3.3 Biological Resources

ENVIRONMENTAL SETTING

This section identifies and describes the existing biological resources within the Hillcrest Station Area Specific Plan Area (referred to throughout this section as "Planning Area"), as well as in surrounding areas (referred to throughout this section as "Study Area"); and identifies the federal, state, and local regulations pertaining to biological resources within the Study Area. Information used in the preparation of this section was obtained from regional biological studies, existing biological reports on the Planning Area (Entomological Consulting, 2005; RCL, 2005, RCL, October 2008, Live Oak Associates, September 2008), the California Natural Diversity Database (CNNDB, 2008), California Native Plant Society Electronic Inventory (CNPS, 2008), U.S. Fish and Wildlife Service (USFWS) (USFWS, 2008), and standard biological literature.

Vegetation types and wildlife habitats were identified using both records and field observations. An ESA biologist conducted reconnaissance-level field surveys of the Planning Area on April 2, 2008 to gather information and verify existing data on vegetative communities, wildlife habitats, and habitat use on and surrounding the site.

PHYSICAL SETTING

Regional Setting

The Planning Area is located in the East Antioch Creek Watershed, south of the San Joaquin River, in eastern Contra Costa County. It is located in the Bay Area-Delta Bioregion (as defined by the State's Natural Communities Conservation Program). This Bioregion comprises a variety of natural communities, which range from tidal salt marshes to chaparral to oak woodlands. The high diversity of vegetation and wildlife found in Contra Costa County, which reflects that of the region as a whole, is a result of topographic and micro-climate diversity that promotes relatively high levels of endemism. This has, in combination with the rapid pace of development in the region, resulted in a relatively high degree of endangerment for local flora and fauna.

The East Antioch Watershed contains one major tributary, East Antioch Creek, originating from the foothills to the east. East Antioch Creek flows from east to northwest, draining into the Delta during winter storm events. In addition to storm flows collected in the grassland areas of the upper watershed, the Creek receives diverted runoff from streets, houses, and parking lots from urbanized areas, the dominant land cover. Detention basins and levees have been built along the Creek to promote infiltration and prevent the floodwaters from moving into adjacent subbasins. Approximately 13 percent of the main East Antioch Creek channel flows through underground culverts (Jones & Stokes, 2006).

Local Setting

With the exception of two steep hills located along the southern site boundary adjacent to Highway 4, the Planning Area is a shallow valley bisected by East Antioch Creek, which flows from southeast to northwest across the site, eventually discharging into the San Joaquin River approximately 1.5 miles to the northwest. East Antioch Creek is fed by both storm water and irrigation runoff from adjacent and upstream residential developments. Two Contra Costa County

Flood Control detention basins are located along East Antioch Creek within the Planning Area – the Oakley and Trembath Basins. These detention basins help to promote infiltration and detain flood flows (RCL, 2005). While most of East Antioch Creek is surrounded by urban development, within the Planning Area the Creek is adjacent to nonnative grassland and wetlands, as described below.

Topography varies from gentle slopes of 2-3 percent on the valley floor to 15-30 percent slopes on the hilly areas in the southeast. Elevations range from approximately 20 feet above mean sea level at the western edge of the site, to approximately 200 feet in the southeast (RCL, 2005).

Most of the Planning Area is undeveloped. Current development includes the Southern Pacific Railroad which runs east-west through the Planning Area, a few houses, one industrial facility, a paving company, and an auto-towing yard. Historically there was also a chemical fertilizer plant, a sand pit, and limited agricultural use.

Wetlands

On January 31, 2008, the Army Corps of Engineers (Corps) verified that approximately 16.14 acres of waters of the United States, including wetlands, are present within the Planning Area. Specifically, there is coastal/valley freshwater marsh in and along the perennial East Antioch Creek and the unnamed tributary to East Antioch Creek, two ponds, and ruderal seasonal wetlands.

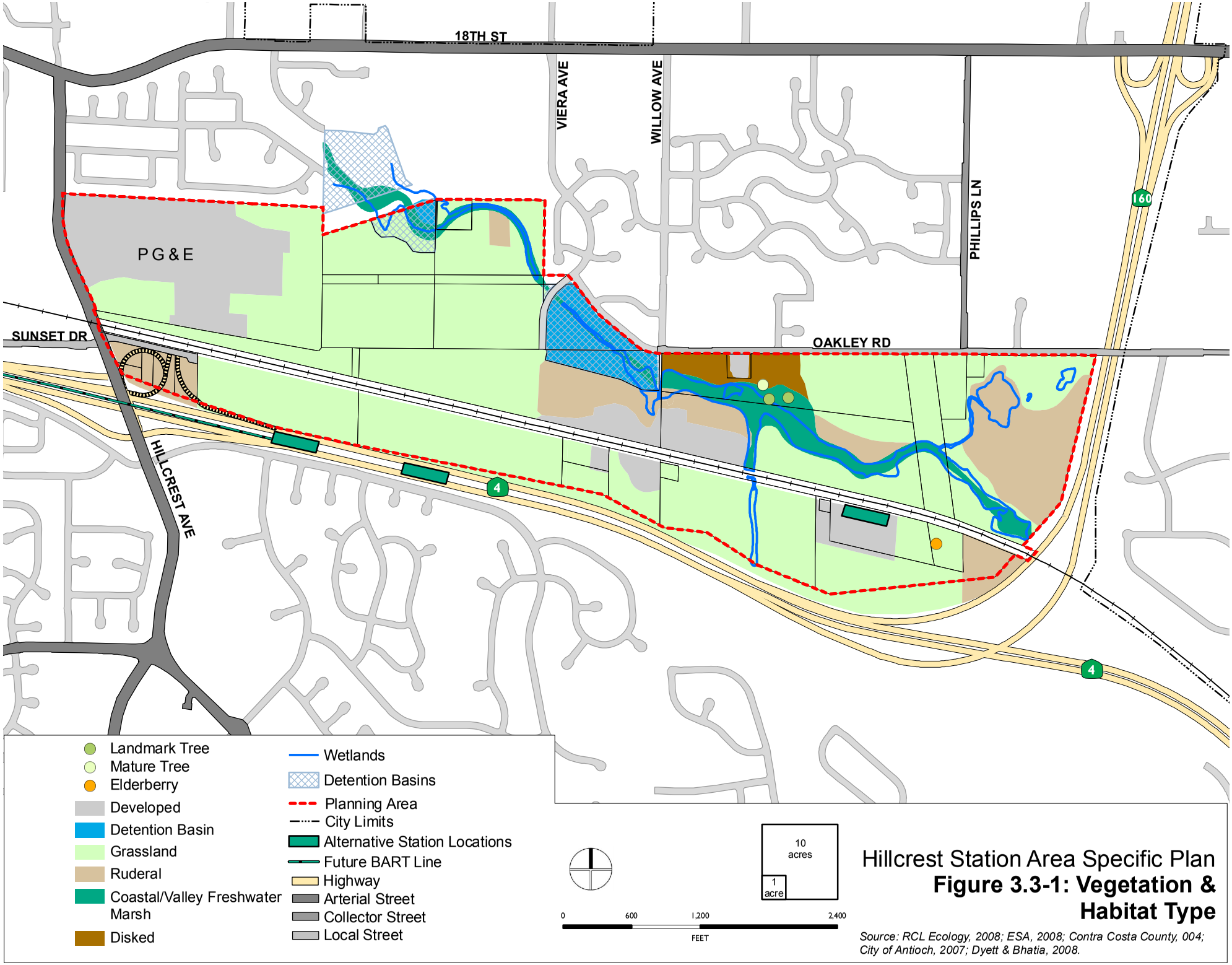
Vegetative Communities and Wildlife Habitat Types

The Planning Area is predominantly annual grassland and ruderal habitat, but also composed of urban areas, freshwater marsh, and ruderal seasonal wetlands (Figure 3.3-1).

Urban Habitat

Urban areas include those that are completely barren; areas that are developed, with buildings and pavement present; and landscaped areas associated with the few residences within the Planning Area, and along roads.

Developed and landscaped areas provide limited wildlife habitat and generally support only generalist and non-native wildlife species that are tolerant of human presence and activities, such as house sparrow (*Passer domesticus*), European starling (*Sternus vulgaris*), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), Anna's hummingbird (*Calypte anna*), Norway rat (*Rattus norvegicus*), and house mouse (*Mus musculus*). The abandoned or underutilized structures, such as those on the south side of the railroad tracks, are potential roost sites for several special-status bat species, including the pallid bat (*Antrozous pallidus),* Townsend's big-eared bat (*Corynorhinus townsendii*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*).



Hillcrest Station Area Specific Plan

Figure 3.3-1: Vegetation & Habitat Type

Source: RCL Ecology, 2008; ESA, 2008; Contra Costa County, 004; City of Antioch, 2007; Dyett & Bhatia, 2008.

Annual Grassland/Ruderal Habitat

Annual grasslands dominate the Planning Area. They have been greatly influenced by a variety of past uses such as dryland farming, livestock grazing, almond orchards, off-road vehicles, dumping, sand mining, and residential and commercial activities (RCL, 2005). These grasslands are composed of non-native grasses, including wild oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), common vetch (*Vicia sativa*), rose clover (*Trifolium hirtum*), soft chess (*Bromus hordeaceus*), hoary mustard (*Hirschfeldia incana*), chicory (*Cichorium intybus*), and yellow star thistle (*Centaurea solstitalis*). There are occasional trees throughout this habitat, including the invasive tree of heaven (*Ailanthus altissima*), Peruvian peppertree (*Schinus molle*), almond trees (*Prunus dulcis*), California black walnut (*Juglans californica*), Russian olive (*Elaeagnus angustifolius*), and eucalyptus (*Eucalyptus sideroxylon*) (RCL, 2005).

