

E 18TH STREET TECHNICAL BIOLOGICAL REPORT ANTIOCH, CONTRA COSTA, CALIFORNIA

Prepared by

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1 INTRODUCTION

This site was evaluated by Live Oak Associates, Inc. (LOA) to ascertain whether or not build-out of the proposed project would have a significant impact (as defined by CEQA) on the biological resources of the site and region. This report describes the biotic resources of the approximately 14.7-acre site located at 3530-3560 E. 18th Street (hereafter referred to as the "study area" or "site"), in Antioch, Contra Costa County, California and evaluates possible impacts to these resources resulting from the proposed land use changes. The site is bordered by East 18th Street and a farm field to the north; Holub Lane, a residence, and more annual grassland to the west; a church to the south; and dense residential development to the west. It is located in the City of Antioch, Contra Costa County, California (Figure 1). The site can be found on the Antioch North U.S.G.S. 7.5' quadrangle in Section 21 of Township 2 North, Range 2 East. The site is comprised of a ruderal field which may have, at one time, supported agricultural use.

In general, the development of parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of the City of Antioch. Therefore, this report addresses issues related to: 1) sensitive biotic resources occurring in the study area; 2) the federal, state, and local laws regulating such resources, 3) evaluate whether or not the project results in any significant impacts to these resources; and if so, 4) includes mitigation measures to reduce these impacts to less-thansignificant (as defined by CEQA).

The analysis of impacts, as discussed in Section 3.0 of this report, was based on the known and potential biotic resources of the study area discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the *California Natural Diversity Data Base* (RareFind5, 2018); 2) the *California Rare Plant Rank* (CNPS 2018); 3) manuals and references related to plants and animals of the Santa Clara Valley region; 4) the City of Antioch policies and ordinances; and 5) the Santa Clara Valley Habitat Plan (SCVHP; 2012).

A field survey of the study area was conducted on August 13, 2018 by LOA ecologist Katrina Krakow.





1.1 PROJECT DESCRIPTION

The project, as proposed, would develop the 14.7-acre property as family and senior apartments with the family portion being 9.4 acres, and the senior portion being 5.2 acres. The new construction would include a 394-unit apartment with a "senior" portion of 178 units (1- and 2-bedroom units) and a "family" portion of 216 units (2-, 3- and 4-bedroom units). The family portion will be nine three-story buildings (24-plexes), in a walk-up design. The senior portion will be two three-story buildings, with a U-shaped design. Community clubhouse buildings of 3,000 square feet for families and 1,380 square feet for seniors are proposed, which includes a manager's office and social services' offices, a media lounge, computer lab and laundry rooms. A total of 600 parking spaces are proposed with carports over some of them. Vehicle access will be on the north side via a stub extension of Holub Avenue south from 18th Street, and from the south side via a stub extension of Filbert Avenue. Bicycle parking will be provided onsite.



2 EXISTING CONDITIONS

The project site is located at 3530-3560 E. 18th Street in Antioch, Contra Costa County, California. The site is bordered by East 18th Street and a farm field to the north; Holub Lane, a residence, and more annual grassland to the west; a church to the south; and dense residential development to the west. The site is generally flat with a bermed area on the western boundary and an engineered slope in the southern portion of the site which appears to have been previously partially constructed as an extension to Filbert Street to the west. The is at an elevation of approximately 30-70 feet (9-21 meters) National Geodetic Vertical Datum (NGVD).

Annual precipitation in the general vicinity of the study area is about 15 inches, almost all of which falls between the months of October and March. Virtually all precipitation falls in the form of rain.

One soil map unit occurs onsite: Delhi sand, 2 to 9 percent slopes (somewhat excessively drained soils, negligible to slow runoff, with rapid permeability). This soil map unit is not considered to be hydric.



2.1 BIOTIC HABITATS

Biotic habitats are limited to California Annual Grassland and Developed. Habitat of the project area is described below (Figure 2).

2.1.1 California Annual Grassland

The site is generally flat with a bermed area on the western boundary and an engineered slope in the southern portion of the site which appears to have been previously partially constructed as an extension to Filbert Street to the west. An area at the western boundary supports a small concrete v-ditch approximately 140 feet long which drains to the adjacent residential neighborhood. A few old grass nests were observed a couple feet off the ground woven into dead standing annual vegetation. The site supports sandy soil with gravel mixed into the sandy soil in a patch in the southeastern portion of the site north of the road extension. Trees are absent from the site, and the site supports one large silver bush lupine (Lupinus albifrons). Other vegetation observed onsite included, but was not limited to deerweed (Acmispon sp.), fiddleneck (Amsinckia sp.), unidentified aster, wild oats (Avena sp.), mustard (Brassica sp.), ripgut brome (Bromus diandrus), red brome (Bromus madritensis ssp. rubens), Italian thistle (Carduus pycnocephalus), yellow star-thistle (Centaurea solstitialis), Fitch's tarweed (Centromadia fitchii), common tarweed (Centromadia pungens), chenopod (Chenopodium sp.), bull thistle (Cirsium vulgare), bindweed (Convolvulus arvensis), annual fireweed (Epilobium brachycarpum), horseweed (Erigeron canadensis), sweet fennel (Foeniculum vulgare), dissected geranium (Geranium dissectum), gumplant (Grindelia sp.), sunflower (Helianthus sp.), barley (Hordeum murinum), prickly lettuce (Lactuca serriola), whitetop (Lepidium draba), lepidium (Lepidium sp.), Italian rye grass (Lolium multiflorum), Spanish lotus (Lotus purshianus var. purshianus), mallow (Malva sp), burclover (Medicago polymorpha), canarygrass (Phalaris sp.), curly dock (Rumex crispus), Russian thistle (Salsola sp.), prickly sowthistle (Soncus sp.), rose clover (Trifolium hirtum), and crimson clover (Trifolium incarnatum).

Animals observed during the site visit include the western fence lizard (*Sceloporus occidentalis*), turkey vulture (*Cathartes aura*), American crow (*Corvus brachyrhynchos*), barn swallow (*Hirundo rustica*), and black phoebe (*Sayornis nigricans*).





2.1.2 Developed/Ruderal

The eastern boundary of the site supports Holub Lane; a road which goes partially down the eastern boundary of the site. Both stormdrain and sewer manhole access exists along the western side of Holub Lane, and a stormdrain with riprap exists just to the east of Holub Lane and East 18th Street.

The frontage of the property also appears to be used as a sidewalk, even though a sidewalk is not in place. This area supports the same species as the adjacent habitat and the same animals are expected to use this habitat as the adjacent habitat.



2.2 MOVEMENT CORRIDORS

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches (Harris and Gallager 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of corridors. They believed, however, that connectivity questions make sense only in terms "of a particular focal species and landscape." For example, volant (flying) species are less affected by barriers than small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be and are useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) is that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions.

The quality of habitat within the corridors is important: "better" habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are



typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply due to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in riparian zones include California buckeye (*Aesculus californica*), dogwood (*Cornus sp.*), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus sp.*), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans sp.*), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus sp.*), and willow (*Salix sp.*).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

- 1. Wide ranging mammals can migrate and find mates;
- 2. Plants can propagate within the corridor and beyond;
- 3. Genetic integrity can be maintained;
- 4. Animals can use the corridor in response to environmental changes or a catastrophic event;
- 5. Individuals can recolonize areas where local extinctions have occurred.

