

This section of the Draft Environmental Impact Report (DEIR) describes the baseline biological resources within the Planning Area, which includes the City of Pinole's city limits, as well as the Sphere of Influence (SOI). The Planning Area encompasses approximately 8,543 acres, or 13.3 square miles. The purpose of this report is to describe on-site vegetation communities, including wetlands and other potential jurisdictional waters of the U.S., and assess the potential for occurrence of special-status plant and wildlife species within the Planning Area. This report also evaluates potential impacts to biological resources associated with the proposed land use designations associated with the General Plan Update, the Three Corridors Specific Plan, and the Zoning Code Update for the City of Pinole and includes a discussion of mitigation measures necessary to reduce impacts to a less than significant level, where feasible.

4.7.1 EXISTING SETTING

REGIONAL SETTING

The City of Pinole is located in the San Francisco Bay Area, on the shores of San Pablo Bay in west Contra Costa County (see **Figure 3.0-1**).

The San Francisco Bay and Delta make up the Pacific Coast's largest estuary, encompassing roughly 1,600 square miles of waterways and draining over 40 percent of California's fresh water. The Sacramento and San Joaquin rivers flow from Northern California's inland valleys into the Delta's winding system of islands, sloughs, canals, and channels, before emptying into San Francisco Bay and the Pacific Ocean.

The San Francisco Bay Area supports an extensive diversity of distinct vegetative communities. Broad habitat categories in the region generally include coastal scrubs, oak woodlands, grasslands, estuaries, coastal salt marsh, riparian habitats, eucalyptus groves, interior wetlands, and rivers and streams. Although not vegetative communities, interior wetlands, estuaries, rivers and streams, and urban or highly disturbed habitats provide natural functions and values as wildlife habitat.

Due to the amount of native vegetation lost to urbanization throughout California, the California Department of Fish and Game (CDFG) identifies several specific native vegetative communities as rare and/or sensitive. Sensitive communities in the Bay Area include coastal salt marsh, freshwater wetlands, and mixed oak woodlands.

PHYSICAL SETTING

Much of the land within the Planning Area has gently rolling hills with steeper hills paralleling on the north and south. Elevation in the Planning Area ranges from sea level to 703 feet (212 meters) above mean sea level. General topography of the area is primarily characterized by rolling foothills. The Planning Area consists largely of residential and commercial development surrounded by and intermingled with open space including rolling hills, annual grasslands, coastal oak woodland, and other habitat types (**Figure 4.7-1**). Areas surrounding the Planning Area are composed of a similar mix of residential, commercial, and open space areas.

The climate is mild, with no extremes of temperature, rainfall, or humidity. Lowest and highest temperatures are in the narrow range of an average low of 40 degrees Fahrenheit in the winter to an average 85 degrees Fahrenheit in the summer (City of Pinole, 2007). The climate is Mediterranean, which is sub-humid with hot dry summers and cool moist winters. Average annual precipitation for Pinole is 23 inches (WRCC, 2006). Mean January minimum temperature is about 42 degrees Fahrenheit, mean September high temperature is 74 degrees Fahrenheit, and

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the mean annual temperature is about 58 degrees Fahrenheit (WRCC, 2006). The average freeze-free period is approximately 363 days (WRCC, 2006).

Hydrology

Drainage of the Planning Area occurs primarily through surface runoff. The Planning Area drains into Pinole Creek, eventually entering San Pablo Bay (USEPA, 2006). The reader is referred to Section 4.9, Hydrology and Water Quality, for in-depth discussion of this subject.

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Vegetative Communities

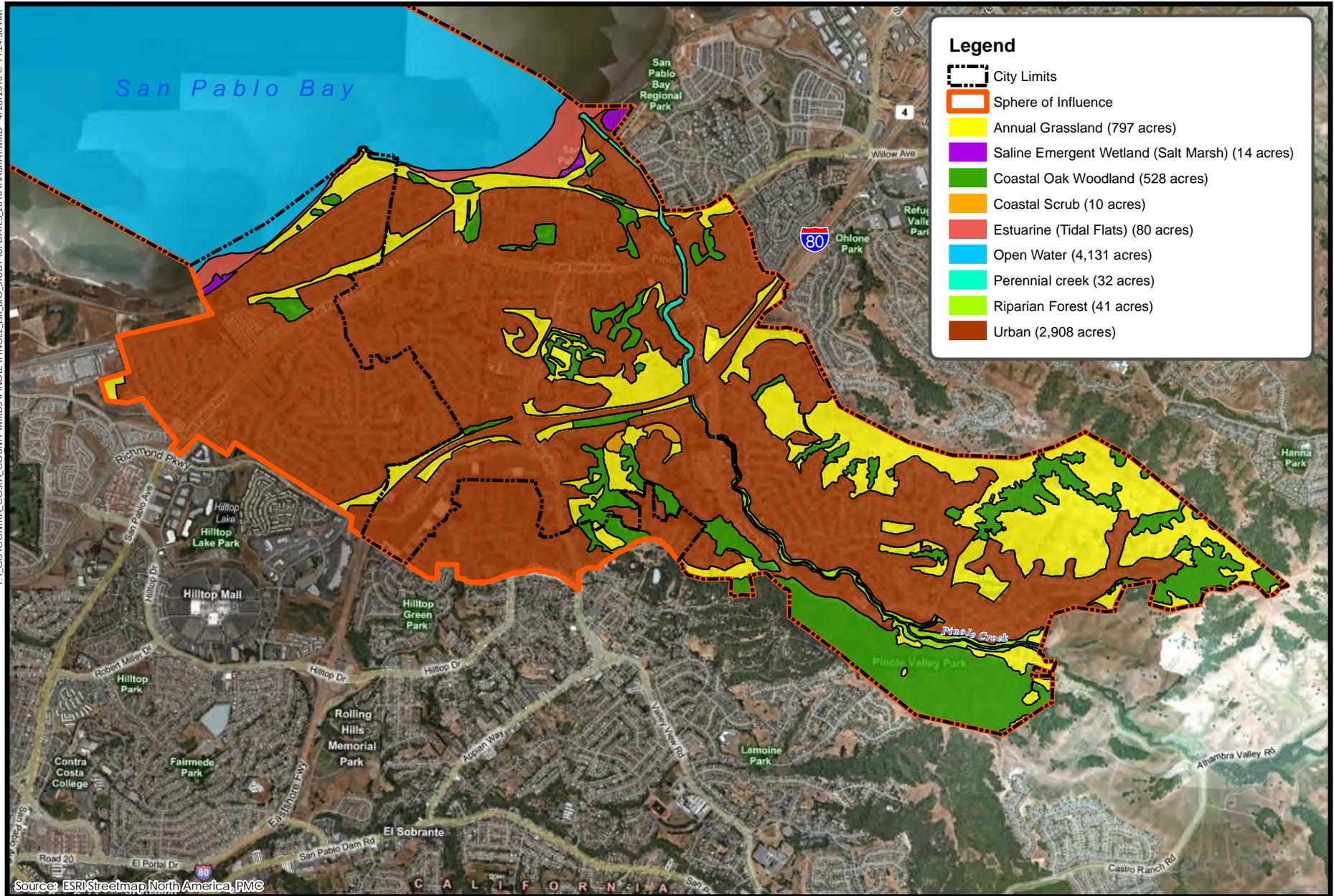
The geography and climate of the Planning Area have resulted in the establishment of numerous distinct habitat types, ranging from tall riparian forest and well-established coastal oak woodland to open grassland and salt marsh. Nine habitat types were delineated within the Planning Area: annual grassland, coastal scrub, coastal oak woodland, riparian forest, perennial creek, saline emergent wetland (salt marsh), estuarine, open water, and urban. Three additional habitats were found within the Planning Area: closed-cone coniferous forest, intermittent creek, and eucalyptus grove. These habitats are not identified in **Figure 4.7-1** because they are found in small, fragmented areas throughout the Planning Area. Acreages of habitat types within the Planning Area are detailed in **Table 4.7-1**.

**TABLE 4.7-1
EXISTING HABITATS FOUND WITHIN THE PLANNING AREA**

Habitat Types	Area Within the City (acres)	Area Within Planning Area (acres)
Annual Grassland	730	797
Coastal Scrub	10	10
Coastal Oak Woodland	500	528
Closed-Cone Pine-Cypress (Closed-Cone Coniferous Forest)	Unknown	Unknown
Eucalyptus Grove	Unknown	Unknown
Riparian Forest	41	41
Perennial Creek (Pinole Creek)	32	32
Intermittent Creek	Unknown	Unknown
Saline Emergent Wetland (Salt Marsh)	10	14
Estuarine (Tidal Flats)	58	80
Open Water (San Pablo Bay Conservation Area)	4,101	4,131
Urban/Ruderal	1,953	2,908
Total Acreage Delineated	~7,438	~8,544

* Mapped by PMC biologists during the development of the Biological Baseline Report (Appendix E)

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Source: ESRI Streetmap, North America, PMC



Figure 4.7-1
Habitat Types Mapped within the Planning Area

Annual Grassland

Annual grassland generally occurs on flat plains to gently rolling foothills throughout the Central Valley, in the coastal mountain ranges to Mendocino County, and in scattered locations in the southern portion of the state (Kie, 2005). This widespread vegetation type is characterized by annual grasses and forbs, which are predominantly non-native species. Annual grassland is typical of slopes throughout the Planning Area. Annual grassland consists of a myriad of native and non-native annual plant species. Dominant plant species in the annual grassland habitat within the Planning Area include ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), slender wild oats (*Avena fatua*), short-pod mustard (*Hirschfeldia incana*), storksbill (*Erodium* spp.), geranium (*Geranium* spp.), purple needlegrass (*Nassella pulchra*), and coyote brush (*Baccharis pilularis*).

Many wildlife species use annual grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and cover (Kie, 2005). Birds known to breed in annual grasslands include a California species of special concern, the western burrowing owl (*Athene cunicularia hypugaea*), and others like horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*). This habitat also provides important foraging habitat for turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and the state-listed Swainson's hawk (*Buteo swainsoni*). Characteristic reptiles that breed in annual grasslands include the western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus viridis helleri*). Mammals typically found in this habitat include the black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and coyote (*Canis latrans*) (Kie, 2005).

Coastal Scrub (Coyote Brush Scrub)

Coastal scrub habitat is distributed in dense concentrations along ridges, hillsides, and other dry areas. This habitat type is often colonized by non-native species such as french broom (*Cytisus monspessulanus*) and pampas grass (*Cortaderia selloana*). Structure of the plant associations that comprise coastal scrub is typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow-root system (Becker, 1988). Coastal scrub is located within the Planning Area on the south side of Interstate 80 (I-80) within and around Sarah Drive Park. Patches of coastal scrub consisting of approximately 10 acres were found on a limited number of hillsides. This habitat typically consists of low shrubs, usually 0.5 to 2 meters tall, usually dense but with scattered grassy openings on windy, exposed sites with shallow, rocky soils. It typically consists of a mix of coyote brush, poison oak (*Toxicodendron diversilobum*), and toyon (*Heteromeles arbutifolia*) with California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), coast live oak (*Quercus agrifolia*), pampas grass, and blue wild rye (*Elymus glaucus*) (Becker, 1988).

Little is known about the importance of coastal scrub habitat to wildlife. Though vegetation productivity is lower in coastal scrub than adjacent chaparral habitats associated with it, coastal scrub seems to support numbers of vertebrate species roughly equivalent to those in surrounding habitats. The federal and state listed peregrine falcon (*Falco peregrinus*) occurs in coastal scrub, though not exclusively (Becker, 1988).

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Coastal Oak Woodland

This closed-canopy forest is characteristic of Pinole Valley Park and lower slopes and drainages of the surrounding hills and consists of approximately 500 acres within the city limits. Coast live oak and California bay are co-dominant (Holland, 2005). The understory is poorly developed, but includes toyon, poison oak, California buckeye, and occasional Monterey pine (*Pinus radiata*) and blue-gum eucalyptus (*Eucalyptus globulus*). The herb component is continuous and dominated by ripgut brome and several other introduced taxa.

Coastal oak woodlands provide habitat for a variety of wildlife species. At least 60 species of mammals may use oaks in some way (Holland, 2005). Approximately 110 species of birds have been observed during the breeding season in California habitats where oaks form a significant part of the canopy or subcanopy (Holland, 2005). California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), ground squirrels (*Spermophilus* spp.), western gray squirrel (*Sciurus griseus*), and black-tailed deer (*Odocoileus hemionus*) may be dependent on acorns in fall and early winter and a poor acorn year can result in significant declines in their populations (Holland, 2005).

Closed-Cone Pine-Cypress (Closed-Cone Coniferous Forest)

Closed-cone coniferous forests are another unique California community occurring in patches along the coast from Humboldt County to Santa Barbara County (Jensen, 1988). The name of this community derives from the fact that the seed-bearing cones remain closed for several years, a reproductive adaptation that ensures survival. Only age, excessive hot weather, or fire opens them. The fossil record indicates that closed-cone forests were once widespread but are now remnants on their way to natural extinction. Although pines are probably not native to the area, many pines appear to thrive in the Planning Area. Stands of Monterey pine appear to have naturalized along the margins of the coastal oak woodland and the established neighborhoods of Pinole. This habitat was not mapped since it occurs in small patches scattered throughout the Planning Area.

Tree squirrels (*Sciurus* spp.), band-tailed pigeon (*Patagioenas fasciata*), and numerous other species make use of this type of habitat for feeding and cover. Few species make substantial use of this type as a breeding habitat, although the great horned owl (*Bubo virginianus*) and red-tailed hawk (*Buteo jamaicensis*) will nest in closed cone pine forests (Jensen, 1988).

Eucalyptus Grove

Eucalyptus has been extensively planted and artificially established in California since approximately 1865. Trees tend to form a dense stand with a closed canopy (Pearson, 1988). On average, eucalyptus range from 87 to 133 feet in height and have a diameter at breast height of 8.6 to 15.1 inches. Trees in excess of 152 feet (maximum 264 feet) in height are not uncommon (Pearson, 1988). The area consists mostly of single-species thickets of blue-gum eucalyptus with little understory. This habitat was not mapped since small groves occur in patches scattered throughout the Planning Area.

Characteristic species of this habitat include American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), common barn owl (*Tyto alba*), red-tailed hawk, and red-shouldered hawk (*Buteo lineatus*). Eucalyptus trees are important as roosts, perches, and nest sites for a number of bird species, particularly raptors. Blue-gum eucalyptus has stringy bark and a tendency for rapid deposition of litter, which creates microhabitats for a number of small vertebrate species,

including northern alligator lizard (*Elgaria coerulea*), Pacific gopher snake (*Pituophis catenifer catenifer*), and woodrats (*Neotoma* spp.) (Pearson, 1988).

Estuarine (Tidal Flats)

Estuaries are inlets or arms of the sea that extend inland. They are found at the saltwater/freshwater mixing zone of Pinole Creek. Estuarine habitat in the Planning Area consists of approximately 80 acres. Species found within this habitat include pickleweed (*Salicornia* spp.), cocklebur (*Xanthium strumarium*), bristly ox-tongue (*Picris echioides*), river bulrush (*Scirpus fluvaitilis*), California cord grass (*Spartina foliosa*), marsh gumplant (*Grindelia stricta* var. *angustifolia*), and creeping wildrye (*Leymus triticoides*).