Annual grasslands and ruderal vegetation may provide refuge for reptiles such as western fence lizard *(Sceloporus occidentalis),* alligator lizard (*Elgaria multicarinata)*, and garter snake (*Thamnophis* spp*.),* as well as grassland birds such as the western meadowlark (*Sturnella neglecta*), loggerhead shrike (*Lanius ludovicianus*), and horned lark (*Eremophila alpestris*) (the latter two which are California Species of Special Concern). Grasslands also serve as important foraging grounds for aerial and ground-foraging insect eaters, including several bat species. Mammals such as Botta's pocket gopher *(Thomomys bottae),* California ground squirrel (*Spermophilus beecheyi)*, and western harvest mouse *(Reithrodontomys megalotis)* commonly forage within urban and disturbed grasslands. These small rodents may attract raptors, including red-tailed hawk (*Buteo jamaicensis),* and American kestrel (*Falco sparverius)*. The white-tailed kite (*Elanus leucurus*) and burrowing owl (*Athene cunicularia*), both California Species of Special Concern, have recently been observed nesting and foraging in the Study Area's grasslands (CDFG, 2008).

Freshwater Marsh Habitat

There are approximately 13.27 acres of freshwater marsh in and along East Antioch Creek, in the Planning Area. These wetlands are dominated by narrow-leaved cattail (*Typha angustifolia*). Other common species present include peppergrass (*Lepidium latifolium*), Italian thistle (*Cynara cardunculus*), and water parsley (*Oenanthe sarmentosa*). Where ponded water occurs within the marsh, willows such as red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*) are found along the banks. The seasonally wet flood plain portion of the marsh is dominated by creeping wildrye (*Leymus triticoides*) and associated species such as Italian ryegrass, Mediterranean barley (*Hordeum marinum* var. *gussoneanum*), willow herb (*Epilobium brachycarpum*), and curly dock (*Rumex crispus*) (RCL, 2005).

Species commonly associated with freshwater marsh include pied-billed grebes (*Podilymbus podiceps*), great blue herons (*Ardea herodias*), great egrets (*Casmerodius albus*), black phoebe (*Sayornis nigricans*), red-winged blackbird (*Agelaius phoeniceus*), marsh wrens (*Cistothorus palustris*), song sparrows, raccoons, and California voles (*Microtus californicus*). The saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), a California Species of Special Concern, is known to breed in this habitat.

Common mammals associated with willow habitat such as that found along East Antioch Creek, include mule deer, raccoon, gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), deer mouse, harvest mouse, dusky-footed woodrat (*Neotoma fuscipes*), and western red

bat (*Lasiurus blossevillii*). Numerous birds are also associated with this cover type, including yellow warbler (*Dendroica petechia*), northern flicker, Bewick's wren, Cooper's hawk, and song sparrows. Of these species, the western red bat, yellow warbler, and Cooper's hawk are all California Species of Special Concern.

Ruderal Seasonal Wetland Habitat

There are approximately 2.87 acres of ruderal seasonal wetlands and a drainage swale in the the disturbed soils within the old sand pit in the northeastern corner of the Planning Area, that captures runoff from Oakland Road and adjacent residences, as well as a road drainage from Highway 160. Plant species occurring in this type include spiny cocklebur (*Xanthium spinosum*), foxtail (*Alopecurus aequalis*), curly dock, rabbitfoot grass (*Polypogon monspeliensis*), narrow-leaf milkweed (*Asclepias fascicularis*), pappose tarweed (*Centromadia parryi* var. *parryi*), and Fremont cottonwood (*Populus fremontii*) (RCL, 2005).

A number of shorebirds may forage around the edges of this complex, including killdeer (*Charadrius vociferous*), black-necked stilt, greater yellowlegs, and gull species.

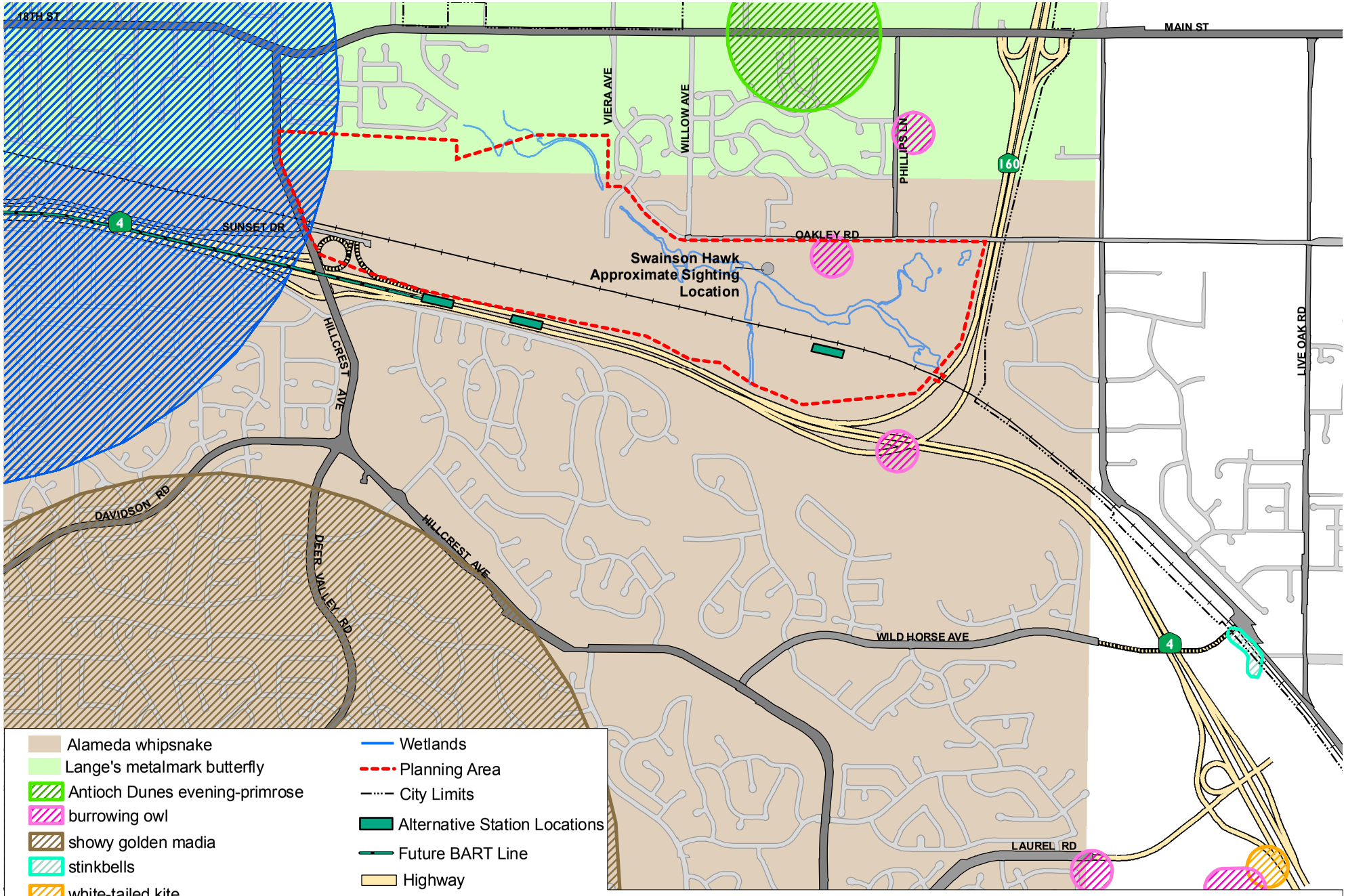
Ponds

There are two ponds in the Planning Area – a larger 0.26-acre pond within East Antioch Creek just east of Willow Ave (hereafter called "large pond"), and a smaller 0.03-acre pond within the unnamed tributary to East Antioch Creek just south of the Southern Pacific Railroad crossing (hereafter called "small pond"). Ponds are small perennial or seasonal water bodies dominated by little or no vegetation. Within the large pond, dense riparian such as red and arroyo willow (*Salix laevigata* and *Salix lasiolepis*) and Himalayan blackberry (*Rubus discolor*) surround most of the pond. Aquatic species within the pond consist of water parsley (*Oenanthe sarmentosa*) and pondweed (*Potamogeton nodosus*). If vegetation is present, it is typically submerged or floating. Largemouth bass (*Micropterus salmoides*) have been introduced into the large pond by a local resident. Other species inhabiting this pond include mosquitofish (*Gambusia affinis*), Pacific tree frog, red swamp crayfish (*Procamburs clarkia*), northern river otter (*Lontra canadensis*), and a variety of common aquatic insects such as dragon flies (*Libellula* sp.) and blue darners (*Aeshna multicolor*). The riparian and upland system surrounding the pond provides larger nesting trees for raptors such as the red-tailed hawk, white-tailed kite, and great horned owl (*Bubo virginianus*) (RCL, 2005).

The small pond is inhabited by Pacific tree frogs, red swamp crayfish, and mosquitofish (RCL, 2005). Shore and wading birds such as those associated with the ruderal seasonal wetland (above), are also associated with ponds.

Sensitive Natural Communities

The CNDDB lists one sensitive natural community, stabilized interior dunes, as occurring in the U.S. Geological Survey quadrangles searched for the area surrounding the Planning Area. Although this community as described by Holland (1986) does not occur within the Planning Area, it is found within the Antioch Dunes National Wildlife Refuge, approximately 0.75 miles north. Areas of coastal and valley freshwater marsh (described in *Vegetative Communities and Wildlife Habitat Types*, above), also considered a sensitive community by CDFG and Corps, occurs within and along East Antioch Creek within the Planning Area.



Hillcrest Station Area Specific Plan

Figure 3.3-2: Special Status Species

Source: California Natural Diversity Database, 2008; Contra Costa County, 2004; City of Antioch, 2007; Dyett & Bhatia, 2008.