A corridor is "wide enough" when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of "passage species" (those species that typically use a corridor for the express purpose of moving from one intact area to another) *and* "corridor dwellers" (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

The project site is not within a defined linkage and is not expected to act as a movement corridor, as the site is within the developed portion of Antioch and movements on and across the site consists of normal movements associated with an individual animal's home range or territory, or animals dispersing from their natal range..

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the vicinity of the study area. These species, and their potential to occur in the study area, are listed in Table 1. Sources of information for this table included *California Natural Diversity Data Base* (CDFW 2018), *Endangered and Threatened Wildlife and Plants* (USFWS 2018), and the *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFW 2018).



A search of published accounts for all of the relevant special status plant and animal species was conducted for the Antioch North USGS 7.5 minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Denverton, Birds Landing, Rio Vista, Honker Bay, Jersey Island, Clayton, Antioch South, and Brentwood) using the California Natural Diversity Data Base (CNDDB) Rarefind5. All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (See Figure 3).

Serpentine soils are absent from the site; as such, those rare plant species having potential to occur in the project vicinity that are uniquely adapted to serpentine conditions are considered absent from the site. These latter species include the chaparral harebell (*Campanula exigua*), Mt. Diablo bird'sbeak (Cordylanthus nidularius), and most beautiful jewel-flower (Streptanthus albidus ssp. *peramoenus*). Other rare plant species having potential to occur in the project vicinity occur in habitats not present in the study area (e.g., chaparral, broadleafed forest, coastal prairie, coastal scrub, marshes and swamps, etc.) or at elevations significantly below or above onsite elevations and, therefore, are also considered absent from the site. These latter species include the slender silver moss (Anomobryum julaceum), Mt. Diablo manzanita (Arctostaphylos auriculata), Contra Costa manzanita (Arctostaphylos manzanita ssp. laevigata), soft salty bird's-beak (Chloropyron mole ssp. molle), Bolander's water hemlock (Cicuta maculate var. bolanderi), Suisun thistle (*Cirsium hydrophilum var. hydrophilum*), Hospital Canyon larkspur (*Delphinium californicum* ssp. interius), dwarf downingia (Downingia pusilla), Lime Ridge eriastrum (Eriastrum ertterae), Antioch Dunes buckwheat (Eriogonum numum var. psychicola), Mt. Diablo buckwheat (Eriogonum truncatum), Contra Costa wallflower (Erysimum capitatum var. angustatum), Toren's grimmia (Grimmia torenii), Diablo helianthella (Helianthella castanea), woolly rose-mallow (Hibiscus lasiocarpos var. occidentalis), northern California black walnut (Juglans hindsii), Contra Costa goldfields (Lasthenia conjugens), Delta tule pea (Lathyrus jepsonii var. jepsonii), legenere (Legenere limosa), Mason's lilaeopsis (Lilaeopsis masonii), Delta mudwort (Limosella australis), Hall's bush-mallow (Malacothamnus hallii), marsh microseris (Microseris paludosa), woodland woollythreads (Monolopia gracilens), Lime Ridge navarretia (Navarretia gowenii), Baker's navarretia (Navarretia leucocephala ssp. bkeri), Antioch Dunes evening primrose (Oenothera deltoids ssp. howellii), Bearded popcornflower (Plagiobothrys hystriculus), eel-grass pondweed (Potamogeton zosteriformis), Mt. Diablo phacelia (Phacelia phacelioides), California alkali grass (Puccinellia simplex), Sanford's arrowhead (Sagittaria sanfordii), rock sanicle (Sanicula saxatilis),



chaparral ragwort (*Senecio aphanactis*), Mt. Diablo jewel-flower (*Streptanthus hispidus*), slenderleaved pondweed (*Stuckenia filiformis*), Suisun Marsh aster (*Symphyotrichum lentum*), coastal triquetrella (*Triquetrella californica*) and oval-leaved vibrunum (*Viburnum ellipticum*). Species more likely to occur on the project site itself or in the surrounding vicinity are discussed further below.









PLANTS (adapted from CDFW 2018 and CNPS 2018)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Large-flowered Fiddleneck (Amsinckia grandiflora)	FE, CE, CNPS 1B	Habitat: Occurs in cismontane woodlands and valley and foothill grasslands. <u>Elevation</u> : 275-550 meters. <u>Blooms</u> : annual herb; April- May.	Possible. The site supports grasslands that may support suitable habitat for large-flowered fiddleneck. Species-specific surveys should be conducted.

PLANTS (adapted from CDFW 2018 and CNPS 2018)

Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area
Alkali Milk-vetch (Astragalus tener var. tener)	CNPS 1B	Habitat: Occurs on alkaline soils within playas, valley and foothill grasslands and in vernal pools <u>Elevation:</u> 1-60 meters <u>Blooms:</u> Annual herb; March-June.	Absent. Habitat is absent from the study area for this species.
Heartscale (<i>Atriplex cordulata</i>)	CNPS 1B.2	Habitat: Occurs in saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland. <u>Elevation</u> : 0-560 meters. <u>Blooms</u> : April-October.	Unlikely. The nearest recorded occurrence is more than 3 miles from the site.
Brittlescale (Atriplex depressa)	CRPR 1B	Habitat: Occurs on alkaline clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools. <u>Elevation:</u> 1-320 meters. <u>Blooms:</u> Annual herb; April- October.	Absent. Habitat is absent from the study area for this species.
Big Tarplant (Blepharizonia plumosa)	CNPS 1B	Habitats: Found in Valley and foothill grassland, usually on clay soil. Elevation: 30-505 meters. Blooms: July-October.	Absent . The site supports grasslands that may support suitable habitat for big tarplant, however, this species would have been observed onsite during the August 2018 site visit and it was not.
Mt. Diablo fairy-lantern (<i>Calochortus pulchellus</i>)	CNPS 1B	Habitats: Found in chaparral, cismontane woodland, riparian woodland, and Valley and foothill grasslands. <u>Elevation</u> : 30-840 meters. <u>Blooms</u> : Perennial bulbiferous herb; April-June.	Unlikely. Habitats are marginal on the site for this species and it has never been observed within a three-mile (5km) radius of the site.
Congdon's Tarplant (Centromadia parryi ssp. congdonii)	CNPS 1B	Habitat: Occurs on alkaline soils within valley and foothill grasslands. <u>Elevation:</u> 1-230 meters <u>Blooms:</u> Annual herb; May- November.	Absent. While marginal potential habitat is available on site for this species, the survey occurred during this species' blooming season when other tarplants were observed in bloom and it would have been observed if present.