Estuarine habitats provide for reproduction, feeding, resting, and cover for many species of mammals and birds (Smith, 1988). These habitats provide shelter for large numbers of water birds, especially during heavy winter storms when open coastal waters become rough. Of great importance are the eelgrass (*Zostera marina*) beds supported by estuarine subtidal habitats. These areas are critical to a small goose, the black brant (*Branta bernicla*), which feeds almost exclusively on eelgrass (Smith, 1988).

Open Water of San Pablo Bay

This area includes open water of the San Pablo Bay Conservation Area. It is located in front of the Pinole Wetland Field Station and Bayfront Park and consists of approximately 157 acres within the Planning Area. The open water of San Pablo Bay is home to numerous, fish, shellfish, and mammals that either inhabit or migrate through the San Pablo Bay. These species may include abalone (*Haliotis* spp.), salmon and steelhead (*Oncorhynchus* spp.), and California sea lions (*Zalophus californianus*).

Perennial Creek

Pinole Creek is a perennial creek that flows through the entire length of the Planning Area from the mountains in the far southeast to San Pablo Bay and consists of nearly 32 acres within the Planning Area. Pinole Creek has four distinct habitat types in the Planning Area: intermittent creek, riparian forest, saline emergent wetland, and urban/ruderal. Numerous intermittent creeks drain into Pinole Creek from the surrounding mountainous terrain. On the southeast side of I-80, Pinole Creek is surrounded by both riparian forest and ruderal habitat since parts of the creek are adjacent to single-family homes. The creek becomes increasingly urban and in some parts channelized into cement-lined banks as it flows under I-80 and through downtown Pinole. The creek eventually flows into estuarine and saline emergent wetland habitat and into San Pablo Bay near the wastewater treatment plant and Bayfront Park.

Near-shore waters provide food for many waterfowl, herons, shorebirds, belted-kingfisher (*Ceryle alcyon*), and American dipper (*Cinclus mexicanus*). Many species of insectivorous birds (swallows, swifts, and flycatchers) hawk their prey over water.

Intermittent Creek

Numerous drainages were observed along the hills surrounding Pinole. These intermittent creeks are tributaries to Pinole Creek. These creeks were dry during the site visit on December 5, 2006, and most contained no vegetation. This habitat was not mapped since it occurs in scattered locations throughout the Planning Area in small amounts.

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Riparian Forest

Well-developed riparian forest lines Pinole Creek in the eastern half of town. Riparian forest occurs in ribbon-like bands along streambeds where rich soils and high humidity produce a natural greenhouse effect. Although this unique community accounts for less than 1 percent of California's total forest acreage, it supports one of the most diverse ecological communities of plants and wildlife. Three species of willow (*Salix* spp.), California buckeye, California bay, coast live oak, valley oak (*Quercus lobata*), California sycamore (*Platanus racemosa*), Himalayan blackberry (*Rubus discolor*), and English ivy (*Hedera helix*) were commonly encountered.

Riparian habitat is generally of high value for wildlife. Birds and mammals that occur in these areas typically include wild turkey, screech owl (*Megascops kennicottii*), great horned owl, red-tailed hawk, California quail (*Callipepla californica*), black-tailed deer, coyote, opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), and western gray squirrel.

Saline Emergent Wetland (Coastal Salt Marsh)

Saline emergent wetland occurs on either side at the mouth of Pinole Creek where it drains into the San Pablo Bay. There are approximately 14 acres of saline emergent wetland within the Planning Area. This habitat consists of highly productive, herbaceous and woody, salt-tolerant hydrophytes forming moderate to dense cover and up to 1 meter tall (Springer, 1988). Most species are active in summer and dormant in winter. Usually saline emergent wetlands are segregated horizontally with cordgrass (*Spartina* spp.) nearer the open water, gumplant (*Grindelia* spp.) at mid-littoral elevations, and a richer mixture closer to high ground, and are usually found along sheltered inland margins of bays, lagoons, and estuaries. These hydric soils are subject to regular tidal inundation by salt water for at least part of each year. The habitat type is found within the San Pablo Bay Conservation Area and Bayfront Park. This 9.69-acre patch of habitat is dominated by pickleweed with salt grass (*Distichlis spicata*), marsh gumplant, dodder (*Cuscuta salina*), California cord grass, and common reed (*Phragmites australis*).

Saline emergent wetlands provide food, cover, nesting, and roosting habitat for a variety of birds, mammals, reptiles, and amphibians (Springer, 1988). Several species of lizards and snakes frequent the edge of the high marsh, whereas the Pacific tree frog (*Hyla regilla*) and western toad (*Bufo boreas*) occur in slightly brackish marsh after heavy rains. Endemic subspecies of birds include the endangered California clapper rail (*Rallus longirostris obsoletus*), California black rail (*Laterallis jamaicensis contorniculus*), salt marsh yellow-throat (*Geothlypis trichas sinuosa*), and three subspecies of the song sparrow (*Melospiza melodia*) at San Francisco Bay. Other bird species that feed or roost in these wetland are herons, egrets, ducks, hawks (including northern harrier), Virginia rail (*Rallus limicola*), American coot (*Fulica americana*), shorebirds, swallows, and marsh wren (*Cistothorus palustris*). Characteristic mammal species are shrews, bats, and mice including the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) endemic to the San Francisco Bay, as well as the raccoon (*Procyon lotor*), mink (*Mustela vison*), river otter (*Lontra canadensis*), and harbor seal (*Phoca vitulina*). A number of species from adjacent uplands visit the wetlands to feed (Springer, 1988).

Urban/Ruderal

This vegetation type includes typical residential and commercial landscaping materials. Lawns, shrubs, and trees of various size, density, and arrangement are found throughout Pinole. A distinguishing characteristic of urban habitats is the mixture of native and exotic plant species (McBride and Reid, 1988). Also included in the urban designation are ruderal communities that

occur in areas of disturbances such as along roadsides and trails. These communities are subject to ongoing or past disturbances (e.g., vehicle activities and mowing). Areas of disturbance that are recolonized by invasive, non-native forb species are typically referred to as ruderal. Ruderal habitat in these disturbed areas supports a diverse weedy flora. In Pinole, this habitat type is found mainly along roadsides and railroad tracks. Annual grasses (*Bromus* sp., *Avena* spp., *Lolium* spp., etc.) and bristly ox-tongue, short-pod mustard, radish (*Raphanus sativus*), oyster root (*Tragopogon dubius*), poison hemlock (*Conium maculatum*), yellow star thistle (*Centaurea solstitialis*), and Italian plumeless thistle (*Carduus pycnocephalus*) are typical of this habitat. Tree of heaven (*Ailanthus altissima*), Franchet's cotoneaster (*Cotoneaster franchetii*), and Ngaio tree (*Myoporum laetum*) were also observed in this ruderal habitat. There is a total of 2,908 acres of ruderal or urban habitat within the Planning Area.

Native and introduced wildlife species that are tolerant of human activities often thrive in ruderal or urban habitats. Wildlife that occurs in these areas typically includes introduced species adapted to human habitation, including rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house mouse (*Mus musculus*) and Norway rat (*Rattus norvegicus*). Some native species include western toad, western fence lizard, Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Carpodacus mexicanus*) (McBride and Reid, 1988).

SPECIAL-STATUS SPECIES

Prior to reconnaissance-level surveys, the CDFG's California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) online inventory, and United States Fish and Wildlife Service (USFWS) online lists were queried for a list of special-status wildlife, botanical, and fisheries resources with potential to occur or known to occur within the Planning Area and vicinity (CDFG, 2010a/b; CNPS, 2010; USFWS, 2010a). **Appendix E** includes a copy of the databases query results. Locations of special-status species previously recorded occurrences within the Planning Area are shown on **Figure 4.7-2**. Using Geographic Information System (GIS) technology, the CNDDDB records of previously recorded occurrences of special-status species within a 5-mile radius of the Planning Area were noted and discussed (see **Appendix E**). No species-specific surveys were conducted. All plant and wildlife observations during habitat mapping efforts were documented (**Appendix E**). Other species documented in the literature search were considered for further analysis based on whether or not habitat existed for the species in the Planning Area as well as whether the Planning Area was within range of the species.

Tables B-1 and B-2 in **Appendix E** present the special-status species that were evaluated to determine if they should be considered in the impact analysis of this report based on habitat suitability within the Planning Area, previously recorded occurrences of these species, and professional expertise. Special-status species were considered for this analysis based on field survey results and a review of results of the database search. Those threatened, endangered, or sensitive species that are considered in this analysis are listed in **Table 4.7-2** according to habitat type. Other special-status species that are considered in this analysis are listed in **Table 4.7-3** according to habitat type.

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**TABLE 4.7-2
THREATENED, ENDANGERED, OR SENSITIVE SPECIES CONSIDERED IN THE IMPACT ANALYSIS BY HABITAT TYPE**

Habitat Type	Special-Status Species	Area in Planning Area (acres)
Annual Grasslands	<p>Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>) Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>) San Joaquin spearscale (<i>Atriplex joaquiniana</i>) Big tarplant (<i>Blepharizonia plumosa</i>) Round-leaved filaree (<i>California macrophylla</i>) Mt. Diablo fairy-lantern (<i>Calochortus pulchellus</i>) Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>) Fragrant fritillary (<i>Fritillaria liliacea</i>) Diablo helianthella (<i>Helianthella castanea</i>) Pale yellow hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>) Santa Cruz tarplant (<i>Holocarpha macradenia</i>) Robust monardella (<i>Monardella villosa</i> ssp. <i>globosa</i>) Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>) Showy Indian clover (<i>Trifolium amoenum</i>) Golden eagle (<i>Aquila chrysaetos</i>) Swainson's hawk (<i>Buteo swainsoni</i>) American peregrine falcon (<i>Falco peregrinus anatum</i>) White-tailed kite (<i>Elanus leucurus</i>) Bald eagle (<i>Haliaeetus leucocephalus</i>)</p>	797
Coastal Scrub	<p>Pallid manzanita (<i>Arctostaphylos pallida</i>) Coastal bluff morning-glory (<i>Calystegia purpurata</i> ssp. <i>saxicola</i>) San Francisco collinsia (<i>Collinsia multicolor</i>) Fragrant fritillary (<i>Fritillaria liliacea</i>) Diablo helianthella (<i>Helianthella castanea</i>) Santa Cruz tarplant (<i>Holocarpha macradenia</i>) Oregon meconella (<i>Meconella oregana</i>) Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>) Showy Indian clover (<i>Trifolium amoenum</i>)</p>	10
Coastal Oak Woodland	<p>Mt. Diablo fairy-lantern (<i>Calochortus pulchellus</i>) Western leatherwood (<i>Dirca occidentalis</i>) Fragrant fritillary (<i>Fritillaria liliacea</i>) Diablo helianthella (<i>Helianthella castanea</i>) Robust monardella (<i>Monardella villosa</i> ssp. <i>globosa</i>) Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>) Alameda whipsnake (<i>Masticophis lateralis euryxanthus</i>) Golden eagle (<i>Aquila chrysaetos</i>) Swainson's hawk (<i>Buteo swainsoni</i>) American peregrine falcon (<i>Falco peregrinus anatum</i>) White-tailed kite (<i>Elanus leucurus</i>) Bald eagle (<i>Haliaeetus leucocephalus</i>)</p>	528

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Habitat Type	Special-Status Species	Area in Planning Area (acres)
Closed-Cone Pine-Cypress	Pallid manzanita (<i>Arctostaphylos pallida</i>) San Francisco collinsia (<i>Collinsia multicolor</i>) Western leatherwood (<i>Dirca occidentalis</i>) Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>) Golden eagle (<i>Aquila chrysaetos</i>) Swainson's hawk (<i>Buteo swainsoni</i>) American peregrine falcon (<i>Falco peregrinus anatum</i>)	< 1
Eucalyptus Grove	Golden eagle (<i>Aquila chrysaetos</i>) Swainson's hawk (<i>Buteo swainsoni</i>) American peregrine falcon (<i>Falco peregrinus anatum</i>)	< 1
Riparian forest	Mt. Diablo fairy-lantern (<i>Calochortus pulchellus</i>) Western leatherwood (<i>Dirca occidentalis</i>) Mason's lilaeopsis (<i>Lilaeopsis masonii</i>) Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>) California seablite (<i>Suaeda californica</i>) California red-legged frog (<i>Rana aurora draytonii</i>) Golden eagle (<i>Aquila chrysaetos</i>) Swainson's hawk (<i>Buteo swainsoni</i>) American peregrine falcon (<i>Falco peregrinus anatum</i>) White-tailed kite (<i>Elanus leucurus</i>) Bald eagle (<i>Haliaeetus leucocephalus</i>)	41
Perennial Creek	California red-legged frog (<i>Rana aurora draytonii</i>)	32
Intermittent Creek	No known	< 1
Saline Emergent Wetland (Salt Marsh)	San Joaquin spearscale (<i>Atriplex joaquiniana</i>) Suisun Marsh aster (<i>Symphyotrichum lentum</i>) Point Reyes bird's-beak (<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>) Soft bird's-beak (<i>Cordylanthus mollis</i> ssp. <i>mollis</i>) Delta tule pea (<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>) Mason's lilaeopsis (<i>Lilaeopsis masonii</i>) California seablite (<i>Suaeda californica</i>) Suisun marsh aster (<i>Symphyotrichum lentum</i>) California least tern (<i>Sternula antillarum</i>) California black rail (<i>Laterallus jamaicensis coturniculus</i>) California clapper rail (<i>Rallus longirostris obsoletus</i>) Salt-marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	14
Estuarine (Tidal Flats)	California seablite (<i>Suaeda californica</i>) California least tern (<i>Sternula antillarum</i>) California black rail (<i>Laterallus jamaicensis coturniculus</i>) California clapper rail (<i>Rallus longirostris obsoletus</i>)	80

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**TABLE 4.7-3
OTHER SPECIAL-STATUS SPECIES CONSIDERED IN THE IMPACT ANALYSIS ORGANIZED BY HABITAT TYPE**

