by the federal and state regulatory agencies in defining their jurisdiction. As such, waters of the U.S. and/or state do not occur on the project site.

Biotic Impacts and Mitigation

Overview

The CEQA and its guidelines provides instruction in evaluating impacts of projects on biological resources and determining which impacts will be significant. The 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 the CEQA guidelines (Section 15065), a project’s effects on biotic resources are deemed significant where the project would:

- A. “substantially reduce the habitat of a fish or wildlife species”
- B. “cause a fish or wildlife population to drop below self-sustaining levels”
- C. “threaten to eliminate a plant or animal community”
- D. “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:

- E. “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”
- F. “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”
- G. “have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act”
- H. “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”
- I. “conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance”
- J. “conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan”

Santa Clara Valley Habitat Plan

The proposed project is a “covered project” under the VHP (ICF International 2012). The Santa Clara Valley Habitat Agency (SCVHA) leads the implementation of the VHP. It is a regional partnership between six local partners, including the County of Santa Clara, Santa Clara VTA, the Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill; the CDFW; and the USFWS. In 2013, the VHP was adopted by all local participating agencies, and permits were issued from the USFWS and CDFW. It is both a habitat conservation plan and natural community conservation plan, or HCP/NCCP. The planning document helps private and public entities plan and conduct projects and activities in ways that lessen impacts on natural resources, including specific threatened and endangered species. The VHP identifies regional lands (called reserves) to be preserved or restored to benefit of at-risk species, and describes how reserves will be managed and monitored to ensure that they benefit those species. In providing a long-term, coordinated planning for habitat restoration and conservation, the VHP aims to enhance the viability of threatened and endangered species throughout the Santa Clara Valley.

The VHP defines measures to avoid, minimize, and mitigate impacts on covered species and their habitats while allowing for the implementation of certain “covered projects”. Chapter 6 of the VHP includes detailed and comprehensive conditions to avoid and minimize impacts to the 18 “covered species” (nine animal species and nine plant species) included in the plan area, which is comprised of 519,506 ac, or approximately 62% of Santa Clara County. These conditions are designed to achieve the following objectives:

- Provide avoidance of covered species during implementation of covered activities throughout the project site.
- Prevent take of individuals from covered activities as prohibited by law (e.g., take of fully protected species).
- Minimize impacts to natural communities and covered species where conservation actions will take place.
- Avoid and minimize impacts to jurisdictional wetlands and waters throughout the study area to facilitate project-by-project wetland permitting.

In conformance with the VHP, project proponents are required to pay impact fees in accordance with the types and acreage of habitat or “land cover” impacted, and to implement conservation measures specified by the VHP. Land cover impacts are used because it is the best predictor of potential species habitat, and is applicable to all of the covered species (with the exception of the burrowing owl). The SCVHA has mapped three fee zones in the VHP area: (A) rangeland and natural lands, (B), agricultural and valley floor lands, and (C) small vacant sites (SCVHA 2015). The following areas are exempt from land cover fees:

- All development that occurs on land mapped by the VHP as urban-suburban, landfill, reservoir (excluding dams), or agriculture developed land cover types
- Other exempt activities include urban development in fee zones A-C on parcels less than 0.5 ac
- Additions to structures within 50 ft of existing structure that result in less than 5000 ft² of impervious surface so long as there is no effect on wetland or serpentine land cover types
- Construction of recreational facilities within the reserve system.

Additional fees in-lieu of providing compensatory mitigation are imposed for projects that impact serpentine habitat, wetlands, and burrowing owls, and for certain projects that result in atmospheric nitrogen emissions, although in some cases, project proponents may provide land to restore or create habitats types protected by the VHP in lieu of payment of fees.

The majority of the project site overlaps the VHP study area and Fee Zone B (Agricultural and Valley Floor Lands) (SCVHA 2015). There is no serpentine habitat or wetlands on the project site, and therefore, fees in lieu of mitigation for impacts to these habitat types would not be required. Because the proposed project entails new development, nitrogen deposition fees may apply.

This impact assessment summarizes the applicable fees and conservation measures that are required by the VHP. Chapter 6 of the VHP (ICF International 2012) is included in Appendix A for reference. The impact analysis below provides the VHP conditions that apply to the proposed project. Other conditions that are species-specific are described in the appropriate sections in this chapter based on the project-specific assessment of potential impacts.

Condition 1- Avoid Direct Impacts on Legally Protected Plant and Wildlife Species

Wildlife Species Protected Under Other Laws. Several wildlife species that occur in the proposed project vicinity are protected under other state and federal laws. Some of these animal species are listed as fully protected under California Fish and Game Code (e.g., American peregrine falcon [*Falco peregrinus anatum*] and white-tailed kite), and eagles are protected under the Bald and Golden Eagle Protection Act. Further, all migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Actions conducted under the VHP must comply with the provisions of the MBTA and California Fish and Game Code.

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality

Condition 3 applies to all projects and identifies a set of programmatic best management practices (BMPs), performance standards, and control measures to minimize increases of peak discharge of storm water and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include pre-construction, construction site, and post-construction actions. Pre-construction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control.

No Impact

Impacts on Special-status Plants and Animals. As described above, suitable habitat is not present on the Project site for any special-status plant species, and presence of special-status animals is precluded by the combination of a lack of suitable habitat and the presence of extensive development in surrounding areas. Therefore, there would be no impact on special-status plants or animals due to the proposed project.

Less-than-significant Impacts

Impacts on Upland Habitats and Associated Common Plant and Wildlife Species

The proposed project would result in the permanent loss of up to 23.74 ac of upland habitats, including 1.04 ac of developed/landscaped areas and 22.71 ac of ruderal grassland. In addition, the project would temporarily impact 5.35 ac of developed/landscaped areas and 0.28 ac of ruderal grassland. Ruderal grassland is relatively abundant and widespread regionally, is not particularly sensitive, and does not provide habitat for special-status plant or wildlife species. Impacts on both upland habitat types would result in impacts on common (i.e., non-special-status) plant and animal species that occur there. These species would experience a direct loss of habitat due to the project from the mortality, injury, disturbance, and displacement of individuals of some of these species. Additionally, loss of habitat and displacement of individuals could have indirect effects on populations

and habitats outside of the project site by increasing concentrations of individuals, leading to increases in intra- and interspecific competition and increased pressure on available resources.

However, plant and wildlife species that occur on the project site are common, regionally abundant, are present in widely available habitats in the region, and may continue to be present on some portions of the site following construction. Additionally, the proposed project would impact only a small proportion of their regional populations, and the number of individuals likely to be displaced by habitat disturbance and loss would be quite small with respect to the amount of suitable habitat available in the area. Thus, impacts on these common species and their habitats resulting from project activities would not meet the threshold of having a *substantial* adverse effect, and would not be considered significant under CEQA.

Impacts Found to Be Less than Significant with Mitigation

Impacts on Protected Trees

The City Municipal Code (Chapter 13 Section 28.220) states that unlawful pruning or removal of street trees (located in public right-of-ways) and/or heritage trees is prohibited without obtaining a permit. Any tree planted on a street is protected by this ordinance. Permits to prune or remove street trees are issued by the Department of Transportation, whereas permits to impact ordinance-sized and heritage trees can be obtained from the Department of Planning, Building, and Code Enforcement.

Project activities have the potential to permanently impact up to 12 ordinance-sized trees that are protected under the City's Municipal Code. The location, size (DBH), and species of each ordinance-sized tree in the impact area of the project site are provided in a separate memorandum that presents the results of the tree survey conducted in October and November 2015 (H. T. Harvey & Associates 2015). It should be noted that additional trees occur within the project site, but not in the impact area as it is currently designed. Therefore, we have assumed that those additional trees will not be impacted.

Trees in the impact area are scattered and do not form a dense overstory, and thus, tree removal would not substantially increase incident sunlight reaching the vegetation below. However, five ordinance-sized trees are native oak species (coast live oak and valley oak). Furthermore, seven of the 12 ordinance-sized trees are exceptionally old (likely over 150 years) and large, including two valley oaks with DBH measurements ranging from 60 to 81 inches and have extensive canopy spreads. The majority of ordinance-sized trees (nine individuals) appeared to be in good or excellent health at the time of the tree survey. As a result, the ecological impact of removing ordinance-sized trees would be substantial. In addition, the project will temporarily impact up to 59 street trees in the right-of-way along Via Del Oro. Pruning of these street trees as part of the project is also regulated by the City. Owing to the proposed project's conflicts with the City's Municipal Code and Envision (City 2012), impacts on protected trees are potentially significant. In conclusion, the removal or pruning of protected trees as part of the project would conflict with impact criteria "I" (local policies or ordinances protecting biological resources) listed under Appendix G of the CEQA Guidelines, and would be considered significant. Implementation of Mitigation Measures BIO-1a (Avoidance and Preservation of Trees)

and BIO-1b (Compensation for Impacts on Protected Trees) will reduce this impact to a less-than-significant level.

Mitigation Measure BIO-1a: Avoidance and Preservation of Trees

During the detailed design of project activities, ordinance-sized trees will be avoided to the extent feasible. If it is determined that impacts on some trees can be avoided, a construction-phase Tree Preservation Plan shall be prepared by a certified arborist prior to initiation of construction to describe how trees that will not be removed will be protected. The construction-phase Tree Preservation Plan shall include the following tree protection measures, which are based on guidelines established by the International Society for Arboriculture:

- Establish an area surrounding individual trees or groups of trees to be protected during construction as defined by a circle concentric with each tree with a radius 1-1/2 times the diameter of the tree canopy drip line. This “tree protection zone” is established to protect the tree trunk, canopy and root system from damage during construction activities and to ensure the long-term survival of the protected trees. The tree protection zone shall: (1) ensure that no structures or buildings, that might restrict sunlight relative to the existing condition, will be constructed in close proximity to the trees; and (2) that no improvements are constructed on the ground around the tree within the tree protection zone, thus ensuring that there is sufficient undisturbed native soil surrounding the tree to provide adequate moisture, soil nutrients and oxygen for healthy root growth.
- Protect tree root systems from damage caused by (a) runoff or spillage of noxious materials while mixing, placing, or storing construction materials and (b) ponding, eroding, or excessive wetting caused by incident rainfall through use of the following measures during excavation and grading:
 - Excavation: Do not trench inside tree protection zones. Hand excavate under or around tree roots to a depth of 3 ft. Do not cut main lateral tree roots or taproots. Protect exposed roots from drying out before placing permanent backfill.
 - Grading: Maintain existing grades within tree protection zones. Where existing grade is 2 inches or less below elevation of finish grade, backfill with topsoil or native soil from the project site. Place fill soil in a single un-compacted layer and hand grade to required finish elevation.
 - Apply 6-inch average thickness of wood bark mulch inside tree protection zones. Keep mulch 6 inches from tree trunks.
- Provide 48-inch tall orange plastic construction fencing fastened to steel T-posts, minimum 6 ft in length, using heavyweight plastic ratchet ties. Install fence along edges of tree protection zones before materials or equipment are brought on site and construction operations begin. Maintain fence in place until construction operations are complete and equipment has been removed from site.

- Provide temporary irrigation to all trees in protection zones using a temporary on-grade drip or bubbler irrigation system sufficient to wet the soil within tree protection zones to a depth of 30 inches per bi-weekly irrigation event.

Mitigation Measure BIO-1b: Compensation for Impacts on Protected Trees

To the extent that the construction-phase tree protection measures, described above under *Mitigation Measure BIO-1a*, are not feasible, the project proponent will comply with the standards of the permit issued by the City's Department of Planning, Building, and Code Enforcement for the removal of ordinance-sized trees, and the permit issued by the Department of Transportation for pruning street trees. Furthermore, the project proponent will provide compensatory mitigation, both in number and spread of canopy to remain in compliance with Envision Goal MS-21.5 (City 2012). In areas where the improvements associated with development have encroached within the tree canopy drip line, and where trees have been removed entirely, all ordinance-sized trees affected shall be replaced at a 1:1 ratio, unless otherwise specified in the conditions of the aforementioned permits. A certified arborist will review the development areas after all construction has been completed. The replacement trees will be standard 24-inch box size trees or larger. Replanting shall occur in appropriate habitat in the City within 6 months of tree removal. Replacement trees should be comprised of species that have low water requirements and are well adapted to the Mediterranean climate of the Santa Clara Valley. Assemblages of diverse species should be selected to prevent monocultures that are vulnerable to pest invasions.

Compliance with Additional Laws and Regulations Applicable to Biotic Resources of the Project Site

Regulatory Overview for Nesting Birds

Construction disturbance during the breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. This type of impact would not be significant under CEQA for the species that could potentially nest on the Project site due to the local and regional abundances of these species and/or the low magnitude of the potential impact of the Project on these species (i.e., the Project is only expected to impact one or two individual pairs of these species, which is not a significant impact to their regional populations). However, we recommend that the following measures be implemented to ensure that Project activities comply with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code and Condition 1 of the VHP:

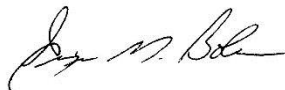
Measure 1. Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code will be avoided. The nesting season for most birds in Santa Clara County extends from February 1 through August 31.

Measure 2. Pre-construction/Pre-disturbance Surveys. If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests will be disturbed during Project implementation. We recommend that these surveys be conducted no more than seven days prior to the initiation of construction activities. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., trees, shrubs, ruderal grasslands, buildings) in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist will determine the extent of a construction-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation.

Measure 3. Inhibition of Nesting. If construction activities will not be initiated until after the start of the nesting season, we recommend that all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by the Project be removed prior to the start of the nesting season (e.g., prior to February 1). This will preclude the initiation of nests in this vegetation, and prevent the potential delay of the Project due to the presence of active nests in these substrates.

Please contact me by email at gbolen@harveyecology.com or by phone at (408) 458-3246 if you have any questions regarding this report. Thank you very much for contacting H. T. Harvey & Associates regarding this Project.

Sincerely,



Ginger Bolen, Ph.D.

Project Manager/Senior Wildlife Ecologist

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Appendix A. Valley Habitat Plan, Chapter 6.

Chapter 6

Conditions on Covered Activities and Application Process

6.1 Introduction

As required by ESA (Section 10[a][2][A][ii]) and Fish and Game Code Sections 2820 (a)(6) and 2820(f), this Plan includes measures to avoid and minimize take of covered species. These measures to avoid and minimize impacts are described as *conditions on covered activities* and are designed to achieve the objectives listed below.

- Provide avoidance of covered species during implementation of covered activities throughout the study area.
- Prevent take of individuals from covered activities as prohibited by law (e.g., take of fully protected species).
- Minimize adverse effects on natural communities and covered species where conservation actions will take place.
- Avoid and minimize impacts on jurisdictional wetlands and waters throughout the study area.

In the context of effects on covered species, one of the greatest benefits of an HCP/NCCP is that mitigation for individual projects can be implemented systematically on a regional scale. This enables a more comprehensive approach to conservation that concentrates protection where it has the greatest value. The Plan also restricts covered activities in high-value land cover types (e.g., wetlands, serpentine grassland) and for some species (e.g., covered plants and selected covered wildlife species). By protecting high-quality areas in the Reserve System and restricting covered activities in areas of higher biological value, regional avoidance and minimization goals are supported.

This chapter describes conditions on covered activities that help meet regional avoidance and minimization goals. Regional avoidance and minimization reduces the need for individual projects to avoid and minimize impacts at the project scale and allows streamlining of regulatory requirements. This Plan assumes that take will result from individual covered activities and that this take will be mitigated through the conservation strategy (Chapter 5). Most activities covered under this Plan are required to provide limited documentation of field conditions to verify these assumptions (see Section 6.2 *Exemptions from Conditions*).

Avoidance and minimization measures are regulated by federal, state, and local programs. The conditions on covered activities (avoidance and minimization measures), described in this chapter do not supersede requirements by other agencies and are not intended to provide a basis for non-compliance with other applicable design guidelines required by other federal, state, and local agencies.

This chapter also describes the application process for individual projects to request coverage under this Plan. The application process is described in detail at the end of this chapter in Sections 6.7 *Receiving Take Authorization under the Plan* and 6.8 *Habitat Plan Application Package*. The conditions on covered activities and application process are included in this chapter together so that project proponents have one location in this document in which all requirements are described.

The NCCP Act requires that the Permittees get concurrence from the Wildlife Agencies before adopting, amending, or approving any plan or project that is inconsistent with the objectives and requirements of this Plan¹. The conditions described in this chapter are designed to ensure this consistency and provide standard and predictable requirements for project applicants. However, Permittees may need to adopt or impose additional conditions beyond those described in this chapter for unanticipated projects or effects in order to ensure consistency with the Habitat Plan and compliance with the NCCP Act. The Permittees will evaluate all projects respective to their authorities to ensure that all applicable conditions described in this chapter have been incorporated into the project prior to extending take coverage under the Plan. Chapter 8 describes applicant responsibilities in the application process.

In addition to the conditions described in this chapter to avoid and minimize impacts, covered activities may also require payment of mitigation fees (see Chapter 9), provision of land in lieu of mitigation fees (see Chapter 8), or habitat restoration or creation in lieu of wetland fees.

6.2 Exemptions from Conditions

Many projects within the study area do not disturb the ground or have little or no measurable impact on the covered species or natural communities. Because the probability of take is so low, the need to enforce conditions on the projects and activities specified below would not provide a net benefit for species. Therefore, these covered activities are not subject to the conditions described in this chapter. Quantifiable impacts associated with activities exempt from conditions of the Habitat Plan will be reported in the Application Package (see Section 6.8, below) (impacts that cannot be quantified will not be tracked). Although these covered activities are exempted from the conditions, all of them receive take coverage (**Table 6-1**).

¹ Fish and Game Code Section 2820(b)(3).

Exemptions based on land cover types are based on the mapping for this Plan at the time of permit issuance and the nature of covered activities previously permitted on the site.

Many of the covered activities exempt from the conditions in this chapter may also be exempt from the Habitat Plan fees, as described in Chapter 9, Section 9.4.1 *Habitat Plan Fees*. The association between covered activities exempt from conditions on covered activities and Habitat Plan fees are shown in **Table 6-1**.

The following activities and projects are exempt from all of the conditions in this chapter and are not tracked as impacts by the Implementing Entity (as described above)².

- Projects that do not result in ground disturbance do not result in release of potential water quality contaminants, or do not create new wildlife barriers.
- Private-sector, routine-maintenance activities that require a development, grading, or building permit, and that occur inside the urban service area (private-sector activities that do not require a development, grading, or building permit are not covered by the Plan or its conditions or fees).
- Private-sector, routine-maintenance activities that require a development, grading, or building permit; that occur outside of the urban service area; and that occur within 50 feet of all existing structures at the time of Plan commencement or within 50 feet of structures that were permitted for incidental take under the Habitat Plan.
- Any covered activity described in Chapter 2 that occurs in urban-suburban, landfill, reservoir³, or agriculture developed⁴ land cover types as verified in the field, unless the activity may affect a mapped or unmapped stream, riparian, serpentine, pond, or wetland land cover types, or the activity is located in a stream setback (see Condition 11 for a discussion of stream setbacks).
- Routine infrastructure maintenance by public agencies within the planning limit of urban growth that do not affect stream, riparian, serpentine, ponds, or wetland land cover types.
- Routine infrastructure maintenance by public agencies that occurs in urban-suburban, landfill, reservoir, or agriculture developed land cover types that do not affect stream, riparian, serpentine, pond, or wetland land cover types. Examples of such activities include filling pot-holes and resurfacing existing roads without expansion of the paved area.

² Project proponents are still required to comply with survey and avoidance requirements for applicable local, state, and federal laws not addressed by the Habitat Plan (e.g., local tree ordinances, state fully protected species, the federal Migratory Bird Treaty Act).

³ “Reservoir” does not include the dam face. Exemptions described in this chapter do not apply to projects impacting the face of covered dams.

⁴ The land cover type “agriculture developed” (also known as agriculture developed/covered ag) is defined in Chapter 3 as intensive agricultural operations such as nurseries and greenhouses.

The following activities⁵ are also exempt from all conditions in this chapter but will be tracked by the Implementing Entity as impacts when they occur on natural land cover types.

- Additions to existing structures or new structures that are within 50 feet of an existing structure (e.g., a new garage) that result in less than less than 5,000 square feet of impervious surface so long as no stream, riparian, wetlands, ponds, or serpentine land cover type are affected. Additions are cumulative and must be calculated based on the footprint of the structure at time of Plan implementation to determine whether this threshold has been crossed.
- A covered activity on a parcel of less than 0.5 acre or less as long as no serpentine, stream, riparian, pond, or wetland land cover type is within the parcel.

A project proponent of a covered activity in the Plan will not be required to comply with the conditions in this chapter or pay any Habitat Plan fees if the proponent of the activity provides written confirmation to the Implementing Entity that the CDFG and USFWS have determined that the activity is not subject to CESA and ESA, respectively; or has already received the necessary take authorizations under CESA and ESA; or has otherwise complied with CESA and ESA. An activity will be deemed to be in compliance with CESA and ESA by the Implementing Entity and thus be exempt from the conditions in this chapter and otherwise comply with the Habitat Plan if the proponent provides the following:

1. Letters from both USFWS and CDFG that specifically refers to the activity and states that the activity is not likely to result in take of any federally or state listed species and will not preclude successful implementation of the conservation strategy for all covered species, or
2. A copy of an incidental take permit issued by CDFG for the activity, and copies of incidental take statements or incidental take permits issued by USFWS that authorize the incidental take associated with the proposed activity.

Additional covered activities are exempt from species surveys, as described in Section 6.8.5 *Item 5: Results of Applicable Species Surveys and Monitoring*, below.

Activities or projects listed in Chapter 2, Section 2.4 *Projects and Activities Not Covered by this Plan*, are specifically excluded from coverage under this Plan and therefore cannot receive take authorization, are not subject to the conditions in this chapter, and do not pay Habitat Plan fees (see Section 2.4 for additional information on these excluded activities and projects). These projects are listed below.

⁵ Although private development that does not meet the criteria described in Section 2.3.2 *Urban Development* subheading *Private Development Coverage Area* and additions of less than 5,000 square feet of new impervious surface (regardless of parcel size) are not subject to the Plan, project proponents may choose to opt into the Plan. If project proponents seek to have these activities covered, the bulleted exemptions apply.

- Private sector activities that do not obtain a development, grading, building, or other construction permit involving land disturbance for the purposes of making land improvements, such as the construction of buildings, roads, and driveways ("building permits" referenced herein do not include plumbing, electrical, or mechanical permits). Activities that do not obtain these development permits are not covered by the Plan.
- SCVWD Stream Maintenance Program activities.
- City of Gilroy expansion beyond the Plan's planning limit of urban growth.
- Bay Area to Central Valley high-speed train.
- New highway between I-5 and U.S. 101.
- Routine and ongoing agricultural activities or expansion of cultivated agriculture into natural land cover types, including vineyard development, that does not seek discretionary approval or permitting by the local jurisdiction.
- Timber harvest operations.
- Quarries and other mining other than expansion of Freeman Quarry (except as otherwise noted).
- New and expanded landfills other than Kirby Canyon, Pacheco Pass Landfill expansions, and landfills occurring inside the planning limit of urban growth of the three cities.
- Mercury removal/remediation (unless described in Chapter 2 as a covered activity).
- Corps led projects.
- Pacheco dam reconstruction and reservoir enlargement.
- Pesticide/ herbicide application for the federal permit.
- Installation and operation of groundwater wells (except as otherwise noted).
- Increased development due to incorporation of San Martin.
- Dam removal and/or construction of new dams.
- Wind farm development.
- Water importation from outside the SCVWD service area.
- Emergency activities.

6.3 Conditions on All Covered Activities

The conditions below are categorized and described in several ways: by activity type, by natural community, and by species. Collectively they provide for regional and site-specific avoidance and minimization of impacts on covered species and sensitive land cover types. It is the responsibility of project

proponents to design and implement their projects in compliance with these conditions. For private projects, the applicable local jurisdictions will review project compliance with the conditions in this chapter. The Local Partners will determine best adherence to conditions where discretion exists. If a project applicant proposes to use a less preferable design option (e.g., a culvert instead of a free-span bridge), the project applicant must demonstrate why a preferred option is infeasible. For private applicants, local jurisdictions will determine if this rationale is sufficient under these circumstances.

Conditions on covered activities, including avoidance and minimization measures identified for certain covered activities and species-specific measures, may be revised over the course of the permit term based on results of implementation through the adaptive management process. Proposed revisions will be reviewed by the Wildlife Agencies upon submission of each annual report to ensure the successful implementation of the conservation strategy. Agencies will review and respond within 30 days. Revisions to conditions will be approved by the Wildlife Agencies prior to the Permittees adopting revised conditions. Allowing such revisions will ensure that out-of-date or unsuccessful management techniques do not persist and that best available science can be incorporated into the conditions as appropriate for the Plan.

Compliance with the Habitat Plan does not preclude compliance with all other applicable state and federal laws. It is the project proponent's responsibility to ensure compliance with all applicable laws and regulations.

All projects that discharge dredged or fill material into waters of the United States, including federal jurisdictional wetlands, are required to obtain applicable permits (e.g., Clean Water Act Section 404 and Section 401) from the Corps and the Regional Board. Projects that place fill, alter the bed bank or channel, or divert the flow of streams, alter portions of streams above the ordinary high water mark, alter streams that lack a nexus to navigable waters, wetlands, or lakes under the jurisdiction of the state only are required to obtain a waste discharge requirement from the Regional Board and enter into a streambed alteration agreement with CDFG⁶. Any project that requires a permit from the Corps, Regional Board, or CDFG for impacts on streams and other aquatic areas may be subject to avoidance and minimization requirements. Those requirements may differ from the avoidance and minimization requirements in this Plan.

Condition 1, described below, pertains to all covered activities. Other conditions specifically pertain to certain types of activities, certain species, or certain natural communities and are enumerated in subsequent sections.

⁶ Activities covered by this Plan that need a streambed alteration agreement are expected to fully meet the standards of the streambed alteration agreement through compliance with this Plan for species covered by the Plan.

Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species

Contra Costa Goldfields

Contra Costa goldfields is a federally endangered and CNPS 1B plant species whose extreme rarity precludes coverage under the Habitat Plan. Because the Habitat Plan does not cover the species, compliance is required on an individual basis.

The likelihood of discovery of new occurrences is very low. If a new occurrence of this species is found, its avoidance would be of the highest importance to the species' viability. If an applicant encounters Contra Costa goldfields on their site, they will contact the USFWS for written concurrence of avoidance to ensure that the project does not jeopardize the continued existence of the species.

Wildlife Species Protected Under Other Laws

Several wildlife species that occur in the study area are listed as fully protected, as defined under Sections 3511 and 4700 of the California Fish and Game Code. As described in Chapter 1, CDFG cannot issue permits for take⁷ of these species. Fully protected species that are known or likely to occur in the study area are listed below.

- Golden eagle.
- Bald eagle.
- American peregrine falcon.
- Southern bald eagle.
- White-tailed kite.
- California condor.
- Ring-tailed cat (= ringtail).

Three of the fully protected raptor species—white-tailed kite, peregrine falcon, and golden eagle—forage widely throughout the study area but nest in discrete locations. Bald eagles are rare winter migrants to Santa Clara County but have been known to breed in the San Francisco Bay Area. A California condor population has been established in San Benito County (Pinnacles National Monument) and birds forage occasionally in Santa Clara County. Additionally, ringtails may be found in some riparian woodlands in the study area.

Further, all migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA). All birds listed above and those covered by

⁷ Take is defined more narrowly in the California Fish and Game Code than in the ESA; see Chapter 1, *Introduction*, for details.

the Plan (western burrowing owl, least Bell's vireo, and tricolored blackbird) are considered migratory birds and subject to the prohibitions of the MBTA. Actions conducted under the Plan must comply with the provisions of the MBTA and avoid killing or possessing covered migratory birds, their young, nests, feathers, or eggs. As described in Chapter 1, the ESA incidental take permit, once issued by USFWS, will automatically function as an MBTA Special Purpose Permit, as specified under 50 CFR Sec. 21.27, for least Bell's vireo (the only migratory bird listed as threatened or endangered under the ESA) for a 3-year term subject to renewal by the Permittees (see Appendix 5 in U.S. Fish and Wildlife Service and National Marine Fisheries Service 1996). Should any other of the covered migratory birds become listed under the ESA during the permit term, the ESA permit would also constitute a Special Purpose Permit under the MBTA for that species for a 3-year term subject to renewal by the Permittees.

Golden eagle and bald eagle are also protected under the Bald and Golden Eagle Protection Act. Take of golden eagle or bald eagle includes "impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment" (72 FR 31133).

6.4 Conditions on Specific Covered Activities

Conditions 2–10 pertain to seven specific categories of covered activities: urban development, in-stream capital projects, in-stream operations and maintenance, rural capital projects, rural operations and maintenance, rural residential development, and Plan implementation.

6.4.1 Urban Development

Urban development is defined as development occurring inside the urban service area of the three Local Partner cities. Although urban development is assumed in the impact analysis to occur throughout the planning limit of urban growth of each city over the 50-year Habitat Plan permit term, the density of development is not assumed to be urban unless the area is also inside of the urban service area.

There are two conditions on new urban development required by the Plan. Conditions on urban development are limited because of the generally low biological value of resources within urban areas⁸. The two general exceptions are the urban fringe and stream resources. Condition 2 below addresses the edge of new urban development in relationship to the Reserve System; in-stream activities are addressed in subsequent conditions.

⁸ See Chapter 3 for the rationale for this assumption and Chapter 5 for identification of selected sites in urban areas with high-value resources.

Condition 2. Incorporate Urban-Reserve System Interface Design Requirements

For the purposes of this Plan, the urban-Reserve System interface is defined as the zone between existing and future urban development and the Reserve System. Because the study area includes three cities, development is anticipated adjacent to the Reserve System in some locations. Because of the influence of urban land uses it is anticipated that some areas generally unsuitable for covered species will border some of the Reserves. Urban buildout adjacent to reserves has the potential to directly or indirectly adversely affect covered species and natural communities within the Reserve System. Sources of such adverse effects may include vandalism, dumping of trash, trampling, unauthorized mountain bike or off-road vehicle use; runoff from adjacent streets and landscaped areas containing lawn fertilizer, pesticides, and vehicle waste (petroleum byproducts); introduction of invasive nonnative species (e.g., pampas grass, French broom, Argentine ants, giant reed); lights and noise from nearby development; unregulated movement of domestic animals; and the potential for covered species to enter developed or urban areas.

Beyond minimizing such direct and immediate impacts, the design of the urban-Reserve System interface will consider indirect and long-term effects, such as runoff from developed areas⁹ that can transport harmful substances (e.g., pesticides, automotive fluids, sediment) into reserves; establishment of invasive nonnative species that can disperse from nearby landscaped areas; and structural and biological damage (e.g., soil compaction, creation of unauthorized trails, disturbance of sensitive species) that can result from unmanaged human access and use.