PLANTS (adapted from CDFW 2018 and CNPS 2018)

Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area
Pappose tarplant (Centromadia parryi ssp. parryi)	CNPS 1B	Habitats: Often alkaline soils within chaparral, coastal prairie, meadows, seeps, marshes, swamps, and mesic valley and foothill grasslands. <u>Elevation</u> : 0-420 meters. <u>Blooms</u> : May-November.	Absent. While marginal potential habitat is available on site for this species, the survey occurred during this species' blooming season when other tarplants were observed in bloom and it would have been observed if present.
Hispid salty bird's-beak (Cordylanthus molle hispidum)	CNPS 1B	Habitats: Occurs in alkaline soils in meadows and seeps, playas, and valley and foothill grassland. <u>Elevation</u> : 1-155 meters. <u>Blooms</u> : June-September.	Unlikely. Habitat is extremely marginal on the site for this species and there have been no occurrences of this species documented within a 3-mile (5km) radius of the site.
Hoover's cryptantha (Cryptantha hooveri)	CNPS 1A	Habitat: Occurs in inland dunes and sandy Valley and foothill grasslands. <u>Elevation</u> : 9-150 meters. <u>Blooms</u> : April-May.	Possible. The site provides potential habitat for this species and species-specific surveys should be conducted.
Jepson's Coyote-thistle (Eryngium jepsonii)	CNPS 1B	Habitats: Occurs in valley and foothill grassland and vernal pools on clay soils. Elevation: 3-300 meters. Blooms: Perennial herb; April-August.	Absent. Vernal pools and clay soils are absent from the site.
Diamond-petaled California poppy (Eschscholzia rhombipetala)	CNPS 1B	Habitat: Occurs in Valley and foothill grassland with alkali and clay soils. Elevation: 0-975 meters. Blooms: March-April.	Unlikely. Habitats on the site are extremely marginal for this species and the only documented occurrence in the project vicinity is approximately two miles northwest of the site.
San Joaquin Spearscale (Extriplex joaquinana)	CNPS 1B	Habitat: Occurs in chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands on alkaline soils. Elevation: 1-835 meters. Blooms: April-October.	Unlikely. Habitat is extremely marginal on the site for this species and there have been no occurrences of this species documented within a 3-mile (5km) radius of the site.
Stinkbells (Fritillaria agrestis)	CNPS 4.2	Habitats: Occurs in chaparral, valley grassland, foothill woodland, wetland, and riparian habitats, and can be associated with serpentine soils. <u>Elevation</u> : 10-1555 meters. <u>Blooms</u> : March-June.	Unlikely. Habitats of the site are extremely marginal for this species. There has been only one occurrence of this species observed in the project vicinity and this was approximately 1.5 miles southeast of the site in 1989.

PLANTS (adapted from CDFW 2018 and CNPS 2018)

Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area
Fragrant fritillary (Fritillaria liliacea)	CNPS 1B	Habitat: Occurs on clay soils within coastal prairie, and scrub, and valley and foothill grasslands, often on serpentine. <u>Elevation:</u> 3-410 meters <u>Blooms:</u> Bulbiferous; February-April.	Absent. Clay and serpentine soils are absent from the study area.
Brewer's western flax (Hesperolinon breweri)	CNPS 1B	Habitats: Usually on serpentinite in chaparral, cismontane woodland, and valley and foothill grassland. <u>Elevation</u> : 30-900 meters. <u>Blooms</u> : May-July.	Unlikely. Habitats of the site are extremely marginal for this species and there are no documented occurrences within a 3-mile (5km) radius of the site.
Carquinez goldenbush (Isocoma arguta)	CNPS 1B	Habitat: Occurs in alkaline valley and foothill grassland. Elevation: 1-20 meters. Blooms: August-December.	Unlikely. Habitats of the site are extremely marginal for this species and there are no documented occurrences within a 3-mile (5km) radius of the site.
Showy golden madia (Madia radiata)	CNPS 1B.1	Habitat: Occurs in cismontane woodland, valley and foothill grassland <u>Elevation:</u> 25-900 meters. <u>Blooms:</u> Annual herb; March-May.	Unlikely. Habitats of the site are extremely marginal for this species and the only documented occurrence of the species in the project vicinity was almost three miles south of the site and is presumed extirpated.
Shining navarretia (Navarretia nigelliformis ssp. radians)	CNPS 1B	Habitat: Occurs in cismontane woodlands, valley and foothill grasslands, and vernal pools. Elevation: 76-1000 meters. Blooms: April-July.	Unlikely. Habitats of the site are extremely marginal for this species and it has not been documented within a 3-mile (5km) radius of the site.
Keck's checkerbloom (Sidalcea keckii)	FE, CNPS 1B	Habitat: Occurs in serpentine and clay of cismontane woodland and valley and foothill grasslands. <u>Elevation:</u> 75-650 meters. <u>Blooms:</u> April-May (June).	Absent. Serpentine and clay soils are absent from the site.
Caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>)	CNPS 1A	<u>Habitat</u> : Occurs in alkaline soils of valley and foothill grassland. <u>Elevation</u> : 1-455 meters. <u>Blooms</u> : March-April.	Unlikely. Habitats of the site are extremely marginal for this species and was last documented in the project vicinity in 1981.

ANIMALS (adapted from CDFW 2018 and USFWS 2018)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Conservancy fairy shrimp (Branchinecta conservatio)	rvancy fairy shrimp <i>nchinecta conservatio</i>) FE Occurs in large, deep vernal pools and lakes of California with water into June at elevations from 5 to 145 meters.		Absent. Suitable habitat in the form of vernal pools is absent from the study area.
Vernal pool fairy shrimp (Branchinecta lynchi)	FT	Occurs in vernal pools of California.	Absent. Suitable habitat in the form of vernal pools is absent from the study area.
Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>)	FE	Occurs in vernal pools of California. Vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	Absent. Suitable habitat in the form of vernal pools is absent from the study area.
Delta green ground beetle (Elaphrus viridis)	FT	Occur on the margins of vernal pools and bare areas along trails and roads in Solano County, CA	Absent. Suitable habitat in the form of vernal pools is absent from the study area and the beetle is not known from this area.
Lange's metalmark butterfly (Apodemia mormo langei)	FE	Occurs in riverbank sand dunes supporting its host plant <i>Eriogonum</i> <i>latifolium</i> ssp. <i>auriculatum</i> .	Absent. Suitable habitat in the form of riverbank sand dunes is absent from the study area. Additionally, the host plant was not observed during the August 2018 site visit.
San Bruno elfin butterfly (Callophrys mossii bayensis)	FE	Eggs are layed on the host plant <i>Callophrys mossii</i> <i>bayensis</i> in coastal grassland and low scrub habitat within the fog belt at elevations from 275 to 325 meters.	Absent. The study area is outside of this species' range.
California tiger salamander (Ambystoma californiense)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	Unlikely. Suitable breeding habitat for this species in the form of stagnant pools with continuous inundation for a minimum of three months is absent from the site and the immediate vicinity. The nearest potential breeding habitat is approximately a half-mile to the south of the site, however, the nearest documented observation of this species is more than 3 miles from the site.
Foothill yellow-legged frog (<i>Rana boylii</i>)	CSC CCT	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	Absent. Habitats required by this species are absent. No water features exist on the site. The nearest documented observation of this species is more than 3 miles from the site.
California red-legged Frog (Rana aurora draytonii)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	Absent. Aquatic habitat suitable for the California red-legged frog is absent from the site. The nearest documented observation of this species is more than 3 miles from the site.



Species	Status	Habitat	Occurrence in the Study Area
Giant garter snake (Thamnophis gigas)	FT, CT	Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid- fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter	Absent. Breeding habitat and suitable canal systems for the giant garter snake do not exist on the site or in the vicinity of the site. The nearest water is approximately 0.5 miles to the south of the site and the nearest recorded observation of giant garter snake is along the San Joaquin River approximately 1.3 miles to the north of the site.