Special-Status Animal Species

Several species known to occur in the Study Area are protected pursuant to federal and/or state endangered species laws, or were formerly designated as species of concern by the U.S. Fish and Wildlife Service (USFWS) or currently as Species of Special Concern by the California Department of Fish and Game (CDFG). In addition, Section 15380(b) of the CEQA Guidelines provides a definition of rare, endangered, or threatened species that are not included in any listing.[1] Species recognized under these terms are collectively referred to as "special-status species." For purposes of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened, or endangered under the federal or state endangered species acts;
- Species that are candidates for listing under either federal or state law;
- Species formerly designated by the USFWS as species of concern or by the CDFG as Species of Special Concern;
- Species protected by the federal Migratory Bird Treaty Act (16 United States Code [USC] Sections 703–711);
- Bald and golden eagles protected by the federal Bald Eagle Protection Act (16 USC 668);
- Species such as candidate and California Native Plant Society (CNPS) List 1 and 2 species that may be considered rare or endangered pursuant to the criteria in Section 15380(b) of the CEQA Guidelines.

Appendix B provides a comprehensive list of the special-status species that have been documented from, or have potential to occur in suitable habitat within, the Study Area. These lists were obtained from the California Natural Diversity Database (CNDDB) (CDFG, 2008), California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2008), the U.S. Fish and Wildlife Service (USFWS, 2008), biological studies in the Study Area (BART, 2008; Entomological Consulting, 2005; Jones & Stokes, 2006; Live Oak Associates, 2008; RCL, 2005), and biological literature of the region. Many of these species have a low potential for occurrence within the Planning Area, and were eliminated from further evaluation because: (1) the Planning Area does not provide suitable habitat, or (2) the known range for a particular species is outside of the Planning Area and/or the immediate area. Species determined to have a moderate or high potential of occurrence in the Planning Area are discussed in detail below. Species documented by the CNDDB within two miles of the Planning Area are shown in Figure 3.3-2.

In 2005, RCL Ecology analyzed the potential for special-status animal species that are known to occur in the Study Area, and did "protocol" site assessments (i.e. according to agency guidelines) for the California tiger salamander (*Ambystoma californiense)*, California red-legged frog (*Rana draytonii*), and burrowing owl. RCL identified one special-status wildlife species in the Planning Area – nesting red-tailed hawks (this species is not threatened/endangered by federal or state law, but is protected by CDFG and federal Migratory Bird Treaty Act [see *Regulatory Framework*, below]) (RCL, 2005). In 2008, Live Oak Associates completed special-status species surveys for the California tiger salamander, California red-legged frog, western pond turtle (*Actinemys*

[1] For example, vascular plants listed as rare or endangered or as List 1 or 2 by the CNPS are considered to meet Section 15380(b) requirements.

marmorata), silvery legless lizard (*Anniella pulchra pulchra*), giant garter snake, tree nesting raptors, burrowing owl, and San Joaquin kit fox (*Vulpes macrotis mutica*). Special-status species observed include nesting Swainson's hawks (*Buteo swainsoni*) and burrowing owls in the Planning Area (2008).

Appendix B identifies 69 special-status wildlife species that have historically occurred or have potential habitat in the Study Area; 21 of these species are further considered in this EIR due to a combination of their rarity or potential habitat in the Study Area: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California red-legged frog, western pond turtle, silvery legless lizard, Alameda whipsnake (*Masticophis lateralis euryxanthus*), northern harrier, burrowing owl, great horned owl (*Bubo virginianus*), red-tailed hawk, Swainson's hawk, white-tailed kite, saltmarsh common yellowthroat, loggerhead shrike (*Lanius ludovicianus*), and several bat species (pallid bat [*Antrozous pallidus*], Townsend's big-eared bat [*Corynorhinus townsendii*], western red bat [*Lasiurus blossevillii*], hoary bat [*Lasiurus cinerus*], long-eared bat [*Myotis evotis*], fringed myotis [*Myotis thysanodes]*, long-legged myotis [*Myotis volans*], and Yuma myotis [*Myotis yumanensis*]). These species are discussed in detail below.

Birds

- **Burrowing owl** (*Athene cunicularia*). This species is a former federal species of concern, and California Species of Special Concern. It is a California resident that prefers open grasslands and disturbed sites with existing burrows, elevated perches, large areas of bare ground or low vegetation, and few visual obstructions. Ground squirrel colonies often provide a source of burrows and are typically located near water and areas with large numbers of prey species, primarily insects. Breeding takes place between March and August, with a peak in April and May. Burrowing owls were observed nesting in several locations within five miles of the Planning Area, including 0.1 miles south of the Planning Area in 2003, and 0.25 miles north of the Planning Area in 2005 (CDFG, 2008). In 2008, Live Oak Associate biologists observed a pair of breeding burrowing owls north of East Antioch Creek, within the Planning Area.
- **Great horned owl** (*Bubo virginianus*). Great horned owls are not threatened/endangered by federal or state law, but like other owls, it is protected under California Code 3503 and 3503.5, which prohibits the taking or destroying of any bird or nest in the order of Falconiformes (falcons, kites, and hawks) and Strigiformes (owls). This species occurs throughout North America and is found in a variety of wooded habitats. They prey on small- to medium-sized mammals such as voles, rabbits, skunks, and squirrels. Great horned owls can often be seen and heard at dusk, perched in large trees. They roost and nest in large trees such as pines or eucalyptus, and often use the abandoned nests of crows, ravens, or squirrels (Erlich et al., 1988; Sibley, 2001). Great horned owls may use large trees located within the Planning Area, and may forage over grasslands and marsh habitat along East Antioch Creek for voles and other small mammals.
- **Red-tailed hawk** (*Buteo jamaicensis*). Red-tailed hawks are not threatened/endangered by federal or state law, but like great horned owls, they are also protected under California Code 3503 and 3503.5 (see preceding paragraph). This species is commonly found in woodlands and open country with scattered trees. These large hawks feed primarily on small mammals, but will also prey on other small vertebrates, such as snakes and lizards, as well as on small birds and invertebrates. Red-tailed hawks nest in a variety of trees in urban, woodland, and agricultural habitats.

- **Swainson's hawk** (*Buteo swainsoni)*. The Swainson's hawk is a California threatened species. It is relatively common throughout the lower Sacramento and San Joaquin valleys, where it commonly nests in large oaks, willows, sycamores, and cottonwoods, but also nest in planted trees such as pines, eucalyptus, and redwoods, in or near riparian habitat, scattered trees, or small groves in sparsely vegetated flatlands. While this species is a rare breeder in eastern Contra Costa County, they are occasionally observed nesting as far west as the Planning Area, particularly in small clumps of eucalyptus trees (Jones & Stokes, 2006). They forage in grasslands and agricultural fields as much as ten miles from their nest for mice, gophers, ground squirrels, rabbits, arthropods, amphibians, reptiles, birds, and rarely, fish. Within increasing development in eastern Contra Costa County, foraging habitat is becoming unsuitably small and/or fragmented for the Swainson's hawk.

  There are three recent CNDDB records of Swainson's hawk nests less than five miles east/southeast of the proposed Hillcrest Station Area (CDFG, 2008). In 2008 one Swainson's hawk nest was observed in a Peruvian peppertree in the Hillcrest Station Planning Area (Live Oak Associates, 2008), and they have been observed foraging in the surrounding grasslands and ruderal habitat (BART, 2008; Live Oak Associates, 2008); there are approximately 280 acres of foraging habitat (includes 227 acres grassland, 48 acres ruderal, and 6 acres of disked habitat) within the Planning Area (see Figure 3.3-1).

- **Northern harrier** (*Circus cyaneus*). This species is a California Species of Special Concern. Northern harriers forage along wet meadows, sloughs, savannas, prairies, and marshes. Destruction of marsh habitat is the primary reason for the decline of this species. Northern harriers nest on the ground in shrubby vegetation, usually at a marsh edge. Their nest is built of a large mound of sticks on wet areas, and a smaller cup of grasses on dry sites. They mostly nests in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water. Suitable habitat is present for this species in the Planning Area.
- **White-tailed kite** *(Elanus leucurus)*. The white-tailed kite is a California Species of Special Concern. It is a California resident that shifts its local distribution in response to available food supplies. Prior to 1895 this species was common to widespread in valley and lower foothill territory, but is now rare in many sections of the state. The white-tailed kite forages in wetlands and open brushlands, usually near water and streams. Oak woodlands, valley oak or live oak, or trees near marshes are used for nesting sites. Their nests are typically a frail platform of sticks, leaves, weed stalks, and similar materials located in tree or bush. A combination of habitats is essential, including open grasslands, meadows or marshes for foraging and isolated dense topped trees for perching and nesting. Large trees in the Planning Area can provide suitable nesting platforms. ESA observed this species foraging in the Planning Area during an April 2, 2008 reconnaissance survey, and there is a 2004 CNDDB record for this species approximately 1.5 miles east of the Planning Area (CDFG, 2008).
- **Saltmarsh common yellowthroat (***Geothlypis trichas sinuosa*). The common yellowthroat is a former federal Species of Concern, and a California Species of Special Concern. It is a small warbler with a complex of subspecies. The saltmarsh subspecies is recognized as a distinct breeding population, with geographic distribution, habitats, and subtle differences in morphological traits that distinguish it from other subspecies. It inhabits tidal salt and brackish marshes in winter, but breeds in freshwater to brackish marshes and riparian woodlands during spring to early summer. Nests are placed on or near the ground in dense emergent

vegetation or shrubs. This species could use the Planning Area's freshwater marsh and riparian habitat along East Antioch Creek, for breeding.

- **Loggerhead shrike** (*Lanius ludovicianus*). The loggerhead shrike is a California Species of Special Concern that inhabits grasslands, woodlands, and scrub. Shrikes are unique among songbirds, in that their diet regularly includes vertebrate prey. They typically hunt from dead trees, tall shrubs, utility wires and fences, and impale their prey on sharp twigs, thorns, or barbed wire. Their nests are well-concealed in densely-foliaged shrubs or trees. Suitable habitat is present for this species in the Planning Area's grasslands and shrub habitat. There is a 2003 CNDDB occurrence of this species approximately 3.5 miles east of the proposed Hillcrest Station Area (CDFG, 2008).