The interface design will address the following key questions, which are based on those proposed by Kelly and Rotenberry (1993) for urban reserves in California.

- What external forces or processes may have a negative impact on covered species and habitats at or near the reserve boundary?
- To what extent are those external forces likely to penetrate the boundary and result directly or indirectly in negative impacts on covered species and habitats? (How permeable is the boundary?)
- Which covered species are likely to exit the reserve and expose themselves to increased risk of injury or death?
- What structures can be built or programs implemented to prevent or mitigate these impacts? For example, how can boundary permeability be altered?

With these questions in mind, site-specific interface design requirements were developed to reduce negative impacts of development on covered species and to

⁹ In general, development in the permit area will occur downslope from Habitat Plan reserves, so runoff should flow away from reserves. However, because construction grading often alters local drainage patterns, some runoff could flow into reserves if precautions are not taken.

help reduce conflicts if wildlife moves outside the Reserve System. The following sections (*Design Requirements*) describe requirements and opportunities for reducing impacts on covered species and natural communities on Reserve System lands adjacent to urbanized areas.

Design Requirements

New urban development that occurs adjacent to reserves or areas with moderate or high priorities for land acquisition (see Chapter 5, Section 5.3.1 *Land Acquisition and Restoration Activities*) will incorporate design requirements at the urban-Reserve System interface to minimize the indirect impacts of development adjacent to existing reserves. The relevant jurisdiction (city or County) will determine which development projects are subject to this condition, as well as which components may be required for a particular development. The Implementing Entity will provide technical assistance when needed. Design requirements to be incorporated in new development at the urban-Reserve System interface, include those listed below.

- Locate the proposed development as far from the reserve boundary as possible consistent with other onsite conditions and constraints.
- Where new development occurs, roads will be placed on the interior of the development (i.e., away from the reserve boundary) to reduce the incidence of domestic pets entering the reserves and to isolate this hazard for wildlife that might enter urban areas from the reserves.
- Fences adjacent to yards or home sites will be designed to minimize the risk of pets escaping private yards and entering reserves (e.g., fences will be as tall as permitted by city and county codes, with no spaces between slats).
- Fences shared with reserve boundaries will not contain any gates between the private property and reserve to prevent entrance and trampling of sensitive species or illegal dumping (legal access to reserves will be provided at recreation staging areas).
- No private gates into the Reserve System will be allowed unless required by a pre-existing access easement and identified as an exception by the Implementing Entity.
- Public roads adjacent to reserves (e.g., a road that is aligned parallel to a reserve boundary) will be fenced to reduce unauthorized public access. Locked gates will be inspected regularly to identify any unauthorized locks.
- Development will be designed to minimize the length of the shared boundary between urban areas and the reserves (i.e., minimize the urban edge).
- Outdoor lighting will be of low intensity and will utilize full cutoff fixtures to reduce light pollution of the surrounding natural areas.
- Use of high-intensity lighting (e.g., recreation facilities, commercial parking lots) near reserves will be avoided or, if necessary, placed as low to the

ground as possible and directed away from the reserves to minimize long-distance glare.

- Public facilities such as ballparks and fields that require high-intensity night lighting (i.e., floodlights) will be sited at least 0.5 mile from the reserve boundary to minimize light pollution. Facilities may be sited closer to the Reserve System if the Implementing Entity determines that the lighting system will not be intrusive to wildlife within the Reserve System (e.g., hills block the lighting).
- For any landscaping, non-invasive plants will be required and use of native plants is highly encouraged, consistent with County landscaping guidelines (County of Santa Clara 2009).
- Natural or artificial barriers or other access restrictions may be installed around development to protect sensitive land cover types and covered species in the reserves. Barriers will be designed so they are appropriate for site conditions and resources protected. Some barriers should keep undesirable pets outside of the Reserve, other barriers should keep covered species inside the Reserve, while others should do both. Before installation of a barrier, consider if the area is used by covered species for movement, if the barrier would prevent movement critical for species life cycle, or if the barrier would encourage species to use other less favorable crossings.

Any design requirements incorporated into projects at the urban-Reserve System interface will be located within the development (i.e., not on the Reserve System) with the exception of the fuel buffer described in Condition 10 below. These features will be maintained by the property owners. The Implementing Entity will monitor compliance with these conditions along the reserve boundary concurrent with other monitoring activities described in Chapter 7. Violations will be reported to the applicable local jurisdiction for enforcement.

Although they are not under obligation or requirement, existing developments located adjacent to reserves or lands identified as land acquisition targets for Plan reserves are encouraged to adopt and implement as many of these design requirements as practicable. Local jurisdictions are encouraged to notify and involve the Implementing Entity during the design review process for large projects planned adjacent to the Reserve System.

In addition to the requirements identified above, several other requirements and avoidance and minimization measures are applicable to development near reserves. Project proponents will comply with the following conditions as appropriate.

- Condition 3. *Maintain Hydrologic Conditions.*
- Condition 7. *Rural Development Design and Construction Requirements.*
- Condition 10. *Fuel Buffer.*

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality

This condition applies to all projects. The implementation of these projects could result in impacts on watershed health through changes in hydrology and water quality.

Currently, all Permittees have stormwater management plans that regulate new development and redevelopment as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. An amendment to the Clean Water Act, the NPDES Program is a compliance permit regulating any point source pollution that is discharged into waters of the United States. The San Francisco Bay Regional Board administers the NPDES program in for the Coyote and Guadalupe watersheds. The Central Coast Regional Board administers the NPDES program for the Pajaro Watershed which includes Uvas, Llagas, and Pacheco subbasins. The purpose of this condition is to identify a consistent approach for applying the most important water quality conditions of each Regional Board across the study area (North and South County).

Site Design and Avoidance and Minimization Measures

Through development of stormwater management plans and complementary guidance manuals (Santa Clara Valley Urban Runoff Pollution Prevention Program 2006; City of Gilroy 2004; City of Morgan Hill 2004, 2008; Santa Clara Valley Water Resources Protection Collaborative 2006; Santa Clara Valley Water District 2008), the Permittees have identified a set of programmatic avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality including during project construction. These avoidance and minimization measures originated, in part, from the measures that area typically required by the Regional Boards and CDFG for projects that have the potential to affect aquatic resources. Many of these avoidance and minimization measures also support the biological goals and objectives of this Habitat Plan. Implementation of these avoidance and minimization measures will reduce the potential for adverse impacts on covered species. **Table 6-2** lists avoidance and minimization measures for all water-related covered activities described in Condition 3, 4, and 5 of this Plan. Each local jurisdiction, or the Implementing Entity in the case of projects conducted by the Permittees, will verify that all appropriate measures in **Table 6-2** are implemented to minimize effects to covered species and their aquatic habitat (see Section 6.8.6). **Table 6-2** lists the source control measures and avoidance and minimization measures from the Permittees' existing stormwater management plans and complementary manuals that are most effective in protecting covered aquatic species and aquatic species habitat.

The requirements listed in **Table 6-2** include general, project design, construction, and post-construction avoidance and minimization measures. Project design measures are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources and the reduction of impervious surfaces. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for municipal operations, stormwater treatment, and flow control.

In addition to the avoidance and minimization measures identified above, several other avoidance and minimization measures are identified in other conditions that will help reduce potential impacts to water quality in the study area. Project proponents will comply with the following conditions as appropriate.

- Condition 2. *Incorporate Urban Reserve System Interface Design Requirements.*
- Condition 4. *Stream Avoidance and Minimization for In-Stream Projects.*
- Condition 5. *Avoidance and Minimization Measures for In-Stream Operations and Maintenance.*
- Condition 7. *Rural Development Design and Construction Requirements.*
- Condition 8. *Implement Avoidance and Minimization Measures for Rural Road Operations and Maintenance.*
- Condition 11. *Stream and Riparian Setbacks.*
- Condition 12. *Wetland and Pond Avoidance and Minimization.*

6.4.2 In-Stream Projects

In-stream projects—such as flood protection projects, construction of new bridges and repair or rehabilitation of existing bridges or culverts, and water supply capital projects—have the capacity to affect wildlife, aquatic species, and habitats by introducing sediment discharge, disturbing earth and riparian vegetation, and altering hydrologic and hydraulic characteristics of water bodies. Condition 4 is designed to address such impacts.

Several of the in-stream covered activities described in Chapter 2 are also covered activities under the SCVWD proposed Three Creeks HCP. The conditions described below for in-stream projects, as well as for stream and riparian habitat and associated covered species (e.g., Condition 16), are consistent with the Three Creeks HCP.

Condition 4. Avoidance and Minimization for In-Stream Projects

The primary purpose of this condition is to identify design requirements and construction practices for in-stream projects to minimize impacts on riparian and aquatic habitat. The term *in-stream* is defined for the purposes of this Plan as the stream bed and bank and the adjacent riparian corridor. The adjacent riparian corridor encompasses all mapped riparian land cover (i.e., riparian forest and scrub natural community) immediately adjacent to a stream (see **Figure 3-10** for mapped land cover types). All in-stream projects must be designed to minimize adverse impacts on stream morphology, aquatic and riparian habitat, and flow conditions. Projects that may also affect wetlands or pond areas are addressed in Condition 12, *Wetland and Pond Avoidance and Minimization*.

All in-stream projects, including projects occurring in dewatered reservoirs, will adopt design requirement and construction avoidance and minimization measures to minimize impacts on covered species, natural communities, and wildlife movement. SCVWD and other Local Partners, such as County Parks, have developed avoidance and minimization measures for projects occurring in streams. The Fishery Network of Central California Coastal Counties (called “FishNet 4C” for the original four counties involved) developed the *County Road Maintenance Guidelines for Protecting Aquatic Habitat and Salmon Fisheries* (Fishery Network of Central California Coastal Counties 2004). This manual, while focused on road maintenance activities, provides avoidance and minimization measures that are applicable to all types of in-stream construction activities. **Table 6-2** summarizes these collected avoidance and minimization measures that are required conditions of in-stream covered activities. Avoidance and minimization measures in this table are applicable to the covered activities addressed in this condition as well as in Condition 3, *Maintain Hydrologic Conditions and Protect Water Quality* and Condition 5, *Avoidance and Minimization Measures for In-Stream Operations and Maintenance*. The avoidance and minimization measures address construction staging, dewatering, sediment management, vegetation management, bank protection, drainage, trail construction, and ground disturbance.

All avoidance and minimization measures listed in **Table 6-2** are required unless the avoidance and minimization measure is not appropriate for the activity or field data collected at the site or in comparable areas demonstrate that the avoidance and minimization measure would not benefit wildlife or reduce impacts on natural communities. The Implementing Entity will update the avoidance and minimization measures in **Table 6-2** over time so that they are more appropriate for implementing a specific covered activity or more beneficial for the covered species. Therefore, the Implementing Entity will update this list of avoidance and minimization measures over the permit term as appropriate to reflect new science and avoidance and minimization measure monitoring results. Proposed revisions will be reviewed by the Wildlife Agencies upon submission of each annual report to ensure the successful implementation of the conservation strategy. **Table 6-2** also includes additional avoidance and minimization measures drawn from those currently used by the Local Partners that strive to

reflect current and forthcoming regulations and guidelines for in-stream project design (e.g., the State Water Board's *Wetland and Riparian Area Protection Policy*, described below).

Types of Projects Subject to Condition

The in-stream projects listed below are subject to the design requirements or construction practices because they are expected to result in impacts on creeks or streams.

- Installation or rehabilitation of flood protection projects and levee reconstruction.
- Bank stabilization projects.
- Geomorphic rehabilitation.
- Gravel enhancement.
- Bridge construction and replacement including vehicular, train, and pedestrian bridges throughout the study area.
- Development of trails in or through the in-stream area (stream bed, banks, and adjacent riparian land cover).
- Culvert installation or replacement.
- Dam repair and seismic retrofit, including dewatering events and development of borrow sites.
- Restoration projects throughout the study area, including creek realignment and erosion management.
- Operation, maintenance and replacement of existing water supply structures such as stream gauges, percolation ponds, and diversions.
- Any other activity that requires construction work within the in-stream area (stream bed, banks, and adjacent riparian land cover).

Design Requirements

Some impacts on stream and riparian land cover types are expected under the Plan (see **Tables 4-2 and 4-3**). All covered activities subject to this condition will implement the measures listed in **Table 6-2** associated with this condition to avoid or minimize impacts of covered activities on streams and riparian woodland/scrub.

- Applicants must also comply with Condition 7 *Rural Development Design and Construction Requirements* where applicable.
- Applicants for projects with streams on site must follow the setback requirements in Condition 11, *Stream and Riparian Setbacks*.

- Applicants for projects with wetlands or ponds on site must comply with Condition 12, *Wetland and Pond Avoidance and Minimization*.
- Applicants for transportation improvements that include stream crossings must comply with Condition 6, *Design Requirements for Covered Transportation Projects*.

Design Criteria for SCVWD Flood Protection Projects

Flood protection projects shall be designed with an objective to protect or enhance natural channel and habitat functions. Designs will be developed and selected to maintain or improve bank stability, minimize bed degradation or aggradation, protect or improve streambed substrate conditions, protect or increase habitat diversity and complexity, and minimize required maintenance. All covered flood control projects will incorporate the following design elements:

1. Flood protection projects will incorporate support for natural stream functions and allow for natural stream processes to occur consistent with the flood protection goals of the project. Approaches for flood protection will generally include excavation of flood benches based on natural geomorphic conditions, off-stream detention, set-back levees or floodwalls, biotechnical bank stabilization methods, and grade control.
2. Project design alternatives will consider habitat connectivity between the stream and the adjacent floodplain as an objective.
3. Project design alternatives will incorporate native riparian vegetation and in-stream habitat enhancement features, where feasible. Potential enhancement features will be evaluated during the project design review process described below.
4. Bypasses that convey all or a portion of flood flows into channels, tunnels, culverts, or other areas that are isolated from the natural stream will be used only when other options have been evaluated and found infeasible to meet flood protection goals. If used, bypasses will be designed considering local geomorphic and flood characteristics and will minimize impacts to in-stream habitat.

Review Process for Covered Flood Control and Levee Reconstruction Projects

1. Flood control and levee reconstruction projects shall be reviewed by the Wildlife Agencies as described in Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities*.
2. During the 60% project design stage(s), review and input from the Wildlife Agencies shall be solicited.
3. The Wildlife Agencies providing review will return comments within a mutually agreeable timeline to maintain project schedule. As described in Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities*, the Wildlife Agencies must review and approve flood control projects to ensure that they are consistent with Habitat Plan requirements.

Requirements for SCVWD Dewatering Events

The following conditions apply to the dewatering events conducted at SCVWD covered reservoirs. Dewatering events *are necessary* for seismic safety retrofit and major maintenance (see Chapter 2 for a description of these covered activities). Due to the unique characteristics at each dam site, a reservoir-specific dewatering plan will be submitted to the Wildlife Agencies for review and approval prior to the first dewatering event for each reservoir (see Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities* for details of this process). Dewatering plans will be reviewed and, if appropriate, updated prior to subsequent dewatering events during the permit term. Dewatering plans will address various issues as requested by the Wildlife Agencies during the covered activity review process or as required by the environmental compliance process and will include the following.

- Timing for the initiation and duration of the dewatering event, including the draining and refilling stages of the dewatering event.
- Average, minimum, and maximum flows expected during draining and refilling (flows will be within the limits described in **Table 2-4**) including the duration of periods in which the maximum reservoir release may be made.
- A schedule for re-operation according to applicable rules curves.
- The ability of SCVWD to bypass water or provide other supplemental sources downstream.
- Documentation of in-channel dryback conditions from the previous 3 years, if feasible, and an evaluation of potential increases in the length and duration of dryback related to the dewatering event.
- A qualitative assessment of total flows that could occur downstream of the dam when taking into account stream inflows other than reservoir releases (e.g., stormwater, urban runoff) based on monitoring done during the previous years to assess the level of potential dryback.
- A description of baseline monitoring conducted for California red-legged frog, foothill yellow-legged frog, and western pond turtle in channels to be affected by the drawdown to establish presence of covered species in the channel.
- A description of anticipated effects of the dewatering event on covered species.

In addition, minimization measures included in a dewatering plan could include, but are not limited to, the following.

- Releases will not result in the overtopping of the channel between May and July when western pond turtles are nesting.
- SCVWD will bypass reservoir inflow around the dam and/or provide other supplemental flows downstream of the reservoir.
- SCVWD will consider installing outlets that provide better control over release volumes (beneficial for subsequent dewaterings).

- SCVWD will ramp increases and decreases in flows during dewatering to avoid washing covered species downstream or drying back the channel faster than covered species can adapt and move to new locations.
- Surveys for covered species as required by this chapter prior to re-filling of the reservoir or other construction activities if the reservoir basin has been undisturbed for a period of time. Surveys may be limited to areas that were not disturbed during construction or that were not inundated before construction but may be after construction.
- As reservoir levels decline, the gravel trap at the upstream end of the reservoir, if present, will be isolated and lined to contain inflow to provide for a relocation site for rescued native fish, amphibians, and/or western pond turtle.
- The lined gravel traps will be designed to allow bypass of inflow through or around the reservoir.

6.4.3 In-Stream Operations and Maintenance

In-stream¹⁰ operations and maintenance activities covered under this Plan—such as sediment removal, bank stabilization, vegetation management, and debris blockage removal to maintain flows—have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways or by disturbing riparian land cover associated with streams. Condition 5 specifies avoidance and minimization measures for covered operations and maintenance activities within and immediately adjacent to the stream channel. Note that SCVWD’s Stream Maintenance Program is not a covered activity under this Plan and therefore not subject to the conditions of this chapter of the Plan.

Condition 5. Avoidance and Minimization Measures for In-Stream Operations and Maintenance

The purpose of this condition is to identify avoidance and minimization measures to be applied when conducting in-stream operations and maintenance activities. The measures will help reduce impacts on stream and riparian land cover types and covered species.

Types of Projects Subject to Condition

The following in-stream operations and maintenance activities are subject to the measures or construction practices described below because they are expected to result in impacts on creeks or streams.

¹⁰ *In-stream* is defined for the purposes of the Plan as, “the stream bed and bank and the adjacent riparian corridor.”

- Facility maintenance such as trail, bridge, road, and culvert repair and/or replacement in in-stream areas.
- Natural resource protection such as small bank stabilization projects and removal of debris deposited during flooding.
- Operations and maintenance of flood protection facilities (e.g., dams, armored creeks, detention ponds, streams). Activities may include vegetation management, minor sediment removal, or bank stabilization.
- Operations and maintenance of water supply facilities (e.g., flashboard dams, inflatable dams, stream gages, pipelines, and diversions).
- Non-routine stream maintenance activities conducted by SCVWD (i.e., those activities not covered by SCVWD's Stream Maintenance Program) including extensive removal of vegetation in the Lower Llagas flood control channel.
- Removal of debris blockages except in emergency situations.
- Mitigation and/or monitoring in creeks or adjacent riparian corridors.
- Vegetation management for exotic species removal, such as removal of giant reed, and native vegetation plantings.
- Reservoir dewatering events.
- Reservoir filling.

Avoidance and minimization measures listed in **Table 6-2** will apply to all streams in the project areas as well as to open canals, because these canals may provide habitat for covered species.

Stream Operation and Maintenance Activities

Several of SCVWD's Stream Maintenance Program avoidance and minimization measures were adapted for inclusion in **Table 6-2** and will be adopted for this Plan. Additional avoidance and minimization measures are identified below to ensure adequate avoidance and minimization of species covered under this Plan during implementation of stream operations and maintenance covered activities. These avoidance and minimization measures were informed by sources that include the Santa Clara Valley Resources Protection Collaborative *Guidelines and Standards* (Santa Clara Valley Water Resources Protection Collaborative 2006) and the SCVWD *Best Management Practices Handbook* (Santa Clara Valley Water District 2008). Throughout the permit term, avoidance and minimization measures listed in **Table 6-2** will be updated through the adaptive management process to reflect current best practices.

Dam Maintenance Program

All applicable measures in **Table 6-2** will apply to implementation of activities associated with the Dam Maintenance Program (see Chapter 2). In addition,

activities requiring reservoir dewatering will comply with the requirements for dewatering reservoirs described above under Condition 4 *Stream Avoidance and Minimization for In-Stream Projects* and in Chapter 2.

Pipeline Maintenance Program

While SCVWD's Pipeline Maintenance Program is described in Chapter 2 under Section 2.3.6 *Rural Operations and Maintenance*, some activities have the potential to affect aquatic resources, particularly at blow-off sites. The following avoidance and minimization measures are from SCVWD's Pipeline Maintenance Program Final Program EIR (MHA Environmental Consulting 2007) and will be applied to Pipeline Maintenance Program covered activities in addition to other applicable avoidance measures described in this chapter.

- The discharge location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, discharges will be terminated until appropriate erosion control measures are installed. Monitoring will be conducted just prior to the start of the discharge and regularly (i.e., every hour, every four hours, every eight hours) during the discharge. Monitoring frequency will depend on the nature of the discharge and the erosion in the area.
- An environmental monitor will walk along each discharge drainage to the termination of the drainage or 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures will be taken to correct the erosion. Correction measures shall include recontouring the land to its previous state and revegetating with the appropriate native grass species in the area, if necessary.
- Discharge rates will be ramped up slowly such that the increase in flow rate in the receiving water is gradual and scouring of the channel bed and banks does not occur.
- Flows will be diverted around sensitive, actively eroding, or extremely steep areas to prevent erosion. Flow diversion methods might include use of flexible piping and/or placement of sandbags to alter flow direction, or equivalent measures. The new flow path and discharge point will be monitored for signs of erosion.
- Pipeline discharge for maintenance work would preferentially be performed during winter months, when storm events are more common and when water is naturally highest. Discharge flows are then a minimal portion of overall stream or river flow. If draining must occur during summer or fall, a slow release is mandatory to ensure receiving waters do not experience a substantial temperature change (greater than 2 degrees Fahrenheit).

6.4.4 Rural Projects

Rural projects include transportation projects, the South County Airport expansion, the Kirby Landfill expansion, construction of large new recreation facilities (e.g., golf course, sports fields, and extensive picnic areas), capital water supply projects, and private rural residential and commercial development. These rural projects have the potential to affect covered species by removing substantial areas of habitat, disrupting hydrologic patterns, contributing to habitat fragmentation, discharging sediment into water bodies, and resulting in direct mortality of covered species. Conditions 6 and 7 are designed to reduce the severity of such impacts for rural projects.

Condition 6. Design and Construction Requirements for Covered Transportation Projects

This condition identifies design requirements to minimize the impacts of transportation projects on wildlife movement, occurrences of certain covered species, and important habitat for covered species. All road and rail transportation projects (including the BART extension), or portions thereof, outside streams and within the planning limit of urban growth are exempt from this condition. Road projects in these areas are either within participating cities (i.e., urban areas) or within adjacent County jurisdiction, both of which support relatively dense suburban development. Road projects in these areas are not expected to significantly affect wildlife linkages, occurrences of covered species, or habitat for covered species. All covered transportation projects that cross streams or creeks, including bridges, are subject to Condition 4 above.

Four new road extensions/connections/realignments are proposed outside the planning limit of urban growth during the permit term of this Plan. However, many road improvements, including road widenings, are covered by the Plan (see **Table 2-6**). One new mass transit project is covered by the Plan: the double tracking of the Caltrain line from San José to Gilroy along the existing corridor.

Exempt Transportation Projects

The following projects are not subject to the design requirements or construction practices specified in this condition because they are not expected to result in new ground disturbance and are not expected to create new wildlife movement barriers or augment existing barriers.

- Installing traffic signals, signs, pavement markings, flashing beacons, or other safety warnings.
- Painting new lane striping.
- Installing “rumble” strips, channelizers, or other safety markers.
- Installing guardrails or similar structures that are permeable to wildlife.

- Installing ramp metering.
- Regrading existing shoulders (this activity is considered maintenance; see Condition 8).
- Implementing other road safety improvements on less than 1,000 feet of roadway.

All transportation projects that cross creeks are subject to Condition 4 above.

The following projects are also exempt from this condition, due to their small footprint, if the project does not include installation of median barriers or other impermeable safety barriers, and if no mapped or unmapped stream, riparian, serpentine, pond, or wetland land cover types are present, and if the activity is not located in a stream setback. Project lengths must be calculated based on the all new adjacent projects constructed since the time of Plan implementation to determine whether the below thresholds have been crossed.

- Widening roads to add lanes where the project is less than or equal to 1,000 feet in length.
- Realigning roads for safety or operational purposes where the project is less than or equal to 1,000 feet in length.
- Constructing new turn lanes less than or equal to 1,000 feet in length.
- Constructing a new road shoulder less than or equal to 1,000 feet in length.

Outside the planning limit of urban growth transportation projects will adopt design requirements and construction practices to minimize impacts on covered species, natural communities, and wildlife movement (see below). Depending on the type of project, these design requirements and construction practices would be *required* or *possible* (**Table 6-3**).

- **Required (R).** Design element or construction practice is required.
- **Possible (P).** Design element or construction practice is required unless field data collected at the site or in comparable areas demonstrate that the element or practice would not benefit wildlife, and CDFG and USFWS concur with the findings.

Types of Projects Subject to Condition

The following projects are subject to the design requirements or construction practices because they are expected to result in new ground disturbance, or they may create new wildlife movement barriers or augment existing barriers. Each project category is subject to a specific combination of requirements listed below and in **Table 6-3**.

Highway Projects

Highway projects are those VTA projects identified in **Table 2-6** as highway projects that call for the expansion of existing highways within the study area.

Mass Transit Projects

The single mass transit project identified for coverage in this Plan is the VTA project identified in **Table 2-6** as *Caltrain South County* which calls for the double tracking of the existing Caltrain corridor.

Roadway Projects and Interchange Upgrades

Major roadway projects and interchange upgrade projects (major roadway projects) are those projects identified in **Table 2-6**. All non-exempt Santa Clara County roadway projects and VTA interchange upgrades identified in **Table 2-6** are subject to the conditions identified **Table 6-3**.

Road Safety and Operational Improvements

These projects include the road projects described in Section 2.3.5 *Rural Capital Projects* that are not listed in **Table 2-6**. Road safety and operational improvements are expected to involve ground-disturbing activities but are not expected to impede or substantially worsen wildlife linkage. However, there may be opportunities for some projects to improve wildlife linkages. These projects are subject to construction and post-construction practices but not to project design requirements (**Table 6-3**).

Dirt Road Construction

Dirt roads may be constructed by the Permittees or private landowners to access their property. These projects are subject to construction and post-construction practices but not to project design requirements (**Table 6-3**).

Pre-Design Data Collection for Wildlife Movement

For transportation projects with the greatest potential to affect wildlife movement (see **Table 6-3** and lists above), it will be important to incorporate requirements that minimize the projects' adverse impacts on wildlife movement. In some cases, transportation projects may present opportunities to upgrade existing structures to improve wildlife movement. For these upgrades to be most effective, they will be supported by data describing movement of wildlife at or near the project site and the likelihood of vehicle collisions based on traffic patterns.

To facilitate better project design and to avoid delays in project construction due to the data collection process, the Implementing Entity will establish a long-term data collection program on wildlife movement in the study area. The primary goal of this program will be to determine the movement patterns of key covered species and other native wildlife throughout the study area. Data collection stations will be established at points along covered transportation projects that are most likely to affect wildlife movement. Wildlife movement will be studied at key sites to determine which species move through the area, when they move and, most importantly, which landscape features are most often used.

Techniques used for data collection will vary by site and target species but may include remote cameras, wildlife track pads, and roadkill observations. This program is described in greater detail in Chapter 5. It is expected that several

years (or decades) of data will be available to inform project design by the time that many of these projects reach the design stage. (This monitoring program is in addition to the wildlife corridor feasibility study discussed in Chapter 5.)

Data collection will be required on wildlife movement along the applicable project corridor for at least 1 year prior to project design. These data will be used to select the design requirements most appropriate for the species and conditions particular to the site (see below). If the Implementing Entity has not collected data in the project vicinity and the project timeline does not permit new data collection, then the applicant must apply all the design guidelines on the basis of the best available information for the region and appropriate to the conditions at the project site.

Transportation project applicants will coordinate with the Implementing Entity and Wildlife Agencies on applicable projects as indicated in **Table 6-3** during the conceptual design phase to ensure that as the project moves from conceptual to final design, the project meets the terms of this Plan.

When multiple road expansions are planned for a roadway during the permit term, wildlife crossing needs will be considered for each roadway as a whole, not by road segment. Further, design requirements will be considered for each wildlife species likely to cross the facility (Barnum 2003). These data will inform the design of wildlife movement structures suitable for the site and the species that use the area. In addition, after each project component is installed, wildlife activity along the road will be monitored to assess how wildlife responded to the project, if behavior has changed, and if additional design considerations will be utilized as future projects are implemented along the roadway.

Transportation Project Design Requirements

To reduce the impacts of construction activities on natural communities and native species within the study area, the design requirements listed below will be implemented for applicable transportation projects (**Table 6-3**). Design requirements are based on the latest techniques for minimizing impacts of transportation projects (Forman et al. 2002; Irwin et al. 2003; Finch 2004; Hilty et al. 2006). Some design requirements may be updated by the Implementing Entity if the best available science indicates that such updates would be more effective at facilitating safe wildlife movement across transportation corridors. Because the effectiveness of road crossings designed for wildlife is an active area of research, frequent advances in design are expected throughout the permit term.

- **Enhance existing undercrossings.** When road expansion projects span an undercrossing, such as a culvert, existing undercrossing structures will be enhanced within safety or engineering limitations to allow for fish and wildlife movement. Existing culverts or other potential crossing points will be enhanced if results of data collection indicate that the existing structure is inadequate. The design requirements of replacement structures will be

determined by the species that have been documented using or attempting to use the site. Wildlife crossings that can serve multiple species will be used whenever possible.