ANIMALS (adapted from CDFW 2018 and USFWS 2018)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Alameda whipsnake (Masticophis lateralis euryxanthus)	FT, CT	Occurs in chaparral foothills, shrublands with scattered grass patches, rocky canyons, and watercourses. Occurs in the San Francisco Bay area including Alameda, Contra Costa, Santa Clara and San Joaquin Counties, CA.	Absent. Suitable habitat for the Alameda whipsnake is absent from the site. Additionally, the nearest documented observation of this species is more than 3 miles from the site.
California least tern (<i>Sterna antillarum browni</i>)	FE, CE, CP	Occurs in central to southern California April to November. Found in and near coastal habitat including coasts, beaches, bays, estuaries, lagoons, lakes, and rivers.	Possible. The site is on the edge of the California least tern's range. Although this species may fly over the site from time to time, it is not expected to breed or forage on the site, as they breed along bays and rivers, with the San Joaquin River to the north being the closest suitable habitat in the vicinity. The nearest documented observation of this species is more than 3 miles from the site.
Tricolored blackbird (Agelaius tricolor)	CSC, CCE	Breeds near fresh water in dense emergent vegetation.	Possible. Marginally suitable nesting habitat is present onsite. A few grass nests were observed a couple feet high in the grassland of the site during the August 2018 site visit. The nearest documented observation of this species is more than 3 miles from the site.
Swainson's hawk (nesting) (Buteo swainsoni)	СТ	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	Likely. Although potential breeding habitat for the Swainson's hawk is absent from the site, potential breeding habitat is in the vicinity of the site. The nearest documented observation of this species is approximately a half-mile from the site, therefore, it is likely that Swainson's hawks would nest in the vicinity of the site.
San Joaquin kit fox (Vulpes macrotis mutica)	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	Unlikely. No San Joaquin kit fox burrows were observed on the site during the field survey in August 2018. The site provides only marginal foraging and dispersal habitat for the kit fox. There have been eight documented sightings within a ten-mile radius of the study site, all to the south of Antioch, with major development between the records and the site; the closest recorded observation is on the other side (south) of Antioch from the site and the most recent documented observation is from 1995 (see Figure 4). Therefore, kit foxes are unlikely to breed on the site, and are unlikely to forage on or disperse through the site.



ANIMALS (adapted from CDFW 2018 and USFWS 2018)

State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area	
Northern California legless lizard (Anniella pulchra)	CSC	The NCLL (previously called silvery legless lizard) occurs mostly underground in warm moist areas with loose soil and substrate. The NCLL occurs in habitats including sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Possible. The site supports suitable habitat with sandy substrate for the NCLL. The nearest recorded observation is a little more than a quarter-mile from the site (labelled as "silvery legless lizard" on Figure 3).	
Coast horned lizard (Phrynosoma blainvillii)	CSC	Occur in grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	Possible. Habitats required by coast horned lizards are present onsite, as the site has sandy soil. The nearest documented observation of this species is more than 3 miles from the site.	
Western pond turtle (<i>Actinemys marmorata</i>)	CSC	Intermittent and permanent waterways including streams, marshes, rivers, ponds and lakes. Open slow- moving water of rivers and creeks of central California with rocks and logs for basking.	Absent. Habitat for the western pond turtle is not available on the site.	
California glossy snake (Arizona elegans occidentallis)	CSC	Occurs in arid areas with grassland, scrub, chaparral, and rocky washes. This species is nocturnal and spends the day in burrows.	Possible. Habitats required by coast horned lizards are present onsite, as the site has sandy soil. The nearest documented observation of this species is more than 3 miles from the site.	
Mountain plover (nonbreeding/wintering) (Charadrius montanus)	CSC	Forages in short grasslands and freshly plowed fields of the Central Valley.	Possible. The site provides suitable winter foraging habitat for mountain plover. The nearest recorded observation of mountain plover is more than 3 miles from the site.	
Northern harrier (nesting) (Circus cyaneus)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Likely. The site provides suitable foraging habitat for this species, although does not provide nesting habitat.	
White-tailed kite (nesting) (Elanus leucurus)	CP	Open grasslands and agricultural areas throughout central California.	Possible. Although suitable breeding habitat does not exist onsite for this species, it does exist in the vicinity of the site, and suitable foraging habitat occurs onsite and in the vicinity of the site.	

ANIMALS (adapted from CDFG 2018 and USFWS 2018)

State Species of Special Concern and Protected Species (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Golden eagle (nesting & nonbreeding/wintering) (Aquila chrysaetos)	СР	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Possible. Although suitable breeding habitat does not exist onsite for this species, suitable foraging habitat occurs onsite and in the vicinity of the site. Therefore, this species may be expected to forage over the site from time to time.
American peregrine falcon (Falco peregrinus)	СР	Individuals breed on cliffs in the Sierra or in coastal habitats; occurs in many habitats of the state during migration and winter.	Absent. Nesting habitat is not present on the site or in the immediate vicinity of the site.
Short-eared owl (nesting) (<i>Asio flammeus</i>)	CSC	Occur in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	Possible. Short-eared owls may use site, but unlikely as the nearest recorded observation is more than 3 miles from the site.
Burrowing owl (Athene cunicularia)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Possible. Suitable habitat in the form of ground squirrel burrows is present on the site, and several burrowing owls are known from the area, the closest documented occurrence was approximately a tenth of a mile from the site.
Song sparrow ("Modesto" population) (<i>Melospiza melodia</i>)	CSC	Nests in riparian and dense vegetation fairly near water and along sparsely vegetated irrigation canals.	Unlikely. The site currently supports California annual grassland and would not likely support the dense vegetation the Modesto song sparrow prefers for nesting.
Suisun song sparrow (Melospiza melodia maxillaris)	CSC	Occurs in tidal salt marsh habitat in Suisun Marsh along Suisun Bay and nests in dense vegetation.	Absent. The site does not support suitable habitat for this species.
Saltmarsh common yellowthroat (Geothlypis trichas sinuosa)	CSC	Breeds in herbaceous wetlands and salt marshes of the San Francisco Bay area, can also be found in non- breeding along the California Coast. Nests in thick herbaceous vegetation up to one meter above the ground or over water.	Absent. The site does not support suitable habitat for this species



ANIMALS (adapted from CDFW 2018 and USFWS 2018)

State Species of Special Concern and Protected Species (cont.)

Species Status Habitat		Habitat	Occurrence in the Study Area
Loggerhead shrike (nesting) CSC Frequents open has sparse shrubs and suitable perches, I ground, and low H cover. Nests in tai and dense trees. I grasslands, marsh ruderal habitats. C		Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in tall shrubs and dense trees. Forages in grasslands, marshes, and ruderal habitats. Can often be found in cropland.	Present. This species was observed onsite.
Townsend's big-eared bat (Corynorhinus townsendii)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats.	Possible. Suitable foraging habitat for this species is present on the site, however, roosting habitat is absent.
Pallid bat (Antrozous pallidus)	CSC	Grasslands, chaparral, woodlands, and forests; most common in dry rocky open areas providing roosting opportunities.	Possible. Suitable foraging habitat for this species is present on the site, however, roosting habitat is absent.
Western red bat (Lasiurus blossevillii)	CSC	Roosts in tree or shrub foliage, although will occasionally use caves.	Unlikely. Trees with foliage thick enough for roosting western red bats is absent from the site.
San Francisco dusky-footed woodrat (Neotoma fuscipes annectens)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	Absent. Suitable habitat is absent from the site.
American badger (Taxidea taxus)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils, specifically grassland environments. Natal dens occur on slopes.	Unlikely. Although suitable habitat for the badger is present onsite, connectivity to occupied habitat is minimal. Therefore, it is unlikely that badgers would occur onsite.