Insects and Invertebrates

An Insect and Invertebrates Site Assessment completed in August 2005 indicates that there is potential for 23 special-status insect and invertebrate species to be found on a portion (280 acres) of the Planning Area (most which are only known from Antioch Dunes, 0.75 miles north of the Planning Area) (Entomological Consulting, 2005). Aside from the valley elderberry longhorn beetle, which has a low to moderate potential for occurrence in the Planning Area, no other species have a moderate or high potential for occurrence in the proposed Hillcrest Station Area, due to the site's degraded nature and lack of suitable host plants (Entomological Consulting, 2005).

- **Valley elderberry longhorn beetle** (*Desmocerus californicus dimporphus*) (VELB). The VELB is a federally threatened species, found in or near riparian areas where its elderberry shrub food plant grows. Only elderberry shrubs with stems at least one inch in diameter at ground level are suitable host plants for this species. The VELB is only known within the Central Valley, and its range includes the northeast corner of Contra Costa County (USFWS, 1999); Antioch lies west of its presumed range. There are no CNDDB records for this species within five miles of the Planning Area (CDFG, 2008). Nevertheless, a cluster of elderberry shrubs is present in the southeast portion of the Planning Area, and may host this species. (BART, 2008)

Amphibians

- **California tiger salamander** (*Ambystoma californiense)* (CTS). The California tiger salamander is listed as federally threatened and a California Species of Special Concern. It inhabits grasslands and oak savanna habitats in valleys and low hills of central and coastal California. Adults spend most of their lives underground, typically in burrows of California ground squirrels (*Spermophilus beecheyi*) and other fossorial mammals. During winter rains, between November and March, adults emerge from underground retreats to breed. Vernal pools, semi-permanent and permanent waters (including stock ponds), and reservoirs are used for egg-laying.

  There are several CNDDB records of CTS within five miles of the Planning Area (CDFG, 2008). The closest of these occurrences, approximately one mile west of the Planning Area, has been extirpated (RCL, 2005). RCL did a protocol site assessment for this species in a portion (280 acres) of the Planning Area, and concluded that the presence of CTS is unlikely, because: (1) they were not observed in the Planning Area; (2) the closest sighting was extirpated; (3) there are non-native predators (largemouth bass, mosquitofish, and red swamp crayfish) present in potential breeding waters; and (4) Highways 4 and 160, and residential

development likely blocks migration into the Planning Area (RCL, 2005). Live Oak Associates did not observe this species during their surveys for this species, and concluded that it is absent from the Planning Area (2008), a conclusion supported by this EIR.

- **California red-legged frog** *(Rana draytonii)* (CRLF). This species is listed as federally threatened and as a California Species of Special Concern. The Planning Area does not occur within the designated critical habitat units for this species in Contra Costa County. CRLF reside in lowlands and foothills in or near permanent or semi-permanent water sources, such as lakes, stock ponds, and slow moving streams with deep pools and dense shrubs or emergent aquatic vegetation. Where water sources are not permanent, CRLF require access to dry-season upland aestivation habitat in the form of mammal burrows. CRLF require at least 11 weeks of permanent water after egg-laying, for larval development.

  CNDDB reports five records of CRLF occurrences within five miles of the Planning Area (CDFG, 2008). There is potential breeding habitat for this species in the larger pond along East Antioch Creek, and the smaller pond in the unnamed tributary that drains into East Antioch Creek. However, RCL did not observe any larvae during sampling at the larger pond, and only tree frog larvae were seen in the smaller pond (RCL, 2005). RCL concluded that CRLF are unlikely to be present in the portion (280 acres) of the Planning Area that they surveyed, because: (1) no CRLF were observed in the Planning Area during reconnaissance surveys; (2) no CRLF are known within five miles of the Planning Area and north of Highway 4; (3) there are non-native predators (largemouth bass and mosquito fish) present in the larger pond; and (4) the Highways 4 and 160, and residential development likely blocks CRLF migration into the Planning Area. In 2008 Live Oak Associates conducted six CRLF surveys during the breeding season and five surveys outside the breeding season, and concluded that CRLF are absent from the Planning Area; this EIR supports this conclusion.

Reptiles

- **Western pond turtle** (*Actinemys marmorata*)**.** The western pond turtle, a former federal species of concern and a California Species of Special Concern, is a thoroughly aquatic turtle found in permanent ponds, rivers, streams, channels, and irrigation ditches with rocky or muddy bottoms, and emergent vegetation. Basking areas used by this species include partially submerged logs, rocks, vegetation mats, and open mud banks. Habitat destruction and stream course degradation are the primary threats to this species. Although suitable habitat is present for this species in the Planning Area, it was not observed during RCL biological surveys (2005), or Live Oak Associates surveys (2008), and is presumed absent from the site.
- **Silvery legless lizard** (*Anniella pulchra pulchra*). The silvery legless lizard is a subspecies of the California legless lizard, a California Species of Special Concern. It occurs primarily in areas with sandy or loose loamy soils such as under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, cottonwoods, or oaks that grow on stream terraces. The sandy loam soils of stabilized dunes seem to be especially favored habitat. Antioch is the northern limit of this species' range. There is a 2004 CNDDB record for this species approximately 1.5 miles east of the Planning Area. While the undeveloped sandy areas in the northeast corner of the Planning Area may have at one time been habitat for this species, it is highly sensitive to disturbance such as mining (which occurred extensively in this portion of the Planning Area). Live Oak Associates did not observe the silvery legless lizard during their 2008 surveys in the Planning Area, and it is presumed absent from the site.

- **Alameda whipsnake** (*Masticophis lateralis euryxanthus*). The Alameda whipsnake is a federal and state threatened species, found in chaparral, grasslands near chaparral, coyote brush scrub, and Diablan sage scrub. Rock outcrops and talus slopes are an important feature of high quality habitat because they provide cover and promote lizards, which are important prey for the Alameda whipsnake. The Planning Area is unsuitable habitat for this species, due to its lack of chaparral habitat and rocky outcrops, its habitat isolation, and its history of disturbance. The East Contra Costa County HCP (HCP) maps suitable core habitat and perimeter core habitat as being southwest of the Planning Area (Jones & Stokes, 2006), and Live Oak Associate biologists did not observe this species during their 2008 amphibian and reptile surveys. This species is presumed absent from the site.

Mammals

- **Special-status bat species**. Bats may forage in the Planning Area, particularly over open areas and along East Antioch Creek. Bats may roost in the Planning Area's large trees such as eucalyptus, in willows and cottonwoods along East Antioch Creek, under the Highway 160 overpass, or in underutilized or abandoned buildings (such as those along the southern border of Southern Pacific Railroad). Several special-status bat species that are former federal species of concern and/or California Species of Special Concern could be present in the Planning Area, including: pallid bat, Townsend's big-eared bat, western red bat, hoary bat, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis. The CNDDB has a 1998 record of western red bats in the western portion of the Planning Area (CDFG, 2008).

Special-Status Plants

RCL Ecology completed an initial survey for a 280-acre portion of the Planning Area in 2005. They analyzed the potential for 29 special-status plant species that are known to occur in the Study Area, and determined that five of these species have a moderate or high potential to occur in the Planning Area: San Joaquin spearscale (*Atriplex joaquiniana*), round-leaved filaree (*California macrophylla*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), Contra Costa goldfields (*Lasthenia conjugens*), and Antioch Dunes evening primrose (*Oenothera deltoids* ssp. *howellii*). However, RCL did not identify any of these or other special-status species during focused rare plant surveys in their respective flowering periods (2005). PBS&J also did not identify these species during their 2006 rare plant surveys for the eBART EIR, which included the southern portion of the Planning Area (BART, 2008).

ESA did not identify any new special-status plant species with a moderate or high potential for occurrence in the Planning Area, that were not already identified by RCL Ecology (see Appendix B for a complete list of special-status species with a potential to occur in the Specific Plan Planning Area). The Planning Area is dominated by non-native plants and is not likely to have any special-status plant species, due to its history of disturbance from past agricultural practices, sand mining, off-roading, disking, and development.

Wildlife Corridors

East Antioch Creek, with its fairly continuous marsh and willow habitat, serves as a wildlife movement corridor throughout the site. Such corridors provide pathways for daily travel, and potential linkage between populations both upstream and downstream from the Planning Area (RCL, 2005).

REGULATORY SETTING

Definitions

Dripline

The dripline is the area directly located under the outer circumference of the tree branches.

Endemism

Endemism refers to the degree to which the distribution of organisms or taxa are restricted to a geographical region or locality. For example, an organism with worldwide distribution would not be characterized as being endemic to any one place, while an organism found only in California would be characterized as being endemic to the State.

Generalist Species

Generalist species are able to use a variety of habitats and food sources, unlike many special-status species that are closely restricted to a specific habitat type or food source.

Federal Species of Concern

"Former federal Species of Concern" is an informal term not defined in the federal Endangered Species Act. Federal Species of Concern were formerly federal candidates for listing at a level abolished in 1996. The Sacramento Fish and Wildlife Office stopped maintaining the federal Species of Concern list in 2006, but these species are still considered to be at-risk species by other federal and state agencies, as well as various organizations with recognized expertise such as the Audubon Society.

Navigable Waters

Navigable waters are defined as those waters that are subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Waters of the U.S.

The term "waters of the U.S.," as defined in Code of federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]), includes: (1) all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (2) all interstate waters, including interstate wetlands; (3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters that are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial purposes by industries in interstate commerce; (4) all impoundments of waters otherwise defined as waters of the U.S. under the definition; (5) tributaries of waters identified in numbers (1) through (4); (6) territorial seas; and (7) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in numbers (1) through (6).

Federal Regulations

Federal Endangered Species Act

Under the federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 USC 1533[c]). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the Planning Area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Project-related impacts to these species or their habitats would be considered significant in this EIR.