- ❑ **Crossing enhancements.** Crossing enhancements must incorporate design requirements identified for culverts in Condition 4, *Stream Avoidance and Minimization for In-Stream Projects*.
- ❑ **Minimum sizing of culverts.** Culverts must be the minimum length, height, and width necessary to provide safe passage under the road for the target species present at the site (based on data collected as described above). Culvert designs will be based on the best available data at the time. Current recommendations are that culverts designed for medium-size mammals (e.g., San Joaquin kit fox, coyote, raccoon) be 5–8 feet in diameter (although culverts larger than 8 feet in diameter may be needed for longer crossings). Culverts designed for small mammals or amphibians are recommended at 18–48 inches in diameter. Culverts will provide a natural substrate on which wildlife can travel (e.g., open bottom box culvert) when such designs are compatible with the hydrologic needs of the culvert.
- ❑ **Install grating to allow ambient light to penetrate undercrossing.** Culverts will include grating on the inactive part of the roadbed (e.g., road shoulders or median) to allow filtration of ambient light and moisture but minimize noise intrusion. Artificial lighting inside tunnels or culverts will not be used; these devices have not been shown to be effective and may deter nocturnal wildlife. Such devices may also be vandalized.
- ❑ **Fencing design.** Fencing will be required in areas where high mortality rates of species attempting to cross the road occur. Fencing will be used along the perimeter of the roadway to direct animals to undercrossings and minimize their access to the road. Fencing designs will be tailored to the species expected to use the undercrossing and will be based on the best available data on species use and best fencing designs available at the time. For example, fencing for amphibians will be high enough to prevent amphibian crossing but low enough to allow movement of other species (e.g., deer, badgers, etc.). Fencing will extend out from the undercrossing along the road to an appropriate distance that will serve as a barrier to wildlife attempting to cross the road. The distance that fencing extends from the undercrossing will be determined on a case-by-case basis and will consider locations of known collisions in the area. Right-of-way fencing could be designed to serve this purpose. Fencing must be attached to the undercrossing to prevent wildlife from passing through a gap between the undercrossing and the beginning of the fence.

Fencing must be monitored regularly by the facility owner and repairs made promptly to ensure effectiveness. Vegetation must be managed along small mammal and amphibian fencing to reduce the opportunity for these species to climb the fence. Fencing designed for small mammal or amphibian exclusion must be installed at least 8 inches into the soil to prevent small mammals from tunneling under the fence.

Where low-traffic side roads (e.g., ranch roads) cross the wildlife fences along the main roadway, gates will be used whenever possible to avoid creating a gap in the fence that wildlife could move through. The gate will be designed to minimize the gap between the gate and the roadbed. If gates are not feasible, an in-roadway barrier (e.g., wildlife grates) or device that channels species away must be installed to deter wildlife from moving around fences and into the road.

- ❑ **Passage placement.** New passages will only be placed or located in areas that connect two viable habitats so that wildlife is not directed into urbanized areas.
- ❑ **Road or rail barrier designs.** When compatible with vehicle and train safety, road and rail median barriers or shoulder barriers will allow wildlife to cross under or over the barrier in the event they become trapped in the right-of-way. For example, one-way gates could be used to allow movement out of the hazardous zone but not into it.

Construction Practices

The following construction practices apply to categories of transportation projects listed in **Table 6-3**.

Avoidance and Minimization Measures for Transportation Projects

- Minimize ground disturbance to the smallest area feasible.
- For construction of new dirt roads, prevent rills (a narrow groove or crack in the road resulting from erosion by overland flow) by breaking large or long bare areas up into smaller patches that can be effectively drained before rills can develop (Fishery Network of Central California Coastal Counties 2004).
- For construction of new dirt roads, disconnect and disperse runoff flow paths, including roadside ditches, which might otherwise deliver fine sediment to stream channels (Fishery Network of Central California Coastal Counties 2004).
- For construction of new dirt roads, prevent gullies by dispersing runoff from road surfaces, ditches and construction sites, by correctly designing, installing and maintaining drainage structures (e.g., road shape, rolling dips, out-sloped roads, culverts, etc.) and by keeping streams in their natural channels. No single point of discharge from a road or other disturbed area should carry sufficient flow to create gullies. If gullies continue to develop, additional drainage structures are needed to further disperse the runoff (Fishery Network of Central California Coastal Counties 2004).
- When constructing or reconstructing a ditch, utilize designs for outlet locations that avoid directly dumping ditch water into surface waters, when practical. If not practical, implement sediment management avoidance and minimization measures to trap sediment before it reaches a stream. Avoidance and minimization measures described in Condition 3 and

Condition 4 will be applied as appropriate (Fishery Network of Central California Coastal Counties 2004).

- When designing or redesigning roads, look for opportunities to restore natural drainage patterns. Install culverts or rolling dips to retain water in its drainage of origin, which will decrease the potential for erosion downstream. On problem roads, look for opportunities to reconstruct the road segment to improve and maintain natural drainage patterns; for example, add rolling dips, emergency water bars and additional cross drains (Fishery Network of Central California Coastal Counties 2004).
- When constructing dirt roads, install road surface and ditch drainage structures frequently enough so that gullies do not form at drainage points and so that the road and drainage system are generally dry (Fishery Network of Central California Coastal Counties 2004).
- Equipment storage, fueling, and staging areas will be sited on disturbed areas or on non-sensitive nonnative grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types. When such sites are not available, staging will occur on the road used to access the site.
- All species survey requirements of this Plan will be followed within the construction zone (i.e., the limit of project construction plus equipment staging areas and access roads) and the entire road right-of-way. Expanding the survey area beyond the project footprint will help identify covered species and their habitats so that impacts on covered species that occur adjacent to the construction zone can be minimized.
- No erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- Silt fencing or other sediment trapping methods will be installed below the grade of new road construction or road widening activities to minimize the transport of sediment off site.
- Temporary barriers will be constructed to keep wildlife out of construction sites, as appropriate.
- Onsite monitoring will be conducted by a qualified biologist throughout the construction period to ensure that disturbance limits, avoidance and minimization measures, and Plan restrictions are being implemented properly.
- Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- Active construction areas will be watered regularly to minimize the impact of dust on adjacent vegetation and wildlife habitats, if warranted.
- Portions of the project that occur in streams (e.g., bridge or culvert construction) will comply with Condition 4.

Post-construction Practices

Following construction, the areas beyond road shoulders and inside the right-of-way will be returned to a pre-project or ecologically improved condition. These actions will likely be applied differently to each road project and will decrease the potential for the spread of nonnative species.

- Invasive plants within the project area and any construction staging areas will be removed to prevent the spread of these species into nearby or adjacent reserves.
- All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.
- Vegetation and debris will be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that the passage through the culvert or under the bridge remains clear.

All structures constructed for wildlife movement (tunnels, culverts, underpasses, fences) will be monitored at regular intervals by the Local Partner facility owner and repairs made promptly to ensure that the structure is in proper condition. For facilities owned by entities not participating in the Habitat Plan (e.g., California Department of Transportation [Caltrans]), the Implementing Entity will secure access and data collection agreements with these entities to allow the Implementing Entity to conduct this monitoring.

Condition 7. Rural Development Design and Construction Requirements

For this Plan, rural development is defined as any new development that occurs outside of the urban service area at the time the development is permitted under the Plan, or those areas within the urban service area that are only covered for development consistent with rural land uses. The rural development covered activities listed below are subject to this condition and to the applicable permitting process of the local jurisdiction.

- Residential development (e.g., single family homes, subdivisions) consistent with the County General Plan (County of Santa Clara 1994). Ancillary improvements may include privately owned bridges, driveways, access roads, vineyards or orchards, and other accessory structures associated with rural dwelling units.
- Non-residential development consistent with the County General Plan (County of Santa Clara 1994). This includes new commercial facilities

(institutional, industrial) agricultural facilities (mushroom farms, commercial stables, and equestrian event facilities) or similar uses that obtain building, grading and/or other development permits, consistent with local general plans, such.

- Vineyard, orchard, or other farming activity that obtains a building, grading, or development permit from the County or City.
- Residential or non-residential development on the non-urban hillsides of eastern San José (outside the planning limit of urban growth) and in the Coyote Valley Urban Reserve and South Almaden Valley Urban Reserve consistent with the San José General Plan.
- Residential or non-residential development in the Morgan Hill Southeast Quadrant consistent with the Morgan Hill General Plan.
- Residential or non-residential development in the Hecker Pass Specific Plan area consistent with the Gilroy General Plan.
- Projects, including capital projects, implemented by Permittees outside the urban service area.

As described in Chapter 4, rural development in hillside and natural areas that will remain rural has a greater potential for direct and indirect impacts on sensitive habitat and more covered species than urban development in already developed areas for a number of reasons. First, rural development tends to occur on larger parcels or in less constrained sites, affecting larger areas. Second, the existing landscape in hillside and natural areas is generally less disturbed prior to project construction on rural development sites than on urban sites. Third, rural development tends to occur near or in areas with native vegetation and higher biological values, including areas near or adjacent to the Reserve System. Rural development in natural areas tends to increase habitat fragmentation, which degrades or disrupts landscape connectivity. New driveways and roads associated with rural development may create new hazards or barriers to species dispersal. Indirect impacts also occur at both the development site and the landscape level, as rural development can introduce new sources of noise, light and glare, air pollution, and vehicle traffic in more remote areas. Despite the potential for these adverse effects on natural communities and covered species, rural development projects often have greater flexibility to modify designs to reduce or minimize impacts on covered species and natural communities than projects in urban areas.

As described in Chapter 4, existing land use restrictions and requirements also substantially limit the footprint and extent of rural development. For example, almost all of the areas intended to be incorporated into the Reserve System (see Chapter 5) are large land holdings designated as Hillside or Ranchland land uses under the County General Plan. In these areas, the maximum development density allowed is one residence per 20 to 160 acres, based on the average slope of a parcel. Subdivision of sites designated Hillside or Ranchland seldom occurs and this pattern is not expected to change during the permit term due to the physical challenges of development in most of the study area. Under County policies, most subdivision proposals for Hillside parcels are required to cluster

future development and preserve a minimum of 90% of the site as open space. If suitable, these large set-asides could be incorporated into the Reserve System. County policies and regulations also require that grading be minimized in Hillside and Ranchland areas through the site design process, which emphasizes compact development. These land-use restrictions help to minimize the effects of rural development on covered species and natural communities.

The primary goal of this condition is to minimize the potential direct and indirect impacts of rural development in areas that will remain primarily rural on covered species and natural communities most likely to be affected by rural development (see Chapter 4, including **Table 4-1**, for an accounting of which species could be affected by rural development). Additional goals of this condition are listed below.

- Minimize habitat fragmentation and degradation of landscape linkages (e.g., wildlife corridors), including maintaining connectivity between aquatic, riparian, and upland habitats.
- Minimize loss of sensitive land cover types and natural communities including but not limited to riparian woodlands, seasonal wetlands, freshwater marsh, ponds, serpentine grassland, valley oak woodland, knobcone pine woodland, and ponderosa pine woodland.
- Reduce the extent of new roads in remote rural areas in order to reduce negative impacts on species.
- Minimize degradation of streams and maintain the hydrograph to the baseline (defined as the existing conditions at the time of Plan approval), or adjust the hydrograph toward predevelopment conditions¹¹.
- Minimize construction-related impacts, including noise; air emissions; erosion and sedimentation; disturbance of native vegetation; and introduction of nonnative, invasive species.
- When designing or retrofitting County facilities, evaluate whether the project can be designed to reduce impervious surfaces to less than pre-project conditions.

This condition integrates existing County requirements with additional avoidance and minimization measures that are intended to reinforce current regulations and support the goals of this condition. The design requirements and conditions for all rural development covered by the Plan are listed below and will be applied as applicable.

Design and Construction Requirements

Projects subject to this condition are required to follow the following measures.

¹¹ The hydrograph will be monitored using existing stream gages within the study area, new gages proposed under the plan, and could be monitored at large developments occurring during the Permit Term, as deemed appropriate by the Implementing Entity.

- Plans presented to local jurisdiction planning staff by private applicants for discretionary approval or a building permit process must identify the proposed impact area and general location of site design features (e.g., residence, access road, leach field, wells, vineyards, accessory structures, etc.). The site plan will show all improvements that will result in permanent land cover impacts (e.g., home, driveway, barn, pool, patio, landscaping, and utilities, etc.), including a 50-foot buffer around all proposed site improvements. The project area plus the 50-foot buffer is called the *development area*. This site plan will also show all site improvements that will result in temporary land cover impacts during construction but that will be returned to the pre-project land cover type within 1 year of completing construction (e.g., leach fields, well pipelines that do not result in permanent habitat disturbance), including a 10-foot buffer around the proposed footprint of the site improvements. Plans do not need to show buffer areas (50 feet for permanent improvements and 10 feet for temporary improvements) that cross property boundaries (e.g., a house 30 feet from a property line only needs to show the buffer area up to the property line). **Figure 6-1** provides an example map of the information required on the site plan. (**Figure 6-1** also defines the development area for the purposes of determining survey areas [see Section 6.8.5 *Item 5: Results of Applicable Species Surveys and Monitoring*] and calculating development fees [see Chapter 9, Section 9.4.1 *Habitat Plan Fees*]).
- Minimize ground disturbance to the smallest area feasible.
- Build close to, and utilize to the extent practicable, existing infrastructure (e.g., existing driveways, utility lines).
- Use existing roads for access and disturbed areas for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- Adhere to Condition 10, *Fuel Buffer*.

Site Hydrology

- Develop only the minimum number of stream crossings necessary to access the property.
- At project sites that are adjacent to any drainage, natural or manmade, exposed soils must be stabilized or otherwise contained on site to prevent excessive sediment from entering a waterway.
- Use of impermeable surfaces surrounding structures must be minimized to the greatest extent possible through the use of alternative design treatments, such as low impact development methods, including but not limited to, permeable pavers, green roofs, and rainwater catchments so that natural infiltration is facilitated and runoff is reduced.
- Consistent with State and Regional Water Quality Control Board regulations, runoff from impermeable surfaces must be directed to natural or landscaped areas, or to designed swales or detention/retention basins to encourage

natural filtration and infiltration. Diversion to a cistern or other onsite stormwater management technique is also allowed and encouraged.

- Avoid and minimize impacts associated with altering natural drainages and contours on the project site. If the site is graded, blend grading into the existing landform as much as possible.
- Leach fields must be sited away from creeks in accordance with the County septic ordinances, as well as at least 100 feet from the reserve boundary. Leach field installation may result in localized soil moisture content and groundwater levels that may have adverse effects on sensitive plants or plant communities in the Reserve System. Leach fields may be sited within the 100-foot setback if site-specific conditions (i.e., topography) adequately minimize effects, or adequate space is not available to site the field elsewhere (i.e., the parcel is too small).
- Adhere to Condition 3, *Maintain Hydrologic Conditions and Protect Water Quality*.
- Adhere to Condition 4, *Stream Avoidance and Minimization for In-Stream Projects*.
- Adhere to Condition 5, *Avoidance and Minimization Measures for In-Stream Operations and Maintenance*.
- Adhere to Condition 11, *Stream and Riparian Setbacks*.

Vineyards

The following conditions apply to new vineyards that are covered by the Habitat Plan (i.e., those requiring a permit from the County or other local jurisdiction) and are encouraged for new and existing vineyards that do not require a development permit.

- During construction, use cover crops, straw mulch, straw wattles/fiber rolls, coconut husks, or other equivalent erosion control mechanism to prevent sediment from being blown or washed from the project site.
- All disturbed areas will be protected during the rainy season (October 15–April 15). Permanent or temporary measures to prevent erosion must be utilized during vineyard planting. Permanent measures must be utilized once planting is completed. Erosion control measures must be in place by October 15.
- Plant vine rows along existing contours to slow runoff and reduce erosion on hillsides (California Sustainable Wine Growing Alliance 2002a).
- A stormwater management system designed for an average storm recurrence interval of not less than 25 years will be installed on the vineyard site. The system will allow excess stormwater runoff to be carried through the vineyard site with minimum erosion and consistent with the overall drainage patterns present in the area. This requirement may be met by either temporary or permanent measures while vineyard planting work is being

carried out, but shall be met by permanent measures by the time vineyard planting work is completed.

- A sediment control system designed to minimize the discharge of sediment from the vineyard site will be installed on the vineyard site. This requirement may be met by either temporary or permanent measures while vineyard planting work is being carried out, but will be met by permanent measures by the time vineyard planting work is completed.
- If open conduits are used as part of the stormwater management system, plant conduits with grasses and other vegetation to filter sediment, pesticides, and fertilizers from runoff and to reduce the potential that the stormwater conduit itself will erode.
- As part of the stormwater and sediment management systems, install vegetated swales, detention basins, extended vegetated buffer, or other similar feature on the downslope edge of the planted area to capture and treat runoff before it enters local streams. This will minimize the amount of sediment, fertilizers, and pesticides that enter local streams.
- Heavy equipment will not be utilized on dirt access roads immediately after rain to prevent roads from turning to mud and sediment from running off the roads (California Sustainable Wine Growing Alliance 2002a).
- Use of natural pest management approaches in place of pesticides is highly encouraged.
- Maintain a buffer of natural vegetation, including grasses, shrubs, or mature trees, around the perimeter of the vineyard to reduce topsoil erosion and provide habitat for birds that will prey on rodents (California Sustainable Wine Growing Alliance 2006).

Private Rural Roads

- Minimize to the maximum extent possible the amount of ground disturbance when constructing roads.
- Ground-disturbing activities associated with road construction should be timed to occur during dry weather months to reduce the possibility of landslides or other sediment being transported to local streams during wet weather.
- If construction extends into wet weather, the road bed will be surfaced with appropriate surfacing material to prevent erosion of the exposed roadbed (Pacific Watershed Associates 1994).
- Avoid, to the extent possible, constructing roads on steep slopes (over 25%) or on unstable slopes.
- If construction on steep slopes is required, construction will be timed for dry weather months to reduce the potential for landslides.
- Adhere to the avoidance and minimization measures for dirt road construction in Condition 6 under *Avoidance and Minimization Measures for Transportation Projects* (see first three bullets under heading).

Other Requirements

- Maintain as much natural vegetation as possible, consistent with fuel management standards, on the project site.
- Maintain County-mandated fuel buffer (variable width by slope conditions).
- On sites adjacent to reserves, locate the proposed development as far from the reserve boundary as possible consistent with other onsite conditions and constraints and adhere to Condition 2, *Incorporate Urban-Wildland Interface Design Elements*.
- All temporarily disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.
- All temporarily disturbed areas, such as staging areas, will be returned to pre-project or ecologically improved conditions within 1 year of completing construction or the impact will be considered permanent.
- No plants identified by the California Invasive Plant Council as invasive¹² will be planted on the project site. Planting with watershed local native and/or drought-resistant plants is highly encouraged. This reduces the need for watering as well as the need for fertilizers and pesticides.
- Outdoor lighting will be of low intensity and will utilize full cutoff fixtures to reduce light pollution of the surrounding natural areas.

Project proponents must continue to adhere to all applicable local planning ordinances including: noise ordinances, zoning ordinances, fuel management guidelines for fire buffers, NPDES permit requirements, Water Collaborative guidelines and standards, Santa Clara County grading ordinance, and drainage manual.

6.4.5 Rural Operations and Maintenance

Rural operations and maintenance activities—such as operations and maintenance of utility lines and facilities, road maintenance, vegetation management, and mitigation monitoring—have the potential to affect covered species by disturbing nesting covered bird species, leading to sediment discharge, and spreading of nonnative invasive species. Condition 8 would reduce the severity of such impacts.

¹² See <www.cal-ipc.org/ip/inventory> for the latest list of invasive species.

Condition 8. Implement Avoidance and Minimization Measures for Rural Road Maintenance

Road maintenance activities have the potential to directly affect covered species through management activities such as mowing, and may indirectly affect covered species by introducing sediment and other pollutants into downstream waterways and by spreading invasive weeds. Effects on covered species may be greatest on unpaved roads due to their erosion potential. The County maintains an extensive network of paved and unpaved roads. All roads maintained by the County Roads and Airports Department in the study area are paved, except for a portion of one road¹³. County Parks maintains an extensive network of unpaved maintenance and emergency access roads within their parks that often serve primarily as recreational trails. SCVWD maintains a small network of paved and unpaved roads, mostly on levees and along pipelines. Gilroy and Morgan Hill do not maintain any dirt roads outside of the planning limit of urban growth.

To avoid and minimize these impacts, avoidance and minimization measures were developed to address potential impacts associated with road operation and maintenance activities. The avoidance and minimization measures in this condition are based largely on the guidelines in *County Road Maintenance Guidelines for Protecting Aquatic Habitat and Salmon Fisheries* (Fishery Network of Central California Coastal Counties 2004). This manual, also called FishNet 4C, was developed by six central California counties (Mendocino, Sonoma, Marin, San Mateo, Santa Cruz and Monterey counties) and included input from cities, local Resource Conservation Districts, and water agencies. This manual identifies best management practices to protect water quality and aquatic habitat when implementing routine and emergency road maintenance activities. These guidelines incorporate avoidance and minimization measures from other road maintenance programs (e.g., the Oregon State Department of Transportation's *Road Maintenance Manual*, and the Northern Five Counties Salmon Conservation Group's *A Water Quality and Stream Habitat Protection Manual for County Road Maintenance in Northwestern California Watersheds*) (Fishery Network of Central California Coastal Counties 2004). Avoidance and minimization measures identified in the FishNet 4C guidelines are included in **Table 6-4** as part of this condition. In addition to the avoidance and minimization measures in **Table 6-4**, project proponents will comply with the avoidance and minimization measures listed below. Avoidance and minimization measures identified in this condition will be used for all covered road operation and maintenance activities.

- Projects occurring in streams or riparian setback zone will also comply with Condition 4 and Condition 5 as appropriate.
- Minimize ground disturbance to the smallest area feasible.
- Within the riparian setback zone (see Condition 11), silt fencing or other sediment control device will be installed downslope from maintenance

¹³ The one unpaved road maintained by County Roads and Airports in the study area is 1.75 miles of Mount Madonna Road between Redwood Retreat Road and Summit Road (the county line).

activities that disturb soil (e.g., blading of fire or access roads within Parks or the Reserve System) to minimize the transport of sediment off site.

- In the course of rural road maintenance, no erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks where it could be washed into the channel.
- Alternatives such as mechanical control will be considered to substantially lessen any significant impact on the environment before using pesticides. Integrated pest management avoidance and minimization measures will be used for all vegetation control. Limitations may occur due to fire management requirements and local integrated pest management ordinances.
- The effects of herbicide and pesticide application will not be covered under the federal permits for this Plan. Herbicides and pesticides will be used only when necessary and will be applied in strict compliance with label requirements and state, federal, and local regulations. Herbicides and pesticides will only be applied when weather conditions will minimize drift and impacts on non-target sites.
- Maintenance activities on rural roads adjacent to natural land cover types will be seasonally timed, when safety permits and regulatory restrictions allow, to avoid or minimize adverse effects on active nests of resident and migratory birds, including covered bird species (western burrowing owl, least Bell's vireo, and tricolored blackbird). This measure is particularly relevant for right-of-way mowing¹⁴, brush clearing, prevention of disease spread (i.e., sudden oak disease), and tree trimming. Project proponents will coordinate with the Implementing Entity to develop work schedules that optimize logistic, safety, and financial needs while minimizing potential impacts on nesting birds.
- Mowing equipment will be thoroughly cleaned before use in rural areas so they are free of noxious weeds (e.g., yellow star-thistle) and do not introduce such weeds to new areas.
- Maintenance or repair of road medians or shoulder barriers in areas that support natural land cover types (e.g., annual grassland, oak savanna, oak woodland) will not reduce the ability of wildlife of all types to move through or over them, within safety limits. Replacement or repair of road medians will be designed or installed to allow wildlife to move past these structures. Exceptions may be made by the Permittee if significant safety concerns or financial constraints arise.
- All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-

¹⁴ For example, County Parks has a Memorandum of Understanding with the California Department of Forestry and Fire Protection (Cal-Fire) that limits mowing to November to April to minimize fire hazards. There may be other public safety restrictions that limit the ability to achieve this guideline.

term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.

- Ground-disturbing road maintenance activities, such as regrading, will be timed so that the moisture content of the soil will support recompaction of the soil and reduce the need for an imported water source to achieve soil compaction. Similarly, activities will be timed so that use of heavy equipment will not result in the creation of mud puddles and ruts.
- Regularly scheduled visual inspections of all roads will be conducted to identify sites where erosion is contributing sediment to local streams. Appropriate actions will be taken within the road right-of-way to manage the erosion.
- Flow lines (e.g., culverts and ditches) will be cleared annually to maintain flow lines free of debris.
- Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- All new public roads that are accessible to general public vehicular use will be paved (this does not include fire roads that may also serve recreational needs).

6.4.6 Reserve System Implementation

Reserve System implementation—which includes activities associated with recreation, construction, infrastructure design, and maintenance of the reserves—could result in localized effects on covered species and their habitats. All relevant conditions will be applied to construction and maintenance activities within the Reserve System.

Condition 9. Prepare and Implement a Recreation Plan

Public access, consistent with the Habitat Plan conservation strategy, will be provided on all reserves owned in fee title by a public agency. Public access to privately owned land under conservation easement will only be permitted with the landowner's consent. See Chapter 10 *Assurances* for more details.

All public access to reserves will be managed according to a recreation plan that will be developed by the landowner (e.g., County Parks, Open Space Authority) and/or the Implementing Entity consistent with the requirements of this condition. Recreation plans will be reviewed by the Implementing Entity for consistency with this condition and integrated into the applicable reserve unit management plan which will be reviewed and approved by the Permittees and the Wildlife Agencies. Wildlife Agency approval of reserve unit management plans

will follow the timelines established in Chapter 5, Section 5.2.5 *Land Management* subheading *Land Management on Reserves*.

The recreation plan will address lands that are acquired for or incorporated into a reserve unit where the Implementing Entity and the land owner determine that recreational and educational uses are compatible with the conservation strategy of this Plan. Each recreation plan will apply to the portion of the reserve unit for which the recreation plan was developed, including existing open space that is incorporated into the unit (existing open space selected for the Reserve System was chosen, in part, for its recreational uses that are compatible with the biological goals and objectives of the Plan).

At a minimum, each recreation plan will contain the requirements listed below.

- Identification of sites within reserves where recreational use is compatible with the goals and objectives of the Plan.
- Identification of acceptable forms of recreation if different from those forms identified in this condition.
- Identification of sites within reserves that contain sensitive land cover types or suitable or occupied habitat for covered species.
- Maps of existing and proposed recreational trails, staging areas, and facilities and of habitat types affected.
- Site-specific methods of recreational use controls.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities. This includes control of active off-trail recreational activities determined inappropriate by Implementing Entity and Wildlife Agencies.
- A framework for enforcement of recreational restrictions and permitting process for restricted recreational uses.
- An evaluation determining if the impact of planned recreational use is within the limits established in the Plan and EIS/EIR, and if planned recreation is compatible with the biological goals and objectives of the Plan.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of covered or sensitive species).

Land acquired for reserves will be closed to all recreational uses until a recreation plan is developed and approved as part of a reserve unit management plan. Existing recreational uses on land incorporated into the Reserve System from existing open space (e.g., County Parks) will continue until the reserve unit management plan and associated recreation plan is completed. Existing open space selected for the Reserve System was chosen, in part, because of its compatible recreation uses with the conservation strategy (see **Table 5-5** and **Figure 5-4**). Until the reserve unit management plan is completed, no additional

recreational uses beyond what is currently allowed will occur on that existing open space incorporated into the Reserve System.

Recreational uses in the Reserve System will be designed to minimize impacts on biological resources and must adhere to the requirements and guidelines listed below.

- Recreation will only be allowed where it is compatible with the biological goals and objectives of the Plan and has less-than-significant impacts on biological resources after implementation of necessary mitigation measures, as described in the EIR/EIS.
- Recreational use and impacts will be monitored by the landowner and the Implementing Entity to ensure that uses do not substantially and adversely affect covered species. If any use is found to be substantially adversely affecting covered species, that use will be discontinued until adjustments in the use can be made to reduce or eliminate impacts (see Chapter 7 for details on monitoring). The Implementing Entity will make decisions about discontinuing or modifying recreational uses in close consultation with the landowner or other applicable reserve management agency or organization, and through a public process.
- Recreational uses allowed in reserves include pedestrian use (walking, hiking, running), dogs on leash, backpacking, nonmotorized bicycle riding on designated trails, horseback riding, wildlife observation and photography, and environmental education and interpretation on designated trails at appropriate sites. Other uses may be allowed by the Implementing Entity as long as they are compatible with the biological goals and objectives of the Plan and users obtain appropriate permissions for conducting activities if needed (e.g., County Parks requires a permit for professional photography).
- Allowable recreational uses will be controlled and restricted by area and time to minimize impacts on natural communities and covered species and to ensure that the biological goals and objectives of the Plan are met. For example, trails will be closed during and immediately following heavy rains and annually winterized to minimize erosion and sedimentation. Additional types of recreational uses (e.g., horse carts on trails) may be allowed if the Implementing Entity determines that they are consistent with the biological goals and objectives of the Plan, CDFG and USFWS concur, and users obtain appropriate permissions for conducting activities if needed (e.g., County Parks requires a permit for use of horse carts).
- Activities will be allowed in keeping with the ecological needs of the given habitat. Any off trail activities and other active recreation not listed above (e.g., outdoor sports, geocaching) unless otherwise authorized by the Implementing Entity are prohibited. Recreational uses will be allowed only during daylight hours and designated times of the year (i.e., limited seasonal closures to protect sensitive covered species; see below for specific examples) unless authorized through a use permit (i.e., backpacking). Exceptions may be made for educational groups and events that are guided by an Implementing Entity staff person or docent approved by the Implementing Entity.

- New staging areas will be developed to the extent possible in areas within reserves that are already disturbed and not suitable for habitat restoration, and that do not contribute to the conservation biological objectives for covered species habitats and/or natural communities. Sites at the edges of reserves will be chosen over sites on the interior of reserves.
- No motorized vehicles or boats will be allowed in reserves, except for use by the reserve manager staff or with the prior approval of the reserve manager (e.g., contractors implementing Plan conservation actions such as habitat restoration and monitoring, grazing tenants, fire-suppression personnel, and maintenance contractors). For reserves under conservation easements, vehicle use will be allowed as part of the regular use of the land (e.g., agricultural operations, permanent residents, utilities, police and fire departments, other easement holders), as specified in the easement.
- When compatible with Plan biological goals and objectives, dogs may be allowed in daylight hours in designated reserves or in designated areas of reserves, but only on leash. Leash law restrictions will be strictly enforced by reserve managers and staff because of the potential impact of dogs on covered species such as San Joaquin kit fox, western burrowing owl, California red-legged frog, and California tiger salamander. Leash enforcement may include citations and fines. Dogs used for herding purposes by grazing lessees must be under verbal control and have proof of vaccination.
- Recreational hunting or fishing within reserves will be prohibited except in limited circumstances. Landowners who have hunted large game (e.g., deer, elk, turkey, or pigs) on their property that becomes part of the Reserve System through a conservation easement will be allowed to continue this use as long as it is consistent with the biological goals and objectives of the Plan. Similarly, hunting for management purposes (e.g., feral pigs) is encouraged where it will contribute to achieving the goals and objectives of the Plan. The Implementing Entity will develop management hunting protocols on new reserve lands in coordination with other agencies who utilize hunting for management purposes (e.g., CDFG). Fishing is currently allowed in some County parks that will be added to the Reserve System. To be consistent with this condition, lakes or ponds in which fishing will continue will not be included in the Reserve System.
- Picnic areas shall be operated during daylight hours only. No irrigated turf or landscaping shall be allowed in picnic areas. To the extent feasible, picnic areas will be located on the perimeter of preserve areas and will be sited in already disturbed areas. No private vehicles shall be allowed in picnic areas, unless the picnic area is at a staging area and except for limited special events approved by the Implementing Entity. Maintenance and emergency vehicles shall be permitted access to picnic areas.
- Backpack camps shall be limited to use by no more than 25 people at each site. With the exception of Americans with Disabilities Act (ADA) service animals, dogs shall only be allowed in backpack camps on-leash. In coordination with the reserve manager, the Implementing Entity will monitor

use and maintenance of backpack camps and may implement a reservation and permitting process for use of backpack camps.