Habitat Type	Special-Status Species	Area in Planning Area (acres)
Annual Grasslands	Western pond turtle (<i>Actinemmys marmorata</i>) Ferruginous hawk (<i>Buteo regalis</i>) Northern harrier (<i>Circus cyaneus</i>) Short-eared owl (<i>Asio flammeus</i>) Burrowing owl (<i>Athene cunicularia</i>) Pallid bat (<i>Antrozous pallidus</i>) American badger (<i>Taxidea taxus</i>)	797
Coastal Scrub	Oregon polemonium (<i>Polemonium carneum</i>) Northern harrier (<i>Circus cyaneus</i>) Burrowing owl (<i>Athene cunicularia</i>) American badger (<i>Taxidea taxus</i>)	10
Coastal Oak Woodland	Ferruginous hawk (<i>Buteo regalis</i>) Northern harrier (<i>Circus cyaneus</i>) Pallid bat (<i>Antrozous pallidus</i>) American badger (<i>Taxidea taxus</i>)	528
Closed-Cone Pine-Cypress	Oregon polemonium (<i>Polemonium carneum</i>) Pallid bat (<i>Antrozous pallidus</i>)	< 1
Eucalyptus Grove	No known	< 1
Riparian forest	Foothill yellow-legged frog (<i>Rana boylei</i>) Western pond turtle (<i>Actinemmys marmorata</i>) Northern harrier (<i>Circus cyaneus</i>) Tricolored blackbird (<i>Agelaius tricolor</i>) Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>) Pallid bat (<i>Antrozous pallidus</i>) Western red bat (<i>Lasiurus blossevillii</i>) Silver-haired bat (<i>Lasiycteris noctivagans</i>)	41
Perennial Creek	Slender-leaved pondweed (<i>Potamogeton filiformis</i>) Foothill yellow-legged frog (<i>Rana boylei</i>) Western pond turtle (<i>Actinemmys marmorata</i>)	32
Intermittent Creek	No known	< 1
Saline Emergent Wetland (Salt Marsh)	Bolander's water-hemlock (<i>Cicuta maculate var. bolanderi</i>) Western pond turtle (<i>Actinemmys marmorata</i>) Tricolored blackbird (<i>Agelaius tricolor</i>) Saltmarsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>) Alameda song sparrow (<i>Melospiza melodia pusillula</i>) San Pablo song sparrow (<i>Melospiza melodia samuelis</i>) Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>) Short-eared owl (<i>Asio flammeus</i>) San Pablo vole (<i>Microtus californicus sanpabloensis</i>) Suisun shrew (<i>Sorex ornatus sinuosus</i>) Salt-marsh wandering shrew (<i>Sorex vagrans halicoetes</i>)	14
Estuarine (Tidal Flats)	No known	80

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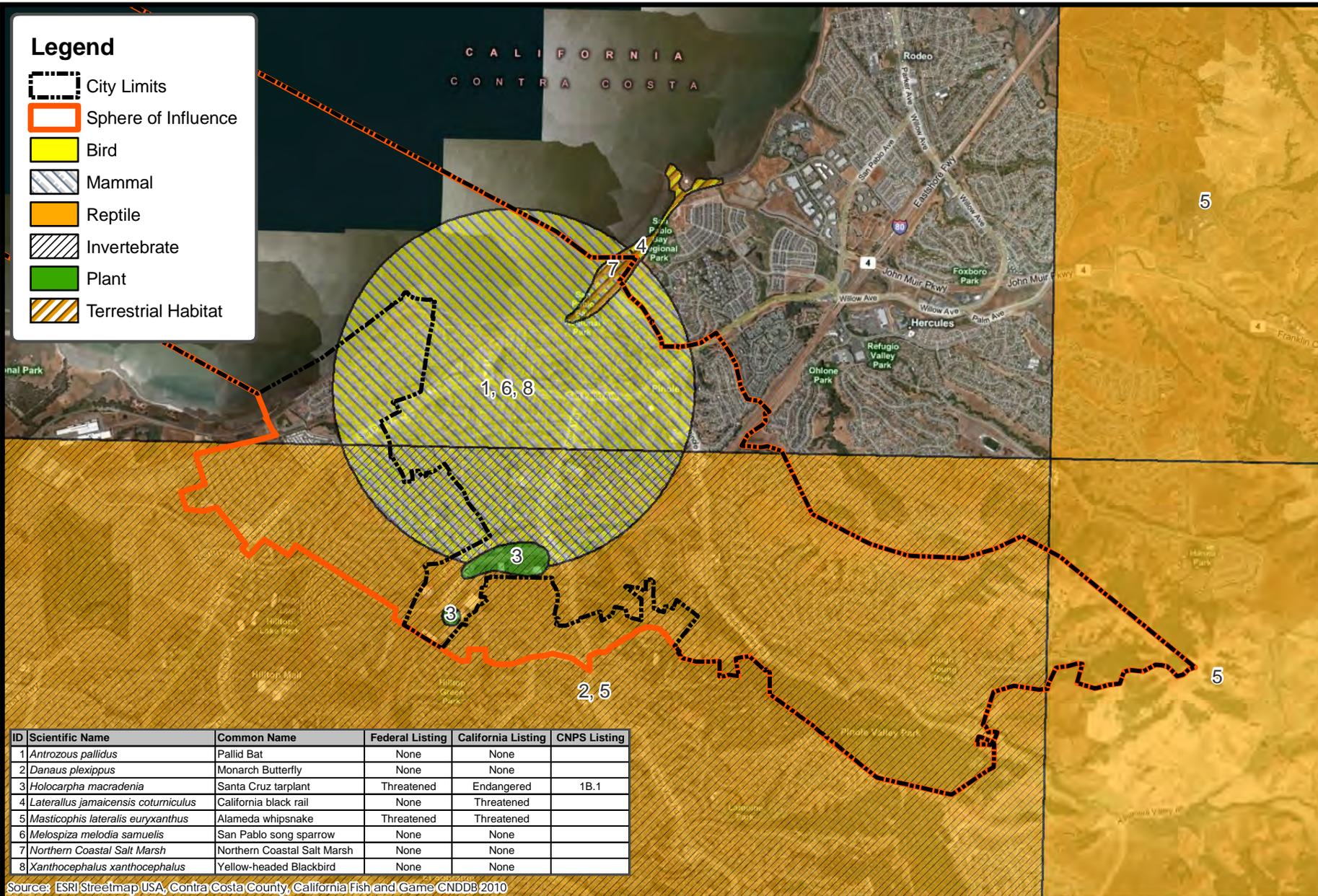


Figure 4.7-2
Recorded Occurrences of Special-status Species
within the City of Pinole Planning Area

Special-Status Plant Species Occurrences

Provided below are species accounts for each of the special-status plant species that, according to results of database searches and a habitat survey, have potential to occur within the Planning Area and therefore have been considered in the impact analysis. A full list of species from the database search is included in Table B-1 in **Appendix E**. Range and habitat information for the special-status wildlife and plant species below was obtained from the California Wildlife Habitat Relationship (CWHR) program version 8 (CDFG 2002) and CNPS online inventory (CNPS 2010).

Bent-flowered fiddleneck (*Amsinckia lunaris*) is designated by CNPS as List 1B.2 and is found in cismontane woodland and valley and foothill grassland. This species' blooming period is between March and June. This species has been found from 3 meters to 500 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are 13 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Pallid manzanita (*Arctostaphylos pallida*) is federally threatened, state-listed as endangered, and designated by CNPS as List 1B.1. This species is found in broad-leaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub. This species grows on uplifted marine terraces on siliceous shale or thin chert and may require fire. This species' blooming period is between December and March. This species has been found from 185 meters to 465 meters above mean sea level (CNPS 2010). Suitable habitat is present within the Planning Area. There are five previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Alkali milk-vetch (*Astragalus tener* var. *tener*) is designated by CNPS as List 1B.2 by the CNPS. This plant occurs in alkali playa, valley and foothill grassland, and vernal pools. This species' blooming period is between March and June. This species has been found from 1 meter to 60 meters above mean sea level (CNPS, 2010). Alkaline soils may be present within the Planning Area. There are three previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

San Joaquin spearscale (*Atriplex joaquiniana*) is designated by CNPS as List 1B.2 and is found on chenopod scrub, alkali meadow, and valley and foothill grassland in seasonal alkali wetlands or alkali sink scrub with saltgrass (*Distichlis spicata*), alkali heath (*Frankenia* spp.), etc. This species' blooming period is between April and October. This species has been found from 1 meter to 835 meters above mean sea level. Suitable habitat is present within the Planning Area. There are two previously recorded occurrences within 10 miles of Planning Area (CDFG, 2010).

Big tarplant (*Blepharizonia plumosa*) is designated by CNPS as List 1B.1. This species is found in valley and foothill grassland on dry hills and plains with clay to clay-loam soils. It is usually found on slopes and often in burned areas. This species' blooming period is between July and October. This species has been found from 30 meters to 505 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are two previously recorded occurrences within 10 miles of Planning Area (CDFG, 2010).

Round-leaved filaree (*California macrophylla*) is designated by CNPS as List 1B.1. This annual herb in the geranium family (Geraniaceae) is found in cismontane woodland and valley and foothill grassland in clay soils. This species' blooming period is between March and May. This species has been found from 15 to 1,200 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

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Mt. Diablo fairy-lantern (*Calochortus pulchellus*) is designated by CNPS as List 1B.2. This species is found in chaparral, cismontane woodland, riparian woodland, and valley and foothill woodland, on wooded and brushy slopes. This species blooms between April and June. This species has been found from 30 meters to 840 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Coastal bluff morning-glory (*Calystegia purpurata* ssp. *saxicola*) is designated by CNPS as List 1B.2. This species is found in coastal dunes and coastal scrub. This species' blooming period is between May and September. This species has been found from 15 meters to 105 meters above mean sea level (CNPS, 2010). Marginal habitat is present within the Planning Area. There is one previously recorded occurrence is within 5 miles of the Planning Area (CDFG, 2010).

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) is designated by CNPS as List 1B.2. This species is found in valley and foothill grassland in alkaline soils, sometimes described as heavy white clay. This species' blooming period is between May and October, rarely until November. This species has been found from 1 meter to 230 meters above mean sea level (CNPS, 2010). Alkaline soils may be present within the Planning Area. There are five previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Bolander's water-hemlock (*Cicuta maculate* var. *bolanderi*) is designated by CNPS as List 2.1. This perennial herb in the carrot family (Apiaceae) is found in marshes and swamps in coastal, fresh or brackish water. This species' blooming period is between July and September. This species has been found from sea level to 200 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

San Francisco collinsia (*Collinsia multicolor*) is designated by CNPS as List 1B.2. This annual herb in the figwort family (Scrophulariaceae) is found in closed-cone coniferous forest and coastal scrub, sometimes serpentinite. This species' blooming period is between March and May. This species has been found from 30 to 250 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are no previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) is designated by CNPS as List 1B.2. This hemi-parasitic annual herb is found in marshes and swamps usually in coastal salt marsh with *Salicornia*, *Distichlis*, *Jaumea*, *Spartina*, etc. This species' blooming period is between June and October. This species has been found from sea level to 10 meters above mean sea level (CNPS, 2010). Limited habitat is present within the Planning Area. There are five previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) is federally endangered, rare in California, and designated by CNPS as List 1B.2. This species is found in coastal salt marsh with *Distichlis*, *Salicornia*, *Frankenia*, etc. This species' blooming period is between July and November. This species has been found from sea level to 3 meters above mean sea level (CNPS, 2010). Limited habitat is present within the Planning Area. There are six previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Western leatherwood (*Dirca occidentalis*) is designated by CNPS as List 1B.2. This species is found in broad-leaved upland forest, chaparral, closed-cone coniferous forest, cismontane woodlands, north coast coniferous forest, riparian forest, and riparian woodland, on brushy slopes, mesic sites, mostly in mixed evergreen and foothill woodlands communities. This species' blooming

period is between January and March, rarely until April. This species has been found from 30 meters to 395 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are 17 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Fragrant fritillary (*Fritillaria liliacea*) is designated by CNPS as List 1B.2. This species is found in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often on serpentine; however, it has been reported on various soils though usually clay, in grassland. This species' blooming period is between February and April. This species has been found from 3 meters to 410 meters above mean sea level (CNPS, 2010). Although serpentine soil is not located within the Planning Area, this species can grow in clay soils, which is found within the Planning Area. There are six previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Diablo helianthella (*Helianthella castanea*) is designated by CNPS as List 1B.2. This species is found in broad-leaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland, usually in chaparral/oak woodland interface in rocky, azonal soils, often in partial shade. This species' blooming period is between March and June. This species has been found from 60 meters to 1,300 meters above mean sea level (CNPS, 2010). Limited habitat is present within the Planning Area. There are 27 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Pale yellow hayfield (seaside) tarplant (*Hemizonia congesta* ssp. *congesta*) is designated by CNPS as List 1B.2. This annual herb in the sunflower family (Asteraceae) is found in valley and foothill grassland, sometimes along roadsides. This species' blooming period is between April and November. This species has been found from 20 to 560 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Santa Cruz tarplant (*Holocarpha macradenia*) is federally threatened, state-listed as endangered, and designated by CNPS as List 1B.1. This species is found in coastal prairie, valley and foothill grassland. Light, sandy soil or sandy clay, often with non-natives. This species' blooming period is between June and October. This species has been found from 10 meters to 220 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are 15 previously recorded occurrences within 5 miles of the Planning Area, two of which are within the city limits (CDFG, 2010).

Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*) is designated by CNPS as List 1B.2. This species is found in freshwater and brackish marshes. Delta tule pea is often found with cattails (*Typha* spp.), Suisun marsh aster (*Symphyotrichum lentum*), California rose (*Rosa californica*), rushes (*Juncus* spp.), and sedges (*Scirpus* spp.), among others, usually on marsh and slough edges. This species' blooming period is between May and July, rarely until September. This species has been found from sea level to 4 meters above mean sea level (CNPS, 2010). Limited habitat is present within the Planning Area. There are nine previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Mason's lilaeopsis (*Lilaeopsis masonii*) is rare in California and designated by CNPS as List 1B.1. It is found in freshwater and brackish marshes and riparian scrub. Generally, this species is found in tidal zones, in muddy or silty soil formed through river deposition or riverbank erosion. This species' blooming period is between April and November. Mason's lilaeopsis has been found from sea level to 10 meters above mean sea level (CNPS, 2010). Limited habitat is present within the

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Planning Area. There are seven previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Oregon meconella (*Meconella oregano*) is designated by CNPS as List 1B.1. This species is found in coastal prairie and scrub in open moist places. This species' blooming period is between March and April. This species has been found from 250 to 620 meters above mean sea level (CNPS, 2010). Limited habitat is present within the Planning Area. There are four previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Robust monardella (*Monardella villosa* ssp. *globosa*) is designated by CNPS as List 1B.2 and is found in openings in broad-leaved upland forest, chaparral, cismontane woodland, and valley and foothill grassland. This species' blooming period is between June and July. This species has been found from 100 to 915 meters above mean sea level (CNPS, 2010). Suitable habitat is present within the Planning Area. There are four previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Oregon polemonium (*Polemonium carneum*) is designated by CNPS as List 2.2. This perennial herb is found in coastal prairie, coastal scrub, and lower montane coniferous forest between sea level and 1,830 meters above mean sea level. This species' blooming period is between April and September (CNPS, 2010). Suitable habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Slender-leaved pondweed (*Potamogeton filiformis*) is designated by CNPS as List 2.2. This aquatic rhizomatous herb is found in marshes and swamps in assorted shallow freshwater habitats between 300 and 2,150 meters above mean sea level. This species' blooming period is between May and July (CNPS, 2010). Limited habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Santa Cruz microseris (*Stebbinsoseris decipiens*) is designated by CNPS as List 1B.2. This annual herb is endemic to California. It is found in broad-leaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland in open areas, sometimes in serpentinite soils between 10 and 500 meters above mean sea level (CNPS, 2010). This species' blooming period is between April and May. Suitable habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

California seablite (*Suaeda californica*) is federally endangered and designated by CNPS as List 1B.1. This species is found in marshes and swamps on margins of coastal salt marshes from sea level to 15 meters above mean sea level. This species' blooming period is between July and October (CNPS, 2010). Limited habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Suisun marsh aster (*Symphyotrichum lentum*) is designated by CNPS as List 1B.1. This perennial rhizomatous herb is found in brackish and freshwater marshes and swamps from sea level to 3 meters above mean sea level (CNPS, 2010). This species is most often seen along sloughs with reeds (*Phragmites* spp.), sedges, blackberry (*Rubus* spp.), cattails, etc. (CDFG, 2010). This species' blooming period is between May and November. Marginal habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Showy Indian clover (*Trifolium amoenum*) is federally listed as endangered and designated by CNPS as List 1B.1. This annual herb is found valley and foothill grassland and coastal bluff scrub, in

open, sunny sites and swales, sometimes on serpentine soil between 5 and 415 meters above mean sea level. This species' blooming period is between April and June (CNPS, 2010). Suitable habitat is present within the Planning Area. There are three previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Special-Status Wildlife Species Occurrences

Provided below are species accounts for each of the special-status wildlife species that, according to results of database searches and a habitat survey, have potential to occur within the Planning Area and therefore have been considered in the impact analysis. A full list of species from the database search is included in Table B-2 in **Appendix E**. Range and habitat information for the special-status wildlife and plant species below was obtained from the CWHR program version 8 (CDFG, 2002) and CNDDDB (CDFG, 2010).