The USFWS also publishes a list of candidate species. Species on this list receive special attention from federal agencies during environmental review, although they are not protected otherwise under FESA. The candidate species are taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. Project impacts to such species would be considered significant in this EIR.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 USC, Section 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

U.S. Army Corps of Engineers

Wetlands and other waters (e.g., rivers, streams, and natural ponds) are a subset of "waters of the U.S.," and receive protection under Section 404 of the Clean Water Act (CWA). The U.S. Army Corps of Engineers (Corps) has primary federal responsibility for administering regulations that concern waters of the U.S. In this regard, the Corps acts under two statutory authorities: the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in "navigable waters," and the Clean Water Act (Section 404), which governs specified activities in waters of the U.S., including wetlands. The construction of structures, such as tidegates, bridges, or piers, or work that could interfere with navigation, including dredging or stream channelization, may require a Section 10 permit, in addition to a Section 404 permit if the activity involves the discharge of fill. The U.S. Environmental Protection Agency (U.S. EPA) has the ultimate authority for designating dredge and fill material disposal sites and can veto the Corps' issuance of a permit to fill jurisdictional waters of the U.S.

The Corps requires a permit if a project proposes placement of structures within navigable waters and/or alteration of waters of the U.S. Some classes of fill activities may be authorized under waters and wetlands as a jurisdictionally relevant factor. The more recent Rapanos case further Regional General or Nationwide permits if specific conditions are met. Nationwide permits do not authorize activities that are likely to jeopardize the existence of a threatened or endangered species (listed or proposed for listing under the FESA). The Nationwide permit outlines general conditions and may specify project-specific conditions as required by Corps during the Section

404 permitting process. When a project's activities do not meet the conditions for a Nationwide Permit, an Individual Permit may be issued by the Corps.

The federal government also supports a policy of minimizing "the destruction, loss, or degradation of wetlands." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

In recent years several Supreme Court cases have challenged the scope and extent of the Corps's jurisdiction over waters of the United States and have led to several reinterpretations of that authority. The most recent of these decisions are the case of *Solid Waste Agency of Northern Cook County* (SWANCC) *v. the Army Corps of Engineers* (January 9, 2001) and *Rapanos v. United States* (June, 2006). The SWANCC decision found that jurisdiction over non-navigable, isolated, intrastate waters could not be based solely on the use of such waters by migratory birds. The reasoning behind the SWANCC decision could be extended to suggest that waters need a demonstrable connection with a 'navigable water' to be protected under the CWA. The introduction of the term isolated has led to the consideration of the relative connectivity between questioned the definition of "waters of the United States" and the scope of federal regulatory jurisdiction over such waters but resulted in a split decision which did not provide definitive answers but expanded on the concept that a "significant nexus" with traditional navigable waters was needed for certain waters to be considered within the jurisdiction of the Corps.

On June 5, 2007 the EPA and the Corps released guidance on CWA jurisdiction in response to the Rapanos Supreme Court decisions, which can be used to support a finding of CWA coverage for a particular water body when either (a) there is a significant nexus between the stream or wetland in question and navigable waters in the traditional sense; or (b) a relatively permanent water body is hydrologically connected to traditional navigable waters and/or a wetland has a surface connection with that water. According to this guidance, the Corps and the EPA will take jurisdiction over the following waters:

1. Traditional navigable waters, which are defined as all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. Wetlands adjacent to traditional navigable waters; including adjacent wetlands that do not have a continuous surface connection to traditional navigable waters;
3. Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months);
4. Wetlands adjacent to non-navigable tributaries as defined above; that have a continuous surface connection to such tributaries (e.g. they are not separated by uplands, a berm, dike, or similar feature).

The EPA and the Corps claim jurisdiction over the following waters, based on a fact-specific determination of significant nexus, as defined below, to a traditional navigable water: non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The EPA and the Corps *generally* do not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

State Regulations

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of threatened species and endangered species (California Fish and Game Code Section 2070). The CDFG also maintains a list of candidate species, which are species that the CDFG has formally noticed as under review for addition to the threatened or endangered species lists. The CDFG also maintains lists of Species of Special Concern that serve as watch lists. Pursuant to the requirements of 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 Planning Area, and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered list and threatened list would be considered significant in this EIR. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

CEQA Guidelines

- **Section 15380.** Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with a situation in which a project may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

  CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there would be substantial losses. Natural communities listed in the California Natural Diversity Database as "high priority for inventory" are considered by CDFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as General Plans often identify these resources as well.

- **Section 15065.** Sensitive plant and wildlife species that are not currently listed as endangered, threatened, or rare but would qualify for listing are afforded protection under CEQA. CEQA Guidelines Section 15065 ("Mandatory Findings of Significance") requires that a reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 ("Rare or Endangered Species") provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing.

California Fish and Game Code

- **Birds**. Birds of prey are protected in California under the Fish and Game Code (Section 3503.5, 1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Non-raptor native birds receive similar protection under California Fish and Game Code Section 3503. Project impacts to these species would not be considered significant unless the species are known to, or have a high potential to, nest in the Planning Area or rely on it for primary foraging.
- **Plants**. The Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900 et seq.) gives the CDFG authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations.
- **Waterways**. Under Sections 1600-1616 of the California Fish and Game Code, the CDFG regulates activities that substantially divert, obstruct the natural flow of, or substantially change rivers, streams, and lakes. The jurisdictional limits of the CDFG are defined in Section 1602 of the California Fish and Game Code as the bed, channel, or bank of any river, stream, or lake. The CDFG regulates activities that would result in the deposit or disposal of debris, waste, or other materials into any river, stream, or lake and requires a Streambed Alteration Agreement for such activities. Impacts to the jurisdictional area of the CDFG would be considered significant in this EIR.

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of special-status plant species based on collected scientific information. Designation of these species by the CNPS has no legal status or protection under federal or state endangered species legislation. CNPS designations are defined as follows: List 1A (plants presumed extinct); List 1B (plants rare, threatened, or endangered in California and elsewhere); List 2 (plants rare, threatened, or endangered in California, but more numerous elsewhere); List 3 (plants about which more information is needed – a review list); and List 4 (plants of limited distribution – a watch list). In general, plants appearing on CNPS List 1A, 1B, or 2 meet the criteria of Section 15380 of the CEQA Guidelines; thus, substantial adverse effects to these species would be considered significant in this EIR.

Regional Regulations

Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) regulates waters of the state under the Porter-Cologne Water Quality Control Act. Under Section 401 of the Clean Water Act, the RWQCB has review authority of Section 404 permits. The RWQCB has a policy of no-net-loss of wetlands and typically requires mitigation for impacts to wetlands before it will issue a water quality certification. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the Porter-Cologne Water Quality Control Act.

East Contra Costa County Habitat Conservation Plan

The East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) is intended to provide a comprehensive framework to protect natural resources in the region. In addition, the intent of the Plan is to improve and streamline the environmental permitting process for impacts to endangered and threatened species. The Plan describes how to avoid, minimize, and mitigate the impacts on Covered Species and their habitats while allowing for urban development in selected regions of the County. It also establishes required setbacks for streams, depending on the stream reach type and location. For example, for perennial, intermittent, or 3rd or higher order ephemeral streams, in urban areas, a 50-foot setback is required from the top of bank, measured in aerial perspective; for perennial, intermittent, or 3rd or higher order ephemeral streams in agricultural or natural areas, a 75-foot setback is required (Jones & Stokes, 2006). The City of Antioch is not a participant in the Plan, but its information and conservation strategy represent the prevailing scientific and regulatory consensus.

Antioch General Plan

10.3.2 Resource Management: Open Space Policies

d. Where significant natural features are present (e.g., ridgelines, natural creeks and other significant habitat areas, rock outcrops, and other significant or unusual landscape features), require new development to incorporate natural open space areas into project design. Require dedication to a public agency or dedication of a conservation easement, preparation of maintenance plans, and provision of appropriate long-term management and maintenance of such open space areas.

e. Require proposed development projects containing significant natural resources (e.g. sensitive or unusual habitats, special-status species, habitat linkages, steep slopes, cultural resources, wildland fire hazards, etc.) to prepare Resource Management Plans to provide for their protection or preservation consistent with the provisions of the Antioch General Plan, other local requirements, and the provisions of State and federal law. The purpose of the Resource Management Plan is to look beyond the legal status of species at the time the plan is prepared, and provide a long-term plan for conservation and management of the natural communities found onsite. Resource Management Plans shall accomplish the following:

- Determine the significance of the resources that are found onsite and their relationship to resources in the surrounding area, including protected open space areas, habitat linkages and wildlife movement corridors;
- Define areas that are to be maintained in long-term open space based on the significance of onsite resources and their relationship to resources in the surrounding area, and
- Establish mechanisms to ensure the long term protection and management of lands retained in open space.

f. Encourage public access to creek corridors through the establishment of trails adjacent to riparian resources, while maintaining adequate buffers between creeks and trails to protect sensitive habitats, special-status species and water quality to the maximum extent feasible.

g. Where feasible, incorporate preserve and protect significant existing natural features as part of the design of new development projects rather than removing them. Where preservation of natural features is not feasible, introduce natural elements into project design. Impacts to significant

natural features that cannot be preserved or reintroduced into the project design onsite shall be mitigated off-site.

10.4.2 Resource Management: Biological Resources Policies

a. Comply with the federal policy of no net loss of wetlands through avoidance and clustered development. Where preservation in place is found not to be feasible (such as where a road crossing cannot be avoided, or where shore stabilization or creation of shoreline trails must encroach into riparian habitats), require 1) on-site replacement of wetland areas, 2) off-site replacement, or 3) restoration of degraded wetland areas at a minimum ratio of one acre of replacement/restoration for each acre of impacted onsite habitat, such that the value of impacted habitat is replaced.

b. Preserve in place and restore existing wetlands and riparian resources along the San Joaquin River and other natural streams in the [General Plan] Planning Area, except where a need for structural flood protection is unavoidable.

c. Require appropriate setbacks adjacent to natural streams to provide adequate buffer areas ensuring the protection of biological resources, including sensitive natural habitat, special-status species habitats and water quality protection.

d. Through the project approval and environmental review processes, require new development projects to protect sensitive habitat areas, including, but not limited to, oak woodlands, riparian woodland, vernal pools, and native grasslands. Ensure the preservation in place of habitat areas found to be occupied by state and federally protected species.