- Public collecting of native species will be prohibited within reserves.
- Introduction of domestic or feral animals, including cats, ducks, fish, reptiles, and any exotic non-naturalized species, is prohibited within the reserves to prevent interference with and mortality of native species, except by the reserve manager for management purposes (e.g., livestock for grazing or dogs for livestock control or protection).
- Trails will be established on existing roads or trails wherever possible to minimize the need for new ground-disturbing activities and to reduce new and ongoing maintenance costs. However, this will be balanced with the need to reroute some poorly designed existing ranch roads that are difficult and expensive to maintain. In some cases, rerouting access roads may have net benefits on biological resources.
- New trails will be designed and operated to be compatible with natural resources protection. New trails will be sited to minimize impacts on sensitive species (including covered species) and natural communities as well as disturbance to adjacent landowners and land uses. Wetlands will be avoided except for educational trails, and trails through woodland or riparian habitat will avoid tree removal or substantial pruning to the extent possible. If tree removal is required, unhealthy, exotic tree species, or trees unlikely to reach maturity due to site conditions (e.g., being shaded out by larger trees) will be targeted for removal.
- Trails built across streams or through riparian corridors will be sited and designed with the smallest footprint necessary to cross the in-stream area. Stream crossings will be perpendicular to the channel and be designed to avoid any potential for future erosion. Trails that follow a stream course will be sited outside the riparian corridor to the maximum extent feasible.
- Trails will not be paved, except as required by law, and will be sited and designed so that they do not contribute to erosion and bank failure. To provide trail access for a range of user capabilities and needs (including persons with physical limitations) in a manner consistent with state and federal regulations, the landowner would site and design new, paved trails in areas within reserves that are already disturbed and do not have the potential to affect sensitive habitat. As common practice, these types of whole-access trails would be sited near staging areas.
- Recreational uses will be controlled using a variety of techniques including fences, gates, clearly signed trails, educational kiosks, trail maps and brochures, interpretive programs, and patrol by land management staff.
- Construction of recreational facilities within reserves will be limited to those structures necessary to directly support the authorized recreational use of the reserve. Existing facilities will be used where possible. Facilities that support recreation and that may be compatible with the reserve include parking lots (e.g., small gravel or paved lots), trails (unpaved or paved as required by law), educational and informational kiosks, up to one visitor

center located in a disturbed or non-sensitive area, and restroom facilities located and designed to have minimal impacts on habitat. Playgrounds, irrigated turf, off-highway vehicle trails, and other facilities that are incompatible with the goals and objectives of this Plan will not be constructed.

- Signs and informational kiosks will be installed to inform recreational users of the sensitivity of the resources in the reserve, the need to stay on designated trails, and the danger to biological resources of introducing wildlife or plants into the reserve.
- New trails will be prohibited within 100 feet of wetlands and streams that provide suitable habitat for covered amphibians and aquatic reptiles or tricolored blackbird, unless topography or other landscape characteristics shield these trails from the covered species habitat or a lack of effect of the trail on the species can be otherwise demonstrated.
- New trails will be prohibited within 250 feet of active western burrowing owl nests. If an owl pair nests within 250 feet of an active trail, Implementing Entity staff will consult with the Wildlife Agencies to determine the appropriate action to take. Actions may include prohibiting trail use until young have fledged and are no longer dependant on the nest.
- When compatible with Plan biological goals and objectives, recreation plans for reserves adjacent to existing public lands will try to ensure consistency in recreational uses across open space boundaries to minimize confusion in the public. Reserves adjacent to non-Plan public lands with different recreational uses will provide clear signage to explain these differences to users that cross boundary lines. The Implementing Entity will be responsible for securing and signing reserve boundaries.

Rare exceptions to the guidelines listed above will be considered and approved by the Implementing Entity and the Wildlife Agencies on a case-by-case basis. Exceptions will be approved only if they are consistent with the biological goals and objectives of the Plan. Any exceptions will be clearly identified in the recreation plan.

Condition 10. Fuel Buffer

In accordance with state law¹⁵, all applicable covered activities will remove all brush, flammable vegetation, or combustible growth within at least 30 feet and up to 100 feet of occupied dwellings or structures. The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, slope, and type of vegetation. Fuels will be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. The intensity of fuels management may vary within the 100-foot buffer of the structure, the most intense being within the first 30 feet around the structure.

¹⁵ California Government Code Section 51182 and Public Resources Code 4291.

Consistent with fuels management objectives, steps will be taken to minimize erosion consistent with Condition 7.

Applicable covered activities include construction of new structures in the Diablo Range or Santa Cruz Mountains, or new structures built in grassland, chaparral, oak woodland, or conifer woodland land cover types. This condition also applies to structures built in areas designated by the County as a very high fire hazard severity zone pursuant to Section 51179 of the California Government Code.

If the property line is less than 30 feet from the occupied structure, then the brush and vegetation will be cleared up to the property line in order to maintain compliance with Public Resources Code 4291. Additional brush and vegetation clearing may be required by local or other state laws. To ensure that erosion is minimized, grass and other vegetation within 30 feet of structures will be maintained within this fuel buffer to a height of 18 inches or less. The cost of establishing and maintaining this fuel buffer will be borne by the project proponent. This condition does not apply to single trees or other vegetation that is well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a dwelling or structure.

The vast majority of properties adjacent to the Reserve System are expected to be able to create sufficient defensible space within their property to meet this condition. If an additional buffer is deemed necessary by the responsible fire agency, then the private landowner may seek an encroachment permit from the Implementing Entity to meet fire code. In these limited instances, the Implementing Entity may decide to allow a fuel buffer on the reserve side of a property boundary to provide additional protection against wildland fire. The Implementing Entity or land manager would define the allowable activities in encroachment permit to ensure compliance with HCP goals. If this is applied, the fuel management buffer within the reserve will not be credited to the land acquisition requirements in Chapter 5 because this area will be maintained in a disturbed state.

In areas within the Reserve System where management of fuel loads is necessary, the Implementing Entity will trim, mow, conduct prescribed burns, utilize grazing, or otherwise clear vegetation to minimize fuel loads and fire hazards. Various land uses are allowable within the fuel management buffer as long as they reduce fire hazards. Uses such as trails, fire-resistant landscaping, and livestock grazing are compatible with the fuel buffer. Allowable uses must comply with the urban-Reserve System interface guidelines described above.

Creating and maintaining the fuel management buffer within the Reserve System may have impacts on covered species. For example, plants such as Santa Clara Valley dudleya and smooth lessingia may occur in grasslands within fuel buffers. Any impacts on covered plants from fuel buffer management will be counted by the Implementing Entity as an adverse effect that must be offset by conservation of covered plants in the Reserve System (see Chapter 5). In some cases,

maintenance of the fuel buffer may improve habitat for covered plants by reducing cover of nonnative plants.

6.5 Conditions to Minimize Impacts on Natural Communities

Conditions 11–14, described below, are designed to minimize impacts on natural communities identified as representing important ecosystems in the Plan area.

Condition 11. Stream and Riparian Setbacks

This condition applies to all covered activities that may impact streams. This includes all development inside the urban service area where a stream or the stream setback overlaps any portion of the parcel on which a covered activity is being implemented. Outside the urban service area, this includes all covered activities where a stream or stream setback overlaps any portion of the development area or project footprint. Exemptions and exceptions may apply as described below in this condition.

Background

The management of stream corridors and associated riparian habitat through the implementation of setbacks has become an increasingly important tool for conserving aquatic and semi-aquatic populations and riparian vegetation and improving water quality. There is strong evidence that riparian buffers of sufficient width protect and improve water quality by intercepting non-point source pollutants in surface and shallow subsurface water flow (e.g., Lowrance et al. 1984; Castelle et al. 1994).

Healthy riparian buffers are also widely recognized for their ability to perform a variety of physical and biological functions other than improving water quality. These functions include stabilizing stream channels; controlling erosion by regulating sediment storage, transport, and distribution; providing organic matter (e.g., leaves and large woody debris) that is critical for aquatic organisms; storing nutrients for the surrounding watershed; reducing water temperature through shading; minimizing flood peaks; and serving as key recharge points for renewing groundwater supplies (DeBano and Schmidt 1989; O’Laughlin and Belt 1995). Riparian buffers also provide habitat for a large variety of plant and animal species. Riparian buffers have been proposed, and in some cases proven, to be landscape components that promote wildlife movement, enhance gene flow, increase connectivity of isolated habitat patches, and provide breeding and foraging habitats for animals (Hilty et al. 2006; Rosenberg et al. 1997).

Within the study area, streams provide important breeding, foraging, and movement habitat for California red-legged frog, foothill yellow-legged frog, and western pond turtle. Riparian woodland, which is found next to many of the study area's streams, provides breeding sites for tricolored blackbird and least Bell's vireo. Riparian woodland habitat also protects water quality by filtering inflow, thus reducing pollutant input and sediment load. Finally, stream and riparian areas provide key linkages connecting conservation areas targeted under the Habitat Plan (see **Table 5-9** and **Figure 5-6**).

Because of the importance of streams and associated riparian woodland for the benefit of covered species and as sensitive land cover types addressed by this Plan, this condition was developed to be as protective as feasible within the land-use constraints of the local jurisdictions and financial constraints of the Habitat Plan. The following principles were developed to guide the stream and riparian setback condition for this Plan.

- Stream habitat and functions are very difficult to replace once lost; in some cases they cannot be replaced.
- Stream setbacks will be required for all covered activities occurring near streams and riparian areas to minimize effects on covered species as required under the ESA and NCCPA. Additional protections adjacent to streams may also be required for urban redevelopment projects.
- Each of the cities participating in the Habitat Plan, as well as the County, has either setback regulations (Morgan Hill) or policies (San José, Gilroy, County of Santa Clara) currently in place. However, these regulations and policies are not consistent among the jurisdictions. A condition is needed that will make regulatory guidance consistent for all covered activities across all jurisdictions. All covered activities must adhere to both the applicable existing local regulations and the requirements of the Plan.
- The main goal of the stream setback requirement is to minimize further degradation of stream and riparian communities from implementation of covered activities and to maintain basic biological and physical functions of stream and riparian systems.
- The purpose of the stream setback requirement within the urban service area is to, at a minimum, protect stream and riparian communities that provide habitat for covered species because these habitats are unique and cannot be conserved elsewhere within the study area.

Protection of streams and adjacent riparian vegetation under this condition would conserve habitat for California red-legged frog, foothill yellow-legged frog, western pond turtle, and least Bell's vireo. All of these species use stream and riparian habitats as either primary or secondary habitat, as described in Chapter 3, *Physical and Biological Resources*.

An analysis was performed to determine the overall value of the setback for protecting covered species' habitat. Modeled habitat protected by the setback was quantified and compared to the level of protection provided by the Reserve System alone. In GIS the habitat models for four covered species (California

red-legged frog, foothill yellow-legged frog, western pond turtle, and least Bell's vireo) were overlaid with the expected locations and widths of riparian setbacks outside of the planning limit of urban growth (setback avoidance is not required inside the urban service area and so those areas were not included in this analysis) for all covered activities except rural residential development (exact location of rural residential development is not known at this time and thus could not be included in the analysis). Assuming all of these covered activities occur, an additional 2,855 acres (28%) of modeled breeding (primary) habitat for California red-legged frog and an additional 348 miles (50%) of modeled habitat (primary and secondary) for foothill yellow-legged frog would be avoided. Also, implementation of the stream setback would avoid an additional 837 acres (55%) of modeled habitat for least Bell's vireo. Setback benefits to these species and western pond turtle are summarized in **Table 6-5**. Stream habitat for covered species will likely overlap (i.e., miles and acres referenced in the table and above are not additive).

Definitions

The following terms are defined for this condition. These definitions are also found in the glossary (**Appendix A**).

Riparian habitat or riparian vegetation: Riparian vegetation is associated with river, stream, or lake banks and floodplains. Riparian vegetation is also defined by USFWS (2009) as plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (i.e., rivers, streams, lakes, or other watercourses). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetation than adjacent areas, 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms due to the greater availability of surface and subsurface water.

Stream: A watercourse that flows at least periodically or intermittently through a bed or channel having banks. This may include watercourses having a surface or subsurface flow that supports or has supported riparian vegetation, fish or other aquatic life. In the context of the Habitat Plan, a watercourse must meet SCVWD "*Criteria to Verify or Identify a Watercourse as a Stream*" discussed below under *Framework* (Santa Clara Valley Water Resources Protection Collaborative 2006) to qualify as a stream.

Reach: A section of a stream. Reaches are defined based on a specific need (e.g., monitoring) and do not necessarily reflect a standard set of characteristics.

Perennial stream: A stream with year-round surface flow that is supplied by both rainfall runoff and groundwater, as well as by substantial dry-season inputs (e.g., runoff).

Intermittent stream: A stream that is supplied by both rainfall runoff and groundwater. Intermittent streams tend to be seasonal, with flow during the rainy season and into the late spring or early summer.

Ephemeral stream: A stream that flows only in response to rain events and receives no groundwater input. As defined in the Habitat Plan, ephemeral streams will not include irrigation ditches, underground streams, or drainages and swales that have neither defined bed and bank nor evidence of scour or sediment transport. All other ephemeral drainages that qualify as streams will be considered under the Habitat Plan.

Framework

This condition will apply to all covered activities, including those within the Reserve System. This condition also has exemptions and exceptions as described in subsequent sections below.

The width of the setback is driven by the following criteria:

- stream community,
- slope, and
- location of the covered activity in relation to the urban service area of each local jurisdiction.

Each of these criteria is described below.

Stream Community

Stream communities are grouped into two simplified categories for the purposes of this condition. These categories are based on broad definitions of the biological characteristics of those communities and correspond to the level of habitat quality for covered species and sensitive riparian communities within the study area. Categories for the stream setback requirement are provided below.

- **Category 1.** This stream type has sufficient flow to support covered species and riparian habitat. These streams include perennial streams and some intermittent streams. These streams are typically larger than ephemeral drainages and support movement of covered species along the length of the stream. The ability of these streams to also support healthy riparian habitats bolsters the ecological value of the stream. This category also includes all in-channel ponds downstream of reservoirs. These streams are shown in **Figure 6-2**¹⁶.
- **Category 2.** This stream type may not have sufficient flow to support covered species and riparian habitat. These streams include all ephemeral streams and some intermittent stream reaches. These reaches provide minimum support of water-quality functions and primary breeding habitat for

¹⁶ **Figure 6-2** may be periodically updated by the Implementing Entity in consultation with the Wildlife Agencies as new data becomes available.

covered species. Category 2 streams are not specifically mapped as part of the Habitat Plan. They include both identified streams (named creeks and USGS blue-line creeks) that are not classified as Category 1 streams (as shown in **Figure 6-2**) and other unmapped streams that meet the “Criteria to Verify or Identify a Watercourse as a Stream” as defined below.

Categories are applied to reaches of streams as opposed to entire streams. This is because almost all streams begin in the uppermost portions of their watersheds as ephemeral streams and gradually become intermittent or perennial and they move downslope and accumulate flows from the watershed and, sometimes, the groundwater basin. As such, a single stream may contain both Category 1 and Category 2 reaches.

The mapped stream network for the Habitat Plan does not differentiate between perennial, intermittent, and ephemeral drainages. However, SCVWD developed a map of all fish-bearing streams in the study area. While fish are not covered by this Plan, presence of fish is a good indicator of the stream type. For example, ephemeral streams do not generally support fish. As such, the stream categories are identified using fish-bearing or non-fish bearing streams as a proxy for Category 1 and Category 2 streams, respectively. Reaches for which fish data are unknown are assumed not to support fish and are included in Category 2. Category 2 reaches cannot occur downstream of a Category 1 reach.

Criteria to Verify or Identify a Watercourse as a Stream

While all Category 1 streams are mapped by the Plan, not all Category 2 streams are mapped. If a watercourse is not mapped by the Plan, but does meet the following criteria, it will be classified as a Category 2 stream. The following is based on the *Santa Clara Valley Water Resources Protection Collaborative* (2006).

A watercourse which does not appear to fit into one of the two described stream categories may be considered a stream if the director of the planning department of the local jurisdiction determines that the watercourse complies with all of the following three criteria:

1. the watercourse is hydrologically connected to a waterway above and below the site or is connected to a spring, headwaters, lake, and/or bay based on satisfying at least one of the conditions identified in paragraph (A) below; and
2. the watercourse is within a defined channel which includes a bed, bank, and exhibits features that indicate actual or potential sediment movement based on satisfying at least one of the conditions identified in paragraph (B) below; and
3. the watercourse occupies a specific topographic position based on satisfying at least one of the conditions identified in paragraph (C) below.

In determining whether the subject watercourse possesses these three features, the following criteria will be examined by the Local Partner with jurisdiction over the covered activity. If necessary, this determination may require the

technical expertise and recommendations of a qualified biologist, hydrologist, or other qualified professional. In addition, the Local Partner with jurisdiction over the covered activity may require the project proponent to provide additional information as deemed necessary to determine if the watercourse satisfies the three criteria listed below.

This process will not be used to determine if a CDFG Streambed Alteration Agreement will be required pursuant to Section 1600 et seq. of the California Fish and Game Code or to determine if a Corps Section 404 Clean Water Act permit will be required.

A. Hydrologic Connectivity—Criterion #1 above will be considered met if any of the following conditions are present:

1. Stream headwaters, springs, in-channel culverts, underground seepage, or groundwater flow are present and capable of providing hydrologic connectivity to recognized watercourses. Sections of stream placed underground by manmade infrastructure (e.g., culverts) are not considered streams for the purpose of this condition except as noted in paragraph B item 4 below.
2. Streams may become connected across or over manmade improvements such as roads (e.g., a temporary connection during a storm event). Except for stream channel improvements, water flowing across or over such improvements within the public right-of-way is not considered a stream. Sections above and/or below this connectivity are streams if they meet the other required features.
3. Springs are present and are considered part of a stream if located above (uphill from) stream initiation.

B. Channel Form—Criterion #2 above will be considered met if any of the following conditions are present:

1. The watercourse has a stream channel, beginning at the point of bed and bank initiation, which may be natural, altered, or engineered.
2. The stream channel must have enough flow under present-day conditions to maintain channel form and to move sediment. A non-engineered stream channel bed and bank are created and maintained by erosion and sedimentation, thus the presence of a channel with bed and bank is itself evidence of sufficient flow. Flow volume or timing is not criteria for stream determination.
3. The stream channel has evidence of scour, sedimentation, sediment sorting, undercut banks and/or other erosion, deposition, or transport features—all of which support sediment movement.

Engineered or altered channels exist and are partially or wholly made of earth, concrete, rip rap, or other materials. The hardened nature of these channels bed and banks, and a lack of available sediment along the channel reach, may prevent signs of sediment movement or scour. Such channels need not have explicit evidence of sediment transport.

4. A currently underground stream was filled without appropriate permits from all applicable regulatory agencies (federal, state, and local) or is underground due to a landslide.

C. Topographic Position—Criterion #3 above will be considered met if any of the following conditions are present:

1. The watercourse is either a ‘U’ or ‘V’ shaped channel typically located at the low point of a macro-topographic feature.
2. The watercourse consists of bowl, ‘U’, or ‘V’ shaped topography with high points draining to valley or ravine as part of a large drainage network leading to large streams, lakes and/or a bay.
3. The watercourse located on flatland consists of shallow bowl or ‘U’ shaped topography. Generally these streams flow from the hills toward a bay following the slope of the land.

Stream topography can be indicated on a topography map by a ‘U’ or ‘V’ shape pointed in the uphill direction.

Slope

Slope is an important determinant of soil stability and therefore erosion and sedimentation rates into streams. Steeper slopes erode faster and are more susceptible to disturbance by the covered activities. To account for these factors, stream setback requirements are greater on steeper slopes. The slope categories developed for the Habitat Plan were based on slope-stability categories in local codes and guidelines. Two slope categories were created. Slope categories are as follows.

- **0%–30% Slopes.** Generally stable slopes. This category does not require additional setbacks beyond those identified above.
- **>30% Slopes.** Increasingly unstable slopes. This category requires increase protection and greater stream setbacks.

If the development area as described in Condition 7 is located within 200 feet of a Category 1 stream, the project proponent will include site topography on the development area map (see Section 6.8.2 *Item 2: Project Description and Map*) in 5-foot intervals in elevation. The project proponent will also calculate the average slope of the development area to determine how this criterion is applied. Slope is defined as the average natural slope of the land within the proposed development area based on an engineered site plan. The average slope is determined by the formula:

$$S = (I * L / A) * 100, \text{ where}$$

S is the average slope of the area in percent; *I* is the contour interval in feet; *L* is the combined length of contour lines in feet; and *A* is the area of the development area. Average site slope will be calculated by a registered civil engineer or licensed land surveyor. **Figure 6-3a** illustrates an example setback based on slope.

Urban Service Area

Different setback distances will be applied depending on whether the covered activity occurs within the urban service area¹⁷ (as adopted and mapped by LAFCO and defined by each city's General Plan at the time of adoption of the Habitat Plan) or outside the urban service area. Within the urban service area of San José, Morgan Hill, and Gilroy, there is typically extensive existing urban development. Due to past land-use policies, this development may have limited or no setbacks from streams. As such, these areas tend to be developed or highly altered from a natural state and the overall habitat value for covered species is less than in the rural areas. The stream setback requirement for covered activities within the urban service area is therefore modest and consistent with existing land uses. This setback also recognizes the limited potential for new development within the urban service area to provide stream protections.

Outside of the urban service area, stream setbacks are greater to maximize protection of existing stream functions and values and to provide additional opportunities for stream and riparian protection and restoration (see Chapter 5). Stream setbacks outside the urban service area take into account the opportunity to establish protective setbacks and to pro-actively prevent degradation seen within the urban service area from past development. The difference between setbacks inside and outside of the urban service area reflects the fact that lands within the urban service area provide a minimum amount of habitat in support of basic ecological functions including connectivity for covered species, while stream and riparian habitat outside of the urban service area will be instrumental in successful implementation of the conservation strategy.

Required Setbacks

Stream setback requirements have been developed on the basis of an extensive literature review of applicable research from both local and national sources (**Table 6-6**) and in consultation with the Wildlife Agencies. Scientific studies to determine minimum setbacks typically recommend relatively modest setbacks (an average of 58 feet) to protect water quality (e.g., sediment and nutrient loading). Recommended setbacks to enhance stream ecology were greater and ranged from 85 to 220 feet with an average of 132 feet. Setbacks intended to provide protection for plants and wildlife were the greatest and ranged from 30 to 1,600 feet, with an average range of 335 to 410 feet (**Table 6-6**).

Working from scientifically rigorous definitions of appropriate setbacks, further refinement of setbacks was coordinated with the Local Partners to determine setback widths that, while consistent with the literature, limited the number of situations in which the setback would create undue hardship upon property owners or be infeasible to implement on a consistent basis (the setback would

¹⁷ The urban service area was used instead of the planning limit of urban growth because the urban service area represents the current boundary of urban development, not the future boundary after implementation of all covered activities. The Local Partners felt strongly that stricter riparian setbacks should be applied outside the urban service area to maximize protection of stream and riparian areas prior to urbanization of these areas.

create a large number of property exemptions). As such, the setbacks identified for this Plan (35 to 250 feet) balance the need to protect ecological functions with surrounding land uses and private property constraints.

A stream setback, measured from top of the stream bank, will be applied to all covered activities as shown in **Table 6-7**. To facilitate implementation of this condition, required setbacks are described below based on project location. **Figures 6-3a through 6-3d** illustrate different applications of the setback.

Inside the Urban Service Area

Inside the urban service area at the time of Plan adoption, the setback for Category 1 streams is 100 feet (**Figure 6-3b**). The setback is increased by 50 feet for parcels with slopes greater than 30% to compensate for increased slope instability and higher anticipated rates of erosion. In addition, if the site supports riparian vegetation the setback is equal to either the riparian edge plus a 35 foot buffer or the setback as defined above, whichever is greater.

The setback for all Category 2 streams is 35 feet regardless of location or slope (see **Figure 6-3c**). In addition, if the site supports riparian vegetation, the setback is extended to include the riparian edge plus a 35-foot buffer. The 35-foot buffer is based on a minimum setback distance of 33 feet suggested for sediment and nutrient reduction (Corley et al. 1999). Ephemeral streams, while constituting the majority of streams affected by this condition, are not commonly mapped due to inherent difficulties in mapping ephemeral tributaries in the study area. Unmapped ephemeral streams will only be subject to the required setback if the criteria for defining a watercourse discussed under *Framework* are met for hydrologic connectivity, channel form, and topographic position (Santa Clara Valley Water Resources Protection Collaborative 2006). The applicable local jurisdiction is responsible for making determinations of whether a watercourse qualifies as a Category 2 stream and for implementing setbacks. Each local jurisdiction may also choose to extend the setback beyond 35 feet in cases where site-specific slope and geological characteristics warrant increased protection.

If the project proponent complies with the stream setback when implementing covered activities (i.e., the project avoids the setback), the area of the setback will be excluded from the development fee calculation for the project. The project will be tracked as the parcel or development area excluding the avoided setback so that local jurisdictions are able to identify new impacts in future project applications.

Outside the Urban Service Area

Outside of the urban service area, setback requirements are greater. For Category 1 streams the setback distance is 150 feet (see **Figure 6-3d**). The setback is increased by 50 feet for slopes greater than 30% to compensate for increased slope instability and higher anticipated rates of erosion (**Figure 6-3a**). In addition, if the site supports riparian vegetation, the setback is either the riparian edge plus a 35-foot buffer or the setback described above, whichever is greater.

As described above for required setbacks “*Inside the Urban Service Area,*” the setback for all Category 2 streams is 35 feet regardless of location or slope (**Figure 6-3c**). If the site supports riparian vegetation, the setback will extend from the riparian edge plus a 35-foot buffer.

Unless a covered activity meets the “Exemption” criteria or is granted a stream setback exception, as described below, implementation of covered activities is prohibited within the stream setback.

Project proponents of projects located outside the urban service area must ensure that the development area does not encroach into the stream setback unless an exemption or an exception is applied. Projects or portions of projects that qualify for an exemption or exception are described below.

If a project proponent chooses to offer a conservation easement onstream setback areas, and the Implementing Entity and Wildlife Agencies approve, the contribution of the area placed under conservation easement may offset development fees as described below under *Fees and Conservation Easements*, and the land will become part of the Reserve System and contribute to the Plan’s requirements for riparian preservation (**Table 5-13**).

Exemptions

The exemptions below apply regardless of location. If a covered activity qualifies for an exemption, a stream setback is not applied and the project proponent is not required to comply with this condition. However, other conditions may still apply and the project is still required to pay all applicable fees (e.g., land cover fee, wetland fee) as described in Chapter 9. Exemptions from the stream setback include the following.

1. Any activity that is not a covered activity and not subject to the Habitat Plan or its conditions.
2. Activities listed as exempt in Section 6.2.
3. Development on parcels less than 0.5 acre.
4. Covered activities that require work within or adjacent to streams such as bridges, levee maintenance and repair, flood-protection projects, stream maintenance, outfall installation and maintenance, flood-protection capital projects, dam-related capital projects.
5. Recreational trails (see Condition 4 and 9 for details on trail siting).
6. Replacement of utilities that result in no new permanent disturbance to the riparian corridor during construction and operation and generate only temporary loss of habitat. (This exemption does not apply for utility projects that result in new permanent riparian impacts.)
7. Stream crossings essential to provide a means of access to parcel or facility.

Exceptions

Stream setback policies that apply to a large number of parcels with varying characteristics require a clear and practical set of exceptions. The term exception means an allowance for reductions in mandated setback distances necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, portions of this stream setback condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the stream setback. For example, geologic and seismic hazards, unusual lot size or configurations, unusual slope, or grading and access issues may present site constraints that require exceptions to the stream setback condition in order to allow reasonable development of a site consistent with local land use regulations.

For all proposed exceptions to the stream setbacks (inside or outside the urban service area), exceptions will be considered based on the following factors:

1. The existence of legal uses within the setback.
2. The extent to which meeting the required setback would result in a demonstrable hardship (i.e., denies an owner any economically viable use of his land or adversely affects recognized real property interests) for the applicant.
3. The extent to which meeting the required setback would require deviation from, exceptions to, or variances from other established policies, ordinances or standards regarding grading, access, water supply, wastewater treatment, disposal systems, geologic hazards, zoning, or other established code standards.
4. The stream setback exception does not preclude achieving the biological goals and objectives of the Habitat Plan or conflict with other applicable requirements of the Habitat Plan and local policies.

Regardless of project location, stream setback exceptions may not reduce a Category 1 stream setback to less than a distance of 50 feet for new development or 35 feet for existing or previously developed sites with legal buildings and uses (**Figure 6-3b**). All applicable fees must be paid for areas granted an exception.

Exceptions may be requested through the standard application process described in Section 6.8, or through a separate request process. Applicants must apply for a stream-setback exception through their local jurisdiction. All private applications for stream-setback exceptions must be reviewed and approved by the local jurisdiction. For projects implemented by a local jurisdiction, exception requests must be made to the Implementing Entity. The findings required to approve the stream setback exception must be supported by factual information and judgments in the record.

As part of the review process, the local jurisdiction or the Implementing Entity must consider the implications of a reduced setback on the riparian system and

covered species, progress toward the biological goals and objective of the Plan, and potential effects on adjacent properties. The local jurisdiction or the Implementing Entity must make written findings that document these considerations and the rationale for the stream-setback exception (see below for specific required findings). The local jurisdiction or the Implementing Entity may require technical reports from qualified professionals or consultants to support the application or request. For example, for any significant proposed reduction, a report by a qualified biologist, stream hydrologist, registered engineer, or other professional may be required as a basis for making necessary findings. Please see Section 6.8.5 for definition of a “qualified biologist.”