Amphibians

The **California red-legged frog** (*Rana aurora draytonii*) is listed as federally threatened and a California species of special concern. Red-legged frogs were formerly widely distributed on the floor of the Central Valley. Their decline has been linked to the introduction of the bullfrog (*Rana catesbiana*), non-native fishes, cattle grazing, and other factors. California red-legged frog occurs in lowlands and foothill streams, pool, and marshes in or near permanent or late season sources of deep water with dense, shrubby, riparian, or emergent vegetation (e.g., ponds, perennial drainages, well-developed riparian) below 3,936 feet in elevation. This species requires 11 to 20 weeks of permanent water for larval development. They also must have access to estivation habitat. Suitable habitat is present within Pinole Creek. A previously recorded occurrence is located upstream in Pinole Creek (CDFG, 2010). There are 25 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

The **foothill yellow-legged frog** (*Rana boylei*) is a California species of special concern. This species occurs from northern Oregon west of the Cascades south along the coast to the San Gabriel Mountains, and south along the western side of the Sierra Nevada to Kern County, with an isolated population in the San Pedro Martir mountains of Baja California. It is found in partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. It frequents shallow, slow, gravelly streams and rivers with sunny banks, in forests, chaparral, and woodlands from sea level to 2,040 meters. Suitable habitat is present within Pinole Creek; however, there are no records of this species occurring in the creek. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Reptiles

Western pond turtle (*Actinemmys marmorata*) is a California species of special concern. The western pond turtle includes two subspecies, the northwestern pond turtle (*A. marmorata marmorata*) and the southwestern pond turtle (*A. marmorata pallida*). The two subspecies range is interconnected within and around the San Francisco Bay Area. It is a thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. The western pond turtle needs basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Suitable habitat is present in Pinole Creek within the Planning Area. There are 12 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Alameda whipsnake (*Masticophis lateralis euryxanthus*) is federally and state-listed as a threatened species. This species is restricted to valley-foothill hardwood habitat of the Coast

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Ranges in the vicinity of Monterey and north San Francisco Bay. It inhabits south-facing slopes and ravines where shrubs form a vegetative mosaic with oak trees and grasses. Suitable habitat is present within the Planning Area. There are 41 previously recorded occurrences within 5 miles of the Planning Area, 13 of which are within the Planning Area (CDFG, 2010). Critical habitat for Alameda whipsnake is located to the east of the Planning Area (USFWS, 2010b); no critical habitat is located within the Planning Area.

Birds

California least tern (*Sternula antillarum*) is federally and state-listed as an endangered species and is federally protected as a migratory non-game bird of management concern under the Migratory Bird Treaty Act (MBTA). This species' nesting season is in the summer in the San Francisco Bay Area. There is an isolated colony in San Francisco Bay on sandy beaches bordering shallow water in estuaries. The bulk of its distribution is on the southern California coast. Limited habitat is present within the Planning Area. There are no previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

The **golden eagle** (*Aquila chrysaetos*) is federally protected under the Eagle Protection Act and the MBTA. It is also a California fully protected species. This species forages in grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. This species nests and winters in rolling foothills of mountain areas, sage-juniper flats, and deserts. Nest sites are located in niches in cliffs, escarpments, and bluffs as well as in large trees in open areas, most often in rugged, mountainous country. Prey includes primarily small mammals. Suitable nesting and foraging habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Swainson's hawk (*Buteo swainsoni*) is listed as threatened in California and is federally protected as a migratory non-game bird of management concern under the MBTA. The preferred breeding habitat of this raptor consists of large trees, which serve as nesting sites, proximate to extensive areas of grassland and/or open fields, which serve as foraging habitat. Swainson's hawks begin to arrive in the Central Valley from South America in March to breed and raise their young. They typically nest in large, mature trees such as valley oak, cottonwood, willow, and native black walnut. Selected trees are typically located near suitable foraging habitat and often within riparian corridors. Swainson's hawks forage in open grasslands, agricultural fields, and pastures. Alfalfa, row crops, grain fields, and irrigated pastures are the Swainson's hawk's preferred foraging habitats, where they take advantage of the opportunities that harvesting and irrigating practices provide for the easy capture of small rodents. Grasslands and agricultural lands (with the exception of orchards and vineyards) provide suitable foraging habitat for this species. Suitable nesting and foraging habitat is present within the Planning Area. There are no previously recorded occurrences within 10 miles of the Planning Area (CDFG, 2010).

The **northern harrier** (*Circus cyaneus*) is a California species of special concern and is federally protected as a migratory non-game bird of management concern under the MBTA. It nests and forages in grasslands. Nesting habitat generally includes freshwater marshes and coastal salt marshes, and grasslands. It nests on ground in shrubby vegetation, usually at marsh edge. The nest is built of a large mound of sticks in wet areas. This species forages in grasslands, from salt grass in desert sinks to mountain ranges. Suitable nesting and foraging habitat is present within the Planning Area. There are four previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

The **white-tailed kite** (*Elanus leucurus*) is a California fully protected species. This species nests in rolling foothills and valley margins with scattered oaks, riparian woodlands, or marshes next to

deciduous woodland and forages in open grasslands, meadows, or marshes. White-tailed kites are known to forage for small rodents and insects in agricultural areas, especially alfalfa fields, open grasslands, meadows, and marshes close to isolated, dense-topped trees used for nesting and perching. Nests are generally built in available trees near hunting grounds. Suitable nesting and foraging habitat is present within the Planning Area. There are four previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

The **American peregrine falcon** (*Falco peregrinus anatum*) has been state and federally delisted. It is a California fully protected species and federally protected as a migratory non-game bird of management concern under the MBTA. This species is a seasonal migrant in the Bay Area. It inhabits open country near water where shorebirds feed. It may nest in high cliffs near rivers, wetlands, lakes, and human-made structures. Suitable nesting and foraging habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

Bald eagle (*Haliaeetus leucocephalus*) is federally protected under the Eagle Protection Act, state-listed as endangered, and is also federally protected as a migratory non-game bird of management concern under the MBTA. It has been delisted under the federal Endangered Species Act (ESA). This species breeds and roosts in remote coniferous forests in close proximity to a river, stream, lake, reservoir, marsh, or other large wetland area. It inhabits ocean shores, lake margins, and rivers for both nesting and wintering. Builds stick nests within large tall trees and typically within 1 mile of permanent water. Wintering populations occur along major rivers and reservoirs in Yuba County. It breeds February to July. Suitable nesting and foraging habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

California black rail (*Laterallus jamaicensis coturniculus*) is state-listed as threatened and a California fully protected species. It is also federally protected as a migratory non-game bird of management concern under the MBTA. This species mainly inhabits salt marshes bordering larger bays. It occurs in tidal salt marsh with heavy growth of pickleweed (*Salicornia* spp.) and in fresh water and brackish marshes. This species only occurs at low elevations. Suitable habitat is present within the Planning Area. There are 34 previously recorded occurrences within 5 miles of the Planning Area, one of which is within the Planning Area (CDFG, 2010).

California clapper rail (*Rallus longirostris obsoletus*) is federally and state-listed as endangered and a California fully protected species. It is also federally protected as a migratory non-game bird of management concern under the MBTA. This species inhabits salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. It is typically associated with abundant growths of pickleweed (*Salicornia europaeae*) and cordgrass (*Spartina* sp.). Suitable habitat is present within the Planning Area. There are 33 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Tricolored blackbird (*Agelaius tricolor*) is a California species of special concern. It is federally protected as a migratory non-game bird of management concern under the MBTA. Tricolored blackbirds are highly colonial. They require a foraging area, usually open water, with insect prey within a few kilometers of the colony. This species typically nests in freshwater marsh or other areas with dense, emergent vegetation. Occasionally, the birds may be found nesting in other types of dense vegetation. Tricolored blackbirds nest in emergent wetlands with dense cattails or tules and in thickets of blackberry and willow. Potential nesting habitat for this species occurs in the perennial and seasonal marsh habitat and adjacent to ditches and open water habitats in the Planning Area. There are four previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

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Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) is a California species of special concern. This species is a resident of the San Francisco Bay region, in fresh and saltwater marshes. It requires thick, continuous cover down to the water surface for foraging and tall grasses, tule patches, and willows for nesting. Suitable habitat is present within the Planning Area. There are 32 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Alameda song sparrow (*Melospiza melodia pusillula*) is a California species of special concern and is also federally protected as a migratory non-game bird of management concern under the MBTA. It is a resident of salt marshes bordering the south arm of San Francisco Bay. This species inhabits pickleweed (*Salicornia* spp.) marshes and nests low in gumplant (*Grindelia* sp.) bushes (high enough to escape high tides) and in pickleweed. Suitable habitat is present within the Planning Area. There are five previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

San Pablo song sparrow (*Melospiza melodia samuelis*) is a California species of special concern and is also federally protected as a migratory non-game bird of management concern under the MBTA. This species is a resident of salt marshes along the north side of San Francisco Bay and San Pablo Bay. This species inhabits tidal sloughs in pickleweed marshes. It nests in gumplant species bordering slough channels. Suitable nesting and foraging habitat is present within the Planning Area. There are 31 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) is a California species of species concern. It is also federally protected as a migratory non-game bird of management concern under the MBTA. This blackbird nests in freshwater emergent wetlands with dense vegetation and deep water, often along the borders of lakes or ponds. They nest only where large insects such as dragonflies and damselflies are abundant. Nesting is timed with maximum emergence of aquatic insects. Suitable habitat is present within saline and freshwater emergent wetlands in the Planning Area. There is one previously recorded occurrence within the Planning Area (CDFG, 2010).

Short-eared owl (*Asio flammeus*) is a California species of special concern and is also federally protected as a migratory non-game bird of management concern under the MBTA. Nesting habitat is located in swamp lands (fresh and salt), lowland meadows, and irrigated alfalfa fields. Tule patches or tall grass is needed for nesting and daytime seclusion. It nests on dry ground in depression concealed in vegetation. Suitable habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

The **burrowing owl** (*Athene cunicularia*) is a California species of special concern and is also federally protected as a migratory non-game bird of management concern under the MBTA. Burrowing owls are year-round residents in open, dry annual or perennial grasslands, deserts, and scrublands with low-growing vegetation. During fall and winter, local residents may move from nesting areas, and migrants may move in. Burrowing owls nest and take shelter in burrows in the ground, typically burrows excavated by other species such as California ground squirrels. They forage in grasslands and agricultural fields. Suitable habitat is present within the Planning Area. There are 10 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Mammals

Pallid bat (*Antrozous pallidus*) is a California species of special concern that inhabits deserts, grasslands, shrublands, woodlands, and forests. This species is most common in open, dry

habitats with rocky areas for roosting. Its roosts must protect bats from high temperatures. They are very sensitive to disturbance of roosting sites. Suitable habitat is present within the Planning Area. There are no previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Western red bat (*Lasiurus blossevillii*) is a California species of special concern. Western red bats are solitary creatures that roost in broad-leaved trees, especially cottonwoods and willows in foothills and lower mountains and in fruit and nut orchards. They are often found near streams. Limited habitat is present within the Planning Area. There are no previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Silver-haired bat (*Lasonycteris noctivagans*) is a California species of concern. The silver-haired bat prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. During migration, it sometimes occurs in xeric or dry areas. Summer roosts and nursery sites are in tree foliage, cavities, or under loose bark, and sometimes in buildings. The silver-haired bat rarely hibernates in caves and is relatively cold tolerant. Its young are born and reared in tree cavities or similar situations. Limited habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

San Pablo vole (*Microtus californicus sanpabloensis*) is a California species of special concern. This species inhabits saltwater marshes of San Pablo Creek, on the south shore of San Pablo Bay. It constructs a burrow in soft soil, feeds on grasses, sedges, and herbs, and forms a network of runways leading from the burrow. Suitable habitat is present within the Planning Area. There are eight previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Salt-marsh harvest mouse (*Reithrodontomys raviventris*) is federally and state-listed as endangered. It occurs only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. This species does not burrow; it builds loosely organized nests. This species requires higher areas for flood escape. Limited habitat is present within the Planning Area. There are 36 previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Suisun shrew (*Sorex ornatus sinuosus*) is a California species of special concern that inhabits tidal marshes of the northern shores of San Pablo Bay and Suisun Bay. It requires dense, low-lying cover and driftwood and other litter above the mean high tide line for nesting and foraging. Marginal habitat is present within the Planning Area. There are nine previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

Salt-marsh wandering shrew (*Sorex vagrans halicoetes*) is a California species of special concern that inhabits salt marshes of the south arm of San Francisco Bay. This species is found in medium-high marshes 2 to 2.5 meters (6 to 8 feet) above sea level where abundant driftwood is scattered among pickleweed species. Marginal habitat is present within the Planning Area. There are two previously recorded occurrences within 5 miles of the Planning Area (CDFG, 2010).

The **American badger** (*Taxidea taxus*) is a California species of special concern that occupies dry, open, treeless regions, prairies, parklands, and cold desert areas. They require sufficient food (burrowing rodents), friable soils for burrowing, and open, uncultivated ground. This species is most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Suitable habitat is present within the Planning Area. There is one previously recorded occurrence within 5 miles of the Planning Area (CDFG, 2010).

4.7 BIOLOGICAL RESOURCES

4.1.2 REGULATORY FRAMEWORK

This section lists specific environmental review and consultation requirements and identifies permits and approvals that must be obtained from local, state, and federal agencies before implementation of the proposed project.