*Explanation of Occurrence Designations and Status Codes

Present: Species observed on the sites at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the sites, but it could occur there from time to time.

Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient. Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern
		CCE	California Candidate Endangered
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more
1B	Plants Rare, Threatened, or Endangered in		information – a review list
	California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in		
	California, but more common elsewhere		



2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.4 of this report for additional information. The site does not support jurisdictional waters or wetlands.



3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant. According to *Guide to the California Environmental Quality Act* (Remy et al. 1996), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community.



- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

For the purposes of this report, it is assumed that impacts will be buildout of the entire property outside of the proposed riparian setbacks.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal Endangered Species Acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the take of a listed species. To "take" a listed species, as defined by the state of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" said species (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" of a listed species (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most bird species. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 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.



3.2.3 Birds of Prey

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5, which 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 CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.2.4 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit, as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

3.2.5 Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:



- 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;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision) impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).



All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

3.2.6 City of Antioch Tree Preservation and Regulation Ordinance (Article 12, § 9-5 of the Municipal Code).

The City defines established trees, indigenous trees, landmark trees, and protected trees as:

- 1. **ESTABLISHED TREE.** This shall be any tree which is at least 10 inches in diameter, as measured four and one half feet above natural or finished grade. **ESTABLISHED TREES** include mature and landmark trees as defined by this chapter.
- 2. *INDIGENOUS TREE.* This shall be a naturally growing tree of the following species:
 - Blue Oak (Quercus douglasii)
 - Valley Oak (*Quercus lobata*)
 - Coast Live Oak (Quercus agerifolia)
 - Canyon Live Oak (*Quercus chrysolepis*)
 - Interior Live Oak (*Quercus wislizennii*)
 - California Buckeye (Aesculus californica)
 - California Bay (Umbellularia californica)
- 3. *LANDMARK TREE*. This shall be any tree which is at least 48 inches in diameter and/or in excess of 40 feet in height.
- 4. *MATURE TREE.* This shall be any tree which is at least 26 inches in diameter, as measured four and one-half feet above natural grade.
- 5. **PROTECTED TREE.** This shall be defined as any of the following:



- Any tree required to be preserved as a condition of an approval from a "regular development application" as defined by this section, and/or any tree that is shown to be preserved on an approved development plan as submitted by the applicant and subsequently approved by the city.
- All established indigenous trees as defined by this section.
- All street trees as defined by this section.
- All mature and landmark trees as defined by this section."

The City requires permits for removal of protected trees:

- 6. *Permit or development application*. Except as provided below, it is unlawful to destroy or remove any established tree on any property within the city without either:
 - Obtaining a tree removal permit from the Department of Parks, Leisure and Community Services; or
 - Receiving approval to remove such trees as part of the regular development application process.
- 7. *Penalty*. A person who either removes or destroys an established tree prior to obtaining the required permits and/or approvals, or deliberately damages an established tree so that its removal is then necessitated for public safety, is subject to the penalties of this chapter and code.
- 8. *Exceptions*. The following trees may be removed without either a tree removal permit and/or regular development application:
 - If the condition of any tree presents an immediate hazard to life and/or property its removal may be authorized by the City Engineer.
 - Other than for protected trees as defined by this article, trees on developed residential properties may be removed without a permit."

Should tree removal be incorporated into a project application, the City would require the following information:

- 1. *Request for tree removal incorporated into regular development application.* If any established trees are on the subject property, the following information shall be provided with the regular development application.
 - A site plan showing the existing topography with location of all established trees, clearly labeling those trees which are proposed for either saving or removal.
 - A description of all established trees on the property, including the size (in diameter), estimated height, species, and relative condition (i.e., healthy vs. in decline).
 - A written statement requesting permission to remove the subject tree(s) providing the reason for the request.
- 2. Action on tree removal request by decision-making body. Approval or denial of the tree removal request will be made as part of the regular develop-ment application process. As part of the dis-cretionary project review process, the decision-making body may require the preservation of a tree proposed for removal and conversely may condition the removal of a tree. Decisions to preserve and/or remove will be based on the following factors:
 - The highest priority will be placed on the preservation of landmark and indigenous trees as defined by this chapter. Mature and established trees shall generally be preserved in

respective order, although tree appearance, species and aesthetic compatibility with the proposed project are additional factors to be considered.

- Permission to remove tree(s) species that do not or will not contribute to the aesthetic value of the proposed project may typically be granted. The provision of shade and context of the landscape design are both to be considered.
- While the city may require some more modifications to a proposed site plan, if the retention of a tree would severely limit the development potential of a property when compared to neighboring property, its removal may be permitted. In order for such tree removal to be granted, the applicant must document, with alternative plans and cost estimates, how the tree preservation would unduly burden the property and development.
- 3. *Need of an expert opinion.* Anytime during the project review process, the city may commission a certified arborist, at the applicant's expense, to provide a report on the health of a tree that the applicant requests permission to remove solely for reasons based on the alleged health of the tree such as the creation of a hazard to future circulation, buildings and/or utilities. Other factors may include the relative health and the age of the tree and its likelihood of long term survival.
- 4. *Appeal.* As with all discretionary approvals and/or conditions of the Zoning Administrator, Planning Commission and the Design Review Board, requirements for tree preservation and/or removal may be appealed as stipulated in this chapter.
- 5. *Required plus prior to initiating development*. Prior to the granting of a building and/or grading permit, the applicant shall provide a site plan showing all protected trees as defined by this chapter. There is to be no excavation within the drip line of such trees with the drip line to be clearly shown in all grading and layout plans.
- 6. Special circumstances to allow grading within the drip line. Although it is always preferable to avoid grading within the drip line, there may be special circumstances where grading may be permitted, such as when the preservation of a tree would otherwise not be possible. The permission to grade within the drip line is not to be seen as a routine procedure for protected trees, but as an alternative to removing trees that would otherwise be removed.
 - *Required plans and additional arborist studies.* There is to be no excavation within the drip line of such trees unless specific plans are to be submitted to the Department of Community Develop-ment staff that indicates how grading within the drip is to be carried out without critically harming the tree. Additional arborist's studies must be provided to support the grading proposed.
- 7. Bonding for protected trees where grading will occur within the drip line. Prior to the granting of a building and/or grading permit, the developer shall post a bond for each protected tree at which grading will occur within the drip line. The bonding schedule will be as listed under section "bonds and penalties." The city will conduct ongoing inspections during the course of the grading to assure adherence to approved plans. Should the tree(s) die "during the course of property development" as defined by this chapter, the bond shall be forfeited to the city and used for tree replacement. A percentage of the bond will be retained in either case to assure tree survival for up to five years after the issuance of a certificate of occupancy.
- 8. *Protection of trees during construction*. Unless specific exceptions are granted prior to the initiation of construction, all construction activity and traffic shall be prohibited from the area within the drip line of a protected tree. Should the tree(s) die "during the course of property development" as defined by this chapter, the applicable penalties of this chapter shall be levied.