If the stream setback exception is granted at an administrative level (Zoning Administrator) or by a designated decision-making authority (Planning Commission), local agencies must include provisions that allow appeal of this decision to the elected legislative body of the applicable agency. Applicable fees may be imposed by the legislative body for processing such appeals, as well as for the original exception requests.

Prior to granting the exception, the local jurisdiction will provide the exception request and proposed decision to both the Implementing Entity and the Wildlife Agencies for review and comment. The Implementing Entity and Wildlife Agencies will have 30 days to review the request and provide a written response. A local agency cannot take an action until after that 30 day-period. The Implementing Entity will compile a list of all exceptions granted each calendar year for inclusion in the annual report to the Wildlife Agencies.

Fees and Conservation Easements

If the stream setback is precluded from future development by a permanent conservation easement offered voluntarily by the landowner, and the easement is acceptable to the Implementing Entity and Wildlife Agencies and consistent with the Plan Reserve System (as described in Chapter 8, Section 8.6.3), a portion of the land cover fee for the covered activity (i.e., the fee for impacts to land cover types outside of the setback) may be waived by the Implementing Entity. If the value of the easement, in terms of area and resource value, exceeds the fee, credit cannot be “banked” for other projects (i.e., the Implementing Entity will not compensate for excess credit). Partial fee waivers for setbacks will be determined on a case-by-case basis by the Implementing Entity according to the criteria in Chapter 9, Section 9.4.1, subheading *Land Provided in Lieu of Development Fee*.

Each local jurisdiction may also consider imposing a conservation easement as a requirement for development approval when there is a direct nexus between the effects or impacts of a project and the need for an easement. The Implementing Entity will provide technical assistance to the local jurisdiction to determine whether a conservation easement is warranted. An easement must also demonstrate rough proportionality with the impact of the project.

Condition 12. Wetland and Pond Avoidance and Minimization

The purpose of this condition is to minimize direct and indirect impacts to wetlands and ponds and in some cases, avoid direct and indirect impacts to high quality wetlands and ponds. Direct impacts are those that directly affect a wetland or a pond within its mapped boundary (see Section 6.8.4 *Item 4: Map of Wetlands and Waters* for a description of mapping direct impacts to wetlands). Project proponents are required to pay a wetland fee for impacts to wetlands and ponds to cover the cost of restoration or creation of aquatic land cover types required by this Plan (see Chapter 9 for details on this wetland fee). Covered activities can avoid paying the wetland fee if they avoid impacts to the wetland.

All project proponents will implement the following actions to avoid and minimize impacts of covered activities on wetlands and ponds.

Planning Actions

- Projects must be designed to avoid and minimize impacts to wetlands to the maximum extent practicable.
- Applicants with streams on site must follow the stream setback requirements in Condition 11.
- Applicants for coverage under the Plan must follow the requirements and guidelines in Condition 3 to minimize the effects of development on downstream hydrology, streams, and wetlands.

Design

- Locate septic facilities, if used, at least 100 feet from the edge of a wetland or pond if space allows.
- If the runoff from the development will flow within 100 feet of a wetland or pond, install vegetated stormwater filtration features, such as rain gardens, grass swales, tree box filters, or infiltration basins, to capture and treat flows.
- Plant native vegetation (shrubs and small trees) between the wetland or pond and the development such that the line of sight between the wetland or pond and the development is shielded.
- If during the environmental review process it is shown that a project has adverse indirect impacts to the wetland's function (change in hydrological functions, etc.), the project will be required to avoid these indirect effects, as determined on a case-by-case approach by the local jurisdiction, in consultation with the Implementing Entity. If a Local Partner is carrying out the activity, it will coordinate avoidance measures with the Implementing Entity. Wetlands that are not completely avoided, including indirect effects, will be considered permanently impacted and will count towards the impact

caps described in **Table 4-2** and will be assessed fees as described in Chapter 9. If however, the local jurisdiction demonstrates to the Wildlife Agencies that the wetlands to be indirectly affected are highly degraded prior to project impacts, and the Wildlife Agencies agree, impacts will not be counted toward the impact caps described in **Table 4-2** and fees will not be assessed. “Highly degraded” wetlands could include, but are not limited to, those that are indirectly affected by surrounding development or agriculture to the extent that hydrology, water quality, or habitat for covered species is adversely affected.

Construction Actions

- Personnel conducting ground-disturbing activities in or adjacent to wetlands and ponds will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.
- All wetlands and ponds to be avoided by covered activities will be temporarily staked in the field by a qualified biologist to ensure that construction equipment and personnel avoid these features.
- Fencing will be erected along the outer edge of the project area, between the project area and a wetland or pond. The type of fencing will match the activity and impact types. For example, projects that have the potential to cause erosion will require erosion control barriers (see below), and projects that may bring more household pets to a site will be fenced to exclude pets. The temporal requirements for fencing also depend on the activity and impact type. For example, fencing for permanent impacts will be permanent, and fencing for short-term impacts will be removed after the activity is completed.
- Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control blankets will be used as a last resort because of their tendency to biodegrade slowly and trap reptiles and amphibians.
- Erosion-control measures will be placed between the wetland or pond and the outer edge of the project site.
- Fiber rolls used for erosion control will be certified as free of noxious weed seed.
- Seed mixtures applied for erosion control will not contain invasive nonnative species, but will rather be composed of native species appropriate for the site or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.

- Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.
- Trash generated by covered activities will be promptly and properly removed from the site.
- No construction or maintenance vehicles will be refueled within 200 feet of avoided wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.
- All management of pest species will be conducted in compliance with the County integrated pest management (IPM) ordinance. In addition, other requirements identified in this chapter that exceed the requirements of the IPM ordinance will be implemented.
- Where appropriate to control serious invasive plants, herbicides that have been approved by EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species (e.g., yellow star-thistle). Herbicide drift will be minimized by applying the herbicide as close to the target area as possible. Herbicides will only be applied by certified personnel in accordance with label instructions.
- All organic matter should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with ponds, wetlands, or potentially contaminated sediments. Items should be rinsed with clean water before leaving each study site (U.S. Fish and Wildlife Service 2005).
- Implement measures to minimize the spread of disease and non-native species based on current Wildlife Agency protocols (e.g., *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures* [U.S. Fish and Wildlife Service 2005]) and other best available science.
- Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken off site for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags (U.S. Fish and Wildlife Service 2005).
- Portions of the project that occur in streams will comply with Condition 4.

Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization

Serpentine soils comprise four land cover types in the study area: serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. These land cover types are estimated to encompass 14,314 acres in the study area. Additional unmapped areas of serpentine may be discovered during

implementation because it often occurs in small patches that could not be discerned at the scale of the mapping and available data.

Most of the serpentine areas in the study area are expected to be acquired as part of the Reserve System (see Chapter 5 for specific targets). However, some impacts on these land cover types may still occur (e.g., allowable impacts to serpentine bunchgrass grassland are limited to 550 acres [**Table 4-2**]). Because of the high importance and rarity of serpentine soils and their habitats, these areas will be avoided whenever feasible during project planning.

In cases where serpentine areas are part of a project site in a developed area, the project will be designed to preserve larger patches of serpentine outside the development area and limit impacts to the smallest patches feasible and to the edges of serpentine patches regardless of their size. The length of the edge of the serpentine patch that is directly adjacent to the developed area will be minimized and will include as large a buffer as possible between the serpentine edge and the developed area. Landscaping will not be planted on serpentine areas except as needed to reduce fire hazards adjacent to structures consistent with County fire hazard reduction regulations (see also Condition 10). Plantings will not include species that are known or suspected to invade serpentine habitats or cross-pollinate with endemic serpentine plant species or other native plants.

On undeveloped sites, the project area and construction staging area must be located to avoid or minimize impacts to any serpentine on site. The guidelines described above for developed areas will also be followed for project sites in undeveloped areas.

Where mapped serpentine cannot be avoided, the minimization measures listed below will be implemented.

- Conduct surveys of the serpentine vegetation to inventory for covered species and evaluate habitat quality for covered species.
- For portions of the development area that are in Bay checkerspot butterfly habitat units identified in Appendix D, survey the site for the presence of larval host plants of Bay checkerspot butterfly. If larval host plants are found, conduct reconnaissance level surveys for adult butterflies during the peak of the flight period to determine species presence or absence.
- Locate the project footprint as far from the covered species or the highest-quality serpentine habitat as is feasible. Utilize applicable buffers as identified in this chapter.
- If covered plants occur on the site and cannot be avoided, notify the Implementing Entity of the construction schedule so that plant salvage can be considered and potentially implemented (see Condition 19).

Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization

Valley oak woodland and blue oak woodland are considered by CDFG to be sensitive biotic communities (California Department of Fish and Game 2003). There is evidence that valley oak woodland was once one of the dominant land cover types on the floor of the Santa Clara Valley, but it has been largely removed by urban and agricultural development (San Francisco Estuary Institute 2006, 2008). These communities can provide important foraging or movement habitat for species covered by the Plan—California red-legged frog, and California tiger salamander—as well as for many other native species. For these reasons, these two oak woodland land cover types would benefit from some avoidance and minimization associated with covered activities.

All covered activities will implement the following actions to avoid or minimize impacts on valley and blue oak woodland.

Project Planning

- Projects on sites supporting substantial stands of valley oak woodland or blue oak woodland will minimize their impacts on these communities and preserve these stands on site when to do so would further the biological goals and objectives of the Plan. For example, projects should preserve oak woodland communities that are adjacent to existing stands of protected oak woodlands to avoid habitat fragmentation and degradation of wildlife linkages.
- Projects will avoid to the maximum extent feasible irrigating in and around valley oak woodland and will avoid altering hydrology of the site, including location of septic leach fields, such that valley oak woodland receives more water than under pre-project conditions.
- Large and healthy trees will be maintained on site whenever feasible. Local jurisdictions may set tree size thresholds for preservation that are consistent with local tree ordinances. Large valley oak trees still healthy today are clearly visible on air photos from as far back as 1939 (San Francisco Estuary Institute 2006), even though they are surrounded by agricultural fields or urban development. Preserved trees can provide habitat value for many decades; they also provide a significant community amenity.
- If trees are maintained on a site, buffer zones will be established between preserved valley oak or blue oak trees and development at a distance equal to or greater than the root protection zone, which is defined as a buffer zone determined by calculating one foot for each inch of trunk diameter measured at 4.5 feet above ground surface (Matheny and Clark 1998).

Project Construction

- Temporary project access points will be constructed as close as possible to the work area to minimize necessity for tree removal.
- Roads and pathways will be aligned outside of the tree's root protection zone (as defined above) whenever possible.
- Roads and pathways designed beneath or within 25 feet of the dripline of oak trees will be graded using hand-held equipment and will use permeable surfacing (e.g., grass pavers that allow runoff to infiltrate the ground).
- Alteration of natural grade through fill or other means within the root protection zone of oak trees will be minimized.
- Trenching for utility lines and other purposes will be minimized within root protection zones. Utilities may be installed in these areas by boring below the root zone.
- If extensive pruning of blue oaks and valley oaks is necessary, pruning will be conducted during the winter dormant period for these species and under the supervision of an arborist certified to International Society of Arboriculture or similar standards.

6.6 Conditions to Minimize Impacts on Specific Covered Species

Species-specific conditions are presented below. The timing of species habitat surveys, preconstruction surveys, and construction monitoring relative to impacts are described below and summarized in **Table 6-8**. For long term projects and projects that are phased¹⁸, the frequency and timing of surveys relative to impacts will be determined by the local jurisdiction or Implementing Entity in coordination with the Wildlife Agencies on a case-by-case basis. At a minimum, surveys and monitoring (if required) will be done prior to each construction phase if the entire project area is not continuously disturbed between phases.

The Implementing Entity will maintain and update modeled habitat maps based on guidance provided in Chapter 7, *Monitoring and Adaptive Management Program*. For species that require surveys based on modeled habitat¹⁹, qualified biologists will utilize the most current modeled habitat maps available from the Implementing Entity to guide where surveys must be conducted. Surveys will be conducted based on modeled habitat maps that are updated throughout Plan implementation. Similarly, the Implementing Entity will track impacts to modeled habitat based on modeled habitat maps updated during Plan implementation.

¹⁸ Phasing may include planned phasing of construction (e.g., multi-year phasing of a road construction project), or unplanned gaps in construction activity.

¹⁹ San Joaquin kit fox, western burrowing owl, and Bay checkerspot butterfly.

6.6.1 Selected Covered Wildlife Species

Conditions 15–18 identify conditions on covered activities that are specific to some of the covered species. Activities that may affect these covered species must also adhere to other applicable conditions in this chapter, including Condition 1, *Avoid Direct Impacts on Legally Protected Plant and Wildlife Species*. A summary of species surveys, preconstruction surveys, and construction monitoring requirements is provided in **Table 6-8**.

Condition 15. Western Burrowing Owl

To avoid or minimize direct impacts of covered activities on western burrowing owls, the procedures described below will be implemented. This condition incorporates survey, avoidance, and minimization guidelines from the following western burrowing owl conservation plans and other sources pertaining to the study area. The avoidance and minimization process for western burrowing owl as required in this condition is illustrated in **Figure 6-4**.

- *CDFG Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).
- *CDFG Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012).
- *Draft Burrowing Owl Habitat Conservation Strategy and Implementation Plan* (City of San José 2000).
- *City of Morgan Hill—Citywide Burrowing Owl Habitat Mitigation Plan* (City of Morgan Hill 2003).
- Personal communication with Jack Barclay regarding ongoing monitoring efforts in the study area including annual monitoring at San José International Airport.
- Various unpublished reports from survey efforts in the study area.
- Guidance from CDFG.

Western Burrowing Owl Habitat Survey

Western burrowing owl habitat surveys will be required in the study area in all modeled occupied nesting habitat (see **Figure 5-11**). Surveys are not required in sites that are mapped as potential burrowing owl nesting or only overwintering habitat. Modeled habitat types may change throughout the permit term based on the best available scientific data. For example, the Implementing Entity will be conducting annual surveys or collecting annual survey data of other organizations in occupied nesting habitat throughout the permit area to determine the annual status of known nesting areas the number of adult breeding owls present. The Implementing Entity will also coordinate with other South Bay local

governments, special districts, and non-profit organizations every 3 years to assess status of the burrowing owl population in the entire study area and the expanded study area for burrowing owl conservation, outside areas of modeled occupied habitat.

Habitat surveys in occupied nesting habitat are required in both breeding and non-breeding seasons. If the project site falls within occupied nesting habitat, a qualified biologist will map areas with burrows (i.e., areas of highest likelihood of burrowing owl activity) and all burrows that may be occupied (as indicated by tracks, feathers, egg shell fragments, pellets, prey remains, or excrement) on the project site. This mapping will be conducted while walking transects throughout the entire project footprint, plus all accessible areas within a 250-foot radius from the project footprint. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, while in open areas with little vegetation they can be 50 feet apart.

This methodology is consistent with other accepted survey protocols for this species (California Burrowing Owl Consortium 1993). The Implementing Entity may update this protocol during the permit term based on changes to the accepted protocol with the concurrence of the Wildlife Agencies. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If suitable habitat is identified during the habitat survey, and if the project does not fully avoid impacts to the suitable habitat, preconstruction surveys will be required. Suitable habitat is fully avoided if the project footprint does not impinge on a 250-foot buffer around the suitable burrow.

Preconstruction Survey

Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity.

To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped.

Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to

construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

Implementation of Covered Activities in Burrowing Owl Habitat

In order to allow covered activities to go forward in burrowing owl habitat prior to the formal take authorization of individuals described above, project applicants will employ avoidance measures described below to ensure that direct take does not occur. Application of these measures is illustrated in **Figure 6-4**. The below avoidance measures apply to all projects that affect any burrowing owl habitat, regardless of whether surveys are required by this condition. In other words, if a project is occurring outside of modeled occupied nesting habitat, the project proponent is obligated to ensure avoidance and minimization of impact to burrowing owls according to the measures described below.

Avoidance Measures

Breeding Season

If evidence of western burrowing owls is found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season if:

- the nest is not disturbed, and
- the project proponent develops an avoidance, minimization, and monitoring plan that will be reviewed by the Implementing Entity and the Wildlife Agencies prior to project construction based on the following criteria.
 - The Implementing Entity and the Wildlife Agencies approves of the avoidance and minimization plan provided by the project applicant.
 - A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
 - The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

- ❑ If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.
- ❑ If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The biologist will excavate the burrow to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and the Wildlife Agencies have 21 calendar days to respond to a request from the project proponent to review the proposed construction monitoring plan. If these parties do not respond within 21 calendar days, it will be presumed that they concur with the proposal and work can commence.

Non-Breeding Season

During the non-breeding season (September 1–January 31), the project proponent will establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites.

- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.
- If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

Construction Monitoring

Based on the avoidance, minimization, and monitoring plan developed (as required in the above section), during construction, the non-disturbance buffer zones will be established and maintained if applicable. A qualified biologist will

monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

Passive Relocation

Passive relocation would not be allowed under the Plan until the positive growth trend described in Section 5.4.6 is achieved. Once this occurs, passive owl relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other measures described in this condition do not allow work to continue. Passive relocation would only be proposed if the burrow needed to be removed, or had the potential of collapsing (e.g., from construction activities), as a result of the covered activity.

If passive relocation is eventually allowed, a qualified biologist can passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools. During excavation an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trapping owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies during Plan implementation.

Exceptions to Passive Relocation Prohibition

Due to the relatively low numbers of burrowing owls in the study area, it is not expected that the prohibition of passive relocation will result in project delays. However, it is possible that a covered activity could not proceed due to avoidance measures for burrowing owl in this condition if owls continually persist on a site where avoidance is not feasible. In such cases, a project proponent may apply for an exception based on the following process. For this condition, the term exception means an allowance to conduct passive relocation of burrowing owls during the non-breeding season only when this activity is not otherwise allowed. This exception process is necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, other portions of this condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the condition.

Exceptions may be requested through the standard application process described in Section 6.8, or through a separate request process. Private applicants must apply for a passive relocation exception through their local jurisdiction. Project

proponents must develop and submit with the request for exception a passive relocation plan. The passive relocation plan must document the following.

1. That owls have occupied the site for a full year without relocating voluntarily. Surveys documenting presence must be completed by a qualified biologist and results must be provided in a written report. The report should confirm that one or more individuals (i.e., unique owl[s]) were monitored for a year and that the owl(s) had used the site for a full year²⁰.
2. The proposed process for relocation, including schedule for the proposed passive relocation and name of the qualified biologist.

The local jurisdiction, the Implementing Entity, and the Wildlife Agencies will meet to discuss the proposed passive relocation plan. Exceptions will be considered based on, but not limited to, the following factors:

1. The parcel is equal to or less than 3 acres and is more than 1,000 feet from other suitable nesting or foraging habitat such that it is unlikely the site can sustain burrowing owls into the future.
2. If the site has historically been used for nesting (within the last 3 years).
3. If the site is a target for a burrowing owl temporary or permanent management agreement.

As part of the review process, the Implementing Entity and Wildlife Agencies will consider the implications of an exception on the burrowing owl population and progress toward the biological goals and objective of the Plan. A passive relocation exception will not be granted if the Implementing Entity and Wildlife Agencies determine that such an exception, as mitigated, would preclude implementation of the conservation strategy of the Habitat Plan or conflict with other applicable requirements of the Habitat Plan and local policies. The local jurisdiction or the Implementing Entity must make written findings that document these considerations and the rationale for the exception.

Additional mitigation may be required as part of an approval to implement passive relocation that is otherwise prohibited by the Plan. The need for and form of additional mitigation will be determined and approved by the Implementing Entity and Wildlife Agencies. Additional mitigation could include payment of additional fees, or contribution of occupied lands to the Reserve System. Applicable fees may be imposed by the local jurisdiction for processing exception requests. Mitigation will be proportional to the impact occurring as a result of a specific eviction and will fully mitigate such evictions.

The Implementing Entity will compile a list of all exceptions granted each calendar year for inclusion in the annual report to the Wildlife Agencies.

²⁰ If monitoring reveals that an owl(s) has vacated the site for 10 consecutive days or more, the project applicant may assume that the owl has voluntarily relocated and a qualified biologist may take measures to collapse suitable habitat to discourage new owls from occupying the site.

Condition 16. Least Bell's Vireo

To avoid and minimize direct impacts of covered activities on least Bell's vireos, the following procedures will be implemented. These survey requirements provide compliance with the Plan and the MBTA (least Bell's vireo is a listed species, so the HCP permit also serves as a Special Purpose Permit under MBTA; see Chapter 1 for details).

Habitat Survey

Least Bell's vireo surveys will only be required for projects occurring within potential breeding habitat. The Implementing Entity will provide maps showing the geographic regions where surveys may be required. These maps will be updated during the permit term to incorporate best available science on where this species may be found. At the time of Plan adoption, the area of required surveys is limited to the Pajaro watershed, including Uvas, Llagas, and Pacheco sub-watersheds.

Projects occurring within the mapped area require surveys if the project-specific verified land cover map (see Section 6.8.3 *Item 3: Land Cover Types on Site*) shows that the project area is within 250 feet of riparian land cover types. If a project meets this criterion, a qualified biologist will conduct a field investigation to identify and map early successional riparian vegetation (typically dominated by willow shrubs and other thick understory vegetation) which may be used for nesting. If early successional riparian vegetation is found, the project proponent may revise the proposed project to avoid all areas within a 250-foot buffer around the potential nesting habitat and surveys will be concluded.

Preconstruction Survey

If the project proponent chooses not to avoid the potential nesting site and the 250-foot buffer, additional nesting surveys are required. Prior to any ground disturbance related to covered activities, a qualified biologist will:

1. Make his/her best effort to determine if there has been nesting at the site in the past 3 years. This includes checking the CNDDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests).
2. If no nesting in the past 3 years is evident, conduct a preconstruction survey in areas identified in the habitat survey as supporting potential least Bell's vireo nesting habitat. Surveys will be made at the appropriate times of year when nesting use is expected to occur. The surveys will document the presence or absence of nesting pairs of least Bell's vireo. Protocol-level surveys will be used (USFWS's 2001 least Bell's vireo survey guidelines or latest protocol). Surveys will conclude no more than two calendar days prior to construction.

To avoid last minute changes in schedule or contracting that may occur if an active nest is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. If one or more least Bell's vireo nests are found present (through step 1 or 2 above), the nest site(s) plus a 250-foot buffer will be avoided (see below for additional avoidance and minimization details). The Wildlife Agencies will be notified immediately of nest locations.

Avoidance and Minimization

Covered activities must avoid active least Bell's vireo nests during the breeding season (March 15–July 31) by maintaining at least a 250-foot no-activity buffer around all active nests. As long as the nest remains active, no activity will occur within the established buffer. Disturbance to previous nesting sites (for up to 3 years) will also be avoided during the breeding season unless the disturbance is required for the conservation strategy or to maintain public safety. Least Bell's vireos use previous nesting sites, and disturbance during the breeding season may preclude birds from using existing nests.

The required buffer may be reduced in areas where there are sufficient barriers or topographic relief to protect the nest from excessive noise or other disturbance. Implementing Entity technical staff will coordinate with the Wildlife Agencies and evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis.

Construction Monitoring

If occupied nests are identified, a qualified biologist will monitor construction to ensure that the 250-foot no-activity buffer around all active least Bell's vireo nests is maintained to ensure that covered activities do not affect nest success. If monitoring indicates that construction outside of the buffer is affecting breeding, the buffer will be increased if space allows (e.g., move staging areas farther away). If space does not allow, construction will cease until the young have fledged from the nest or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a least Bell's vireo flies into an active construction zone (i.e., outside the buffer zone).

Condition 17. Tricolored Blackbird

To avoid direct impacts of covered activities on nesting tricolored blackbird colonies, the following procedures will be implemented.

Habitat Survey

Projects require surveys if the project-specific verified land cover map (see Section 6.8.3 *Item 3: Land Cover Types on Site*) shows that the project area is within 250 feet of any riparian, coastal and valley freshwater marsh (perennial wetlands), or pond land cover types. If a project meets this criterion, a qualified biologist will conduct a field investigation to identify and map potential nesting substrate. Nesting substrate generally includes flooded, thorny, or spiny vegetation (e.g., cattails, bulrushes, willows, blackberries, thistles, or nettles). If potential nesting substrate is found, the project proponent may revise the proposed project to avoid all areas within a 250-foot buffer around the potential nesting habitat and surveys will be concluded.

Preconstruction Survey

If the project proponent chooses not to avoid the potential nesting habitat and the 250-foot buffer, additional nesting surveys are required. Prior to any ground disturbance related to covered activities, a qualified biologist will:

1. Make his/her best effort to determine if there has been nesting at the site in the past 5 years. This includes checking the CNDDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests).
2. If no nesting in the past 5 years is evident, conduct a preconstruction survey in areas identified in the habitat survey as supporting potential tricolored blackbird nesting habitat. Surveys will be made at the appropriate times of year when nesting use is expected to occur. The surveys will document the presence or absence of nesting colonies of tricolored blackbird. Surveys will conclude no more than two calendar days prior to construction.

To avoid last minute changes in schedule or contracting that may occur if an active nest is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. If a tricolored blackbird nesting colony is present (through step 1 or 2 above), a 250-foot buffer will be applied from the outer edge of all hydric vegetation associated with the site and the site plus buffer will be avoided (see below for additional avoidance and minimization details). The Wildlife Agencies will be notified immediately of nest locations.

Avoidance and Minimization

Covered activities must avoid tricolored blackbird nesting habitat that is currently occupied or have been used in the past 5 years. If tricolored blackbird colonies are identified during the breeding season, covered activities will be prohibited within a 250-foot no-activity buffer zone around the outer edge of all hydric vegetation associated with the colony. This buffer may be reduced in areas with dense forest, buildings, or other habitat features between the construction activities and the active nest colony, or where there is sufficient topographic relief to protect the colony from excessive noise or visual disturbance.

Depending on site characteristics, the sensitivity of the colony, and surrounding land uses, the buffer zone may be increased. Land uses potentially affecting a colony will be observed by a qualified biologist to verify that the activity is not disrupting the colony. If it is, the buffer will be increased. Implementing Entity technical staff will coordinate with the Wildlife Agencies and evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis.

Construction Monitoring

If construction takes place during the breeding season when an active colony is present, a qualified biologist will monitor construction to ensure that the 250-foot buffer zone is enforced. If monitoring indicates that construction outside of the buffer is affecting a breeding colony, the buffer will be increased if space allows (e.g., move staging areas farther away). If space does not allow, construction will cease until the colony abandons the site or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that tricolored blackbirds fly into an active construction zone (i.e., outside the buffer zone).

Condition 18. San Joaquin Kit Fox

Disturbance of all San Joaquin kit fox dens will be avoided to the maximum extent possible. To avoid or minimize direct impacts of covered activities on San Joaquin kit fox, the following procedures will be implemented. This program was based on USFWS's *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance* (U.S. Fish and Wildlife Service 2011).

Habitat Survey

San Joaquin kit fox surveys will only be required for projects occurring within modeled habitat (**Appendix D**). (This model will be updated as needed based on best available scientific information.) The Implementing Entity will provide updated modeled habitat maps to the County (the only jurisdiction in which these areas occur). A qualified biologist will conduct a field evaluation of suitable breeding or denning habitat for kit fox for all covered activities that occur within modeled habitat and map potential den sites. If the project does not fully avoid impacts on suitable dens, preconstruction surveys will be required. Suitable breeding habitat is fully avoided if the project footprint does not overlap with a suitable den or with a 250-foot buffer around the suitable den.

Preconstruction Survey

Prior to any ground disturbance related to covered activities, a qualified biologist will conduct a preconstruction survey for covered activities in areas identified by species surveys as being suitable breeding or denning habitat. The surveys will evaluate use of dens by kit foxes using methods appropriate for the northern edge of the species' range, such as placing a tracking medium in the project area where suitable dens occur. Surveys will conclude no more than two calendar days prior to construction. To avoid last minute changes in schedule or contracting that may occur if a kit fox or active den is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed unless access is granted within the 250-foot radius. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS and CDFG within two calendar days after survey completion and before the start of ground disturbance.

If San Joaquin kit foxes and/or suitable dens (i.e., dens greater than 5 inches in diameter) are identified in the survey area, the conditions described below will be implemented.

Avoidance and Minimization

The goal of the avoidance and minimization measures for San Joaquin kit fox are to avoid all injury or death to kit fox in the study area, and to minimize harm or harassment to the species. No take authorization for injury or death to kit fox is provided by this Plan due to the rarity of the species in the study area. The following avoidance and minimization conditions will be applied to projects that do not fully avoid suitable dens or kit fox individuals.

- If a suitable San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS- and CDFG-approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens will be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is found, USFWS and CDFG will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFG.
- If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is

determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated by hand when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities). If at any point during excavation a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above will be resumed. Destruction of the den may be completed when, in the judgment of the biologist, the animal has escaped from the partially destroyed den.

- Construction and on-going operational requirements from *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance* (U.S. Fish and Wildlife Service 2011) or the latest guidelines will be implemented.
- If active or suitable dens are identified within the proposed disturbance footprint or outside the proposed project footprint but within a 250-foot buffer, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones will be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for atypical dens and suitable dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by the foxes.

Construction Monitoring

If construction takes place while kit fox dens are occupied, a qualified biologist will be present to ensure compliance with the avoidance and minimization measures listed above. The frequency of monitoring will be approved by USFWS and CDFG and will be based on the frequency and intensity of construction activities and the likelihood of disturbance to the active dens. In most cases, monitoring will occur at least weekly, but in some cases daily monitoring may be appropriate to ensure that disturbance of San Joaquin kit fox is minimized.

6.6.2 Covered Plant Species

Impacts on covered plant occurrences are constrained by limits on the number of occurrences impacted, as described in Chapter 4 (see **Table 4-6**). Accordingly, only two additional conditions on covered activities is needed to meet regulatory requirements for covered plants.

Condition 19. Plant Salvage when Impacts are Unavoidable

Where impacts on covered plant species cannot be avoided and plants will be removed by approved covered activities, the Implementing Entity has the option of salvaging the covered plants. Salvage of covered plants is conducted in addition to mitigation that may be required for impacts on covered plants.

Plant salvage as mitigation is acknowledged as a technique that rarely succeeds; it is opposed by conservation organizations as a primary mitigation tool (Howald 1996; California Native Plant Society 1998). Therefore, the Implementing Entity must carefully weigh the expected costs and potential benefits of the salvage effort before undertaking it. Salvage guidelines are presented below for all covered plants, for perennial species, and for annual species.

All Covered Plants

All salvage operations will be conducted by the Implementing Entity or a third party contractor approved by the Implementing Entity. Translocation activities will be reviewed and approved by the Wildlife Agencies in advance of translocation activities occurring. Translocated plants should be moved during their dormant season in order to minimize impacts to individuals. To ensure enough time to plan salvage operations, project proponents will notify the Implementing Entity of their schedule for removing the covered plant occurrence.