- If impacts to sensitive habitat areas are unavoidable, appropriate compensatory mitigation shall be required off-site within eastern Contra Costa County. Such compensatory mitigation shall be implemented through the provisions of a Resource Management Plan ("RMP") as described in Policy 10.3.2.e (see above), except where, in the discretion of the Community Development Director, an RMP is not necessary or appropriate due to certain characteristics of the site and the project. Among the factors that are relevant to determining whether an RMP is necessary or appropriate for a given project are the size of the project and the project site, the location of the project (e.g., proximity to existing urban development or open space), the number and sensitivity of biological resources and habitats on the project site, and the nature of the project (e.g., density and intensity of development).
- Where preserved habitat areas occupy areas that would otherwise be graded as part of a development project, facilitate the transfer of allowable density to other, non-sensitive portions of the site.

e. Limit uses within preserve and wilderness areas to resource-dependent activities and other uses compatible with the protection of natural habitats (e.g., passive recreation and public trails).

f. Through the project review process, review, permit the removal of healthy, mature oak trees on a case-by-case basis only where it is necessary to do so.

g. Preserve heritage trees throughout the [General Plan] Planning Area.

h. Within areas adjacent to preserve habitats, require the incorporation of native vegetation and avoid the introduction of invasive species in the landscape plans for new development.

i. Design drainage within urban areas so as to avoid creating perennial flows within intermittent streams to prevent fish and bullfrogs from becoming established within a currently intermittent stream.

j. Whenever a biological resources survey is undertaken to determine the presence or absence of a threatened or endangered species, or of a species of special concern identified by the U.S. Fish and Wildlife Service or the California Department of Fish and Game, require the survey to follow established protocols for the species in question prior to any final determination that the species is absent from the site.

10.5.2 Resource Management: Open Space Transitions and Buffers Policies

a. Minimize the number and extent of locations where residential, commercial, industrial, and public facilities land use designations abut lands designated for open space and protected resource areas (e.g., lands with conservation easements or set aside as mitigation for development impacts). Where such land use relationships cannot be avoided, use buffers and compatible uses to buffer and protect open space and protected resources from the adverse effects of residential, commercial, industrial and public facilities development.

b. Ensure that the design of development proposed along a boundary with open space or protected resources provides sufficient protection and buffering for the open space and protected resources. The provision of buffers and transitions to achieve compatibility shall occur as part of the proposed development.

c. In designing buffer areas, the following criteria shall be considered and provided for (when applicable) within the buffer areas to avoid or mitigate significant impacts.

- Aesthetics: How will development affect views from adjacent open space areas? What are the sensitive land uses and resources within open space areas and how might they be affected by changes in the visual environment?
- Light and Glare: Will a proposed development result in increased light or glare in open space areas that would impact open space uses or wildlife habitats within that open space?
- Noise: Will noise generated by the proposed development affect the public's quiet enjoyment of public open space? What are the sensitive noise receptors in open space areas and how can impacts on those sensitive receptors be avoided or mitigated? Can noise-generating uses be located away from noise-sensitive areas?
- Fire Safety: How will development affect the risk of fire on adjacent open space and resource areas? How would development affect or be affected by existing fire abatement practices on adjacent open space and resource areas, including livestock grazing, prescribed fire, plant pest management, mowing, disking, ecological restoration and other practices?
- Public Safety: How will development adjacent to open space or resource areas increase the risk of vandalism, trespass, and theft in adjacent open space and resource areas?

- Habitat Management: How will proposed development affect habitat values on adjacent open space and resource areas? How will development prevent the spread of introduced animals and plant pests into adjacent open space and resource areas? How will proposed development affect wildlife migration corridors between or within open space and/or resource areas?
- Public Access Management: How will development adjacent to public open space and resource areas affect the maintenance of existing public facilities, such as roads, trails, fences, gates and restrooms? How might development adjacent to open space or resource areas facilitate illegal public access?
- Buffer Management: How can appropriate management of lands that are set aside as buffers between development and open space or resource areas be ensured?

City of Antioch Tree Ordinance

The City of Antioch Municipal Code provides the guidelines for tree preservation and regulation (Title 9, Chapter 5, Article 12) (City of Antioch, 2008). A permit must be obtained to remove any "established tree" (any tree at least ten inches in diameter at breast height [dbh]), any "mature tree" (any tree at least 26 inches dbh), or any "landmark tree" (any tree at least 48 inches dbh or in excess of 40 feet in height).

According to an October 2008 Arborist's Report for a 284-acre portion of the project area (R&L Ecology, 2008), 112 "established" trees are present in the Planning Area. Of those, 61 are in good or fair condition and recommended to be retained, and 51 are rated in poor condition and recommended for removal. Three "mature" trees were identified, though only one was in fair condition; and two "landmark" trees were identified, both in fair condition. The complete Arborist's Report is included as Appendix E of this EIR.

IMPACT ANALYSIS

The proposed Specific Plan would have a significant adverse impact on biological resources if it would:

SIGNIFICANCE CRITERIA

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; or
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service; or
- 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; or
- 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; or

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- 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 AND ASSUMPTIONS

For purposed of this EIR, the analysis considered the following three principal components of the guidelines and criteria outlined above:

- Magnitude of the impact (e.g. substantial/not substantial)
- Uniqueness of the affected resource (rarity)
- Susceptibility of the affected resource to perturbation (sensitivity)

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species would be considered significant because the species is rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance, and therefore a much larger magnitude of impact would be required to result in a significant impact. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state. Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality.

SUMMARY OF IMPACTS

The proposed Hillcrest Station Area Specific Plan would encompass approximately 375 acres, currently dominated by non-native annual grassland and ruderal habitats. There are several types of jurisdictional wetlands present within the Planning Area, including ruderal seasonal wetlands, a drainage swale, in-channel ponds, and freshwater marsh in and along East Antioch Creek. Wildlife may use East Antioch Creek as a movement corridor, and several birds are known to have recently nested in the Planning Area, including the Swainson's hawk, burrowing owl, and red-tailed hawk. Finally, several "established" trees under the City of Antioch Tree Ordinance currently exist on the site and would likely be removed for buildout, and others will be planted in "landscape buffers," under the proposed Specific Plan. Existing General Plan policies, proposed Specific Plan policies, and mitigation measures would reduce these potentially significant biological impacts to a less than significant level under CEQA.

Though the proposed Hillcrest Station Planning Area is within the boundaries of the East Contra Costa County HCP/NCCP (ECCC HCP), the City of Antioch is not a signatory to the ECCC HCP, and therefore the project sponsor is not required to participate in it. Furthermore, the Specific Plan policies and mitigation measures included in this EIR are at least as stringent as, and in many cases equivalent to, the Conditions and Conservation Measures described in the ECCC HCP. As there is no foreseen conflict between the proposed Hillcrest Station Area Specific Plan and the ECCC HCP, this impact is not analyzed any further.

IMPACTS AND MITIGATION MEASURES

3.3-1 *Construction and development activities under the proposed Specific Plan could impact non-listed nesting bird species protected under the federal Migratory Bird Treaty Act. (Less than Significant)*

Nesting habitat for non-listed birds protected under the federal Migratory Bird Treaty Act occurs in and around the Planning Area. Disturbances due to construction or other activities during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, and would be considered a significant impact.

Under the proposed Specific Plan, trees, shrubs, and grasslands in areas proposed for development are potential nesting habitat for birds protected under the federal Migratory Bird Treaty Act. It is likely that construction activities would contribute to the destruction or degradation of habitat. Specific Plan policies below ensure that a protocol is followed to schedule construction around the breeding season, and when that is not possible, to adequately survey and avoid nesting areas during construction.

Specific Plan Policies that Reduce the Impact

EH-3 Prior to approval of any subdivisions or development projects, project sponsors shall comply with mitigation measures to avoid impacts to nesting bird species protected under the federal Migratory Bird Treaty Act, as follows:

- Project sponsors will avoid disturbing nesting raptors and other special-status birds by performing construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) outside of the breeding season (February 1 through August 31), to the extent possible.
- If construction activities are scheduled to occur during the breeding season (February 1 through August 31), the project sponsor will implement the following measures to avoid potential adverse effects on nesting raptors and other special-status birds:
  - The project sponsor will retain a qualified wildlife biologist to conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction activities, where access is available. Surveys shall be conducted no more than 14 days prior to the first day of construction activities.
  - If active nests are found during preconstruction surveys, the project sponsor will create a no-disturbance buffer (size to be determined in consultation with CDFG) around active raptor nests and nests of other special-status birds during the breeding season, or until it is determined that all young have fledged. The size of these buffer zones and types of construction activities restricted in these areas will be based in part on existing noise and human disturbance levels in the project site. Nests initiated during construction are presumed to be unaffected, and no buffer would be necessary. However, the "take" (harm) of any individuals will be prohibited.

- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs within the construction footprint that are determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests, may be removed.

Mitigation Measures

No mitigation measures are required.

3.3-2 ***Construction and development activities under the proposed Specific Plan could impact the Swainson's hawk and supporting habitat. (Less than Significant)***

The Swainson's hawk is a California threatened species under the California Endangered Species Act, and protected under the federal Migratory Bird Treaty Act and CDFG Code. In 2008 the Planning Area contained one Swainson's hawk nest, and approximately 280 acres of foraging habitat; construction activities and development that adversely affects this species would be significant.

Under the proposed Specific Plan, there will be construction activities within 0.25 miles of the 2008 Swainson's hawk nest, and nearby foraging habitat for this species will be developed. CDFG considers nests to be "active" if they are used one or more years within the last five years (CDFG, 1994). Development within the Planning Area is not projected to begin for several years, and this nest could become inactive by the time development activities begin.

Specific Plan Policies that Reduce the Impact

EH-4 Surveys for nesting Swainson's hawks shall be conducted semi-annually by a qualified biologist during the nesting season (March 1-September 15), beginning in the spring of 2009 and continuing until Planning Area development begins.

- Surveys shall be conducted at the beginning of the breeding season (March/April) and towards the end of the season (August/September) to determine the extent of nesting activity.
- Surveys shall be conducted within the Planning Area and extending out 0.25 miles from the Planning Area where possible.
- If potentially occupied nests are within 0.25 miles of the Planning Area and public access is not possible, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the Planning Area.
- Documentation of Swainson's hawk presence shall be submitted to the CDFG California Natural Diversity Database, and annual reports summarizing the results of the surveys shall be submitted to the City.
- Project sponsor(s) shall provide funding to the City of Antioch to contract for the biologist's services.