- 9. *Damage of protected tree during construction*. Should a protected tree be damaged during site development, the developer shall administer all reasonable methods of treatments as approved by the Director of Community Development. The repair of the damage shall be at the expense of the developer. In addition, the city may require the posting of a bond pursuant to the requirements of this section.
- 10. *Need for re-hearing of a project.* Any time after initial approval of a site plan by either the Zoning Administrator, Planning Commission and/or City Council, an applicant's request to remove a "protected tree" as shown on the approved site plan will require a hearing. A new public hearing will be held on the issue of tree removal and the applicant will be required to renotice the surrounding property owners as stipulated in this chapter.
- 11. Replacement of trees that where legally removed.
 - All trees that are legally removed shall be replaced according to the following schedule:
 - Each established tree: two 24 inch box trees.
 - Each mature tree: two 48 inch box trees.
 - Legally removed indigenous and land-mark trees shall be replaced by boxed specimens at a rate and size to be established by the decision-making body at the time of regular development application approval.
- 12. *Requirement of subsequent owners to maintain trees.* All future owners of parcels on which trees were required to be maintained, (as a condition of approval) shall be responsible for continued maintenance of such trees. Buyers of property with such trees, as well as buyers of new all single-family homes, shall be given disclosure notices from the owner and/or developer of this requirement, and all other responsibility of tree management and/or preservation as required by this chapter.
- 13. *Previously approved projects*. Projects having tentative map, final development plan, use permit, and/or design review approval prior to the effective date of this chapter are not subject to this section of the chapter, unless those pre-existing approvals expire."

A bond (security deposit) or fees for tree removal are also required when grading is within the

dripline or when trees are removed without prior approval:

1. Payment required.

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• *Payment amount*. Payments in the amounts as listed by the following table will be collected by the city pursuant to the requirements for bonds and/or penalties as mandated by this chapter:

Tree Size (Diameter)	Bond Amount
10 to 17 inches	\$1,000
18 to 25 inches	\$2,000
26 to 36 inches	\$3,500
37 to 48 inches	\$5,000
48 and larger	\$10,000

• *Acceptable methods of payments.* All payments made for penalties and or bonds shall be cash, or equivalent security, as approved by the City Attorney.



- *Maximum bond amount per develop-ment parcel.* The property owners' and/or developers' obligation for cash or other security deposit shall not exceed a maximum of \$25,000 per development parcel.
- 2. *Refund of bond security.* At the end of the course of property development as defined by this chapter, the city shall make a determination as to the health of the protected tree(s) for which a security deposit was made. Unless the tree(s) shows obvious signs of ill health, the deposit shall be returned to the developer and/or property owner. Should the tree be in poor condition, the city may either:
 - Extend the length of time the bond is held; or
 - Require that the bond be forfeited and used for tree replacement.
- 3. *Use of penalties and forfeited bonds.* The money acquired by the city under this section shall be used as follows:
 - Money collected in conjunction with property development shall be used in the following order or preference, at the direction of the Director of Community Development:
 - To replace trees that have died during the course of property development with a tree of the same species and as close in size as reasonably possible.
 - To provide additional landscaping on the developers' or property owners' property.
 - To upgrade and/or landscape public places in the vicinity of the property.
 - Money collected by the payment of penalties for failure to obtain a tree removal permit from the Department of Parks, Leisure and Community Services (independent from site development) shall be used for neighborhood beautification project as per the discretion of the Director of Parks, Leisure and Community Services.
- 4. *Exemption from fine*. No penalty shall be paid and/or security deposit bond forfeited if a tree dies during the course of property development but for reasons beyond the developer's reasonable control. In order for this exception to be granted, all grading and construction must be consistent with approved plans."

3.2.7 City of Antioch General Plan 2003 and Draft General Plan Update EIR 2003

City of Antioch General Plan.

The City of Antioch General Plan 2003 includes several objectives. The objectives within the General Plan that apply to biological resources are included below:

- Biological Resources Objective: "Preserve natural streams and habitats supporting rare and endangered species of plants and animals." This objective includes the following biological resource 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 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, 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 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."
- 2) Open Space Transitions and Buffers Objective: "Minimize the impacts of development located adjacent to natural areas, preserved in open space, and protected environmental resources." This objective includes the following 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?"
- 3) Water Resources Objective: "Ensure that an adequate supply of water is available to serve existing and future needs of the City." This objective includes the following water resources policies relating to Water Quality (starting with subheading "f"):
 - f. "Participate in the Contra Costa Clean Water program to reduce storm water pollution and protect the water quality of the City's waterways.
 - g. Require public and private development projects to be in compliance with applicable National Pollution Discharge Elimination System (NPDES) permit requirements, and require the implementation of best management practices to minimize erosion and sedimentation resulting from new development.
 - h. Participate in regional watershed planning efforts to enhance area water quality. Design drainage within urban areas to avoid runoff from landscaped areas and impervious surfaces from carrying pesticides, fertilizers, and urban and other contaminants into natural streams."

City of Antioch General Plan Update EIR.

The site is identified as mostly agricultural with some developed land on figure 4.3.1 of the City of Antioch General Plan Update EIR.

Biological Resource Policies within the General Plan Update EIR include:



- 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 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 projection of biological resources.
- d) Through the project approval and design review processes, require new development projects to protect sensitive habitat areas, including, but not limited to, oak woodlands, vernal pools, and native grasslands. Ensure the preservation in place of habitat areas found to be occupied by State and federally protected species. 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 compatible with the protection of natural habitats.
- f) Through the project review process, review, and where appropriate, permit the removal of oak trees on a case-by-case basis.
- g) Preserve heritage trees throughout the 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."

Open Space Policies within the General Plan Update EIR include:



- a) "Require proposed development projects containing significant natural resources (e.g. sensitive habitats, habitat linkages, steep slopes, cultural resources, wildland fire hazards, etc.) to prepare Resource Management Plans to define appropriate responses to General Plan policies calling for their protection or preservation. 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 habitat linkages and wildlife movement corridors;
 - Define areas that are to be maintained in long-term open space, and
 - Establish mechanisms to ensure the long term protection and management of lands retained in open space."

Projects must be consistent will all objectives and policies of the General Plan.

3.2.8 East Contra Costa County Habitat Conservation Plan

Antioch is not covered under the East Contra Costa County Habitat Conservation Plan or any other habitat conservation plan.

3.3 IMPACTS SPECIFIC TO THE PROJECT

The project, as proposed, would develop the 14.7-acre property as apartments with the family portion being 9.4 acres, and the senior portion being 5.2 acres. The new construction would include a 394-unit apartment with a "senior" portion of 178 units (1- and 2-bedroom units) and a "family" portion of 216 units (2-, 3- and 4-bedroom units). The family portion will be 9 buildings (24-plexes) of 3 stories, in a walk-up design. The senior portion will be 2 buildings of 3 stories, with a U-shaped design. Community clubhouse buildings of 3,000 square feet for family and 1,380 square feet for senior are proposed, which includes managers office and social services offices, media lounge, computer lab and laundry rooms. 600 parking spaces are proposed with carports over some of them. Vehicle access be on the north side via a stub extension of Holub Avenue south from 18th Street, and from the south side via a stub extension of Filbert Avenue. Bicycle parking will be provided onsite. The development of the property could cause impacts including nest failure of breeding

migratory birds and raptors. As discussed above, activities resulting in impacts to biotic resources may be regulated by local, state, and federal laws. The natural resource issues specific to this project are discussed in detail below.