FEDERAL

Endangered Species Act

The Endangered Species Act (ESA) protects threatened and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the United States Fish and Wildlife Service (USFWS), which administers the ESA for all terrestrial species. The first pathway, Section 10(a) incidental take permit, applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under the ESA. The second pathway, Section 7 consultation, applies to projects directly undertaken by a federal agency or private projects requiring a federal permit or approval.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the Fish and Game Code (FGC).

All raptors and their nests are protected from take or disturbance under the MBTA (16 United States Code [USC], Section 703 et seq.) and California statute (FGC Section 3503.5). The golden eagle and bald eagle are also afforded additional protection under the Eagle Protection Act, amended in 1973 (16 USC, Section 669 et seq.).

Clean Water Act

Section 401 of the Clean Water Act (CWA) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board regulates Section 401 requirements.

Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States without a permit from the United States Army Corps of Engineers (USACE). The USACE and the U.S. Environmental Protection Agency administer the act. In addition to streams with a defined bed and bank, the definition of waters of the U.S. includes wetland areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 California Federal Regulations [CFR] 328.3 7b).

Substantial impacts to jurisdictional wetlands may require an individual permit. Small-scale projects may require a nationwide permit, which typically has an expedited process compared

to the individual permit process. Mitigation of wetland impacts is required as a condition of the 404 permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Executive Order 13112 – Invasive Species

This order directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, USFWS and USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

Coastal Zone Management Act (16 USC 1456 et seq.)

This act established national policy to preserve, protect, develop, and where possible, restore or enhance the nation's coastal zone. The coastal zone includes the territorial sea and inland bays. If a proposed project affects water use in the coastal zone, the activity must be consistent with the state's coastal zone management program to the maximum extent possible. This applies to actions taken by a federal entity or to actions that require a federal permit. The reauthorization amendments of the Coastal Zone Management Act (CZMA), passed in 1990, indicate that any federal action, regardless of its location, would be subject to the CZMA. Since the City of Pinole is located adjacent to San Francisco Bay, nearly any project action proposed in the city that requires a federal permit would be subject to the CZMA.

The Fish and Wildlife Coordination Act of 1958 (16 USC 661et seq.)

This act requires that whenever any body of water is proposed or authorized to be impounded, diverted, or otherwise controlled or modified, the lead federal agency must consult with the U.S. Fish and Wildlife Service (USFWS), the state agency responsible for fish and wildlife management, and the National Marine Fisheries Service. Section 662(b) of the act requires the lead federal agency to consider the USFWS' and other agencies' recommendations. The recommendations may include proposed measures to mitigate or compensate for potential damages to wildlife and fisheries associated with a modification of a waterway.

Marine Mammal Protection Act (P.L. 92-522; amended by P.L. 98-364, approved July 17, 1984)

This Act prohibits the taking or importing of marine mammals or marine mammal products except under special permit conditions. The term "take" is broadly defined to include harassing or attempting to harass marine mammals. The term "marine mammal" includes all seals, sea lions and other mammals that primarily occur in marine environments.

Executive Order 11990 Protection of Wetlands (42 FR 26961, 25 May 1977)

This executive order requires federal agencies to provide leadership and take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural qualities of these lands. Federal agencies are required to avoid undertaking or providing support for new construction located in wetlands unless (1) no practicable alternative exists and (2) all practical measures have been taken to minimize harm to wetlands.

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Estuary Protection Act (16 USC 1221 et seq.)

This act requires that consideration of estuaries and their natural resources and importance must be included in the planning for the use or development of water and land resources. Compliance with this act may be achieved through coordination with the Department of the Interior under the Fish and Wildlife Coordination Act and the National Environmental Policy Act.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Game (CDFG) has the responsibility for maintaining a list of endangered and threatened species (Fish and Game Code – FGC 2070). Sections 2050 through 2098 of the FGC outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the FGC prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFG maintains a list of "candidate species," which are species that CDFG formally notices as being under review for addition to the list of endangered or threatened species.

Native Plant Protection Act of 1977

In addition, the Native Plant Protection Act of 1977 (FGC Section 1900 et seq.) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by CDFG). An exception to this prohibition in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFG and give that state agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed (FGC, Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right-of-way"). Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

CDFG also maintains lists of "species of special concern" which serve as species "watch lists." Species with this status have limited distribution or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under the California Environmental Quality Act and thereby warrant specific protection measures.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. The CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society's (CNPS) Lists 1A, 1B, and 2 would typically be considered under CEQA.

Sections 3500 to 5500 of the Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFG cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances

such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Under Section 3503.5 of the FGC it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from CDFG would be in the form of an Incidental Take Permit.

California Wetlands Policy

The California Resources Agency and its various departments do not authorize or approve projects that fill or otherwise harm or destroy coastal, estuarine, or inland wetlands. Exceptions may be granted if all of the following conditions are met:

- The project is water-dependent;
- No other feasible alternative is available;
- The public trust is not adversely affected; and
- Adequate compensation is proposed as part of the project.

The objective of the Clean Water Act (CWA) (33 USC 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Specific sections of the act control the discharge of pollutants and wastes into aquatic and marine environment. Section 404 (b)(1) of the CWA, as amended in 1977, requires that the U.S. Army Corps of Engineers evaluate the impact of the discharge of dredged or fill materials into the waters of the United States. Subpart A, Section 230.1(c) of Section 404 (b)(1) guidelines states the following: "Fundamental to these guidelines is the precept that dredged or fill materials should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge would not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting ecosystems of concern."

Porter-Cologne Water Quality Control Act of 1966 (California Water Code Sec. 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15)

The Porter-Cologne Act is the primary state regulation that addresses water quality. The requirements of the act are implemented by the State Water Resources Control Board (SWRCB) at the state level and at the local level by the Regional Water Quality Control Board (RWQCB). The RWQCB carries out planning, permitting, and enforcement activities related to water quality

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in California. The act provides for waste discharge requirements and a permitting system for discharges to land or water. Certification is required by the RWQCB for activities that can affect water quality.

Stream Alteration Agreement

State and local public agencies are subject to Section 1602 of the FGC, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFG. Under Section 1602, a discretionary Stream Alteration Agreement permit from the CDFG (Region 2 for the proposed project) must be issued by the CDFG to the project developer prior to the initiation of construction activities within lands under CDFG jurisdiction. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

California Coastal Act of 1976

Under the authorization of the California Coastal Act of 1976 (PRC Section 3000 et seq.), the Coastal Zone Management Plan (CZMP) was developed and has been approved by the U.S. Department of Commerce. All federal actions that affect the coast must be determined to be as consistent as practicable with this plan.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission's primary mission is to analyze, plan, and regulate the San Francisco Bay as an ecological unit. BCDC has permit jurisdiction over San Francisco Bay, San Pablo Bay, and the Suisun Marsh—including levees, waterways, marshes, and grasslands—below the 10-foot contour line (as measured off a USGS quadrangle map from mean high water). Any person or public agency other than a federal agency that proposes certain activities in or around these areas must obtain a development permit from BCDC.

The area over which BCDC has jurisdiction for the purpose of carrying out the controls described above is defined in the McAteer-Petris Act and includes:

- The open water, marshes and mudflats of greater San Francisco Bay, including Suisun, San Pablo, Honker, Richardson, San Rafael, San Leandro, and Grizzly bays and the Carquinez Strait.
- The first 100 feet inland from the shoreline around San Francisco Bay.
- The portion of the Suisun Marsh—including levees, waterways, marshes and grasslands—below the 10-foot contour line.
- Portions of most creeks, rivers, sloughs, and other tributaries that flow into San Francisco Bay.
- Salt ponds, duck hunting preserves, game refuges, and other managed wetlands that have been diked off from San Francisco Bay.

Where necessary, particular portions of BCDC's jurisdiction may be further clarified by BCDC's regulations.

4.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance:

- 1) 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 CDFG or USFWS.
- 2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS.
- 3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- 4) 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.
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

METHODOLOGY

The impact assessment was based on the project description (Section 3.0 of this DEIR), information described in the existing setting, and the standards of significance described above. The impact assessment discusses impacts to implementation of the proposed project which includes the proposed updates to the City's General Plan and Zoning Code, as well as the Three Corridors Specific Plan.

Prior to conducting a field survey of biological resources within the Planning Area, PMC biologists examined aerial photographs (GlobeXplorer, 2006) and General Plan land use designation maps (City of Pinole, 1995) to select representative vegetation in the area to investigate. Several different natural areas within the Planning Area were selected for investigation (**Appendix E**). PMC biologists Greg Matzuak and Tim Nosal undertook reconnaissance-level surveys on December 5, 2006, to map habitat types and identify the presence/absence of sensitive biological resources including special-status species and their potential to occur in the Planning Area based on habitat suitability. Methodology used for the surveys involved a combination of driving accessible roads and walking throughout the Planning Area. The biological baseline report is included in **Appendix E**.

Habitats within the Planning Area were defined based upon the following data: species composition, abundance, and spatial distribution. A habitat map was created for the Planning Area by delineating boundaries of distinct vegetation types on aerial photographs and

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assigning habitat types based upon qualitative field assessment of local vegetation types (**Figure 4.7-1**). Important plants were noted for each habitat type and were identified (Hickman, 1993) to the level of species where practicable. Wildlife species were also noted (**Appendix E**). A comprehensive list of plant and wildlife species was not attempted for the entire Planning Area.

Prior to initiating field surveys, aerial photography was reviewed for potential habitat for the special-status species identified from the literature and database searches. A species was determined to have potential to occur in the Planning Area if its documented geographic range from the literature and database search included the project vicinity and if suitable habitat for the species was identified within or near the Planning Area. The CDFG's CNDDDB was queried for a list of special-status wildlife, botanical, and fisheries resources with a potential to occur or known to occur within the Planning Area and in the vicinity of the Planning Area (CDFG, 2010a/b). The database search was performed for special-status species in the Mare Island, Richmond and Briones Valley United States Geologic Survey (USGS) 7.5-minute quadrangle and the surrounding quadrangles (Sears Point, Cuttings Wharf, Cordelia, Petaluma Point, Benicia, Vine Hill, San Quentin, Walnut Creek, San Francisco North, Oakland West, Oakland East, and Las Trampas Ridge). Locations of special-status species occurrences as recorded in CNDDDB within the Planning Area are shown in **Figure 4.7-2**.

The CNPS inventory was also searched for rare or endangered plants that may occur within the Planning Area (CNPS, 2010). This query was performed for CNPS List 1A, List 1B, and List 2 special-status plants occurring in the surrounding USGS 7.5-minute quadrangles listed above. List 1A species are presumed extinct in California. List 1B species are considered rare or endangered in California and elsewhere. List 2 species are considered rare or endangered in California, but are more common elsewhere.

In addition, the USFWS list for the USGS 7.5-minute quadrangles listed above was consulted for federally listed or candidate plant and animal species that could potentially be affected by the proposed action (USFWS, 2010a). An electronic request was submitted online to the USFWS for a list of federal special-status species potentially occurring in the surrounding USGS 7.5-minute quadrangles.

When the USFWS lists a species as threatened or endangered under the Endangered Species Act, areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection due to their ecological importance. Potential critical habitat designations within the general vicinity of the Planning Area were checked using the USFWS Critical Habitat Portal (USFWS, 2010b). No critical habitat is located within the Planning Area (USFWS, 2010b).

Appendix E presents the results of the CNDDDB, CNPS, and USFWS queries for special-status species that have the potential to occur within the Planning Area and within overlapping habitats with adjacent jurisdictions. **Appendix E** contains a consolidated list of special-status species from the database searches as well as rationale for including them in the impact analysis.

No species-specific surveys were conducted; however, plant and wildlife observations during habitat mapping efforts were documented (**Appendix E**). Historic records of surveys performed in the surrounding area reveal the presence of special-status species. Other species documented in the literature search were considered for further analysis based on whether or not habitat existed for the species within the Planning Area as well as whether the Planning Area was within range of the species.

Since the exact nature of all development associated with the Land Use Map of the proposed General Plan Update and its associated project components is not known at this time, a conservative approach was taken, and it was assumed that all natural resources within the proposed Planning Area would be removed, or otherwise modified by project activities, unless explicitly stated in the General Plan. Although it is likely that some level of natural resources would be retained within each project parcel, the location and extent of these resources cannot be determined. Therefore, this more conservative impact approach was taken to ensure that impacts are not underestimated.

IMPACT STATEMENTS AND MITIGATION MEASURES

Impacts to Special-status Species, Species of Concern, and Other Non-Listed Special-Status Species (Standard of Significance 1)

Impact 4.7.1 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in direct and indirect loss of habitat and individuals of endangered, threatened, rare, proposed, and candidate plant and wildlife species, plant species identified by the California Native Plant Society with a rating of List 1A or 1B (i.e., rare, threatened, or endangered plants) as well as animal and plant species of concern and other non-listed special-status species. This would be a **less than significant** impact.

Direct Impacts to Special-status Species

As discussed in the Existing Setting discussion above, suitable habitat for plant and wildlife species listed as endangered, threatened, rare, proposed, candidate, or List 1A or 1B (collectively referred to in this DEIR as "listed species") is found within the Planning Area. Future development under the proposed project could directly impact such habitat. Most direct impacts would occur from further impingement on the riparian corridor near Pinole Creek and other sensitive habitats, and from potential infill development and redevelopment in the Planning Area.

Development under the proposed General Plan Land Use Map could potentially cause direct impacts to approximately 1,505 acres of habitat types (total acreage minus open water and urban habitat) that serve as occupied or potential habitat for listed species (**Table 4.7-2**). As the final design of future development is not currently known, the acreages listed in **Table 4.7-4**, below, represent the maximum area that could be directly affected. Actual direct impacts to these habitat types may be less, depending on the ultimate design of individual developments as determined through application of proposed General Plan policies on a project-specific basis and project-specific compliance with state and federal agency requirements.

Development under the proposed General Plan Land Use Map could potentially cause significant impacts to an unspecified number of undeveloped parcels within the Planning Area including approximately 1,067 acres of habitat cover types that serve as occupied or potential habitat for common and special-status species (**Table 4.7-4**). The habitat type layer created by PMC (all habitat types except for urban) was overlain on the proposed General Plan Update Land Use Map to generate the potential land use conflicts outlined in **Table 4.7-4**. Areas designated as land use codes San Pablo Bay Conservation Area, water, and open space were removed, as impacts to these areas are not expected to occur with the implementation of the proposed project.

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Direct Impacts to Species of Concern and Other Non-Listed Special-Status Species

Suitable habitat exists in the Planning Area for unlisted but nonetheless special-status species. These species are designated as a species of concern by the USFWS or the CDFG, listed as "fully protected" in the Fish and Game Code of California (Section 3511, 4700, 5050, 5515), and/or listed in the CNPS's *Inventory of Rare and Endangered Plants of California* (2001) as List 2. For a listing of special-status, unlisted species and their associated habitat types within the Planning Area, see **Table 4.7-3**.

Direct impacts to these species would occur for the same reasons and in the same manner as direct impacts to listed species as identified. See **Table 4.7-4** for information on the acreages of suitable habitat that would be affected by implementation of the proposed General Plan Update.