EH-5 Prior to the approval of a development permit in the Planning Area, the City shall determine whether Swainson's hawks are present in or within 0.25 miles of the Planning Area. Using the semi-annual survey results required in Policy EH-4 and the most recent CEQA environmental review documents for the Planning Area, it will be determined:

- Whether nesting sites are active or have been vacant for the five consecutive years (and therefore "inactive") preceding the application date; and
- If active, the total acreage of Swainson's hawk habitat, both nesting and foraging, that may be disturbed.

EH-6 If active Swainson's hawk nests are identified, a permanent 100-foot buffer shall be created around the dripline of the nest trees.

- No development shall occur within this buffer.
- The buffer shall be fenced to prevent the nests from being disturbed.

EH-7 If it is determined through Policy EH-5 that the Swainson Hawk nest is "active", then the project sponsor shall mitigate for lost Swainson's hawk nesting and foraging habitat using mitigation ratios prepared in consultation with CDFG, through mitigation credits or conservation easements.

- As of 2008 the CDFG recommended the following mitigation ratios, which are subject to change:
  - 1:1 for foraging habitat within one mile of an active nest;
  - 0.75:1 for foraging habitat within one to five miles of an active nest; and
  - 0.5:1 for foraging habitat within five to ten miles of an active nest.
- Mitigated land should be as close as possible to the Planning Area.

EH-8 During the nesting season (March 1–September 15), a qualified biologist shall conduct a preconstruction survey no more than 14 days prior to ground disturbance, to establish whether Swainson's hawk nests within 0.25 mile of the project site are occupied (unless this was already accomplished through Policy EH-4).

- If potentially occupied nests exist within 0.25 mile of the Planning Area, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the Planning Area.
- If active Swainson's hawk nests are identified during these pre-construction surveys, no construction activities shall occur during the nesting season within 0.25 mile of occupied nests or nests under construction, unless CDFG/USFWS agrees to a smaller buffer based on environmental conditions such as steep topography or dense vegetation. If young fledge prior to September 15, construction activities can proceed normally.

Mitigation Measures

No mitigation measures are required.

3.3-3 *Construction and development under the proposed Specific Plan could impact the western burrowing owl and its habitat. (Less than Significant)*

The western burrowing owl is a California Species of Special Concern. It is also protected under the federal Migratory Bird Treaty Act and CDFG Code. In 2008, Live Oak Associate biologists observed one pair of burrowing owls nesting in the northeast portion of the Planning Area, and evidence of burrowing owl activity in the southeast portion of the Planning Area (Live Oak Associates, 2008). Adverse impacts to nesting burrowing owls would be significant.

Construction and development under the proposed Specific Plans could adversely affect nesting burrowing owls by removing foraging habitat and threatening burrow locations. However, proposed Specific Plan policies prohibit disturbance during the nesting season, provide guidance for proper relocation procedures outside of the nesting season, and provide for the replacement of foraging habitat or credits for same. These policies will reduce this impact to a less than significant level.

Specific Plan Policies that Reduce the Impact

EH-9 No more than 14 days before construction, a survey for burrowing owls and their burrows shall be conducted by a qualified biologist within 500 feet of the project (access permitting). The survey will conform to the protocol described by the California Burrowing Owl Consortium (1995), which includes up to four surveys on different dates if there are suitable burrows present.

EH-10 If occupied owl burrows are found within the survey area, a determination will be made by a qualified biologist, in consultation with the CDFG, as to whether or not work will affect the occupied burrows or disrupt reproductive behavior.

- If it is determined that construction will not affect occupied burrows or disrupt breeding behavior, construction will proceed without any restriction or mitigation measures.
- If it is determined that construction will affect occupied burrows during the non-breeding season (August through February), the subject owls shall be passively relocated from the occupied burrow(s) according to a plan approved by the CDFG. The plan will include installation of one-way doors in occupied burrows at least 48 hours before the burrows are excavated, and will provide for the owl's relocation to nearby lands that possess available nesting habitat.
- If it is determined that construction will physically affect occupied burrows or disrupt reproductive behavior during the nesting season (March through July), then avoidance is the only mitigation available. Construction will be delayed within 300 feet of occupied burrows until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self-sufficient or are no longer using the natal burrow as their primary source of shelter.

EH-11 If the project requires the mitigation of Swainson's hawk foraging habitat, lost burrowing owl nesting and foraging habitat will be considered effectively mitigated with the acquisition of habitat or habitat credits, which replaces Swainson's hawk foraging habitat (see Plan Policy EH-7).

EH-12 If the project does not require the mitigation of Swainson's hawk foraging habitat, lost burrowing owl habitat shall be compensated by the acquisition or conservation of 6.5 acres per breeding pair using the site, at the time of disturbance.

Mitigation Measures

No mitigation measures are required.

3.3-4 ***Construction and development activities under the proposed Specific Plan could result in disturbance to special-status bat species. (Less than Significant)***

Buildings, trees, and shrubs in and surrounding the proposed project area provide suitable foraging and roosting habitat for special-status bat species, including Townsend's big-eared bat, pallid bat, western red bat, hoary bat, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis. These bats are protected as former federal species of concern and/or California species of special concern, and any "take" of these species would be significant. In addition, the loss of an active breeding maternity roost of a relatively common species like the big brown bat or California myotis, would also potentially be a significant impact, because these maternity roosts are protected by §4150[2] of the CDFG Code.

The proposed Specific Plan would result in the removal of several trees and shrubs, as well as abandoned buildings. Potential impacts to bats within the Planning Area include direct mortality as a result of roost destruction, and indirect impacts if bats abandon their roosts due to construction noise and human disturbance. However, Specific Plan Policy 3.3(c) reduces this potential impact to bats to a level that is less than significant.

Specific Plan Policies that Reduce the Impact

EH-13 The project sponsor will avoid disturbance of hibernating or maternity bat roosts, by performing preconstruction surveys and creating no-disturbance buffers.

EH-14 Prior to construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) within 200 feet of trees and buildings that potentially support special-status bats, the project proponent will retain a qualified bat biologist to survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, strong odors) is present, no further mitigation is required.

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[2] Section 4150 of the Fish and Game Code states that all non-game mammals (which includes bats) or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the commission. Thus, activities that result in direct mortality of bats, or disturbance that causes the loss of a maternity colony (and consequent death of young bats), is prohibited.

EH-15 If evidence of bats is observed, the project sponsor will carry out the following measures to avoid potential adverse effects to bats:

- A no-disturbance buffer (acceptable in size to the CDFG) will be created around active roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected, and no buffer would be necessary. However, the take of individuals will be prohibited.
- Removal of trees/buildings showing evidence of bat activity will occur during the period least likely to affect bats, as determined by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and April 15 for maternity roosts). If exclusion is necessary to prevent indirect impacts to bats due to construction noise and human activity adjacent to trees showing evidence of bat activity, these activities will also be conducted during these periods.

Mitigation Measures

No mitigation measures are required.

3.3-5 ***New development under the proposed Specific Plan could result in disturbance to the valley elderberry longhorn beetle. (Less than Significant)***

Although unlikely, there nevertheless is the potential for valley elderberry longhorn beetle (VELB) presence in the elderberry shrubs located in the southeast corner of the Planning Area. Impacts to the VELB would be significant.

Under the proposed Plan, the location of elderberry shrubs is zoned as "transit area mixed use," and there is potential for impacts to these shrubs and the VELB.

Specific Plan Policies that Reduce the Impact

EH-16 The project sponsor shall avoid Valley Elderberry Longhorn Beetle (VELB) habitat or prepare a VELB Mitigation Plan:

- Regardless of whether or not VELB exit holes are present, all elderberry shrubs with stems at least one inch in diameter shall be avoided, and a 100-foot buffer shall be established around the dripline of the shrubs. The 100-foot buffer may be adjusted in consultation with the USFWS. If avoidance is achieved, a letter report confirming avoidance shall be sent to the USFWS and no further mitigation would be required.
- If disturbance within 100 feet of the dripline of the elderberry shrubs with stems greater than or equal to one inch in diameter is unavoidable, then the project sponsor will: (1) conduct surveys for the VELB in accordance with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS, 1999); and (2) mitigate for impacts in accordance with these guidelines (USFWS, 1999).

Mitigation Measures

No mitigation measures are required.

3.3-6 *New development under the proposed Specific Plan could degrade streams, wetlands, and riparian habitats potentially subject to state and federal protection. (Less than Significant)*

Wetlands, streams, and ponds are present within the Planning Area, and potential direct impacts to these resources include filling, diversion, contamination, and siltation, all of which could be significant. Indirect effects on the retained Creek corridor would also be significant, and could include predation and harassment of the Creek's wildlife by pets, vandalism, dumping of trash, noise pollution, light pollution, introduction of nonnative plant and wildlife species (the proliferation of invasive species within an area leads to the loss of biodiversity since they displace native plants and frequently decrease wildlife habitat), and increased runoff from adjacent streets and landscaped areas containing lawn fertilizer, pesticides, and vehicle waste into the Creek. The planned 75-foot buffer around East Antioch Creek's wetlands would minimize these indirect impacts, by protecting biological resources such as sensitive wetlands, protecting wildlife utilizing the wetlands and adjacent habitat, maximizing the natural flood protection value of the floodplain, and protecting water quality by filtering sediments and pollutants from urban runoff before they reach the Creek.

Under the proposed Plan, jurisdictional wetlands would be developed, including the seasonal wetlands and drainage swale in the northeast portion of the Planning Area, and areas of freshwater marsh (the unnamed tributary of East Antioch Creek) in the central and eastern portions of the Planning Area. Although most direct impacts to the East Antioch Creek corridor would be avoided, there could be indirect impacts to this corridor, as described above.