3.3.1 Loss of Habitat for Special Status Plants

Potential Impact. Of the special status plant species potentially occurring in the region for which the project site provides potential habitat (Table 1, Figure 3b), most are considered absent from, or unlikely to occur on the site due to a lack of suitable habitat such as vernal pools, and serpentine or alkaline soils, or because the site provides only marginal habitat for these species and they have never been observed in the project vicinity or have not been observed for many decades. However, the site does provide potential habitat for two special status plant species: large-lowered fiddleneck and Hoover's cryptantha, and focused surveys during the appropriate blooming season for these species are warranted to determine their presence on the site, and if present, the extent to which they may be impacted by the project. A focused botantical survey conducted in late April-early May would be sufficient to determine their presence on the site.

Mitigation. Should the botanical surveys indicated above confirm that special status plants are absent from the site, then no mitigation would be required. If populations of these species are present, and if it is determined by a qualified botanist or plant ecologist that project impacts to these species are significant under CEQA, then the following mitigations will be implemented which will reduce impacts to a less-than-significant level.

Avoidance. In consultation with a botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer) to these species.

Compensation. If the project cannot be designed to avoid significant impacts to special status plant populations, then the following compensatory measures will be implemented.

Development of an Onsite Restoration Plan. If the project cannot be designed to avoid significant impacts to special status plants (as discussed above), then an onsite or offsite restoration plan must be developed for the significantly impacted species by a qualified botanist or plant ecologist and approved by the City prior to the start of project development. The objective of this mitigation measure would be to replace the special status plants and habitat lost during project implementation.



A proposed onsite restoration program should be monitored for a period of five years from the date of site grading. The restoration plan should contain at a minimum the following:

- Identification of appropriate locations either onsite or offsite as determined by the botanist or plant ecologist (i.e., areas with suitable soils, aspect, hydrology, etc.) to restore lost plant populations.
- A description of the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can best be established by collecting seeds of onsite plants prior to project implementation and then directly seeding into suitable habitat on the conservation area.
- A timetable for implementation of the restoration plan.
- A monitoring plan and performance criteria.
- A description of remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- A description of site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

Development of an Off-site Mitigation Plan. If an onsite restoration plan is not feasible, mitigation for impacted special status plant species could be accommodated through restoration or preservation at an offsite location. Any offsite restoration plan would be subject to the same minimum requirements as indicated above for an onsite restoration plan.

If off-site preservation is the mitigation alternative chosen, then the mitigation site must be confirmed to support populations of the impacted species and must be preserved in perpetuity via deed restriction, establishment of a conservation easement, or similar preservation mechanism. A qualified botanist or plant ecologist should prepare a Preservation Plan for the site containing, at a minimum, the following elements:

- A monitoring plan and performance criteria for the preserved plant population.
- A description of remedial measures to be performed in the event that performance criteria are not met.
- A description of maintenance activities to be conducted on the site including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife.



The project proponent will be responsible for funding the development and implementation of any onsite or off-site plan.

Purchase of Suitable Mitigation Bank Credits. To our knowledge, no mitigation banks currently exist that provide mitigation credits for either of the species having potential to occur on the site; however, should mitigation bank credits become available, then the purchase of credits could also be used to mitigate significant impacts.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impact. Thirty-five (35) special status animal species occur, or once occurred, regionally. Of these, 20 species would be absent or unlikely to occur on the site due to a lack of suitable habitat for these species. The species that would be absent or unlikely to occur include the Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, Delta green ground beetle, Lange's metalmark butterfly, San Bruno elfin butterfly, California tiger salamander, Foothill yellow-legged frog, California red-legged frog, giant garter snake, Alameda Whipsnake, western pond turtle, American peregrine falcon, song sparrow ("Modesto" population), saltmarsh common yellowthroat, western red bat, San Francisco dusky-footed woodrat, American badger, and San Joaquin kit fox.

The remaining 15 special status animal species from Table 1 potentially occur more frequently as potential foragers, transients, may be resident to the site, or they may occur within areas adjacent to the site. These include northern California legless lizard, Coast horned lizard, California glossy snake, mountain plover, Swainson's hawk, white-tailed kite, northern harrier, golden eagle, short-eared owl, burrowing owl, California least tern, loggerhead shrike, tricolored blackbird, Townsend's big-eared bat, and pallid bat.

No evidence of bats was observed during reconnaissance surveys, and the site does not support roosting habitat for bats; however, individual Townsend's big-eared bats and pallid bats may forage over the site from time to time.

Although potential impacts to habitat are less than significant, potential impacts to individuals are discussed further below.

Mitigation. No mitigation warranted.



3.3.3 Loss of Habitat for Native Wildlife

Potential Impact. The habitats of the site comprise only a small portion of the regionally available habitat for plant and animal species that are expected to use the habitat. The proposed project would result in the loss of California annual grassland. This is not expected to result in a significant effect on local wildlife. Therefore, impacts due to the loss of developed and landscaped habitats for native wildlife resulting from the proposed project are considered less-than-significant.

Mitigation. No mitigation would be warranted for the loss of habitat for native wildlife.

3.3.4 Interference with the Movement of Native Wildlife

Potential Impact. Buildout of the site would not constrain native wildlife movement, as the site is currently used for agriculture and residences exist to the west of the site, a church is to the south, and a rural residence and Highway 160 are to the east of the site, none of which supports a wildlife movement corridor.

Mitigation. No mitigation would be warranted for interference with the movement of native wildlife.

3.3.5 Impacts to Nesting Migratory Bird Including Nesting Raptors and other Protected Birds

Potential Impacts. The grassland and bush lupine onsite may support nesting birds and groundnesting raptors. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading and soil excavation, poses a risk of nest abandonment and death of any live eggs or young that may be present within the nest within or near the site. Such an effect would be considered a significant impact. To ensure that any active nests will not be disturbed and individual birds will not be harmed by construction activities, the following measures should be followed.

Mitigation. The following measures will ensure that active migratory bird and raptor nests will not be disturbed and individual birds will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to nesting migratory birds to a less-than-significant level.

Mitigation Measure 3.3.5a. If initial site disturbance activities, including shrub, or vegetation removal, are to occur during the breeding season (typically February 1 to August 31), a qualified biologist would conduct pre-construction surveys for nesting migratory birds onsite and within 250



feet (for raptors) of the site, where accessible. The survey should occur within 14-days prior to the onset of ground disturbance if disturbances are to commence between February 1 and August 31. If a nesting migratory bird were to be detected, an appropriate construction-free buffer would be established. Actual size of buffer would be determined by the project biologist, and would depend on species, topography, and type of activity that would occur in the vicinity of the nest. Typical buffers are 25 feet for non-raptors and up to 250 feet for raptors. The project buffer would be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer would no longer be required.

3.3.6 Impacts to Western Burrowing Owls

Potential Impacts. The site currently supports California ground squirrel burrows, and provides potential habitat for burrowing owls. As suitable habitat exists onsite and adjacent to the site, and there are several documented occurrences exist within the vicinity of the site, preconstruction surveys are necessary.

Should site grading occur during the nesting season for this species (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. Overwintering burrowing owls may also be buried in their roost burrows outside of the nesting season (September 1 through January 31). Any actions related to site development that result in the mortality of burrowing owls would constitute a violation of the federal Migratory Bird Treaty Act and provisions of the California Fish and Game Code. Therefore, the mortality of burrowing owls would constitute a significant impact under CEQA.