**TABLE 4.7-4
HABITAT TYPES IMPACTED BY IMPLEMENTATION OF THE PROPOSED PROJECT**

Habitat Types Within Land Use Codes	Acreage of Land Use Conflicts
High Density Residential	1.3
Coastal Oak Woodland	1.3
Low Density Residential	19.4
Annual Grassland	14.2
Coastal Oak Woodland	5.1
Medium Density Residential	14.0
Annual Grassland	3.2
Coastal Oak Woodland	9.6
Perennial Creek	0.4
Riparian Forest	0.8
Mixed Use Sub Area	12.5
Annual Grassland	4.2
Coastal Oak Woodland	8.3
Old Town	7.4
Annual Grassland	1.9
Coastal Oak Woodland	1.8
Perennial Creek	3.7
Parks and Recreation	323.3
Annual Grassland	64.7
Brackish Marsh	12.6
Coastal Oak Woodland	220.2
Coastal Scrub	5.9
Estuarine	2.5
Perennial Creek	3.6

Habitat Types Within Land Use Codes	Acreage of Land Use Conflicts
Riparian Forest	13.9
Public/Quasi-Public/Institutional	12.4
Annual Grassland	7.2
Coastal Oak Woodland	1.3
Estuarine	0.1
Perennial Creek	0.4
Riparian Forest	3.3
Regional Commercial	3.3
Annual Grassland	3.3
Rural	507.9
Annual Grassland	207.2
Coastal Oak Woodland	98.3
Coastal Scrub	2.9
Perennial Creek	2.3
Riparian Forest	6.0
Service Area	25.1
Annual Grassland	17.5
Coastal Oak Woodland	5.9
Perennial Creek	0.9
Riparian Forest	0.8
Annual Grassland	117.9
Coastal Oak Woodland	55.4
Coastal Scrub	0.8
Perennial Creek	2.7
Riparian Forest	14.6
Transportation	140.4
Annual Grassland	114.5
Brackish Marsh	0.8
Coastal Oak Woodland	18.9
Estuarine	0.4
Perennial Creek	3.8
Riparian Forest	1.9
TOTAL	1,067

Indirect Impacts to Special-Status Species

Suitable habitat for listed plant and wildlife species exists within the Planning Area and could be indirectly impacted by development under the proposed project (as identified in the Land Use Element of the City of Pinole General Plan). Information regarding these species is included in **Table 4.7-2**.

Indirect impacts occur for a number of reasons, though primarily through increased human/wildlife interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows due to development of previously undeveloped areas.

Increased Human/Wildlife Interactions

The major circulation features identified in the Circulation Element of the General Plan Update would be heavily traveled with vehicular traffic and pedestrians, increasing the amount and severity of indirect impacts to wildlife and habitat in the Planning Area. Additionally, development of previously undeveloped land for residential uses can expose species to impacts from feral and unconfined pets.

Habitat Fragmentation

Much of the habitat within the Planning Area used by listed species is currently interconnected with large areas of agricultural land and sparse development that has a minor impact on plant and wildlife species in the Planning Area. However, wide-scale development of the Planning Area consistent with the proposed project could result in small pockets of conserved habitat that are no longer connected by streams and open space, resulting in indirect impacts to species diversity and movement within the Planning Area.

Encroachment by Exotic Weeds

Generally, landscaping installed as part of development in the region has relied heavily on exotic, non-native plant species for decoration; however, some of these species can spread to natural areas, causing native plant life to be replaced by exotic species. Construction activities, grading, and other ground- or vegetation-clearing disturbances can eliminate the native plant population and allow invasive non-native species to become established. As native plants are replaced by exotic species, indirect impacts to the habitat of listed species would occur such as modification or degradation of habitat.

Changes in Surface Water Flows

As development occurs, surface water flows normally increase due to an increase in impermeable surfaces through, for example, the placement of building materials and paving over permeable surfaces. In addition, surface water flows are modified due to changes in surface flow by point source stormwater infrastructure installed in order to handle greater flows from the increasing impermeable surfaces as well as from the introduction of drainage flows during seasons when waterways and wetland features are typically dry (commonly referred to as "summer nuisance flows"). Some cover types that contain habitat for listed species can be indirectly impacted by such changes. For example, seasonal wetland communities survive along a rigid set of soil, water, and climatic conditions. Alteration of current inundation and desiccation regimes due to altered hydrology could substantially alter the characteristics of seasonal wetland habitat, resulting in loss or degradation of seasonal wetland habitat in developed and undeveloped areas of the Planning Area.

Table 4.7-4 shows quantities of these habitats that may be impacted by development under the proposed project, and **Table 4.7-2** lists which species would be impacted. The actual acreage ultimately impacted may be less than the estimates shown in **Table 4.7-4**, because future development design proposals will be subject to the application of General Plan policies that address protection of biological resources, as well as possible further review on a project-by-project basis. These policies and possible further review are expected to reduce the impacts estimated in **Table 4.7-4**, which ensure that the worst-case impacts are considered in this DEIR. As discussed previously, further environmental review may be necessary, depending on whether the potential environmental impacts of future proposed projects within the Planning Area have the potential to cause one or more direct or reasonably foreseeable indirect physical change in the environment that has not already been adequately considered in this DEIR.

Indirect Impacts to Species of Concern and Other Non-Listed Special-Status Species

Suitable habitat exists within the GPU Planning Area for unlisted, special-status species, identified (along with other listed special-status species) in **Table 4.7-3**. The previously documented location of these species is shown in **Figure 4.7-2**. Indirect impacts to these species would occur for similar reasons as those identified for special-status species above.

Indirect impacts to habitat for non-listed, special-status species would most likely be less than the total impact identified above. The mitigating effect of many of the policies and action items in the proposed General Plan Update, addressing protection of biological resources, would ultimately reduce actual impacts. In estimating the amount of acreage potentially impacted, this discussion considers the worst-case outcome of implementation of the proposed project to ensure that potential environmental impacts are fully considered. In addition, some future development design proposals will be subject to additional environmental review, depending on whether all of the impacts of such proposals have been adequately considered in this DEIR. This environmental review may further reduce the indirect impacts of the proposed General Plan on non-listed special-status species. Therefore, the total acres of indirect impacts likely would be less. As the final design of development and roadways to be constructed under the proposed General Plan Update cannot be known, the actual quantity of habitat impacted may vary greatly.

Proposed General Plan Policies and Action Items that Address Impacts to Special-status Species, Species of Concern, and Other Non-Listed Special-Status Species

- Policy OS.1.1 Habitat Preservation. The City shall protect and preserve open space and natural areas. Preserve oak/woodland, riparian vegetation, creeks, fisheries, saltwater and freshwater marsh, native bunchgrass grasslands, wildlife corridors and sensitive nesting sites. Loss of these habitats should be fully offset through creation of habitat of equal value. Compensation rate for habitat recreation shall be determined by a qualified biologist in consultation with resource agencies.

- Policy OS.1.2 Agency Cooperation. Work with Federal, State and local regulatory and trustee agencies to promote the long-term sustainability of local natural resources.

- Policy OS.1.4 Protect and Mitigate Wetlands. All projects shall avoid impacts where feasible. If not feasible, projects shall mitigate impacts to wetlands consistent with Federal and State Policies to ensure there is no net loss in a regional context. Protect wetlands through careful environmental review of proposed

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- development applications. The City shall recognize the U.S. Army Corps of Engineers as the designated permitting agency that regulates wetlands.
- Policy OS.1.5 Integrated Management. Work toward integrated management of tidal areas and drainages within the City limits.
- Policy OS.1.8 Habitat Restoration. The City shall implement a re-vegetation plan which aims to identify and prioritize areas planned for habitat restoration. Areas planned for restoration may provide special-status species habitat, connectivity of wildlife corridors, transitional zones in between natural areas and incompatible land uses, or expansion of ecological functions such as flood management and water quality.
- Policy OS.2.1 Protection of Native Vegetation. Protect, preserve and create the conditions that will promote the preservation of significant trees and other vegetation, particularly native to California and the region.
- Policy OS.2.2 Invasive Species. The City shall attempt to prevent further expansion of invasive species and protect against noxious weeds through public education and development review of projects that occur adjacent to natural areas. These efforts shall include requiring the planting of native vegetation that supports native terrestrial and aquatic animal species.
- Policy OS.2.3 Invasive Species. Consider adopting guidelines and standards to protect against the continued spread of invasive species, seek out opportunities to replace invasive, non-native vegetation with native vegetation on public property, and support efforts that enhance habitat by replacing invasive, nonnative vegetation with native California plant species over time within the City.
- Policy OS.2.5 Riparian Habitat Restoration. Require restoration or replanting of riparian vegetation to the extent feasible, projects shall mitigate impacts to wetlands consistent with Federal and State policies to ensure that there is no net loss in a regional context.
- Policy OS.2.6 Riparian Mitigation. Impacts to riparian habitats shall be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted.
- Policy OS.2.8 Maintain and Improve Wildlife Movement Corridors. Continuous wildlife habitat, including corridors free of human disruption, shall be preserved and where necessary created by interconnecting open spaces, wildlife habitat and corridors.
- Policy OS.2.9 Wildlife Movement Corridor Mitigation. The City will condition development permits in accordance with applicable mitigation measures to ensure that important corridors for wildlife movement and dispersal are protected. Features of particular importance to wildlife include riparian corridors, wetlands, bay shorelines, and protected natural areas with cover and water. Linkages and corridors shall be provided to maintain connections between habitat areas.

- Policy OS.3.1 Continuous Open Space Planning. Plan for connectivity of open spaces and wildlife habitat and corridors using species area plans, neighborhood plans, subdivision maps or other applicable planning processes, consistent with Open Space Guidelines.
- Policy OS.3.2 Regional Planning. Coordinate with Contra Costa County and adjoining jurisdictions, federal and state agencies to assure regional connectivity of open space and wildlife corridors.
- Policy OS.3.3 Cluster Development. Encourage cluster development and other creative site planning techniques to preserve open space, trails and visual, habitat, recreation and archaeological resources.
- Policy OS.3.5 Buffers for Sensitive Resources. When activities close to open space resources within or outside the urban area could harm these resources, the City will require buffers between the activities and the resources. The City will actively encourage individuals, organizations and other agencies to follow this policy. Buffers associated with new development shall be on the site of the development, rather than on neighboring land containing the open space resource. Buffers provide distance in the form of setbacks, within which certain features or activities are not allowed or conditionally allowed. Buffers shall also use techniques such as planting and wildlife-compatible fencing. Buffers shall be adequate for the most sensitive species in the protected area, as determined by a qualified professional and shall complement the protected area's habitat values. Buffers shall be required in the following situations:
- Between urban development – including parks and public facilities – and natural habitat such as creeks, wetlands, rocky outcrops and grassland features to address noise, lighting, storm runoff, spread of invasive, non-native species, and access by people and pets.
 - Between agricultural operations and natural habitat, to address noise, chemical use, sediment transport, and livestock access.
- Policy OS.3.6 Minimize Environmental Impacts. Encourage development patterns which minimize impacts on the City's biological, visual, and cultural resources, and integrate development with open space areas.
- Policy OS.3.8 Protect Listed and Non-listed Special-status Species. Limit development in areas which support listed and non-listed special-status species. If development of these areas must occur, any loss of habitat should be fully compensated on-site. If off-mitigation is necessary, it should occur within the Pinole planning area whenever possible, and must be accompanied by plans and a monitoring program prepared by a qualified biologist.
- Policy OS.3.9 Biological Resource Evaluation. The City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials. This evaluation shall be conducted prior to the authorization of any ground disturbance.

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Policy OS.3.10 Mitigation for Special-status Species. For those areas in which special-status species are found or are likely to occur or where the presence of species can be reasonably inferred, the City shall require mitigation of impacts to those species. Mitigation shall be designed by the City in coordination with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), and shall emphasize a multi-species approach to the maximum extent feasible. This may include development or participation in a habitat conservation plan.

In addition, Section 7.0, *Private Realm Design Guidelines*, includes site planning guidelines that promote the preservation of natural amenities such as views, mature trees, and similar features unique to a site.

Implementation of these General Plan goals and policies and associated action items, as well as the Specific Plan guidelines, would mitigate direct and indirect impacts to special-status listed species and non-listed special-status species in the GPU Planning Area. The proposed General Plan Update policies and actions contain specific, enforceable requirements that would ensure that direct and indirect impacts to special-status species are **less than significant**.

Mitigation Measures

No additional mitigation measures are necessary.

Impacts to Sensitive Biological Communities (Standard of Significance 2)

Impact 4.7.2 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in disturbance, degradation, and removal of riparian habitat, coastal oak woodland, and wetland habitats. This would be a **potentially significant** impact.

Implementation of the proposed project would result in disturbance, degradation, and removal of riparian, coastal oak woodland, and wetland habitats.

Riparian habitat is under the jurisdiction of the CDFG under Section 1602 of the Fish and Game Code. CDFG regulates work that will substantially affect resources associated with rivers, streams, and lakes in California, pursuant to Fish and Game Code Sections 1600–1607. Any action from a project that substantially diverts or obstructs the natural flow or changes the bed, channel, or bank of any river or stream, or uses material from a streambed must be previously authorized by CDFG in a Streambed Alteration Agreement under Section 1602 of the Fish and Game Code. This requirement may, in some cases, apply to any work undertaken within the 100-year floodplain of a body of water or its tributaries, including intermittent streams. As a general rule, however, it applies to any work done within the annual high-water mark of a river or stream, that contains or once contained fish and wildlife, or that supports or once supported riparian vegetation. Implementation of the proposed project would result in direct and indirect impacts to riparian conditions along the Pinole Creek.

Riparian habitat supports a high diversity of wildlife species and provides shade for streams and wetlands, maintaining stream temperatures and reducing stream evaporation. The proposed project does not fully address buffer zones for riparian habitat. Riparian obligates (those species dependent on riparian habitat) require a minimum of a 100-foot setback (Ledwith, 1996) (see mitigation measure **MM 4.7.2a** below). Buffers are not only important to the species they support but they also can reduce sediment and nutrient inputs into streams. The length of buffers is also

important for stream functions. The benefits of riparian corridor buffers increase if they are adjacent to larger tracts of conserved land.

Coastal oak woodland occurs in the GPU Planning Area. Implementation of the General Plan Update would result in the loss of oak woodland providing habitat for common wildlife species. The loss of oak woodland and associated common wildlife is significant because this biological community is classified as a sensitive community.

Wetland habitats will be discussed under Impact 4.7.3.

Consequently, prior to approval of projects proposing to affect these habitats, focused studies should be conducted to determine the presence/absence of these habitats within the GPU Planning Area. If they do occur within the survey area, the appropriate resource agency should be contacted and specific management strategies should be developed to ensure the protection of these habitats. These communities in the GPU Planning Area are considered sensitive by CDFG because of their rarity, high biological diversity, and/or susceptibility to disturbance or destruction.

Proposed General Plan Policies and Action Items that Address Impacts to Special Biological Communities

- Policy OS.1.1 Habitat Preservation. The City shall protect and preserve open space and natural areas. Preserve oak/woodland, riparian vegetation, creeks, fisheries, saltwater and freshwater marsh, native bunchgrass grasslands, wildlife corridors and sensitive nesting sites. Loss of these habitats should be fully offset through creation of habitat of equal value. Compensation rate for habitat re-creation shall be determined by a qualified biologist in consultation with resource agencies.