Existing Policies and Regulations on Wetlands

As described in *Regulatory Setting*, above, all projects that discharge into or fill waters of the United States, including jurisdictional wetlands, are required to obtain applicable permits from the Corps; all projects that discharge into or fill waters of the State, including jurisdictional wetlands, are required to obtain applicable permits from the RWQCB; and projects that fill streams under the jurisdiction of the State are also required to obtain a Streambed Alteration Agreement from CDFG. The wetlands within the Hillcrest Planning Area fall under the jurisdiction of all three of these agencies, and therefore permits from these agencies will be required prior to construction activities. These permits will require avoidance measures for any retained wetlands, and mitigation for any temporary or permanent impacts to wetlands, either through protection/restoration of existing wetlands, or creation of new wetlands.

Furthermore, the Antioch General Plan has an extensive set of existing policies that protect these resources. Please return to the *Regulatory Setting* for the detailed list.

Specific Plan Policies that Reduce the Impact

EH-17 The project sponsor will avoid or minimize effects on streams, ponds, wetlands, and riparian habitat when possible. If underground utility crossings are required underneath East Antioch Creek, contractors shall employ jack-and-bore construction techniques for these crossings.

EH-18 For impacted wetlands, the project sponsor shall restore/create wetlands on or off site at a 2:1 ratio. A wetland mitigation and monitoring plan (referred to in General Plan Policies 10.3.2(e) and 10.4.2(d) as a Resource Management Plan) shall be developed and submitted to the Corps and any other applicable agencies, that includes the following:

- description of wetland types;
- performance standards and monitoring protocol to ensure the success of the mitigation wetlands over a period of five to ten years;
- engineering plans showing the location, size, and configuration of wetlands to be created or restored, as applicable;
- an implementation schedule showing when construction of mitigation areas shall occur, as applicable; and
- a description of legal protection measures for preserved wetlands, as applicable (i.e., dedication of fee title, conservation easement, and/or an endowment held by an approved conservation organization, government agency, or mitigation bank).

EH-19 As part of the development review process for projects adjacent to or including East Antioch Creek, the project sponsor shall create a Resource Management Plan for the creek corridor, as required by the General Plan Policy 10.4.2(d), in order to retain native vegetation in and along East Antioch Creek and prevent its degradation. Components of this Plan shall include but are not limited to: a vegetation palette consisting of native species for any landscaping that the project sponsor would like to do within the corridor, and methods for plant installation; vegetation monitoring; herbivore and weed control; irrigation; and site protection.

EH-20 The project sponsor shall establish a minimum 50-foot buffer from the delineated edge of the wetlands and the freshwater marsh vegetation. No development shall occur within this buffer.

- In an effort to avoid impacts to wildlife, including nesting birds and sensitive habitats, a fence shall be erected between the outer edge of the buffer area and the development, to keep pets out. The fence shall be at least four feet in height.
- A 25-foot additional buffer containing a recreation trail composed of permeable or semi-permeable surface may be located outside of the 50-foot buffer.

EH-21 Pedestrian and vehicle bridges proposed to cross over East Antioch Creek shall be designed to span the bed and bank of streams and avoid or minimize bridge piers or footings within the stream, within bridge safety limits.

- If possible, the span of bridges that cross streams should also include some upland habitat beneath their spans to provide dry areas for wildlife species that do not use creeks or for use during storms.
- Native plantings, natural debris, or rocks should be installed under bridges to provide wildlife cover and encourage the use of crossings.

Mitigation Measures

No mitigation measures are required.

3.3-7 ***New development under the proposed Specific Plan could interfere 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. (Less than Significant)***

The Planning Area is surrounded by development and has little value as a wildlife corridor, except for possibly those species moving along or inside East Antioch Creek. Policies described in Impact 3.3-6 that require a buffer to this creek (i.e. General Plan Policy 10.3.2(e), and Specific Plan Policy EH-x and EH-x) would protect this movement corridor.

Under the proposed Plan, there will be a buffer around East Antioch Creek, which will serve as a movement corridor for wildlife species. The plan is not expected to impede wildlife movement in the Planning Area.

Specific Plan Policies that Reduce the Impact

EH-22 Provisions shall be made for wildlife under-crossings for new roads near East Antioch Creek. Tunnels or culverts must be the minimum length, height, and width necessary to provide safe passage under the road. Culvert designs will be based on the best available data at the time of the development application.

Mitigation Measures

No mitigation measures are required.

3.3-8 ***The proposed Specific Plan could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)***

The City of Antioch Municipal Code 9-5.12 describes measures that protect trees, including "established" trees, which are present on the site. The City of Antioch has also passed ordinances that aim to protect native flora and fauna, by avoiding nonnative species introductions. Conflicts with these policies and ordinances would be significant.

Under the proposed Plan, trees will be planted in the "landscape buffer" area, and several trees that the City of Antioch has defined as "established" and therefore deserving of protection will be removed. Though the Arborist's Report identified a total of 112 established trees on the site, only 61 of those were evaluated as of good or fair condition and meriting preservation. Of the 61, only three are landmark or mature trees. The cluster of these three particular trees adjoins the creek buffer proposed in the Specific Plan and described above under Impact 3.3-7. Nonetheless, as all established trees overall are protected by the Tree Ordinance, any removal in conflict with the Ordinance would constitute a potentially significant impact. The following Specific Plan policies reduce this potentially significant impact to a level that is less than significant.

Specific Plan Policies that Reduce the Impact

EH-23 All "established" trees that will be retained shall be adequately protected during grading and construction.

- Trees to be preserved immediately adjacent to the construction area should be protected with a minimum four-foot construction fence placed at least three feet outside the tree's dripline.
- Care should be taken not to change the grade of the protected trees either by fill or grading. Any proposed grading within the dripline of protected trees will require further site investigation and recommendations by a certified arborist.

EH-24 Trees to be retained at the edge of the construction area should be pruned prior to the start of construction to remove dead wood that might present a safety hazard. Trees to be retained in landscape buffers and open space areas should be pruned of dead wood to minimize human hazards.

EH-25 The project sponsor will guarantee the health of all trees to be preserved within and adjacent to the proposed project site for three years. The project sponsor will replace any tree that is to be retained but that dies as a result of project construction activities during the guarantee period, with two 24-inch box, native trees, and the City of Antioch may require the posting of a bond pursuant to the Municipal Code.

EH-26 A plan for control of the Tree of Heaven species should be prepared and implemented in order to prevent root and sprout damage to concrete and asphalt pavement and building foundations.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE ANALYSIS

This analysis evaluates whether the impacts of the proposed Project, together with the impacts of cumulative development, would result in a cumulatively significant impact on special-status species, wetlands and other waters of the U.S., or other biological resources protected by federal, state, or local regulations or policies (based on the significance criteria and thresholds presented earlier). This analysis then considers whether the incremental contribution of the Hillcrest Station Specific Plan to this cumulative impact would be considerable. Both conditions must apply in order for a project's cumulative effects to rise to the level of significance. The geographic context for analysis of cumulative impacts to biological resources includes sites within and adjacent to the Hillcrest Station Planning Area.

East Contra Costa County is one of the fastest growing areas in the San Francisco Bay region. Between 2000 and 2030, population in the SR 4 corridor is projected to increase from about 167,700 people to 232,000 people (about 38 percent). During that same timeframe, population in the County is expected to increase from a population of about 948,800 to 1,255,300 (about 32 percent), and the population of the Bay Area is likely to increase in population from roughly 6.8 to 8.7 million (about 28 percent). The more rapid growth rate projected for the project corridor

indicates that the corridor is forecast to house an even greater proportion of the Bay Area's growth in 2030 than it does currently.

Within eastern Contra Costa County, there are approximately 58,840 acres of annual grassland, and 6,188 acres of ruderal habitat (Jones & Stokes, 2006). The annual grasslands are predominantly located in the southwest portions of eastern Contra Costa County, while ruderal habitat is located primarily in small patches throughout the urban areas. While large tracts of undeveloped grasslands and woodlands are present a few miles south of the Planning Area, which provide suitable habitat for several special-status species, and sensitive communities that also support special-status species are located approximately one mile north of the Planning Area, the Planning Area itself is an island of predominantly disturbed grassland and ruderal habitat, completely surrounded by development.

Past projects are the principle determinant of existing conditions in the Planning Area. While open space persists within and nearby the Planning Area, much of the original extent of the natural habitat once present has been developed. Development including SR 4, SR 160, residential lots, and business parks, have already caused significant adverse cumulative effects on biological resources through habitat loss and fragmentation, as well as the introduction of night lighting and noise. With the addition of current and other proposed projects, there is an existing cumulative impact without the project, which could be considered to combine with the proposed project to increase the aggregate effect and be considered cumulatively significant.

Development in the Planning Area, the future eBART, and other nearby projects will continue to fragment an already highly fragmented landscape in an urban environment, with essentially no wildlife movement corridors remaining except along creeks (although even the creeks in the vicinity of the Planning Area are of poor quality due to loss of riparian vegetation and culverted sections). Currently developed lands lack suitable habitat for most special-status species, and remaining pockets of undeveloped land in the vicinity of the Planning Area have a relatively low biological value, because (1) their highly fragmented nature makes wildlife access difficult; (2) their history of disturbance has eliminated suitable habitat for many special-status plants and animals; and (3) their small size cannot support viable populations of many wildlife species. Therefore, overall biological value in the urban area including the Hillcrest Station Planning Area is considered low.

The current impact analysis has shown that, while the Hillcrest Station Specific Plan has the potential for relatively minor impacts on burrowing owls, Swainson's hawks, and other potential special-status species, these impacts can be minimized to less than significant levels through the application of this EIR's proposed Specific Plan policies. When considered relative to all past, present, and reasonably foreseeable similar projects within the geographic context for this analysis, the incremental contribution of the proposed projects under this Specific Plan (which includes a loss of less than one percent of existing annual grasslands and ruderal habitat available in eastern Contra Costa County) to an already existing cumulative impact, is not cumulatively considerable. Therefore, the cumulative effect of the proposed Hillcrest Station Specific Plan on biological resources would be less than significant.

Mitigation Measures

No mitigation measures are required.

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