Mitigation. The following measures will ensure that burrowing owls will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to burrowing owls to a less-than-significant level.

Mitigation Measure 3.3.6a. Preconstruction surveys are required to ascertain whether or not burrowing owls occupy burrows on the site prior to construction. These should follow the CDFG 2012 *Staff Report on Burrowing Owl Mitigation* document or newer CDFW document should one exist before construction begins, which requires surveys consist of a minimum of two surveys, with the first survey no more than 14 days prior to initial construction activities (i.e. vegetation removal, grading, excavation, etc.) and the second survey conducted no more than 24 hours prior to initial construction activities. If no burrowing owls or fresh sign of burrowing owls are observed during



pre-construction surveys, construction may continue; however, if a burrowing owl is observed during these surveys, occupied burrows will be identified by the biologist and a construction-free buffer (up to 250 feet) will be established and maintained until the biologist determines the burrow is no longer active.

Mitigation Measure 3.3.6b. If pre-construction surveys determine that burrowing owls occupy the site during the non-breeding season (September 1 through January 31), then a passive relocation effort (e.g., blocking burrows with one-way doors and leaving them in place for a minimum of three days) may be necessary to ensure that the owls are not harmed or injured during construction. Once it has been determined that owls have vacated the site, the burrows can be collapsed, and ground disturbance can proceed.

Mitigation Measure 3.3.6c. Alternatively, the project applicant could comply with one of the following conditions:

1. Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or

2. Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.

3.3.7 Impacts to Swainson's Hawks

Potential Impacts. Swainson's hawks are known to occur in the vicinity of the site and likely forage over the site. As suitable foraging habitat exists onsite and breeding habitat exists in the vicinity of the site, preconstruction nest surveys should occur.

As the project has the potential to affect individual nesting Swainson's hawks, the mortality of Swainson's hawks would constitute a significant impact under CEQA.

Mitigation. The following measures will ensure that Swainson's hawks will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to Swainson's hawks to a less-than-significant level.

Mitigation Measure 3.3.7a. Preconstruction surveys are required to ascertain whether or not Swainson's hawks have active nests in the vicinity of the site prior to start of construction activities.

Surveys for active nests within a half-mile shall occur during nesting season at least two survey periods prior to start of construction to ensure nests are not disturbed during construction activities. Surveys should follow the protocol in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000).

Mitigation Measure 3.3.7.b. Should a Swainson's hawk nest become active on or near the project site during construction, or if construction begins within the nesting season after a Swainson's hawk nest has already been established, a construction-free buffer shall be established. A minimum buffer distance of 600 feet shall be established for a nest that is already active prior to construction, and a minimum buffer distance of 150 feet shall be used for a nest that starts after construction has already initiated. These minimum distances are based on potential impact distances stated in the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (2000). Appropriate buffer distances shall be determined on the ground by a qualified biologist and shall be based on actual observations of the nest and parent behavior, the stage of nesting, and level of potential disturbance. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until a qualified biologist has determined that the young have fledged and the nest is inactive. The biologist shall have the authority to stop construction if construction activities are likely to result in nest abandonment.

Mitigation Measure 3.3.7.c. (Biological Tailgate Training) - The project shall retain a qualified biologist to conduct a tailgate training session for all construction personnel and subcontractors. This training would typically include natural history and biology of the Swainson's hawk and instructions on what to do if any Swainson's hawks are observed onsite.

Mitigation Measure 3.3.7d. Alternatively, the project applicant could comply with one of the following conditions:

1. Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or



2. Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.

3.3.8 Potential Impacts to Special Status Reptiles Including Northern California Legless Lizard, Coast Horned lizard, and California Glossy Snake

Potential Impacts. The site supports sandy substrate typical of habitat for the Coast horned lizard, northern California legless lizard, and California glossy snake. As the project has the potential to affect individual Coast horned lizards, northern California legless lizards, and California glossy snakes, the mortality of individuals of these species would constitute a significant impact under CEQA.

Mitigation. The following measures will ensure that Coast horned lizards, northern California legless lizards, and California glossy snakes will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to these species to a less-than-significant level.

Mitigation Measure 3.3.8a. Preconstruction surveys for the Coast horned lizard, northern California legless lizard, and California glossy snake must occur prior to construction activities. A minimum of one day-time and one night-time survey conducted between May 1-June 15 shall be conducted by a qualified biologist prior to construction activities.

Mitigation Measure 3.3.8b. Should preconstruction surveys locate any of these species, they would be relocated by a Designated Biologist to a CDFW-approved relocation site.

3.3.9 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Potential Impacts. Riparian habitat and wetlands are absent from the site. Therefore, development of the site would not constitute a significant effect on sensitive and protected habitat communities.

Mitigation. No mitigation is warranted.

3.3.10 Degradation of Water Quality in Seasonal Drainages, Stock Ponds and Downstream Waters

Potential Impact. Eventual site development and construction will require grading that leaves the soil of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural



creek beds, canals, and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species. The deposition of pollutants and sediments in sensitive riparian and wetland habitats would be considered a potentially significant adverse environmental impact. The project would comply with the City's grading requirements, and the Municipal Code (§ 6-9.05) states that all projects are "subject to the development runoff requirements in the city's NPDES permit shall be accompanied by a stormwater control plan that meets the criteria in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook" and "Implementation of an approved stormwater control plan and submittal of an approved stormwater control operation and maintenance plan by the applicant shall be a condition precedent to the issuance of a certificate of occupancy for a project subject to this section." Therefore, the project buildout would result in a less-than-significant impact to water quality.

Mitigation. No mitigation is warranted.

3.3.11 Conflict with Local Policies and Ordinances: City of Antioch Tree Ordinance

Potential Impacts. Trees are absent from the project site. Should protected trees occur onsite, replacement ratios should be followed as listed in Section 3.2.6 above, and any required bonds or security deposits would also be paid prior to the start of construction.

Mitigation. Should protected trees be found to occur onsite, the project would include the trees to be removed within the development application and would follow all mitigation measures and pay all required fees and/or bonds with the development application. Successful completion of these measures will reduce impacts to trees to a less-than-significant level.

3.3.12 Conflict with Local Policies and Ordinances: City of Antioch General Plan 2003 and Draft General Plan Update EIR 2003

The City of Antioch General Plan 2003 includes several objectives and policies; objectives and policies relating to biological resources are included in Section 3.2.8 above. The site is identified as mostly agricultural with some developed land on figure 4.3.1 of the City of Antioch General Plan Update EIR. The project will comply with all General Plan and General Plan Update EIR objectives and policies.



Failure to comply with the above General Plan policies could constitute a significant impact under CEQA. However, the proposed project would ensure compliance with the General Plan which would ensure there is no project conflict with the General Plan or General Plan Update EIR.

Mitigation. No mitigation is warranted.

3.3.13 Conflict with Local Policies and Ordinances: Specific Plans

The site is adjacent to and south of the East 18th Street Specific Plan and is within the Study Area, but not the Plan Area of the Hillcrest Station Area Plan, therefore, the site is not covered by a Specific Plan.

Mitigation. No mitigation is warranted.

3.3.14 Conflict with East Contra Costa County Habitat Conservation Plan

The City of Antioch is not covered under the East Contra Costa County Habitat Conservation Plan or any other HCP/NCCP.

Mitigation. No mitigation is warranted.



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