- Policy OS.1.4 Protect and Mitigate Wetlands. All projects shall avoid impacts where feasible. If not feasible, projects shall mitigate impacts to wetlands consistent with Federal and State Policies to ensure there is no net loss in a regional context. Protect wetlands through careful environmental review of proposed development applications. The City shall recognize the U.S. Army Corps of Engineers as the designated permitting agency that regulates wetlands.

- Policy OS.1.5 Integrated Management. Work toward integrated management of tidal areas and drainages within the City limits.

- Policy OS.1.8 Habitat Restoration. The City shall implement a re-vegetation plan which aims to identify and prioritize areas planned for habitat restoration. Areas planned for restoration may provide special-status species habitat, connectivity of wildlife corridors, transitional zones in between natural areas and incompatible land uses, or expansion of ecological functions such as flood management and water quality.

- Policy OS.2.1 Protection of Native Vegetation. Protect, preserve and create the conditions that will promote the preservation of significant trees and other vegetation, particularly native to California and the region.

- Policy OS.2.2 Invasive Species. The City attempt to prevent further expansion of invasive species and protect against noxious weeds through public education and development review of projects that occur adjacent to natural areas. These

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efforts shall include requiring the planting of native vegetation that supports native terrestrial and aquatic animal species.

Policy OS.2.3 Invasive Species. Consider adopting guidelines and standards to protect against the continued spread of invasive species, seek out opportunities to replace invasive, non-native vegetation with native vegetation on public property; and support efforts that enhance habitat by replacing invasive, non-native vegetation with native California plant species over time within the City.

Policy OS.2.5 Riparian Habitat Restoration. Require restoration or replanting of riparian vegetation to the extent feasible, projects shall mitigate impacts to wetlands consistent with Federal and State policies to ensure that there is no net loss in a regional context.

Policy OS.2.6 Riparian Mitigation. Impacts to riparian habitats should be mitigated at a net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted.

Policy OS.3.1 Continuous Open Space Planning. Plan for connectivity of open spaces and wildlife habitat and corridors using species area plans, neighborhood plans, subdivision maps or other applicable planning processes, consistent with Open Space Guidelines.

Policy OS.3.3 Cluster Development. Encourage cluster development and other creative site planning techniques to preserve open space, trails and visual, habitat, recreation and archaeological resources.

Policy OS.3.5 Buffers for Sensitive Resources. When activities close to open space resources within or outside the urban area could harm these resources, the City will require buffers between the activities and the resources. The City will actively encourage individuals, organizations and other agencies to follow this policy. Buffers associated with new development shall be on the site of the development, rather than on neighboring land containing the open space resource. Buffers provide distance in the form of setbacks, within which certain features or activities are not allowed or conditionally allowed. Buffers shall also use techniques such as planting and wildlife-compatible fencing. Buffers shall be adequate for the most sensitive species in the protected area, as determined by a qualified professional and shall complement the protected area's habitat values. Buffers shall be required in the following situations:

- Between urban development – including parks and public facilities – and natural habitat such as creeks, wetlands, rocky outcrops and grassland features to address noise, lighting, storm runoff, spread of invasive, non-native species, and access by people and pets.
- Between agricultural operations and natural habitat, to address noise, chemical use, sediment transport, and livestock access.

- Policy OS.3.6 Minimize Environmental Impacts. Encourage development patterns which minimize impacts on the City's biological, visual, and cultural resources, and integrate development with open space areas.
- Policy OS.3.7 Preserve Natural Features. Retain sensitive habitat areas in their natural state, where possible, and protect from inappropriate development and landscaping. New development shall incorporate natural features present on the site such as a creek, steep topography or natural vegetation, where feasible, unless appropriate mitigation measures can be incorporated.
- Policy OS.3.9 Biological Resource Evaluation. The City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials. This evaluation shall be conducted prior to the authorization of any ground disturbance.
- Policy OS.8.6 Water for Riparian Communities. Protect water sources for water-dependent species and the health of riparian communities.
- Policy OS.8.7 Interagency Water Resource Projects. Help implement interagency projects, such as expansion of wastewater treatment capacity, joint development of new treatment or distribution infrastructure, water exchanges, and reclaimed water sales with local, regional and state water suppliers and water resource managers to ensure a sustainable water supply.

In addition, Chapter 7.0, *Private Realm Design Guidelines*, of the proposed Three Corridors Specific Plan encourages the preservation of mature trees in good health and appearance during site design.

Mitigation Measures

MM 4.7.2a The following mitigation shall be incorporated as an action under proposed General Plan Update Policy OS.1.1: Require a minimum 100-foot setback from the top of creek banks (Pinole Creek, Catty Creek, Duncan Canyon/Cole Creek, Shady Draw, Faria Creek, and Roble Creek) for development and associated above-ground infrastructure. Analyze the adequacy of a 100-foot setback as a part of project and environmental review, and require a larger setback where necessary to mitigate project impacts.

MM 4.7.2b The following mitigation shall be incorporated as an action under proposed General Plan Update Policy OS.1.1: The City shall require biological resources evaluation for discretionary projects in areas identified to contain or possibly contain plant and/or wildlife species designated by state and federal agencies as rare, threatened, or endangered. This evaluation shall be conducted prior to the authorization of any ground disturbance.

For proposed projects in which plant and/or wildlife species designated by state and federal agencies as rare, threatened, or endangered are found, the City shall require feasible mitigation of impacts to those species that ensure that the project does not contribute to the decline of the affected species such that their decline would impact the viability of the species. Such

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mitigation measures may include providing and permanently maintaining similar quality and quantity of replacement habitat, enhancing existing habitat areas, or paying fees towards to an approved habitat mitigation bank. Replacement habitat may occur either on-site or at approved off-site locations. Feasible mitigation shall be determined by the City after the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) are provided an opportunity to comment. Mitigation shall emphasize a multi-species approach to the maximum extent feasible. This may include development or participation in a habitat conservation plan.

The General Plan Update designates the majority of land within the riparian corridor as Public/Quasi-Public/Institutional, as well as areas designated as park/open space, general industrial, and industrial reserve. Implementation of General Plan policies and associated action items, Specific Plan guidelines, and mitigation measures **MM 4.7.2a** and **MM 4.7.2b**, would ensure that all development projects within the City's jurisdiction comply with federal, state, and local regulations. Impacts from the proposed project will therefore be reduced to a **less than significant** level.

Impacts to Jurisdictional Waters (Standard of Significance 3)

Impact 4.7.3 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in substantial adverse impacts to and the potential loss of jurisdictional waters of the U.S. This would be a **less than significant** impact.

Implementation of the proposed project, specifically development identified in the General Plan Land Use Map and roadway construction and improvement identified in the Circulation Element, could result in direct and indirect impacts to jurisdictional waters within the Planning Area. Improvements identified in the Circulation Element and implementation of the General Plan Update could impact as much as 34.8 acres of brackish marsh and 21.4 acres of perennial creek, and unknown acreage of intermittent creek and other wetlands. Jurisdictional waters of the U.S. may occur in any of the habitat types within the Planning Area. Impacts 4.7.1 and 4.7.2 above contain more information regarding acreages of and possible direct and indirect impacts to these habitat types due to implementation of the proposed General Plan Update. Impacts to jurisdictional features would require a 404 permit from USACE and a 401 Water Quality Certification from the Regional Water Quality Control Board. Potential impacts to Pinole Creek will also require a Streambed Alteration Agreement (CDFG Code Section 1603). USACE and CDFG have a "no net loss" policy for jurisdictional features; therefore, this impact would be considered potentially significant.

Jurisdictional waters of the U.S. provide for a variety of functions for plants and wildlife within the Planning Area. Jurisdictional waters provide habitat, foraging, cover, migration and movement corridors, and water sources for special-status and other species found in the Planning Area. In addition to habitat functions, jurisdictional waters provide physical conveyance of surface water flows as well as channels for the handling of large stormwater events. Large storms can produce extreme flows that cause bank cutting and sedimentation of ephemeral drainage and water bodies such as open water and streams in the Planning Area. Jurisdictional waters found within the Planning Area can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources. Impacts to surface water flows are discussed further in Section 4.9, Hydrology and Water Quality, of this DEIR.

Proposed General Plan Policies and Action Items that Address Impacts to Jurisdictional Waters

- Policy OS.1.1 Habitat Preservation. The City shall protect and preserve open space and natural areas. Preserve oak/woodland, riparian vegetation, creeks, fisheries, saltwater and freshwater marsh, native bunchgrass grasslands, wildlife corridors and sensitive nesting sites. Loss of these habitats should be fully offset through creation of habitat of equal value. Compensation rate for habitat re-creation shall be determined by a qualified biologist in consultation with resource agencies.
- Policy OS.1.2 Agency Cooperation. Work with Federal, State and local regulatory and trustee agencies to promote the long-term sustainability of local natural resources.
- Policy OS.1.4 Protect and Mitigate Wetlands. All projects shall avoid impacts where feasible. If not feasible, projects shall mitigate impacts to wetlands consistent with Federal and State Policies to ensure there is no net loss in a regional context. Protect wetlands through careful environmental review of proposed development applications. The City shall recognize the U.S. Army Corps of Engineers as the designated permitting agency that regulates wetlands.
- Policy OS.1.5 Integrated Management. Work toward integrated management of tidal areas and drainages within the City limits.
- Policy OS.1.8 Habitat Restoration. The City shall implement a re-vegetation plan which aims to identify and prioritize areas planned for habitat restoration. Areas planned for restoration may provide special-status species habitat, connectivity of wildlife corridors, transitional zones in between natural areas and incompatible land uses, or expansion of ecological functions such as flood management and water quality.
- Policy OS.2.1 Protection of Native Vegetation. Protect, preserve and create the conditions that will promote the preservation of significant trees and other vegetation, particularly native to California and the region.
- Policy OS.2.2 Invasive Species. The City should review landscape plans to prohibit invasive species and protect against noxious weeds through regulatory standards for construction activities that occur adjacent to natural areas to inhibit the establishment of noxious weeds through accidental seed import.
- Policy OS.2.3 Invasive Species. Consider adopting guidelines and standards to protect against the introduction of invasive species, replace invasive, non-native vegetation with native vegetation, and enhance habitat by removing invasive, non-native vegetation and be replacing it with native California plant species.
- Policy OS.2.5 Riparian Habitat Restoration. Require restoration or replanting of riparian vegetation to the extent feasible, projects shall mitigate impacts to wetlands consistent with Federal and State policies to ensure that there is no lest loss in a regional context.

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- Policy OS.2.6 Riparian Mitigation. Impacts to riparian habitats should be mitigated at a net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted.
- Policy OS.3.3 Cluster Development. Encourage cluster development and other creative site planning techniques to preserve open space, trails and visual, habitat, recreation and archaeological resources.
- Policy OS.3.5 Buffers for Sensitive Resources. When activities close to open space resources within or outside the urban area could harm these resources, the City will require buffers between the activities and the resources. The City will actively encourage individuals, organizations and other agencies to follow this policy. Buffers associated with new development shall be on the site of the development, rather than on neighboring land containing the open space resource. Buffers provide distance in the form of setbacks, within which certain features or activities are not allowed or conditionally allowed. Buffers shall also use techniques such as planting and wildlife-compatible fencing. Buffers shall be adequate for the most sensitive species in the protected area, as determined by a qualified professional and shall complement the protected area's habitat values. Buffers shall be required in the following situations:
- Between urban development – including parks and public facilities – and natural habitat such as creeks, wetlands, rocky outcrops and grassland features to address noise, lighting, storm runoff, spread of invasive, non-native species, and access by people and pets.
 - Between agricultural operations and natural habitat, to address noise, chemical use, sediment transport, and livestock access.
- Policy OS.3.6 Minimize Environmental Impacts. Encourage development patterns which minimize impacts on the City's biological, visual, and cultural resources, and integrate development with open space areas.
- Policy OS.3.7 Preserve Natural Features. Retain sensitive habitat areas in their natural state, where possible, and protect from inappropriate development and landscaping. New development shall incorporate natural features present on the site such as a creek, steep topography or natural vegetation, where feasible, unless appropriate mitigation measures can be incorporated.
- Policy OS.8.6 Water for Riparian Communities. Protect water sources for water-dependent species and the health of riparian communities.
- Policy OS.8.7 Interagency Water Resource Projects. Help implement interagency projects, such as expansion of wastewater treatment capacity, joint development of new treatment or distribution infrastructure, water exchanges, and reclaimed water sales with local, regional and state water suppliers and water resource managers to ensure a sustainable water supply.
- Policy OS.8.8 Protect creeks and San Pablo Bay within the Planning Area by implementing stormwater pollution-prevention activities.

The General Plan Update includes goals and policies that preserve habitat (Policy OS 1.1), protect wetlands (Policies OS 1.4 and 1.5), restore habitat (Policy OS 1.8), protect native vegetation (Policy OS 2.1), control invasive species (Policy OS 2.2 and 2.3), provide setbacks to creeks and riparian mitigation (Policy OS 2.5 and 2.6), preserve natural features (Policy OS 3.7), and buffer sensitive resources (OS 3.5). In addition, there are other policies to work in cooperation with government agencies (OS 1.2), require a biological resource evaluation (OS 3.9), and minimize environmental impacts (OS 3.6). Policy OS 3.3 will conserve sensitive resources. In addition, there are policies to prevent water pollution (OS 8.6), protect water for riparian communities (OS 8.7), and protect creeks and San Pablo Bay (OS. 8.8). There will not be an overall loss of wetland resources in the GPU Planning Area because of the no-net-loss policy of the USACE and the CDFG. Implementation of the proposed project will result in a **less than significant** impact to jurisdictional waters of the U.S.

Mitigation Measures

No additional mitigation measures are necessary.

Impacts to Migratory Corridors (Standard of Significance 4)

Impact 4.7.4 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could interfere substantially with the movement of native resident or migratory fish or wildlife species. This would be a **less than significant** impact.

Although this portion of the San Francisco Bay Area is a part of the Pacific Flyway, implementation of the proposed project would not result in the obstruction of the movement of migratory birds. Migratory birds may, however, use detention ponds, irrigation ditches, and wastewater treatment ponds during migration. The major area with remaining natural lands includes the riparian corridor along Pinole Creek, which provides adequate cover and vegetation to be used as a migratory corridor for common and special-status fish and wildlife species. Implementation of the proposed project would result in disturbance, degradation, and removal of the riparian corridor, an important corridor for the movement of common and special-status species. In addition, open space, including agricultural lands, provides an opportunity for dispersal and migration of wildlife species. These actions could result in habitat degradation due to additional traffic, increased human presence, and degradation of the water quality. This would be considered **potentially significant**.

Proposed General Plan Policies and Action Items that Impacts to Migratory Corridors

Policy OS.1.1 Habitat Preservation. The City shall protect and preserve open space and natural areas. Preserve oak/woodland, riparian vegetation, creeks, fisheries, saltwater and freshwater marsh, native bunchgrass grasslands, wildlife corridors and sensitive nesting sites. Loss of these habitats should be fully offset through creation of habitat of equal value. Compensation rate for habitat re-creation shall be determined by a qualified biologist in consultation with resource agencies.