The Implementing Entity may conduct investigations into the efficacy of salvaging seeds from the soil seed bank for both perennial and annual species. The soil seed bank may add to the genetic variability of the occurrence. Covered species may be separated from the soil through garden/greenhouse germination or other appropriate means. Some topsoil taken from impact sites may also be moved to the transplant site in the reserve to introduce soil microorganisms.

The Implementing Entity will transplant new occurrences such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal. Transplanting or seeding *receptor* sites (i.e., habitat suitable for establishing a new population) will be carefully selected on the basis of physical, biological, and logistical considerations (Fiedler and Laven 1996); some examples of these are listed below.

- Historic range of the species.
- Soil type.
- Soil moisture.
- Topographic position, including slope and aspect.

- Site hydrology.
- Mycorrhizal associates.
- Presence or absence of typical associated plant species.
- Presence or absence of herbivores or plant competitors.
- Site accessibility for establishment, monitoring, and protection from trampling by cattle or trail users.

Perennial Covered Plants

Salvage methods for perennial species will be tested for whole individuals, cuttings, and seeds. Salvage measures will include the evaluation of techniques for transplanting as well as germinating seed in garden or greenhouse and then transplanting to suitable habitat sites in the field. Techniques will be tested for each species, and appropriate methods will be identified through research and adaptive management. Where plants are transplanted or seeds distributed to the field, they will be located in reserves in suitable habitat to establish new populations. Field trials will be conducted to evaluate the efficacy of different methods and determine the best methods to establish new populations.

Transplanting within the reserves will only minimally disturb existing native vegetation and soils. Supplemental watering may be provided as necessary to increase the chances of successful establishment, but must be removed following initial population establishment. Supplemental watering will include watering throughout first growing season to mimic natural rainfall patterns. During establishment, areas will be fenced off as necessary to prevent trampling or grazing by livestock. These areas will not be selected for controlled burns. Once the population has established itself, as determined by success criteria that may include setting seed, 3-year survival, or other criteria developed in agreement with the Wildlife Agencies, then fencing and irrigation will be removed and the site may be burned for management purposes if that is appropriate for the target plant.

Annual Covered Plants

For annual covered plants, mature seeds will be collected from all individuals for which impacts cannot be avoided (or if the population is large, a representative sample of individuals). If storage is necessary, seed storage studies will be conducted to determine the best storage techniques for each species. A seed storage facility will also be contacted and consulted regarding collecting and storage requirements of the facility. One of the leading seed banks in California is the Rancho Santa Ana Botanic Garden in Claremont, CA (Rancho Santa Ana Botanic Garden 2010). This facility has strict seed collection and storage guidelines available on its website (<http://www.rsabg.org>).

If needed, studies will be conducted on seeds germinated and plants grown to maturity in garden or greenhouse to propagate larger numbers of seed. Such

studies can be contracted with research institutions such as the Rancho Santa Ana Botanic Garden, or carried out by other qualified biologists. Seed propagation methods will ensure that genetic variation is not substantially affected by propagation (i.e., selection for plants best adapted to cultivated conditions). Field studies will be conducted under the Adaptive Management Program to determine the efficacy and best approach for dispersal of seed into suitable habitat. Where seeds are distributed to the field, they will be located in reserves in suitable habitat to establish new populations. If seed collection methods fail (e.g., due to excessive seed predation by insects), alternative propagation techniques will be necessary.

Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences

Almost all known occurrences of covered plants in the study area are outside the planning limits of urban growth and outside the footprint of covered activities. Many of these occurrences are expected to be included in the Reserve System. However, uncertainty remains regarding impacts on covered plants because of the lack of surveys in many areas, the general nature of some plant occurrence data, and the uncertainty in the location of some covered activities. To account for this uncertainty, impacts on covered plants are tracked by occurrence²¹, as described in Chapter 4. To ensure compliance with the requirements in Chapter 5, surveys for covered plants will be conducted in certain areas in order to 1) identify occurrences of covered plants, and 2) assess the condition of these occurrences.

Covered Plant Surveys

To ensure that plants are adequately conserved relative to impacts of covered activities, plant surveys will identify occurrences of covered plants that may be affected by covered activities (see Section 5.3.1 *Land Acquisition and Restoration Actions* subheading *Incorporating Covered Plant Species*). Surveys are required in locations where covered plant occurrences are most likely to occur. Covered plant surveys will be required in the following land cover types and specific habitats. The plant species for which surveys are required are also indicated. These land cover types and habitats were identified because the majority of covered species occur primarily or exclusively in serpentine land cover types.

- Serpentine bunchgrass grassland: Survey for smooth lessingia, fragrant fritillary, Metcalf canyon jewelflower, most beautiful jewelflower, Tiburon paintbrush, and Coyote ceanothus.

²¹ Occurrence can be synonymous with population for some species. However, some plant species may have several occurrences in one population. Definitions of plant populations will be developed for covered plants during implementation.

- Serpentine rock outcrop: Survey for Santa Clara Valley dudleya, smooth lessingia, Metcalf canyon jewelflower, most beautiful jewelflower, and Tiburon paintbrush.
- Serpentine seep: Survey for Mount Hamilton thistle.
- Mixed serpentine chaparral: Survey for Coyote ceanothus and most beautiful jewelflower.
- Mixed oak woodland and forest with serpentine soils: Survey for Loma Prieta hoita.
- Coast live oak forest and woodland with serpentine soils: Survey for Loma Prieta hoita.
- Northern coastal scrub and Diablan sage scrub with serpentine soils: Survey for Coyote ceanothus, Metcalf canyon jewelflower, most beautiful jewelflower, and smooth lessingia.

Plant surveys will also be required in suitable habitat within a 0.25 mile (1,320 feet) radius of a known occurrence of a covered plant to ensure that known occurrences are located (in most cases, these survey areas will overlap with the land cover types listed above). The Implementing Entity will maintain a map of known occurrences and the survey radius around each one based on this Plan and updates provided by the CNDDDB (every six months) for the study area.

These surveys will be performed according to the current applicable guidelines of CDFG and/or USFWS for plant surveys (if available) except no floristic surveys are required. The appropriate survey period for each covered plant species is described in **Table 6-9**²². Surveys must be conducted at the time of year when the species can be identified in the field. In some cases, plants may be identifiable outside of the flowering period (e.g., Mount Hamilton thistle, Coyote ceanothus).

Inside the urban service area, surveys for covered plants will occur in land cover types and habitats listed above within the area on which the land cover fee will be levied and in any other areas where indirect effects could occur. The survey area must include buffers around structure where required vegetation clearing will occur to meet state and local fuel reduction regulations.

If a covered plant occurrence is observed on site, the condition of this occurrence must be described in the application package according to the guidelines in Chapter 5, Section 5.3.1 *Land Acquisition and Restoration Activities* subheading *Incorporating Covered Plant Species*. The condition of each covered plant occurrence must be documented as a baseline to compare future monitoring (if necessary) and to ensure that occurrences are protected within the Reserve System that are in as good or better condition than those lost to covered activities.

²² These survey periods should be used as a guide only. Some plants can be readily identified by qualified botanists outside of the species' blooming period.

If a covered plant occurrence is found on the project site, the local jurisdiction will obtain the opinion of a qualified biologist regarding the projected long-term viability of a covered plant occurrence given the plant occurrence condition, site conditions, and project-level construction details. The qualified biologist will make this determination based on best available scientific information. In cases where it is difficult to project long-term viability, the qualified biologist will conservatively error in favor of the covered plant and assume that long-term viability will be reduced and the occurrence will be considered lost for tracking purposes. Impacts to covered plants will be avoided or minimized wherever possible by implementing the following conditions.

Avoidance and Minimization

In order to reduce impacts to covered plants, all covered activities will be confined to the minimum area necessary to complete the activity or construction. A setback buffer will be established around covered plant occurrences located on any project site or in an adjacent area that could be affected by construction traffic or activities. The setback buffer will be adequate to prevent or minimize impacts during or after project implementation. The plants and buffer area will be protected from encroachment and damage during construction by installing temporary construction fencing. Fencing will be bright-colored and highly visible. Fencing will be designed to keep construction equipment away from plants and prevent unnecessary damage to or loss of plants on the project site. Fencing will be installed under the supervision of a qualified biologist to ensure proper location and prevent damage to plants during installation. Fencing will be installed before any site preparation or construction work begins and will remain in place for the duration of construction. Construction personnel will be prohibited from entering these areas (the exclusion zone) for the duration of project construction.

Site Monitoring, Assessment, and Management

If a qualified biologist determines that the long-term viability of a covered plant occurrence will be reduced (as described below) by implementation of covered activities, the loss must be offset by protection, management, and monitoring of covered plant occurrences in the Reserve System prior to impacts (**Table 5-16**).

Some covered plant occurrences may only be disturbed or partially affected by covered activities, and viability may be maintained. It is important to monitor and, if possible, maintain these occurrences of covered plants where they occur, even if they are not protected within the Reserve System. Covered plant occurrences that are determined to be partially permanently affected by a qualified biologist (i.e., only a portion of the occurrence is impacted) by covered activities will be monitored by the Implementing Entity. The purpose of the monitoring will be 1) to assess whether the impact reduces the long-term viability of the occurrence and whether supplemental management actions are feasible and warranted, and 2) to determine whether the Implementing Entity must protect and

enhance or create²³ occurrences in the Reserve System according to **Table 5-16**. If the impact occurs to less than 5% of the total occurrence as measured by the number of individuals at the time of impact, then the impact is assumed not to affect long-term viability and will not require monitoring nor will it count as a permanent impact (**Table 4-6**). This allowance does not apply to Coyote ceanothus.

When determining viability for the purpose of assessing a partial or permanent impact, the Implementing Entity will consider the following factors.

1. Results of monitoring plant occurrences affected by covered activities (e.g., correlation between pre-project observations and actual viability post-project).
2. Impacts to date to the covered plant species and how close total impacts are to the allowable impact cap in the Plan (e.g., extra care taken when near cap not to exceed the cap).

Specific monitoring protocols and success criteria will be developed during implementation as appropriate for each covered species, according to the guidelines discussed here. Monitoring protocols can draw on those developed for other HCP/NCCPs. It is possible that only a portion of the occurrence will be located on the covered activity project site. In such instances, the monitoring protocol will address this issue. Three possible approaches include the following.

1. If the landowner agrees, the Implementing Entity will obtain access to the adjacent sites on which the rest of the plant occurrence is located, and surveys will include the entire occurrence.
2. If access to adjacent site(s) is not possible, or if for some other reason it is not feasible to survey the entire occurrence, then an alternative will be developed to estimate the extent and condition of the adjacent portion of the occurrence.
3. If only a small portion of the occurrence is on adjacent properties, then only the portion of the occurrence on the project site will be monitored and assessed for viability. The determination whether this is a full impact will be made based on the results for this portion of the occurrence only.

Population monitoring will be conducted by the Implementing Entity before the covered activity is implemented to document the baseline condition. For annual species, the minimum post-construction monitoring period will be 5 years. If extreme or unusual climate conditions affect the species, then monitoring will be extended 1 or 2 years, as appropriate to assess impacts and success. Monitoring will include estimates of percent cover and number of individuals. An occurrence will be assumed to retain long-term viability and will not require replacement in the Reserve System if the decline in occurrence size and percent cover from pre-project conditions is less than 25% over the monitoring period,

²³ Creation is only allowed to mitigate effects for Coyote ceanothus. All other plant occurrence creation would contribute to recovery (**Table 5-16**).

unless site-specific conditions otherwise suggest substantial declines in occurrence viability.

For perennial species, the minimum post-construction monitoring period will be 3 years. Monitoring will include estimates of density (percent cover), recruitment of seedlings if impacts included removing individuals, and measurements of adult plant health (e.g., signs of disease, herbivory, nutrient deficiencies, etc.). An occurrence of a perennial covered species will be assumed to retain long-term viability and will not require replacement in the reserve system if the decline in seedling recruitment and density from pre-project conditions is less than 25% over the monitoring period, unless site-specific conditions otherwise suggest substantial declines in occurrence viability.

The Implementing Entity will implement conservation actions on the site that would help to maintain or improve the condition of the occurrence, as long as an agreement can be reached with the landowner to conduct these measures. Possible conservation measures are described in Chapter 5. If plant occurrences are determined to not be viable based on post-project monitoring, the Implementing Entity must assess the loss as a full permanent impact and implement conservation actions accordingly. In these cases, mitigation would occur after the impact. However, the potential for mitigation to occur after impacts is unlikely given that the qualified biologist and Implementing Entity will make conservative determinations regarding projected impacts on long-term viability.

6.7 Receiving Take Authorization under the Plan

Take authorization will be provided by the Plan to three broad categories of covered activities: public projects proposed by the Permittees, private projects under the jurisdiction of the Permittees, and public projects by non-Permittees in the study area that are approved for inclusion by the Implementing Entity. Each of these situations is explained below.

6.7.1 Evaluation Process for Permittee Projects

The Plan permits provide the Permittees with take authorization along with the authority to approve covered activities complying with the terms of the Plan. If a Permittee undertakes a covered activity (see Chapter 2), the Permittee must document compliance with the Habitat Plan and provide a copy of this documentation to the Implementing Entity for tracking purposes (i.e., to track the amount of take coverage granted) before the Permittee take authorization may be used. As described in Chapter 8, the Permittees will develop a template Habitat Plan application package for use by private applicants and Permittees that includes all items described in this section prior to permit issuance. It is expected that the documentation will be similar to the *Habitat Plan application package*

required of private project proponents²⁴ applying to local jurisdictions for coverage (this application package is described in detail in Section 6.8 *Habitat Plan Application Package*, below).

Review and CEQA for Permittee Projects

Many covered activities are expected to be subject to CEQA²⁵. When Permittees initiate projects that are also subject to CEQA, the terms of the Habitat Plan should generally be integrated into the CEQA environmental review process. To facilitate CEQA coordination, the Permittee should begin preparation of the Habitat Plan application package (or equivalent material) when the CEQA project description and alternatives for the project are developed such that requirements of the Habitat Plan can be used to inform site design and selection of the preferred alternative. The completed Habitat Plan documentation should be evaluated and approved by the appropriate CEQA lead agency of the Permittee concurrently with the lead agency's review of the associated CEQA documents. Projects exempt from CEQA may still be covered activities under this Plan and require compliance with the conditions of this Plan as described in this chapter.

Receiving Take Authorization for Permittee Projects

Incidental take associated with covered activities carried out by the Permittees is authorized under the permits issued for the Habitat Plan. These projects are therefore "pre-approved" for take authorization by the Wildlife Agencies as long as their effects were adequately analyzed, they meet the conditions of the Plan, and they pay the appropriate fees, if applicable. Each Permittee is responsible for ensuring that its covered activity is compliant with the conditions of approval described in this chapter. Take authorization will be in effect once the Permittee documents consistency with the Habitat Plan. The form developed by the Implementing Entity to document the consistency of private development with the Plan may also be used by Permittees for their own projects. Documentation of Plan consistency and a complete Habitat Plan application package must be submitted to the Implementing Entity for tracking purposes. The process for receiving take authorization under the Plan for public projects of the Permittees is shown in **Figure 6-5**.

²⁴ The term *project proponent* is used interchangeably with the term *applicant* or *project applicant* in this and subsequent chapters.

²⁵ Permittee covered activities that may not be subject to CEQA include operations and maintenance activities and projects that only require ministerial approval within local jurisdictions such as single family home construction.

6.7.2 Application Process for Private Projects

Private applicants seeking coverage under the Habitat Plan, including applicants that wish to opt in to the Plan²⁶, will apply to their local jurisdiction by submitting a *Habitat Plan application package* described in Section 6.8 *Habitat Plan Application Package*. A checklist for evaluating these applications will be developed by the Implementing Entity prior to the first ordinance implementing the Plan taking effect. The local jurisdiction will review the Habitat Plan application package for completeness in accordance with the checklist. For requests to opt in, the local jurisdiction will also evaluate the amount of take requested (i.e., acres of impacts) and whether or not take coverage is available for the project. If the application package is not complete, it will be returned to the project proponent with an explanation of why it is incomplete. If the application package is complete, the local jurisdiction will calculate the required fees on the basis of the requirements described in Chapter 9 and consistent with the local ordinance implementing the Plan. The determination of completeness of the application package rests with the local jurisdiction. If they choose, local jurisdictions may request technical assistance from the Implementing Entity staff in their review.

All applicable conditions will be identified and fees paid at (or before) the time of issuance of the first authorization of ground disturbance (typically a grading permit or building permit). In cases where there is no grading or other ground disturbance permit, the fees will be due upon issuance of the first permit that authorizes construction. If the project proponent requests to contribute land in lieu of fees or requests special project conditions, such requests must be reviewed and approved by the Implementing Entity. See Chapter 8, Section 8.2.1 *Permittees* for Permittees that may grant take authorization and Section 8.7 *Roles and responsibilities in Reviewing Applications for Take Authorization* for additional detail on application review.

The process for receiving take authorization for private projects is shown in **Figure 6-6**. Local agencies reviewing the Plan application package will be subject to the processing time and other requirements of the Permit Streamlining Act (Section 65920 et seq.) which requires public agencies to follow standardized time limits and procedures when making specific types of land use decisions.

Application Review and CEQA for Private Projects

Many private covered activities will require a land use approval and be subject to CEQA. For such covered activities, review of applications for take authorization should generally be undertaken concurrently with the CEQA environmental review. To facilitate this approach, the local jurisdiction should generally request

²⁶ Private parties that are not subject to the Plan (see **Figure 2-5**) have the option to request coverage under the Plan from the applicable local jurisdiction.

that project proponents submit initial Habitat Plan application package information as part of the land use approval application and CEQA process.

There are many benefits to drafting the Habitat Plan application early in the planning process. First, submitting initial Plan application package information during the land use approval / CEQA process will illustrate the various requirements of the Habitat Plan on the proposed project, and provide time for the project proponent to change the project description or to identify alternatives for CEQA analysis. Second, it will enable the CEQA document to refer to the project-specific requirements as identified in the draft Plan application. Finally, it will enable the local jurisdiction to provide early review of the Plan application for completeness. Based on a review of this initial information and a determination of the Habitat Plan requirements, the local jurisdiction can establish conditions of approval specifying the Habitat Plan conditions and fee requirements. Habitat Plan fees will need to be paid prior to the issuance of construction permits (grading / building permits).

Each local jurisdiction is responsible for ensuring that covered activities, upon issuance of take, fully comply with the terms of the Habitat Plan.

Granting Take Authorization for Private Projects

Proponents of private projects that are covered by the Plan and not exempt (see Section 6.2 *Exemptions from Conditions*) must have their projects conditioned by the local jurisdiction obligating compliance with all terms and conditions of the Implementing Agreement, the Plan, and the state and federal permits that apply to the project prior to the local jurisdiction issuing take authorization. Such terms and conditions include, but are not limited to, those listed below.

- Compliance with all relevant avoidance, minimization, surveys, monitoring, and conservation measures determined by the local jurisdiction to apply to the project as required by the Plan.
- The right for the Permittee to monitor the applicant's compliance with all applicable conditions of this Plan.
- Imposition of a fee or dedication of land in lieu of the fee as described in Chapter 9 and in the local Implementing Ordinance.

Before take authorization is granted, Permittees must prepare a written determination of the project's consistency with the Plan. A template form for private applicants that documents this determination of consistency will be developed by the Implementing Entity prior to the first local ordinance taking effect (this consistency determination will be made based on the application checklist described above).

Once the Habitat Plan application package is deemed complete, the conditions of approval have been established and imposed, and the required fees (if applicable) have been paid, the project proponent will be granted take authorization by the

appropriate Permittee (see Chapter 9 for required fees and payment times). At this point, the project proponent will be allowed to proceed with the project consistent with other applicable local, state, and federal laws and local entitlements. Take authorization for impacts on covered species will be provided by the applicable Permittee consistent with the state and federal permits issued to all Permittees. Each local jurisdiction, working with the Implementing Entity will develop a process to document projects that receive take authorization but do not proceed with the project to have the take authorization removed from the Implementing Entity's records.

When Habitat Plan application packages are completed, each Permittee must provide a copy of the application material to the Implementing Entity for entry into the Habitat Plan database (described in Chapter 8 *Plan Implementation*).

6.7.3 Application Process for Non-Permittee Public Projects

Because the list and evaluation of covered activities in Chapter 2 is meant to be comprehensive, the Plan has included some projects that will be proposed by public entities that are not Permittees. For example, a special district or local school district may propose to build a project in one of the three participating cities or the unincorporated County. Although the special district or school district is not subject to the land use jurisdiction of the participating jurisdictions, the impacts of its project have been covered by the Plan and evaluated as part of the planned urban development within the jurisdiction. To receive coverage under the Plan, projects proposed by an entity that is neither a Permittee nor subject to the land use authority of a Permittee, the project proponent must apply directly to the Implementing Entity as a *Participating Special Entity*. The entity will provide the same Habitat Plan application package as private entities seeking coverage. See Chapter 8, Section 8.4 *Participating Special Entities*, for more details on the process by which Participating Special Entities receive take authorization under the Plan.

6.8 Habitat Plan Application Package

Private projects that are covered by the Plan must submit a *Habitat Plan application package* to the local jurisdiction for review and approval in order to receive coverage under the Habitat Plan. For their own projects, Permittees must submit an application package to the Implementing Entity for tracking purposes and pay the appropriate fees if applicable. The project proponent is responsible for preparing the application package and paying for any necessary field surveys, if required. The application package must contain the following items, if applicable, each of which is described in detail in this section.

- Item 1: An application form for coverage under the Plan.

- Item 2: A brief description and map of the project.
- Item 3: Documentation of land cover types on site.
- Item 4: Map of wetlands and waters, if applicable.
- Item 5: Results of applicable surveys for selected covered species.
- Item 6: Documentation of any additional and applicable avoidance and minimization requirements that will be implemented.

Each item in the application package builds on the previous item. For example, surveys for certain covered wildlife and plants (Item 5) are required only if specific land cover types are documented on the site (Items 3 and 4). Many covered activities will be able to comply with the Habitat Plan by only completing Items 1, 2, and 3 of the application package. For others, field surveys are limited to only the highest-value biological resources.

Most components of the application package can be prepared by the applicant, with the assistance of local planning staff. In some cases, the Plan requires that components be prepared or surveys or monitoring be conducted by *qualified biologist*. Please see *Qualified Biologists* below for details on the qualification process.

Templates for all these application components will be provided by the Implementing Entity to each local jurisdiction prior to the first local ordinance taking effect. These templates will also be posted on the Habitat Plan web site for use by private applicants and their consultants. Use of the templates will streamline the review and approval process by local jurisdictions. The Permittees may adjust the required components of the application package over time, consistent with the requirements of the Plan. To recover the costs of reviewing and processing these application packages, local jurisdictions may charge a fee associated with the application (see Chapter 9 for details).

The Habitat Plan application package, survey requirements, and conditions of approval were designed with the following principles in mind.

- Provide the necessary data to track impacts of all covered activities to allow the Implementing Entity to meet Plan requirements (e.g., land acquisition, Stay-Ahead provisions, wetland restoration).
- Simplify and reduce pre-project survey requirements relative to current and future environmental regulations throughout the Habitat Plan.
- Avoid and minimize impacts on covered species and natural land cover types to the maximum extent practicable on a regional scale, in compliance with federal and state endangered species laws.
- Ensure that survey requirements are proportional to impacts—the survey burden is lower on low-quality habitat than on high-quality habitat.
- When possible, limit survey requirements under the Plan to those required for other local, state, or federal environmental compliance (e.g., CEQA or

NEPA), and redirect resources previously spent on biological surveys to improve regional conservation.

Each of the required application components is described below.

6.8.1 Item 1: Project Application Form

The project application form will contain basic information about the project. The Implementing Entity will develop a form prior to issuance of the state and federal Plan permits that will be made available to the Permittees. Required forms will be available through the local jurisdictions and on the Habitat Plan website.

6.8.2 Item 2: Project Description and Map

The application package will include a brief project description including the location, assessor's parcel number, construction activity or maintenance methods, a description of the nature of the impacts (permanent or temporary), and timing (including duration) of the project or activity. The project description will be sufficient to document that it is a covered activity in the Plan (see Chapter 2). A legible vicinity map of the project site will also be provided to document that the project is within the Habitat Plan study area. A vicinity map will include any streams or water bodies that fall within the mapped area. If the project is located in Fee Zone A or B, but the project applicant believes that the project qualifies for Fee Zone C, the project applicant must demonstrate compliance with the criteria provided in Chapter 9, Section 9.4.1 *Habitat Plan Development Fees*, subheading *Land Cover Fee Zones*. A project detail map will be included that shows the area on which fees will be levied, as well as the full project parcel if inside the urban service area or the full development area if outside the urban service area, and any relevant landforms, roads, water bodies, and existing and proposed structures that will be affected by the proposed project.

6.8.3 Item 3: Land Cover Types on Site

As described in Chapter 3 *Physical and Biological Resources* a detailed land cover map was developed for the study area for this Plan. This land cover map was essential in estimating impacts of the covered activities (Chapter 4) and developing the conservation strategy (Chapter 5). However, due to limitations in the land cover mapping (see **Table 3-4**) and the potential for land cover to change over time, land cover types must be verified at the time applications are submitted. This step is also critical because almost all impacts under the Plan are tracked by land cover type.

Proponents of all projects and activities with quantifiable impacts, including approved Participating Special Entities, will specify the amount and type of land cover that will be permanently and temporarily impacted. All fees are paid on the development area (see **Figure 6-1**) except for land inside the urban service area designated with a land use of Urban Development or Rural Residential (see **Figure 2-2**) that is less than 10 acres, where fees are assessed on the parcel. In addition, all public corridor projects (e.g., stream and utility) pay fees based on the project footprint, regardless of parcel size. As described in Condition 12, projects that do not completely avoid indirect effects to wetlands (including wetlands on parcels adjacent to the covered activity development area) will be considered permanently impacted and will count towards the impact caps described in **Table 4-2** and will be assessed fees as described in Chapter 9.

Project proponents of activities that have temporary impacts are required to provide photographs that document the condition of the project site before the activity is implemented. These photographs will be compared to those required for post-project conditions (see Item 6) to determine if impacts were temporary and that appropriate fees were paid.

All calculations and other information provided in application packages will be verified by the local jurisdiction or Implementing Entity so that all impacts to land cover types can be tracked appropriately and fees paid. This exercise can be performed through air-photo analysis or field verification. Project proponents may request assistance from local planning staff in this analysis (for exempt projects, local jurisdictions will document land cover types present). For sites outside urban or suburban areas that support natural land cover types, land cover verification may need to be performed by a qualified biologist. Land cover type classification will be done in accordance with the descriptions provided in Section 3.3.5 *Natural Communities and Land Cover Types*. If the project site supports or may support any wetland or stream land cover types that would be affected by the proposed project, a qualified biologist must be retained (see Item 4 below).

All land cover determinations provided by private applicants will be verified by local planning staff. All land cover determinations provided by a Permittee will be verified by Implementing Entity staff. A private applicant or Permittee may retain Implementing Entity staff (at cost) to conduct this land cover mapping. Local jurisdiction staff may also be available to provide this service to private applicants as part of the application review process.

Land cover mapping of sites with the following land cover types, as mapped by the Plan, can be conducted by the applicant or local planning staff.

- California annual grassland²⁷;
- reservoirs;

²⁷ See definition of annual grassland in Chapter 3. When trees are present in annual grassland at low density, the land cover may instead be oak woodland. In these cases, a qualified professional is needed to make the determination.

- all agricultural land cover types; and
- all development land cover types.

Additions to existing development encompassing an area of 10,000 square feet (approximately 0.2 acre) or less on any land cover type, other than stream, riparian, serpentine, pond, or wetland land cover types, do not require land cover mapping by a qualified biologist or other professional. These projects may be mapped based on aerial photos by planners or applicants.

All other land cover types must be mapped by a qualified biologist. Forest land cover types can also be mapped by a professional forester or arborist. Accurate mapping of the remaining land cover types is necessary because of the Implementing Entity's obligation to stay ahead of impacts by land cover type and to ensure the appropriate species surveys are conducted. The Implementing Entity will provide a list of qualified biologists to conduct land cover mapping and other surveys required by the Habitat Plan. The Implementing Entity may also provide a list of qualified professionals (e.g., non-biologists such as foresters and arborists) to conduct land cover mapping. Biologists and other professionals qualified to conduct land cover mapping will have demonstrated experience conducting vegetation mapping in the field or from air photos at the scale of the proposed project and in vegetation types similar to those on the project site. This list will be updated regularly and made available to project proponents and the Permittees. Biologists conducting species surveys that could result in take must also be pre-approved by USFWS and CDFG (see Item 5 below).

Land cover mapping is not required for operations and maintenance activities conducted by Permittees except where serpentine land cover will be impacted (land cover mapping is required for all private applicants and Participating Special Entity projects). However, Permittees must still implement all applicable conditions including plant surveys. As such, some projects with operations and maintenance covered activities may require land cover mapping to determine applicable conditions. If no land cover mapping is conducted, Permittees will rely on the most recent land cover map developed by the Implementing Entity to quantify impacts.

For covered activities that result in temporary impacts, in lieu of aerial photo or field-verified land cover mapping, applicants have the option of assuming that the entire footprint of the covered activity permanently affects natural land cover types based on the Plan's most recent land cover map (and therefore pays a fee on these impacts as described in Chapter 9). This option is available for temporary impacts because the footprint of many of these activities is expected to be relatively small. If the land cover types assumed to be permanently impacted include those land cover types that trigger covered species surveys, then covered species surveys must be conducted.

The application package must include a map showing all land cover types on the project parcel(s) if the project is located inside the urban service area or within the development area if the project is outside the urban service area, and a table showing the amount of each land cover type to the nearest 0.1 acre for all non-

stream land covers or linear foot for streams (blank tables will be provided in the template application package). These final values will be used to calculate any required fees (Chapter 9).

Table 6-8 describes land cover types and habitat elements that, when present, trigger the need for preconstruction surveys for five covered wildlife species. For example, if a project is located within occupied nesting habitat modeled for burrowing owls, a qualified biologist would need to conduct a habitat survey and possibly a pre-construction survey to map any burrows within 250 feet of the activity footprint. In some cases, presence of the habitat feature itself, regardless of land cover, may trigger additional survey requirements (**Table 6-8**).

The presence of certain land cover types on site may also trigger the need to survey for specific covered plants, as described in Item 5 below.

6.8.4 Item 4: Map of Wetlands, Ponds, Streams, and Riparian Woodlands

A map of all coastal and valley freshwater marsh, seasonal wetlands, ponds, riparian woodland, and streams is required for any project subject to the Habitat Plan that may directly or indirectly affect these aquatic land cover types.

Although Section 404 Clean Water Act wetland delineations are a tool that can be employed, jurisdictional delineations completed to meet the requirements of Section 404 do not necessarily account for all aquatic habitat for species proposed for coverage under this Plan (e.g., they do not address waters of the state that are not also waters of the U.S.). The Implementing Entity will use the wetland and waters map²⁸ developed for Item 4 of the application package to track impacts to coastal and valley freshwater marsh, seasonal wetlands, ponds, riparian woodland, and streams and to determine the wetland fee owed (see Chapter 9, Section 9.4.1, subheading *Wetland Mitigation Fee* and **Table 9-6**). Fees on wetlands, ponds, and riparian woodland will be determined by the acres of impact (see Condition 12 above and Chapter 9). Stream fees and impacts will be determined by the linear feet of stream affected, measured at the stream centerline.

Project proponents will not need to provide Item 4 of the application package if the Implementing Entity or permitting local jurisdiction determines that aquatic features will not be directly or indirectly affected by covered activities.

Formal delineations are typically required to identify waters of the U.S. and support compliance with Section 404 of the Clean Water Act. Maps of non-jurisdictional aquatic features are typically required to identify waters of the state

²⁸ Although delineations can be conducted any time of the year, they will be based on an evaluation of multiple factors by a qualified biologist, including but not limited to, hydrology, vegetation, and soils. Wetland features do not need to be holding water at the time of the field investigation to be delineated.

and support compliance with the Porter-Cologne Water Quality Control Act and Section 1602 of the California Fish and Game Code.

Project proponents are encouraged to produce maps for Item 4 that support other necessary state or federal permitting needs, but maps do not need to be verified by the Corps or Regional Boards prior to submission of the application package. If the Habitat Plan application will also meet the application requirements of the Habitat Plan RGP, once such a permit is in place, the delineation method must be consistent with Corps's delineation protocol. Such delineations may be verified by the Corps prior to application submittal, or delineations may be verified by the Corps as part of application processing once the application is submitted.

If a process for permitting projects affecting waters of the U.S. and/or waters of the state is not provided by local jurisdictions or the Implementing Entity in conjunction with the Plan, proponents of projects that could affect such resources must seek such permits on their own. In such cases, this Plan does provide the framework for CESA and ESA compliance for covered activities that would result in impacts on state or federal wetlands and waters.

6.8.5 Item 5: Results of Applicable Species Surveys and Monitoring

As described in Item 3, the presence of certain land cover types on the project site triggers an evaluation of whether specific habitat elements for selected wildlife species or for occurrences of covered plants. **Figure 6-7** summarizes these triggers and survey process. Survey requirements for these selected wildlife species are based on avoiding take of individual species—particularly animals with lower reproductive outputs (e.g., western burrowing owl) than other species (e.g., fish and amphibians). If suitable breeding habitat of these selected wildlife species is found, preconstruction surveys are triggered (see Conditions 15–18). If the preconstruction survey identifies occupied breeding habitat, project proponents must implement defined avoidance and minimization measures to avoid the resource during breeding seasons. Compliance during construction will be monitored by a qualified biologist.

As described below in this section under *Surveys for Covered Plants*, covered plant surveys will be required for specified land cover types. If an occurrence of a covered plant is present on the site, additional field assessment is required to document the occurrence's condition.

The purpose of these surveys is to comply with the avoidance and minimization requirements of ESA and CESA. If surveys are planned far enough in advance (typically 6–8 months), it is expected that in most cases identification of selected occupied habitat will not change the project design or schedule. These survey requirements and avoidance measures are designed to avoid or minimize take of individuals (as required by law), to document key resources for tracking

purposes, and to ensure that impacts on plant occurrences are properly mitigated by the Implementing Entity.

Although surveys are required in specific cases, overall, impacts on covered species are assumed to occur on all project sites. However, if the results of the preconstruction survey documents a large or important population of a covered species other than those acknowledged in the Plan, the local agency reviewing or proposing the project must consult the Implementing Entity for advice on species avoidance and minimization measures²⁹. The Implementing Entity will also contact the Wildlife Agencies for technical advice. Protocol-level surveys to document species presence or absence are not required for the Habitat Plan, with the exception of the least Bell's vireo (Condition 16).

Species surveys are required for all covered activities, including some operations and maintenance activities, subject to the conditions on covered activities except as noted in the following section. Species survey requirements and exemptions are described in greater detail below.

Exemptions from Species Surveys, Preconstruction Surveys, and Construction Monitoring

The following types of covered activities are exempt from species survey and construction monitoring requirements for target covered wildlife species and covered plants. A summary of the types of exemptions available is described in **Table 6-1**. Activities exempt from species surveys must still submit an application package as described above.

- Covered operations or maintenance activities, including those on the Reserve System, that do not result in any ground disturbance or removal of natural land cover types not identified in the following exemptions.
- Covered operations or maintenance activities that occur more than once annually within the same location, as long as applicable surveys are conducted once before initiating the activity in the appropriate season (i.e., wildlife and plant surveys must be conducted during the appropriate time of year) and there are negative survey results. Such activities are likely to result in repeated disturbance that will preclude establishment or persistence of the covered species targeted by these surveys. If species surveys identify wildlife covered species, preconstruction surveys and construction monitoring must be conducted according to the conditions in this chapter. Unavoidable impacts to covered plant species will be tracked toward the Plan's impact limits (**Table 5-16**). All applicable wildlife and plant surveys must be conducted prior to implementation of the covered operations or maintenance activity until the covered species has not been detected at the site for three consecutive years. Applicable surveys will once again be

²⁹ If new information is found through surveys or other data that greatly changes the understanding of covered species distribution or habitat requirements from that described in this Plan, the Plan would need to be re-evaluated and an amendment may be necessary (see Chapter 10 for the amendment process).

required if operations and maintenance activities cease for three or more consecutive years.

- Covered activities that occur entirely on one or more of the following land cover types³⁰.
 - Coyote brush scrub.
 - Reservoir.
 - Stream (i.e., riverine) where no riparian or wetland vegetation occurs.
 - Agricultural developed³¹.
 - Urban-suburban.
 - Rural-residential.
 - Ornamental woodland.

In addition to the exemptions listed above, covered activities occurring on the land cover types listed below, while subject to the wildlife species surveys, preconstruction surveys, and construction monitoring requirements, will not trigger any covered plant surveys³².

- Willow riparian forest and scrub.
- Redwood forest.
- Coastal and valley freshwater marsh.
- Pond.
- Orchard.
- Vineyard.
- Grain, row crop, hay and pasture, disked/short-term fallowed.
- Golf courses/urban parks.
- Barren.

Qualified Biologists

Several types of monitoring will be conducted for this Plan including species surveys, preconstruction surveys, construction monitoring, and effectiveness monitoring conducted on the Reserve System. This requirement applies to all monitoring described in this Plan including conditions on covered activities described in this chapter and effectiveness monitoring described in Chapter 7.

³⁰ These land cover types do not support any of the covered species for which surveys are required.

³¹ The land cover type “agriculture developed” (also known as agriculture developed/covered ag) is defined in Chapter 3 as intensive agricultural operations such as nurseries and greenhouses.

³² Focused surveys for selected covered wildlife may still be required; consult **Table 6-8** and Conditions 13 and 15–18.

Qualified biologists are those biologists who have the experience, education, and training necessary to perform the tasks described in this Plan accurately and in an unbiased fashion. The term “qualified biologist” is used generically to mean a biologist who is trained to perform the given task; such a person is, more specifically, a fisheries biologist, wildlife biologist, or botanist. Training must be in the field to which the task is related. For example, a wildlife biologist may not perform a covered plant survey or delineate land covers for a project application unless the individual is also competent in those fields.

If the task does not have the potential to result in take of covered species (e.g., land cover mapping, establishing perimeters around an active nest or burrows, or monitoring the compliance of construction crews), applicants (or Permittees) may choose their own biologists to conduct these specialized tasks. Applicants will provide the local jurisdiction with a brief resume of the biologist so that the local jurisdiction (or in the case of a Permittee project, the Implementing Entity) can verify the qualifications of the biologist. The local jurisdictions will review these qualifications with the application package. If the local jurisdiction finds the qualifications lacking, they may ask the applicant for additional information or for another survey by a more qualified biologist.

If the task has the potential to result in take of covered species (e.g., discouraging use of a den by a San Joaquin kit fox, handling a California tiger salamander, or conducting effectiveness monitoring described in Chapter 7), the biologist must be approved by the Implementing Entity and Wildlife Agencies prior to conducting such tasks. Biologists conducting this work may be Implementing Entity staff or consultants hired by the Implementing Entity.

To be approved, these biologists must provide the Implementing Entity with credentials demonstrating that he or she has an understanding of the monitoring protocols, data collection techniques, and handling procedures for the covered species. If the Implementing Entity deems the biologist qualified, then the Implementing Entity will forward the recommendation to the Wildlife Agencies for approval. The names, contact information, and written certification of training and qualifications for these biologists will be provided to the appropriate Wildlife Agencies for approval. This documentation will also be on file with the Implementing Entity.

Upon Implementing Entity and Wildlife Agency approval, the Implementing Entity will maintain a list of *pre-approved* qualified biologists who may conduct monitoring work for a 5-year period. This approval process will reduce the need for 2081(a) and/or 10(a)(1)(b) permits as well as the need for the Wildlife Agencies to review qualifications on a case-by-case basis during implementation.

Individuals who are not pre-approved by the Implementing Entity and Wildlife Agencies to conduct monitoring with the potential for take may conduct monitoring if they have a valid recovery permit for the species that they are monitoring. In either case, the biologist will possess all of the qualifications that would otherwise be required under a recovery permit.

Surveys for Breeding Habitat of Select Covered Wildlife Species

While take of covered species and impacts to their known and suitable habitat is assumed and mitigated under the regional approach to mitigation and conservation described above, avoidance of breeding habitat for selected covered wildlife species is required. The selected species have the greatest potential to benefit from avoidance measures and are generally species with lower reproductive rates, such as birds and mammals, which suffer greater consequences from take of individuals, particularly when breeding. Survey requirements for these species are triggered by the presence of specific land cover types and habitat features as described in **Table 6-8**. These species and their habitat features are listed below.

- Western burrowing owl (occupied and nesting habitat, see **Figure 5-11**).
- Least Bell's vireo (breeding habitat in South County³³, see species habitat distribution model in **Appendix D**).
- Tricolored blackbird (breeding habitat, see species habitat distribution model in **Appendix D**).
- San Joaquin kit fox in the Pacheco corridor (denning habitat; see species habitat distribution model in **Appendix D**).
- Bay checkerspot butterfly in serpentine bunchgrass grassland in Bay checkerspot butterfly habitat units (see **Appendix D**).

If suitable breeding habitat³⁴ for these species as defined in **Table 6-8** and in Conditions 13 and 15–18 is identified on site, and if the proposed project could affect this habitat, additional preconstruction surveys are required for the San Joaquin kit fox, western burrowing owl, tricolored blackbird, and least Bell's vireo. Specific survey requirements for these species are detailed in Conditions 13 and 15–18. Surveys for these species will occur on all areas on which the land cover fee will be levied and within any areas that may be encroaching within a required species buffer.

If applicable land cover types or habitat features are present on site, the application package must describe the methods used for the required surveys and the results of these surveys. As indicated in **Table 6-8**, a map of habitat features (e.g., suitable kit fox dens, suitable burrowing owl burrows) is required. If a covered species is observed on site, details of this observation will also be included in the application. CNDDB California Native Species Field Survey Forms will be included for all covered species encountered on the site. Copies of these forms will also be submitted to the CNDDB.

³³ The least Bell's vireo range may expand to the northern portion of the study area during the permit term. The Implementing Entity will periodically monitor outside of the vireo's modeled habitat in the study area to determine if the species' range is expanding (see Section 7.3.3 of Chapter 7, *Species-Level Actions*).

³⁴ Suitable breeding habitat is defined as habitat identified in the field as suitable for breeding by the target species. Suitable breeding habitat may be different from modeled habitat.

Preconstruction Surveys for Select Covered Wildlife

If the appropriate land cover type and habitat feature listed in **Table 6-8** are present on site, then a preconstruction survey is required for one or more of the five covered wildlife species listed above (**Figures 6-5 and 6-6**). Preconstruction surveys will be required to establish presence or absence of occupied breeding habitat for the applicable species. For example, if a freshwater wetland that could provide suitable breeding habitat for tricolored blackbird is present on site, a preconstruction survey on the site would need to be conducted prior to construction to determine if the site is occupied. If results indicate that breeding tricolored blackbirds are present, then avoidance and minimization measures and construction monitoring must occur, as described in **Table 6-8** and Condition 17.

The Habitat Plan application package will be prepared before project construction in order to receive project approvals from the local agency (or if by a Permittee, to ensure compliance with the Habitat Plan). To ensure compliance with preconstruction survey requirements, project proponents must describe in the application package which surveys are required, when they will be performed, and how they will be applied to the project. This description will follow the requirements in **Table 6-8** and Conditions 15–18 and will be incorporated into the conditions of project approval.

Construction Monitoring for Certain Covered Wildlife

Identification of occupied breeding habitat as defined above will trigger the specified avoidance and minimization requirements described in **Table 6-8** and Conditions 15–18. Construction monitoring will be carried out by a qualified biologist to ensure that these avoidance and minimization requirements are being implemented properly and that they are adequately protecting the target species (**Figures 6-4, 6-5, and 6-6**). Because the selected wildlife species are rare in the study area, it is expected that few projects will require construction monitoring. If required, the construction monitoring frequency and protocols are described for the appropriate species in Conditions 15–18.

Like preconstruction surveys, construction monitoring will occur well after the Habitat Plan application package is prepared. To ensure compliance with the Plan, the application package must describe which construction monitoring and avoidance and minimization requirements may be required and how they will be applied to the project if preconstruction surveys identify occupied breeding habitat. This description will follow the requirements in **Table 6-8** and Conditions 15–18 and will be incorporated into the conditions of project approval. The application will include a description of monitoring frequency and duration (including the time when monitoring will be initiated relative to impacts) and specific construction activities to be monitored. The application will also include a description of the authority of the onsite construction monitor to modify or temporarily stop implementation of the activity if necessary to ensure compliance with the Plan.

Construction monitoring is necessary to ensure that avoidance and minimization measures are implemented in accordance with permit requirements and is the responsibility of the project proponent.

Covered Plant Surveys

Project proponents wishing to affect occurrences of covered plants must notify the Implementing Entity of their construction schedule to allow the Implementing Entity the opportunity to salvage the occurrence (see Condition 19).

The application package must describe the methods used for the required plant surveys and the results of these surveys. If a covered plant occurrence is observed on site, the condition of this occurrence must be described in the application package according to the guidelines in Chapter 5, Section 5.3.1 *Land Acquisition and Restoration Activities* subheading *Incorporating Covered Plant Species*. The condition of each covered plant occurrence must be documented to ensure that occurrences are protected within the Reserve System that are in as good or better condition than those lost to covered activities. CNDDDB California Native Species Field Survey Forms will be included in the application package for all covered plants encountered on the site. Copies of these forms will be submitted to the CNDDDB.

6.8.6 Item 6: Compliance Documentation

The final component of the Habitat Plan application package is documentation of how any remaining applicable conditions (Conditions 1–14) have been incorporated into the proposed project. If appropriate, a map will be provided to document this compliance.

Verification that conditions have been implemented is primarily the responsibility of the local jurisdiction conducting or approving the covered activity. Participating local jurisdictions will be responsible for reporting the relevant details of approved projects to the Implementing Entity (for entry into the Habitat Plan database and for required reporting to the Wildlife Agencies). The Implementing Entity may contact the local jurisdiction to verify and ensure that the conditions are appropriately implemented.

If the project includes activities for which temporary fees are paid, the project applicant is required to file compliance information at the conclusion of the project. The compliance information will include documentation that the area for which temporary fees were paid was disturbed by covered activities for less than one year. The project proponent must also provide photographs that document the condition of the site before project initiation and (or less) after completion of the covered activity. Based on this information, the local jurisdiction or Implementing Entity will make a determination that the site was recovered to pre-project or ecologically improved conditions within one year of completing

construction, that the impacts were actually temporary, and that the fees paid were adequate.

6.9 Confirming Exemption from the Plan

Project proponents seeking permits from a local jurisdiction for activities that would otherwise be covered will need to demonstrate that the project is not a covered activity per the criteria in Chapter 2. Project proponents will need to:

1. demonstrate the size of the project;
2. show that the project is located in an area in **Figure 6-8** where private development is not subject to the Plan;
3. provide a map consistent with the requirements in Section 6.8.3 *Item 3: Land Cover Types on Site* showing that no serpentine, wetland, stream, riparian, or pond land cover types are present on the site;
4. demonstrate that no adverse indirect impacts to wetlands were identified through the applicable environmental review process; and
5. demonstrate that the project is not located in occupied nesting habitat for western burrowing owl based on the most recent western burrowing owl occupied nesting habitat map provided by the Implementing Entity.

Table 6-1. Covered Activities Exempt from Plan Conditions and/or Plan Fees

Covered Activity	Exemptions from Conditions (✓ = exempt)					
	All Chapter 6 Conditions	Wildlife Species Surveys (Conditions 15–18)	Preconstruction Surveys (Conditions 15–18)	Construction Monitoring (Conditions 15–18)	Covered Plant Surveys (Condition 20)	Development Fees ¹
<i>Public Activities</i>						
Routine infrastructure maintenance by public agencies within the planning limit of urban growth that do not affect stream, riparian, serpentine, ponds, or wetland land cover types.	✓	✓	✓	✓	✓	
Routine infrastructure maintenance by public agencies that occurs in urban-suburban, landfill, reservoir, or agriculture developed land cover types that do not affect stream, riparian, serpentine, pond, or wetland cover types. Examples of such activities include filling pot-holes and resurfacing existing roads without expansion of the paved area.	✓	✓	✓	✓	✓	
<i>Private Activities</i>						
Projects that do not result in ground disturbance, do not result in release of potential water quality contaminants, or do not create new wildlife barriers.	✓	✓	✓	✓	✓	
Private-sector, routine-maintenance activities that require a development, grading, or building permit, and that occur inside the Urban Service Area ² .	✓	✓	✓	✓	✓	
Private-sector, routine-maintenance activities that require a development, grading, or building permit; that occur outside of the Urban Service Area; and that occur within 50 feet of all existing structures at the time of Plan commencement or within 50 feet of structures that are permitted for incidental take under the Habitat Plan.	✓	✓	✓	✓	✓	
Additions to existing structures, or new structures that are within 50 feet of an existing structure (e.g., a new garage) that result in less than 5,000 square feet of impervious surface as long as no stream, riparian woodland, wetlands, ponds, or serpentine land cover type are affected ³ .	✓	✓	✓	✓	✓	✓

Table 6-1. Continued

Covered Activity	Exemptions from Conditions (✓ = exempt)					
	All Chapter 6 Conditions	Wildlife Species Surveys (Conditions 15–18)	Preconstruction Surveys (Conditions 15–18)	Construction Monitoring (Conditions 15–18)	Covered Plant Surveys (Condition 20)	Development Fees ¹
Any covered activity described in Chapter 2 that occurs in urban-suburban, landfill, reservoir, or agriculture developed land cover types as verified in the field, unless the activity may affect a mapped or unmapped stream, riparian, serpentine, ponds, or wetland land cover types, or the activity is located in a stream setback.	✓	✓	✓	✓	✓	
A covered activity on a parcel of less than 0.5 acre or less as long as no serpentine, stream, riparian woodland, pond, or wetland land cover type is within the parcel.	✓	✓	✓	✓	✓	
Covered operations or maintenance activities, including those on the Reserve System, that do not result in any ground disturbance or removal of natural land cover types.		✓	✓	✓		
Covered operations or maintenance activities that occur more than once annually within the same location, as long as applicable surveys are conducted once before initiating the activity and there are negative survey results ^{4,5} .		✓	✓	✓		
Covered activities that occur entirely on one or more of the following land cover types: coyote brush scrub, reservoir, stream (i.e., riverine) where no riparian or wetland vegetation occurs, agricultural developed ⁶ , urban-suburban, rural-residential, or ornamental woodland.		✓	✓	✓		
Covered activities that occur entirely on one or more of the following land cover types: willow riparian forest and scrub, redwood forest, coastal and valley freshwater marsh, pond, orchard, vineyard, grain, row crop, hay and pasture, disked/short-term fallowed, golf courses/urban parks or barren.					✓	
Urban development covered activities (see Section 2.3.2 <i>Urban Development</i> in Chapter 2) in Zones A, B, or C on parcels less than 0.5 acre as long as the parcel does not contain or is not adjacent to a stream, riparian woodland or forest, wetland, pond, or serpentine land cover type ⁸ .						✓

Covered Activity	Exemptions from Conditions (✓ = exempt)				
	All Chapter 6 Conditions	Wildlife Species Surveys (Conditions 15–18)	Preconstruction Surveys (Conditions 15–18)	Construction Monitoring (Conditions 15–18)	Covered Plant Surveys (Condition 20) Development Fees ¹
All development that occurs on land mapped by the Habitat Plan as “urban-suburban”, “landfill”, “reservoir”, or “agriculture developed” land cover types if it is not located in or adjacent to a parcel that contains a stream, riparian woodland or forest, wetland, or serpentine land cover type ^{9, 10} .					✓
Construction of recreational facilities within the Reserve System ¹¹ .					✓

Notes:

¹ Does not include the Nitrogen Fee. See Chapter 9 for a complete discussion of all Development Fees.

² Private-sector activities that do not require a development, grading, or building permit are not subject to the Plan or its conditions or fees.

³ Additions are cumulative and must be calculated based on the footprint of the structure at time of Plan implementation to determine whether this threshold has been crossed.

⁴ Such activities are likely to result in repeated disturbance that will preclude establishment or persistence of the covered wildlife species targeted by these surveys.

⁵ If surveys identify covered species, subsequent surveys must be conducted.

⁶ The land cover type “agriculture developed” (also known as agriculture developed/covered ag) is defined in Chapter 3 as intensive agricultural operations such as nurseries and greenhouses.

⁷ These land cover types do not support any of the covered species for which surveys are required.

⁸ If new vehicle trips are generated, the nitrogen deposition fee may be assessed.

⁹ The category “reservoir” excludes dams, which are subject to Habitat Plan fees.

¹⁰ Barns, corrals, ranch homes, and other small patches of existing development were not mapped as these four exempt land cover types because they fell below the 10-acre minimum mapping unit. These sites would also be exempt from the same development fees as long as project proponents demonstrate that they were existing at the time of Plan adoption through air photos or other documentation.

¹¹ Instead of paying a fee for construction of infrastructure within the Reserve System, new disturbance for infrastructure does not count toward land cover type land acquisition requirements in Chapter 5, but it does count toward the total Reserve System size requirements.

Table 6-2. Aquatic Avoidance and Minimization Measures

ID	Avoidance and Minimization Measure
	General
1	Minimize the potential impacts on covered species most likely to be affected by changes in hydrology and water quality.
2	Reduce stream pollution by removing pollutants from surface runoff before the polluted surface runoff reaches local streams.
3	Maintain the current hydrograph and, to the extent possible, restore the hydrograph to more closely resemble predevelopment conditions.
4	Reduce the potential for scour at stormwater outlets to streams by controlling the rate of flow into the streams.
5	Invasive plant species removed during maintenance will be handled and disposed of in such a manner as to prevent further spread of the invasive species.
6	Activities in the active (i.e., flowing) channel will be avoided. If activities must be conducted in the active channel, avoidance and minimization measures identified in this table will be applied.
7	Personnel shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
8	Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).
9	Personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means when removing sediments from the streams.
10	<p>If ground disturbing activities are planned for a stream channel that is known or suspected to contain elevated levels of mercury, the following steps should be taken.</p> <ol style="list-style-type: none"> 1. Avoid disturbing soils in streams known or suspected to contain high levels of mercury. 2. Soils that are likely to be disturbed or excavated shall be tested for mercury. Soils shall be remediated if: <ol style="list-style-type: none"> a. disturbed or excavated soils exposed to flood flows below the 2.33-year channel flow level exceed 1 ppm Hg, or b. disturbed or excavated soils above the 2.33-year flow level exceed 20 ppm Hg.
11	Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
12	No equipment servicing shall be done in the stream channel or immediate flood plain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators).
13	Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, shall be used depending on the situation
14	If high levels of groundwater in a work area are encountered, the water is pumped out of the work site. If necessary to protect water quality, the water shall be directed into specifically constructed infiltration basins, into holding ponds, or onto areas with vegetation to remove sediment prior to the water re-entering a creek.

ID	Avoidance and Minimization Measure
15	<p>If native fish or non-covered, native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a native fish and aquatic vertebrate relocation plan shall be implemented when ecologically appropriate as determined by a qualified biologist to ensure that significant numbers of native fish and aquatic vertebrates are not stranded.</p> <p>Prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual project sites when site conditions preclude reasonably effective operation of capture gear and equipment, or when the safety of biologist conducting the capture may be compromised.</p> <p>Relocation of native fish or aquatic vertebrates may not always be ecologically appropriate. Prior to capturing native fish and/or vertebrates, the qualified biologist will use a number of factors, including site conditions, system carrying capacity for potential relocated fish, and flow regimes (e.g., if flows are managed) to determine whether a relocation effort is ecologically appropriate. If so, the following factors will be considered when selecting release site(s):</p> <ol style="list-style-type: none"> 1. similar water temperature as capture location; 2. ample habitat availability prior to release of captured individuals; 3. presence of other same species so that relocation of new individuals will not upset the existing prey/predation function; 4. carrying capacity of the relocation location; 5. potential for relocated individual to transport disease; and 6. low likelihood of fish reentering work site or becoming impinged on exclusion net or screen. <p>Proposals to translocate any covered species will be reviewed and approved by the Wildlife Agencies.</p>
16	<p>When work in a flowing stream is unavoidable, the entire streamflow shall be diverted around the work area by a barrier, except where it has been determined by a qualified biologist that the least environmentally disruptive approach is to work in a flowing stream. Where feasible, water diversion techniques shall allow stream flows to gravity flow around or through the work site.</p>
17	<p>Coffer dams shall be installed both upstream and downstream not more than 100 feet from the extent of the work areas. Coffer dam construction shall be adequate to prevent seepage into or from the work area. Stream flow will be pumped around the work site using pumps and screened intake hoses. All water shall be discharged in a non-erosive manner (e.g., gravel or vegetated bars, on hay bales, on plastic, on concrete, or in storm drains when equipped with filtering devices, etc.).</p>
18	<p>Small in-channel berms that deflect water to one side of the channel during project implementation may be constructed of channel material in channels with low flows.</p>
19	<p>Sumps or basins may also be used to collect water, where appropriate (e.g., in channels with low flows).</p>
20	<p>Diversions shall maintain ambient stream flows below the diversion, and waters discharged below the project site shall not be diminished or degraded by the diversion. All materials placed in the channel to dewater the channel shall be removed when the work is completed. Normal flows shall be restored to the affected stream as soon as is feasible and safe after completion of work at that location.</p>
21	<p>To the extent that stream bed design changes are not part of the project, the stream bed will be returned to as close to pre-project condition as appropriate.</p>
22	<p>To the extent feasible, all temporary diversion structures and the supportive material shall be removed no more than 48 hours after work is completed.</p>
23	<p>Temporary fills, such as for access ramps, diversion structures, or cofferdams, shall be completely removed upon finishing the work.</p>
24	<p>To prevent increases in temperature and decreases in dissolved oxygen (DO), if bypass pipes are used, they shall be properly sized (i.e., larger diameter pipes to better pass the flows). Use of bypass pipes may be avoided by creating a low-flow channel or using other methods to isolate the work area.</p>

ID	Avoidance and Minimization Measure
25	Diversions shall maintain fish passage when the project meets the following conditions: 1) the length of the area dewatered exceeds 500 feet, and/or 2) the length of time the stream is dewatered exceeds two weeks in length. Conditions for fish passage shall be met as long as the diversion 1) maintains contiguous flows through a low flow channel in the channel bed or an artificial open channel, 2) presents no vertical drops exceeding six (6) inches and follows the natural grade of the site, 3) maintains water velocities that shall not exceed eight feet per second (8 ft/sec), and 4) maintains adequate water depths consistent with normal conditions in the project reach. An artificial channel used for fish passage shall be lined with cobble/gravel. A closed conduit pipe shall not be used for fish passage. The inlets of diversions shall be checked daily to prevent accumulation of debris.
26	Any sediment removed from a project site shall be stored and transported in a manner that minimizes water quality impacts.
27	Sediment from the San Francisco Bay Watershed, including that for reuse, will not be removed to areas any farther south than Metcalf Road in south San Jose.
28	Where practical, the removed sediments and gravels will be re-used.
29	Existing native vegetation shall be retained by removing only as much vegetation as necessary to accommodate the trail clearing width. Maintenance roads should be used to avoid effects on riparian corridors.
30	Vegetation control and removal in channels, on stream banks, and along levees and maintenance roads shall be limited to removal necessary for facility inspection purposes, or to meet regulatory requirements or guidelines.
31	When conducting vegetation management, retain as much understory brush and as many trees as feasible, emphasizing shade producing and bank stabilizing vegetation. If riparian vegetation is to be removed with chainsaws, consider using saws currently available that operate with vegetable-based bar oil.
32	In-channel vegetation removal may result in increased local erosion due to increased flow velocity. To minimize the effect, the top of the bank shall be protected by leaving vegetation in place to the maximum extent possible.
33	Regional Board objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change.
Project Design	
34	Use the minimum amount of impermeable surface (building footprint, paved driveway, etc.) as practicable.
35	Use pervious materials, such as gravel or turf pavers, in place of asphalt or concrete to the extent practicable.
36	Use flow control structures such as swales, retention/detention areas, and/or cisterns to maintain the existing (pre-project) peak runoff.
37	Direct downspouts to swales or gardens instead of storm drain inlets.
38	Use flow dissipaters at runoff inlets (e.g., culvert drop-inlets) to reduce the possibility of channel scour at the point of flow entry.
39	Minimize alterations to existing contours and slopes, including grading the minimum area necessary.
40	Maintain native shrubs, trees and groundcover whenever possible and revegetate disturbed areas with local native or non-invasive plants.
41	Combine flow-control with flood control and/or treatment facilities in the form of detention/retention basins, ponds, and/or constructed wetlands.
42	Use flow control structures, permeable pavement, cisterns, and other runoff management methods to ensure no change in post-construction peak runoff volume from pre-project conditions for all covered activities with more than 5,000 square feet of impervious surface.
43	Site characteristics will be evaluated in advance of project design to determine if non-traditional designs, such as bioengineered bank treatments that incorporate live vegetation, can be successfully utilized while meeting the requirements of the project.
44	Maintenance of natural stream characteristics, such as riffle-pool sequences, riparian canopy, sinuosity, floodplain, and a natural channel bed, will be incorporated into the project design.