Policy OS.1.4 Protect and Mitigate Wetlands. All projects shall avoid impacts where feasible. If not feasible, projects shall mitigate impacts to wetlands consistent with Federal and State Policies to ensure there is no net loss in a regional context. Protect wetlands through careful environmental review of proposed

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- development applications. The City shall recognize the U.S. Army Corps of Engineers as the designated permitting agency that regulates wetlands.
- Policy OS.1.5 Integrated Management. Work toward integrated management of tidal areas and drainages within the City limits.
- Policy OS.1.8 Habitat Restoration. The City shall implement a re-vegetation plan which aims to identify and prioritize areas planned for habitat restoration. Areas planned for restoration may provide special-status species habitat, connectivity of wildlife corridors, transitional zones in between natural areas and incompatible land uses, or expansion of ecological functions such as flood management and water quality.
- Policy OS.2.1 Protection of Native Vegetation. Protect, preserve and create the conditions that will promote the preservation of significant trees and other vegetation, particularly native to California and the region.
- Policy OS.2.2 Invasive Species. The City shall attempt to prevent further expansion of invasive species and protect against noxious weeds through public education and development review of projects that occur adjacent to natural areas. These efforts shall include requiring the planting of native vegetation that supports native terrestrial and aquatic animal species.
- Policy OS.2.3 Invasive Species. Consider adopting guidelines and standards to help protect against the continued spread of invasive species, seek out opportunities to replace invasive, non-native vegetation with native vegetation on public property; and support efforts that enhance habitat by replacing invasive, nonnative vegetation with native California plant species over time within the City.
- Policy OS.2.5 Riparian Habitat Restoration. Require restoration or replanting of riparian vegetation to the extent feasible, projects shall mitigate impacts to wetlands consistent with Federal and State policies to ensure that there is no net loss in a regional context.
- Policy OS.2.6 Riparian Mitigation. Impacts to riparian habitats should be mitigated at a net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted.
- Policy OS.2.8 Maintain and Improve Wildlife Movement Corridors. Continuous wildlife habitat, including corridors free of human disruption, shall be preserved and where necessary created by interconnecting open spaces, wildlife habitat and corridors.
- Policy OS.2.9 Wildlife Movement Corridor Mitigation. The City will condition development permits in accordance with applicable mitigation measures to ensure that important corridors for wildlife movement and dispersal are protected. Features of particular importance to wildlife include riparian corridors, wetlands, bay shorelines, and protected natural areas with cover and water. Linkages and corridors shall be provided to maintain connections between habitat areas.

- Policy OS.3.1 Continuous Open Space Planning. Plan for connectivity of open spaces and wildlife habitat and corridors using species area plans, neighborhood plans, subdivision maps or other applicable planning processes, consistent with Open Space Guidelines.
- Policy OS.3.3 Cluster Development. Encourage cluster development and other creative site planning techniques to preserve open space, trails and visual, habitat, recreation and archaeological resources.
- Policy OS.3.5 Buffers for Sensitive Resources. When activities close to open space resources within or outside the urban area could harm these resources, the City will require buffers between the activities and the resources. The City will actively encourage individuals, organizations and other agencies to follow this policy. Buffers associated with new development shall be on the site of the development, rather than on neighboring land containing the open space resource. Buffers provide distance in the form of setbacks, within which certain features or activities are not allowed or conditionally allowed. Buffers shall also use techniques such as planting and wildlife-compatible fencing. Buffers shall be adequate for the most sensitive species in the protected area, as determined by a qualified professional and shall complement the protected area's habitat values. Buffers shall be required in the following situations:
- Between urban development – including parks and public facilities – and natural habitat such as creeks, wetlands, rocky outcrops and grassland features to address noise, lighting, storm runoff, spread of invasive, non-native species, and access by people and pets.
 - Between agricultural operations and natural habitat, to address noise, chemical use, sediment transport, and livestock access.
- Policy OS.3.7 Preserve Natural Features. Retain sensitive habitat areas in their natural state, where possible, and protect from inappropriate development and landscaping. New development shall incorporate natural features present on the site such as a creek, steep topography or natural vegetation, where feasible, unless appropriate mitigation measures can be incorporated.

Incorporation of the above General Plan policies and associated action items would reduce potential impacts to migratory/movement corridors to a **less than significant** level.

Mitigation Measures

None required.

Conflict with Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Any Adopted Biological Resources Recovery or Conservation Plan of any Federal or State Agency (Standards of Significance 5 and 6)

Impact 4.7.5 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any adopted biological resources recovery or

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conservation plan of any federal or state agency. Therefore, there is **no impact**.

The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Planning Area is within the boundaries of the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, 1998). However, the Planning Area does not contain habitat for species listed in the recovery plan and therefore implementation of the General Plan Update would not conflict with the recovery plan.

The Planning Area is not within the boundaries of any Habitat Conservation Plan/Natural Community Conservation Plan. Implementation of the General Plan Update would not conflict with any such plan. Thus, no further analysis of the issue is required.

As the proposed General Plan Update would not conflict with any local policies, ordinances, or plans protecting biological resources, there is **no impact**.

Mitigation Measures

None required.

4.7.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

The City of Pinole and the surrounding area of Contra Costa County as a whole must be considered for the purpose of evaluating land use conversion issues associated with biological resources on a cumulative level. In particular, this cumulative setting condition includes the proposed and approved projects listed in **Table 4.0-1**, existing land use conditions and planned development, including land areas within the City's Sphere of Influence, existing land use conditions, and planned and proposed land uses in communities near the city, as well as consideration of development patterns on communities in the rest of Contra Costa County and the East Bay from growth pressures from the rest of the Bay Area.

The City of Pinole is located in Contra Costa County in the northeastern portion of the San Francisco Bay Area. Habitat in this region is critically important for the protection of several sensitive species, as there is little natural habitat left in the region due to the tremendous growth pressures of the San Francisco Bay Area.

The Planning Area is located within the coverage area of *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area* (USFWS, 1998). The primary objective of this recovery plan is the recovery of 28 species of plants and animals that occur exclusively or primarily on serpentine soils and serpentine grasslands in the San Francisco Bay Area. The recovery plan does not identify the area within and surrounding the proposed project as having regional biological significance for the species covered within the recovery plan. The Planning Area is not near or within areas proposed for reserves or where connectivity and linkages should be promoted.

Increased development and disturbance created by human activities will result in direct mortality, habitat loss, deterioration of habitat suitability, and avoidance of habitat. Habitats most likely to be affected are oak woodlands, riparian habitat, and wetlands. The wildlife species associated with each habitat will likely be affected as well.

Cumulative Impacts to Special-Status Species

Impact 4.7.6 Implementation of the proposed General Plan and associated project components (Three Corridors Specific Plan and Zoning Code Update), together with past, present, and probable future projects in the Planning Area and larger regional context, would result in a cumulatively significant loss of biological resources in the region. The project's incremental contribution to this significant cumulative impact is **less than cumulatively considerable**.

As identified under Impacts 4.8.1 through 4.8.5 above, development arising through implementation of the proposed project would result in direct and indirect impacts to listed and non-listed special-status species as well as impacts to jurisdictional waters of the U.S. and non-special-status species, trees, habitat, and movement corridors. Further development under way in areas such as the cities as well as in unincorporated areas of Contra Costa County would increase indirect impacts in the cumulative area.

In addition to these direct impacts, the cumulative loss of habitat and associated wildlife could result in declines in special-status species and other regulated biological resources. In addition, the proposed project would contribute to an increased human presence, which would result in indirect impacts to biological resources (e.g., wildlife struck by vehicles, increased nighttime lighting). The proposed project and other projects in the region would result in adverse impacts on:

- Large trees and riparian habitat that provide important habitat for a wide variety and high diversity of wildlife;
- Special-status species and the habitat(s) they use;
- Habitat used by migratory birds and raptors; and
- Jurisdictional features (wetlands and waters of the U. S.).

Wetlands and riparian habitat provide an invaluable services such as water purification through retention of nutrients, sediments, and pollutants, groundwater recharge (the movement of water from the wetland down into the underground aquifer), and stabilization of local climate conditions, particularly rainfall and temperature. The loss of wetlands and riparian forest along Pinole Creek would result in declines in water quality conditions. This potential reduction to water quality in Pinole Creek could result in adverse effects to downstream aquatic resources and riparian habitat.

A portion of the Planning Area is disturbed as a result of previous residential and commercial development activities and agricultural production. Even so, disturbed lands provide habitat for many common species and may provide habitat for several special-status species. Many of the species potentially occurring within the Planning Area are not only a concern in the city but also regionally throughout the county and the state. The riparian corridors, agricultural lands, and open space within the Planning Area provide habitat for numerous listed and non-listed special-status species. Further population declines for listed species may jeopardize species survival, while non-listed species may become listed with further losses or degradation of suitable habitat. Implementation of the proposed project would contribute to the overall loss of open space.

While additional impacts may result from the implementation of individual projects within the Planning Area and surrounding areas, mitigation would be required of any discretionary projects impacting natural resources. The establishment of mitigation requirements such as those

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recommended in this document would adequately address these impacts. The proposed General Plan policies for preservation of wildlife and their habitats would ensure that the cumulative impacts would be properly mitigated by preserving mitigation lands for wildlife and sensitive communities in the Contra Costa County.

Proposed General Plan Policies and Action Items that Address Cumulative Impacts to Special-status Species

The proposed General Plan update contains several goals, policies, and action items that would assist in reducing this potential impact to biological resources. The following list contains those policies and action items that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that assist in reducing (though not eliminating) this impact. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

Natural Resource and Open Space Element

Policy OS.1.1; Policy OS.1.2; Policy OS.1.4; Policy OS.1.5; Policy OS.1.8; Policy OS.2.1; Policy OS.2.2; Policy OS.2.3; Policy OS.2.5; Policy OS.2.6; Policy OS.2.8; Policy OS.2.9; Policy OS.3.1; Policy OS.3.2; Policy OS.3.3; Policy OS.3.5; Policy OS.3.6; Policy OS.3.7; Policy OS.3.8; Policy OS.3.9; Policy OS.3.10; Policy OS.8.6; Policy OS.8.7; Policy OS.8.8

In addition, Section 7.0, *Private Realm Design Guidelines*, includes site planning guidelines that promote the preservation of natural amenities such as views, mature trees, and similar features unique to a site.

Mitigation Measures

Implementation of the above Specific Plan guidelines, General Plan policies, associated action items, and mitigation measures **MM 4.7.2a** and **MM 4.7.2b** would reduce the proposed project's contribution to cumulative biological impacts in the region to a **less than cumulatively considerable** level.

REFERENCES

- Becker, Sally de. 1988. Saline Emergent Wetland. In Mayer and Laudenslayer 1988.
- California Department of Fish and Game (CDFG). 2002. California Interagency Wildlife Task Group. 2002. California Wildlife Habitat Relationships (CWHR) version 8.0 personal computer program. Sacramento, CA.
- California Department of Fish and Game (CDFG). 2010a. California Natural Diversity Database (CNDDDB), Wildlife and Habitat Data Analysis Branch, Rarefind Version 3.1.1. Commercial version dated February 28, 2010.
- California Department of Fish and Game (CDFG). 2010b. California Natural Diversity Data Base (CNDDDB) Quickviewer. Data Base Record Search for Special-Status Species: *Walnut Creek, Briones Valley, Oakland East, Las Trampas Ridge, Richmond, San Quentin, San Francisco North, Oakland West, Cordelia, Benecia, Vine Hill, Cuttings Wharf, Sears Point, Petaluma Point, and Mare Island, 7.5-Minute United States Geologic Survey Quadrangles*. Accessed online April 16, 2010. California Department of Fish and Game, Sacramento, CA.
- California Native Plant Society (CNPS). 2010. *Inventory of Rare and Endangered Plants* (online edition, v7-10a 1-19-10). <http://www.cnps.org/inventory> (accessed April 16, 2010).
- GlobeXplorer. 2006. Aerial photograph of the Planning Area.
- Hickman, J., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press: Berkeley, CA.
- Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Unpublished Report. California Department of Fish and Game: Sacramento CA.
- Holland, V. L. 2005. Coastal Oak Woodland. In Mayer and Laudenslayer 1988.
- Jensen, D. B. 1988. Closed-Cone Pine-Cypress. In Mayer and Laudenslayer 1988.
- Kie, John G. 2005. Annual Grassland. In Mayer and Laudenslayer 1988.
- Ledwith, T. 1996. *The Effects of Buffer Strip Width on Air Temperature and Relative Humidity in a Stream Riparian Zone*. Six Rivers National Forest, Eureka, CA.
- Mayer, Kenneth E., and William F. Laudenslayer, Jr. 1988. *A Guide to Wildlife Habitats of California*. 1988. Edited by Kenneth E. Mayer and William F. Laudenslayer, Jr. State of California, Resources Agency, Department of Fish and Game: Sacramento, CA.
- McBride Joe R., and Chris Reid. 1988. Urban. In Mayer and Laudenslayer 1988.
- Pearson, D.C. 1988. Eucalyptus. In Mayer and Laudenslayer 1988.
- Pinole, City of. 1995. *General Plan*.
- Pinole, City of. 2007. City of Pinole website. <http://www.ci.pinole.ca.us/>

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Pinole, City of. 2007. *General Plan Update*.

Sawyer, J., and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society: Sacramento CA.

Smith, Kent. 1988. Estuarine. In Mayer and Laudenslayer 1988.

Springer, Paul. 1988. Saline Emergent Wetland. In Mayer and Laudenslayer 1988.

United States Department of Agriculture (USDA). 2006. *Soil Survey of Contra Costa County, California*. Natural Resources Conservation Service: Sacramento, California.

United States Environmental Protection Agency (USEPA). 2006. *Locate Your Watershed*. <http://cfpub1.epa.gov/surf/locate/index.cfm> (accessed December 2006).

United States Fish and Wildlife Service (USFWS). 1998. *Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area*. Diane R. Elam, David H. Wright, Bradley Goettle (eds.). U.S. Fish and Wildlife Service, Region 1. Portland, Oregon. http://ecos.fws.gov/docs/recovery_plans/1998/980930c.pdf

United States Fish and Wildlife Service (USFWS). 2010a. *Federal Endangered and Threatened Species that may be Affected by Projects in the Walnut Creek, Briones Valley, Oakland East, Las Trampas Ridge, Richmond, San Quentin, San Francisco North, Oakland West, Cordelia, Benecia, Vine Hill, Cuttings Wharf, Sears Point, Petaluma Point, and Mare Island, 7.5-Minute United States Geologic Survey Quadrangles*. USFWS, Sacramento Fish and Wildlife Office: Sacramento, California. Document Number 100416011716. April 16, 2010.

United States Fish and Wildlife Service (USFWS). 2010b. *Critical Habitat Mapper*. <http://criticalhabitat.fws.gov/> (accessed April 16, 2010).

Western Regional Climate Center. 2006. *Current and Historical Climate Data for the City of Pinole*. <http://www.wrcc.dri.edu/>.