ID	Avoidance and Minimization Measure
45	Stream crossings shall incorporate a free-span bridge unless infeasible due to engineering or cost constraints or unsuitable based on minimal size of stream (swale without bed and banks or a very small channel). If a bridge design cannot free-span a stream, bridge piers and footings will be designed to have minimum impact on the stream. A hydraulics analysis must be prepared and reviewed by the jurisdictional partner, including SCVWD as appropriate, demonstrating that piers or footings will not cause significant scour or channel erosion. Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek. Native plantings, natural debris, or scattered rocks will be installed under bridges to provide wildlife cover and encourage the use of crossings.
46	Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek.
47	If a culvert is used, up- and downstream ends of the culvert must be appropriately designed so that the stream cannot flow beneath the culvert or create a plunge pool at the downstream end. Preference will be given to designs that allow a natural bottom (arch culvert) and/or which do not alter natural grade.
48	Trails will be sited and designed with the smallest footprint necessary to cross through the in-stream area. Trails will be aligned perpendicular to the channel and be designed to avoid any potential for future erosion. New trails that follow stream courses will be sited outside the riparian corridor.
49	The project or activity must be designed to avoid the removal of riparian vegetation, if feasible. If the removal of riparian vegetation is necessary, the amount shall be minimized to the amount necessary to accomplish the required activity and comply with public health and safety directives.
50	If levee reconstruction requires the removal of vegetation that provides habitat value to the adjacent stream (e.g., shading, bank stabilization, food sources, etc.), then the project will include replacement of the vegetation/habitat that was removed during reconstruction unless it is determined to be inappropriate to do so by the relevant resource agencies (e.g., CDFG and USFWS).
51	All projects will be conducted in conformance with applicable County and/or city drainage policies.
52	Adhere to the siting criteria described for the borrow site covered activity (see Chapter 2 for details).
53	When possible, maintain a vegetated buffer strip between staging/excavation areas and receiving waters.
54	When not within the construction footprint, deep pools within stream reaches shall be maintained as refuge for fish and wildlife by constructing temporary fencing and/or barrier so as to avoid pool destruction and prevent access from the project site.
55	For stream maintenance projects that result in alteration of the stream bed during project implementation, its low flow channel shall be returned to its approximate prior location with appropriate depth for fish passage without creating a potential future bank erosion problem.
56	Increased water velocity at bank protection sites may increase erosion downstream. Therefore, bank stabilization site design shall consider hydraulic effects immediately upstream and downstream of the work area. Bank stabilization projects will be designed and implemented to provide similar roughness and characteristics that may affect flows as the surrounding areas just upstream and downstream of the project site.
57	When parallel to a stream or riparian zone and not located on top of a levee, new trails shall be located behind the top of bank or at the outside edge of the riparian zone except where topographic, resource management, or other constraints or management objectives make this not feasible or undesirable.
58	Existing access routes and levee roads shall be used if available to minimize impacts of new construction in special status species habitats and riparian zones.
59	Trails in areas of moderate or difficult terrain and adjacent to a riparian zone shall be composed of natural materials or shall be designed (e.g., a bridge or boardwalk) to minimize disturbance and need for drainage structures, and to protect water quality.
60	Trail crossings of freshwater stream zones and drainages shall be designed to minimize disturbance, through the use of bridges or culverts, whichever is least environmentally damaging. Structures over water courses shall be carefully placed to minimize disturbance. Erosion control measures shall be taken to prevent erosion at the outfalls of drainage structures.

ID	Avoidance and Minimization Measure
Construction	
61	Minimize ground disturbance to the smallest area feasible.
62	Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
63	Prepare and implement sediment erosion control plans.
64	No winter grading unless approved by City Engineer and specific erosion control measures are incorporated.
65	Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles).
66	Control sediment runoff using sandbag barriers or straw wattles.
67	No stockpiling or placement of erodible materials in waterways or along areas of natural stormwater flow where materials could be washed into waterways.
68	Stabilize stockpiled soil with geotextile or plastic covers.
69	Maintain construction activities within a defined project area to reduce the amount of disturbed area.
70	Only clear/prepare land which will be actively under construction in the near term.
71	Preserve existing vegetation to the extent possible.
72	Equipment storage, fueling and staging areas will be sited on disturbed areas or non-sensitive habitat outside of a stream channel.
73	Avoid wet season construction.
74	Stabilize site ingress/egress locations.
75	Dispose of all construction waste in designated areas and prevent stormwater from flowing onto or off of these areas.
76	Prevent spills and clean up spilled materials.
77	Sweep nearby streets at least once a day.
78	In-stream projects occurring while the stream is flowing must use appropriate measures to protect water quality, native fish and covered wildlife species at the project site and downstream of the project site.
79	If mercury contamination may be present, the channel must be dewatered prior to commencement of the activity.
80	All personnel working within or adjacent to the stream setback (i.e., those people operating ground-disturbing equipment) will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.
81	Temporary disturbance or removal of aquatic and riparian vegetation will not exceed the minimum necessary to complete the work.
82	Channel bed temporarily disturbed during construction activities will be returned to pre-project or ecologically improved conditions at the end of construction.
83	Sediments will be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff will be allowed to flow back to the channel.
84	Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian vegetation. Fiber rolls used for erosion control will be certified as free of noxious weed seed. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control measures will be placed between the outer edge of the buffer and the project site.
85	Seed mixtures applied for erosion control will not contain invasive nonnative species and will be composed of native species or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.
86	Topsoil removed during soil excavation will be preserved and used as topsoil during revegetation when it is necessary to conserve the natural seed bank and aid in revegetation of the site.
87	Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life.

ID	Avoidance and Minimization Measure
88	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.
89	The potential for traffic impacts on terrestrial animal species will be minimized by adopting traffic speed limits.
90	All trash will be removed from the site daily to avoid attracting potential predators to the site. Personnel will clean the work site before leaving each day by removing all litter and construction-related materials.
91	To prevent the spread of exotic species and reduce the loss of native species, aquatic species will be netted at the drain outlet when draining reservoirs or ponds to surface waters. Captured native fish, native amphibians, and western pond turtles will be relocated if ecologically appropriate. Exotic species will be dispatched.
92	To minimize the spread of pathogens all staff working in aquatic systems (i.e., streams, ponds, and wetlands)—including site monitors, construction crews, and surveyors—will adhere to the most current guidance for equipment decontamination provided by the Wildlife Agencies at the time of activity implementation. Guidance may require that all materials that come in contact with water or potentially contaminated sediments, including boot and tire treads, be cleaned of all organic matter and scrubbed with an appropriate cleansing solution, and that disposable gloves be worn and changed between handling equipment or animals. Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.
93	When accessing upland areas adjacent to riparian areas or streams, access routes on slopes of greater than 20% should generally be avoided. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion.
94	Personnel shall use existing access ramps and roads if available. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams.
95	To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.
96	Isolate the construction area from flowing water until project materials are installed and erosion protection is in place.
97	Erosion control measures shall be in place at all times during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place downstream of project site.
98	When needed, utilize in-stream grade control structures to control channel scour, sediment routing, and headwall cutting.
Post-Construction	
99	Conduct street cleaning on a regular basis
100	Potential contaminating materials must be stored in covered storage areas or secondary containment that is impervious to leaks and spills
101	Runoff pathways shall be free of trash containers or trash storage areas. Trash storage areas shall be screened or walled
102	Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets .
103	All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding. Cut-and-fill slopes will be planted with local native or non-invasive plants suitable for the altered soil conditions.
104	Measures will be utilized on site to prevent erosion along streams (e.g., from road cuts or other grading), including in streams that cross or are adjacent to the project proponent's property. Erosion control measures will utilize natural methods such as erosion control mats or fabric, contour wattling, brush mattresses, or brush layers. For more approaches and detail, please see the <i>Bank Protection/ Erosion Repair Design Guide</i> in the Santa Clara Valley Water Resources Protection Collaborative's <i>User Manual: Guidelines & Standards for Land Use Near Streams</i> (Santa Clara Valley Water Resources Protection Collaborative 2006).

ID	Avoidance and Minimization Measure
105	Vegetation and debris must be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that passage through the culvert or bridge remains clear.
106	Prior to undertaking stream maintenance activities, reach conditions will be assessed to identify tasks that are necessary to maintain the channel for the purpose for which it was designed and/or intended (e.g., flood control, groundwater recharge). Only in-stream work that is necessary to maintain the channel will be conducted.
107	On streams managed for flood control purposes, when stream reaches require extensive vegetation thinning or removal (e.g., when the channel has been fully occluded by willows or other vegetation), removal will be phased so that some riparian land cover remains and provides some habitat value. In addition, vegetation removal will be targeted and focused on removing the least amount of riparian vegetation as possible while still meeting the desired flood control needs. For example, vegetation removal should be focused on shrubby undergrowth at the toe-of-slope that is most likely to increase roughness and create a flooding hazard. Vegetation on the upper banks, particularly mature tree canopy, should be maintained to the extent possible to provide habitat for birds and small mammals and shading for the active channel.
108	When reaches require sediment removal, approaches will be considered that may reduce the impacts of the activity. Examples of potential approaches include phasing of removal activities or only removing sediment along one half of the channel bed, allowing the other half to remain relatively undisturbed.
109	In streams not managed for flood control purposes, woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) will be retained unless it is threatening a structure, impedes reasonable access, or is causing bank failure and sediment loading to the stream.
110	If debris blockages threaten bank stability and may increase sedimentation of downstream reaches, debris will be removed. When clearing natural debris blockages (e.g., branches, fallen trees, soil from landslides) from the channel, only remove the minimum amount of debris necessary to maintain flow conveyance (i.e., prevent significant backwatering or pooling). Non-natural debris (e.g., trash, shopping carts, etc.) will be fully removed from the channel.
111	If bank failure occurs due to debris blockages, bank repairs will only use compacted soil, and will be re-seeded with native grasses or sterile nonnative hybrids and stabilized with natural erosion control fabric. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. If compacted soil is not sufficient to stabilize the slope, bioengineering techniques must be used. No hardscape (e.g., concrete or any sort of bare riprap) or rock gabions may be utilized in streams not managed for flood control except in cases where infrastructure or human safety is threatened (e.g., undercutting of existing roads). Rock riprap may only be used to stabilize channels experiencing extreme erosion, and boulders must be backfilled with soil and planted with willows or other native riparian species suitable for planting in such a manner. If available, local native species will be utilized as appropriate.
112	Pumps and generators shall be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.
113	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible.
114	Erosion control methods shall be used as appropriate during all phases of routine maintenance projects to control sediment and minimize water quality impacts.
115	All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway.

Table 6-3. Conditions on Covered Transportation Projects

Design Requirements and Construction Practices	Highway Projects	Roadway Projects ¹ and Interchange Upgrades	Mass Transit Projects	Road Safety and Operational Improvements	Dirt Road Construction
Transportation Project Design Requirements					
Background data collection by Habitat Plan Implementing Entity	R	R	R	–	–
Design coordination with Wildlife Agencies ²	R	R	R	–	–
Enhance existing undercrossings	R	R	R	R	–
• Implement minimum sizing of culverts	R	R	R	R	–
• Install grating over tunnels/culverts for light penetration	P	P	P	P	–
• Install fencing around undercrossings to maximize crossing use	R	R	R	R	–
Road or rail barrier and passage designs for wildlife (to direct wildlife to safe crossings)	R	P	R	R	–
Construction Practices					
Avoidance and minimization measures	R	R	R	R	R
Post-Construction Practices					
Control roadside vegetation adjacent to reserves	R	R	R	R	R
Revegetate cut/fill slopes with native vegetation	R	R	R	R	R
Vegetation management around undercrossings	R	R	R	R	R
Notes:					
R = Required					
P = Possible (required unless data demonstrate action would not benefit wildlife and CDFG and USFWS agree to omit).					
¹ Major roadway projects are identified in Table 2-6 and include those projects most likely to adversely affect habitat linkages in the study area.					
² The scope of this review will be limited to the design, location, and extent of the median barrier.					

Table 6-4. Rural Road Maintenance Avoidance and Minimization Measures

		Sediment Management and Erosion Control							Road Maintenance									
		General Construction	Hillside Activities	Spoils Handling and Disposal	Mass Wasting Repair	Minor Slide Repair	Storm-Proofing	Culverts	General	Shoulder Maintenance	Dirt Road Maintenance	Ditch Maintenance	Drainage Systems	Sidcasting	Water Drafting	Vegetation Management	Dust Control	Concrete Work
Avoidance and Minimization Measures																		
1	Incorporate erosion control into the planning, construction and follow up phases for all road activities.	X	X	X		X	X	X	X	X	X	X	X	X		X		
2	If working during times when rain might be possible, always have erosion control measures onsite in case of a storm event.	X	X	X		X	X	X	X	X	X	X	X	X				
3	Plan for projects involving disturbance of soil (earthwork) within the riparian setback to occur during the salmonid avoidance season (June 15–October 15) with the exception of emergency or public safety related projects (e.g., clearing a landslide across a road). If avoidance is not possible, utilize appropriate avoidance and minimization measures as described in Conditions 4 and 5.	X	X	X		X	X	X	X	X	X	X	X	X		X		X
4	Set up the work and staging area to minimize the area of soil that will be disturbed and the tracking of soil out of the work area by vehicles and equipment.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	When possible, avoid staging projects in areas where runoff will be concentrated.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	Do not stage maintenance equipment in riparian areas or adjacent to streams with the exception of emergency or public safety related projects where no other staging options exist. Avoidance and minimization measures described in Conditions 4 and 5 will be applied as appropriate.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	Use appropriate erosion and sediment control avoidance and minimization measures to secure the staging and project area so that sediment runoff is avoided. Avoidance and minimization measures described in Conditions 4 and 5 will be applied as appropriate.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Protect storm drain inlets and watercourses using appropriate avoidance and minimization measures. Avoidance and minimization measures described in Conditions 4 and 5 will be applied as appropriate.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	Mulch or revegetate bare soil adjacent to stream channels, or other flow transport paths, to the break-in-slope near those areas.	X	X	X	X	X			X	X		X	X			X		

Table 6-4. Continued

		Sediment Management and Erosion Control							Road Maintenance									
		General Construction	Hillside Activities	Spoils Handling and Disposal	Mass Wasting Repair	Minor Slide Repair	Storm-Proofing	Culverts	General	Shoulder Maintenance	Dirt Road Maintenance	Ditch Maintenance	Drainage Systems	Sidecasting	Water Drafting	Vegetation Management	Dust Control	Concrete Work
Avoidance and Minimization Measures																		
29	Avoid disturbance of vegetation outside the essential shoulder area, especially near ditches, streams or watercourses. These vegetated areas help filter sediment from water run-off into ditches or streams and helps prevent erosion.	X							X							X		
30	Grade ditches only when necessary to keep the ditchline free flowing and restore capacity. Unnecessary mechanical grading can cause excess erosion, undermine banks, and expose the toe of the cutslope to erosion or slope failure.										X	X						
31	To control vegetation (rather than remove it entirely), use methods like mowing or weed-whacking when feasible. Vegetation prevents scour and filters out sediment.		X						X			X				X		
32	Whenever feasible, maintain a buffer of vegetation between the ditch and the road. This helps filter sediment from runoff and can be accomplished by using a steeper angle on the grader blade.	X	X						X			X				X		
33	Avoid harming existing vegetation on the cutbank above the ditch to reduce erosion and prevent slope failure.	X	X				X		X			X						
34	When “pulling” a ditch (mechanically grading and removing fine sediment), when possible, avoid spreading ditch spoils across or into the surface rock of the road or shoulder. Consider incorporating the removed soil into localized infrastructure (e.g., trails) and compact soil in place.											X						
35	The recommended minimum diameter for all new culverts, including cross drains, but exclusive of driveway culverts, is 18 inches. Often, small diameter culverts (12 inches or less) plug with debris, causing significant road damage. They are also difficult to clean out.	X						X	X				X					

Table 6-4. Continued

		Sediment Management and Erosion Control							Road Maintenance									
		General Construction	Hillside Activities	Spoils Handling and Disposal	Mass Wasting Repair	Minor Slide Repair	Storm-Proofing	Culverts	General	Shoulder Maintenance	Dirt Road Maintenance	Ditch Maintenance	Drainage Systems	Sidecasting	Water Drafting	Vegetation Management	Dust Control	Concrete Work
Avoidance and Minimization Measures																		
41	Designate areas to be used for concrete washout and perform washout only in properly constructed containments. When washing equipment or vehicles to remove cement or concrete residue, use only as much water as is needed so that rinse water can be properly contained. For example, use a positive shutoff on the washout hose.																	X
42	Follow these procedures for concrete mixing on site. - Ensure that contractors who fuel and operate cement mixing operations on site have an adequate spill plan and materials for spill containment. - Avoid mixing excess amounts of fresh concrete or cement on site. - Establish mixing plants outside of riparian corridors or near watercourses. - Dry and wet materials should be stored away from waterways and storm drains and should be covered and contained to prevent runoff from rainfall.																	X
43	Remove concrete grindings, rubble, and debris from the site for proper disposal and do not discharge into drain inlets, the storm water drainage system or watercourses.																	X
44	Contain coolant water from concrete cutting and do not discharge into drain inlets, the storm water drainage system or watercourses.																	X
45	When fresh concrete may be exposed to water, (e.g. rainy weather work), use concrete sealants that are approved by the California Department of Fish and Game for this purpose.																	X
46	Perform all in-stream work in dry conditions, and do not work in flowing waters. If a stream is flowing, use a cofferdam or other dewatering avoidance and minimization measures as needed. See Condition 4 for dewatering avoidance and minimization measures.	X						X	X				X					

		Sediment Management and Erosion Control							Road Maintenance									
		General Construction	Hillside Activities	Spoils Handling and Disposal	Mass Wasting Repair	Minor Slide Repair	Storm-Proofing	Culverts	General	Shoulder Maintenance	Dirt Road Maintenance	Ditch Maintenance	Drainage Systems	Sidecasting	Water Drafting	Vegetation Management	Dust Control	Concrete Work
Avoidance and Minimization Measures																		
47	Identify and map existing permanent disposal sites that can be used for long-term disposal of materials from routine and emergency maintenance activities and provide this information to maintenance crews. These sites should be in upland areas, such as rock pits, ridges, and benches. Locations should be above the 100-year floodplain of the closest stream and away from any groundwater seeps or wetlands.			X	X				X									
48	Minimize disturbance of ground cover or grass on the shoulder to the extent possible (the shoulder is part of the road right-of-way and may need to be kept clear for safety purposes), near ditches and outside of the road right-of-way. If the ground is bladed clean during mowing, the exposed soil will be vulnerable to erosion and could run-off into a creek. Vegetation can also act as a pollution filter that traps sediment and other runoff before it gets into ditches or streams.															X		
49	General guidelines for working within the road right-of-way: - Do not mow beyond 8 feet from the edge of the pavement unless that vegetation must be removed to retain existing drainage patterns or for safety reasons. - Do not remove brush more than 20 feet on either side of the road at bridge structures, unless additional removal is required to address safety concerns or to control noxious weeds. - Do not remove brush more than 10 feet on either side of a culvert, or 10 feet up and downstream from culverts that are 6-feet in diameter or larger, unless management is required for safety concerns or to control noxious weeds. NOTE: Fire management requirements must be considered when using this avoidance and minimization measure.						X	X	X						X			

		Sediment Management and Erosion Control							Road Maintenance									
		General Construction	Hillside Activities	Spoils Handling and Disposal	Mass Wasting Repair	Minor Slide Repair	Storm-Proofing	Culverts	General	Shoulder Maintenance	Dirt Road Maintenance	Ditch Maintenance	Drainage Systems	Sidecasting	Water Drafting	Vegetation Management	Dust Control	Concrete Work
Avoidance and Minimization Measures																		
50	Small quantities of cut brush and trees may be left in riparian areas, adjacent to streams, when cut vegetation: - Does not cause a safety concern or fire hazard; - Does not disturb existing drainage patterns. - Does not contain noxious weeds (consult with appropriate staff about types and locations of noxious weeds); - Is not stockpiled in concentrated areas that can release leachate to surface water.															X		
51	When removing invasive plants and noxious weeds, use complete and thorough treatments. (<i>Arundo donax</i> is particularly difficult and requires at least two treatments to remove all underground root networks.)															X		
52	Dispose of larger amounts of vegetation and debris in approved upland disposal areas. Do not dispose of vegetation directly into waterbodies such as streams or wetlands. Do not permanently dispose of concentrated amounts of vegetation that can generate leachate that could affect surface or groundwater quality, unless disposal is at a location permitted for this purpose.															X		

Table 6-5. Habitat for Covered Species Avoided due to the Stream and Riparian Setback Condition

Species/Modeled Habitat	Total Modeled Habitat in Study Area ¹	Amount in Open Space Types 1, 2, and 3 ²	Commitment to Acquire Modeled Habitat for Reserve System ¹	Additional Modeled Habitat Avoided due to Setbacks ³	Percent of Modeled Habitat Avoided due to Setbacks
California red-legged frog					
Primary habitat (acres)	10,101	3,230	1,300	2,855	28%
Foothill yellow-legged frog					
Primary habitat (miles)	244	70	30	119	49%
Secondary habitat (miles)	447	1526	50	229	51%
Western pond turtle					
Primary habitat (acres)	82,895	28,568	7,000	13,480	16%
Least Bell's vireo					
Primary habitat (acres)	3,097	330	460	837	55%

Notes:

¹ Source: **Table 5-17**.² Open space Types 1, 2, and 3 are assumed to provide some conservation value for covered species.³ Excludes setbacks that could occur within the Reserve System and existing open space. Represents a reasonable estimate of avoidance during the permit term if all covered activities occurred. Estimate does not include setbacks from rural residential development, which are difficult to predict in locations precise enough to estimate setback distances.

Table 6-6. Recommended Setbacks to Preserve Riparian and Stream Function (from studies throughout the United States since 1990)

	Function	Citation	Recommended Setback
Physical Properties	Sediment and Nutrient Reduction	Corley et al. 1999	>33 feet
		Nichols et al. 1998	>60 feet
		Woodward and Rock 1995	>50 feet
		Desbonnet et al. 1994	80 feet
Petersen et al. 1992		>33 feet	
Castelle et al. 1992		>50 feet	
Schellinger and Clausen 1992		75 feet	
	Welsch 1991	>85 feet	
	Removal of Fecal Coliform	Johnson and Ryba 1992*	75–300 feet
	Moderation of Stream Temperature/Microclimate	Lynch and Corbett 1990	100 feet
	Channel Complexity	Brosofske et al. 1997	>145 feet
		Chapel et al. 1991	135–220 feet
Biological Properties	Salmonid Habitat	Ligon et al. 1999	>150 feet
		Welsch 1991	>85 feet
	Reptile/Amphibian Habitat	Burbink et al. 1998	>325 feet
		Semlitsch 1998	540 feet
		Buhlmann 1998	440 feet
		Rudolph and Dickson 1990	98 feet
	Bird Habitat/Diversity	RHJV 2000	250 feet
		Whitaker and Montevechi 1999	>160 feet
Hagar 1999		>130 feet	
Kilgo et al. 1998		>1,600 feet	
Richardson and Miller 1997		>160 feet	
Mitchell 1996		>325 feet	
Hodges and Kremetz 1996	>325 feet		
Spackman and Hughes 1995	450 feet for 90% of species diversity		
Mammal Habitat/Diversity	Hilty et al. 2006	>1,000 feet	
Plant Diversity	Spackman and Hughes 1995	30–100 feet for 90% of species	
General Riparian/Ecosystem Function	NH FSSWT 2000	100 feet, 300 feet, 600 feet by stream order	
	Spence et al. 1996	98–145 feet	
	Johnson and Ryba 1992*	> 98 feet	
	Chapel et al. 1991	160–650 feet	
	Welsch 1991	>85 feet	

* Article does not present new data, but instead is a review of existing data.

Table 6-7. Required Stream Setback Distances¹

Stream Category	Category 1 Streams		Category 2 Streams
	Inside Existing Urban Service Area ²	Outside Existing Urban Service Area ²	
Slope Class			
0-30%	100 feet	150 feet	35 feet
> 30%	150 feet	200 feet	

¹ All distances measured from top of bank. For Category 1 streams, if the edge of riparian vegetation extends beyond setback, the riparian edge becomes the setback plus a 35-foot buffer from riparian edge inside or outside the Urban Service Area. For Category 2 streams, if the site supports riparian vegetation, the setback will extend from the riparian edge plus a 35-foot buffer.

² Urban service areas existing at the time of permit issuance for the Habitat Plan.

Table 6-8. Summary of Habitat Survey Requirements and Preconstruction Survey and Monitoring for Select Covered Wildlife Species

Land Cover Type	Species	Specific Habitat Elements	Species Habitat Survey ¹	Preconstruction Survey	Requirements	
					Avoidance and Minimization Requirements	Construction Monitoring
Any Grassland, Oak Woodland, or Agricultural Land Cover Types	San Joaquin kit fox	<ul style="list-style-type: none"> • Within the modeled habitat in the study area (see species account in Appendix D for model and parameters) 	<ul style="list-style-type: none"> • Identify and map potential den sites 	<ul style="list-style-type: none"> • Determine status and map all dens (>5 in. diameter) within 250 feet of activity footprint 	<ul style="list-style-type: none"> • Monitor dens • Destroy unoccupied dens • Discourage use of occupied (non-natal) dens 	<ul style="list-style-type: none"> • Establish exclusion zones (>50 feet) for potential dens • Establish exclusion zones (>100 feet) for known dens • Notify USFWS and CDFG of any occupied natal dens • Construction or maintenance personnel must participate in training
	Western burrowing owl	<ul style="list-style-type: none"> • Within all occupied nesting habitat (Figure 5-11). Surveys are not required in sites that are mapped as potential nesting/overwintering or only overwintering habitat 	<ul style="list-style-type: none"> • Identify and map burrows and potential burrows within 250 ft of activity footprint • Document evidence of presence/absence (owls, pellets, whitewash, prey remains) • Species survey in occupied habitat are required in both breeding and non-breeding 	<ul style="list-style-type: none"> • Conduct burrowing owl survey within 2 calendar days of ground disturbance (see Condition 15 for details of required survey methods) 	<ul style="list-style-type: none"> • Avoid occupied nests within a 250-foot buffer during breeding season (Feb 1–Aug 31) or develop a monitoring plan that allows activity within 250-foot buffer (see Condition 15 for requirements) • Avoid occupied burrows during non-breeding season (Sept 1–Jan 31) or meet requirements in Condition 15 if allowing activity within a 250-foot buffer 	<ul style="list-style-type: none"> • Establish buffer zones (250 feet) around active nests if applicable • Establish buffer zones (250 feet) around occupied burrows during non-breeding season if applicable • Implement construction monitoring consistent with monitoring plan or requirements if activities occur within the buffer • Construction or maintenance personnel must participate in training

Table 6-8. Continued

Land Cover Type	Species	Specific Habitat Elements	Species Habitat Survey ¹	Requirements		
				Preconstruction Survey	Avoidance and Minimization Requirements	Construction Monitoring
Pond or Coastal/Valley Freshwater Marsh	Tricolored blackbird	<ul style="list-style-type: none"> • Within 250 feet of verified riparian land, coastal and valley freshwater marsh, or pond cover types 	<ul style="list-style-type: none"> • Identify and map nesting substrate, and marsh habitat 	<ul style="list-style-type: none"> • Document presence/absence of breeding colony within 2 calendar days of disturbance • Document use of habitat (e.g., breeding, foraging) • Determine if the site has been used for nesting in the past 5 years 	<ul style="list-style-type: none"> • Avoid occupied nests colonies during breeding season (Mar 15–July 31) • Avoid nest sites that were occupied in the past 5 years 	<ul style="list-style-type: none"> • Establish 250-foot buffer around outer edge of all hydric vegetation associated with breeding habitat • Construction or maintenance personnel must participate in training • Notify CDFG and USFWS of nest locations immediately
Any Riparian Forest and Scrub Land Cover Types	Least Bell's vireo	<ul style="list-style-type: none"> • Within potential breeding habitat, as mapped by the Implementing Entity • Within 250 feet of verified riparian land cover types 	<ul style="list-style-type: none"> • Identify and map early successional riparian forest or scrub 	<ul style="list-style-type: none"> • Document presence/absence of nesting least Bell's vireo within 2 calendar days of disturbance • Document use of habitat (e.g., breeding, foraging) • Determine if the site has been used for nesting in the past 3 years 	<ul style="list-style-type: none"> • Avoid occupied nests during breeding season (Mar 15–July 31) • Avoid nest sites that were occupied in the past 3 years 	<ul style="list-style-type: none"> • Establish a 250-foot buffer around occupied nest site • Construction or maintenance personnel must participate in training • Notify CDFG and USFWS of nest locations immediately
Serpentine bunchgrass grassland	Bay checkerspot butterfly	<ul style="list-style-type: none"> • In Bay checkerspot butterfly habitat units identified in Appendix D • In mapped serpentine that cannot be avoided 	<ul style="list-style-type: none"> • Identify and map extent of larval host plants • Report results of reconnaissance level surveys for adult butterflies 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Locate the project footprint as far from field-verified occupied Bay checkerspot habitat or the highest-quality serpentine habitat as feasible 	<ul style="list-style-type: none"> • None

¹ Changes to project design that result from planning survey information will help avoid impacts to covered species. If no project design changes are needed and site is relatively simple, species habitat surveys could be combined with preconstruction surveys.

Table 6-9. Survey Periods for Covered Plant Species

Species		Survey Period											
Common Name	Scientific Name	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Covered Species													
Tiburon Indian paintbrush	<i>Castilleja affinis</i> ssp. <i>neglecta</i>				√	√	√	√					
Coyote ceanothus	<i>Ceanothus ferrisiae</i>	√	√	√	√	√							
Mount Hamilton thistle	<i>Cirsium fontinale</i> var. <i>campylon</i>		(√)	(√)	√	√	√	√	√	√	(√)		
Santa Clara Valley dudleya	<i>Dudleya abramsii</i> ssp. <i>setchellii</i>				√	√	√						
Fragrant fritillary	<i>Fritillaria liliacea</i>		√	√	√								
Loma Prieta hoita	<i>Hoita strobilina</i>					(√)	√	√	(√)	(√)	(√)		
Smooth lessingia	<i>Lessingia micradenia</i> var. <i>glabrata</i>							√	√	√	(√)	(√)	
Metcalf Canyon jewelflower	<i>Streptanthus albidus</i> ssp. <i>albidus</i>				√	√	√	√					
Most beautiful jewelflower	<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>			√	√	√	√						

Note: (√) indicates flowering periods which are possible but uncommon for the species.