

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE

**±21-ACRE GREENWOOD COMMERCE CENTER
STUDY AREA**

NAPA COUNTY, CALIFORNIA



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APRIL 14, 2008

APR 24 2008

NAPA CO. CONSERVATION
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BIOLOGICAL RESOURCES ASSESSMENT FOR THE ±21-ACRE GREENWOOD COMMERCE CENTER STUDY AREA

INTRODUCTION

Project Location

North Fork Associates conducted a biological resources assessment for an approximately 21-acre study area in Napa County, California. The study area is located southwest of the corner of Highway 29 and Airport Boulevard south of the City of Napa. The location corresponds to Sections 1 and 2 of Township 4 North and Range 4 West on the 7.5 minute Cuttings Wharf USGS (United States Geological Survey) quadrangle (Figure 1). The latitude and longitude of the approximate center of the Study Area are 38.22127° north and 122.26187° west. The Assessor Parcel Number (APN) is 057-210-055 and a portion of 057-210-056.

Setting

The study area is located at an elevation between approximately 34 and 70 feet. The study area is bounded by Airport Boulevard to the north, undeveloped land to the east and south, and light industrial to the south and west. Surrounding land uses include a county airport used by large overseas carriers for training, a Napa County Sheriff Department Office, salt ponds, business and industrial development, agricultural activities, a golf course, and patches of undeveloped open areas (Figure 2).

Proposed Project Description

The proposed project includes a mid-scale warehouse storage and distribution facilities to serve the wine industry in Napa County.

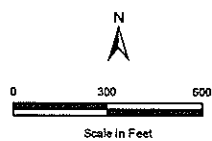
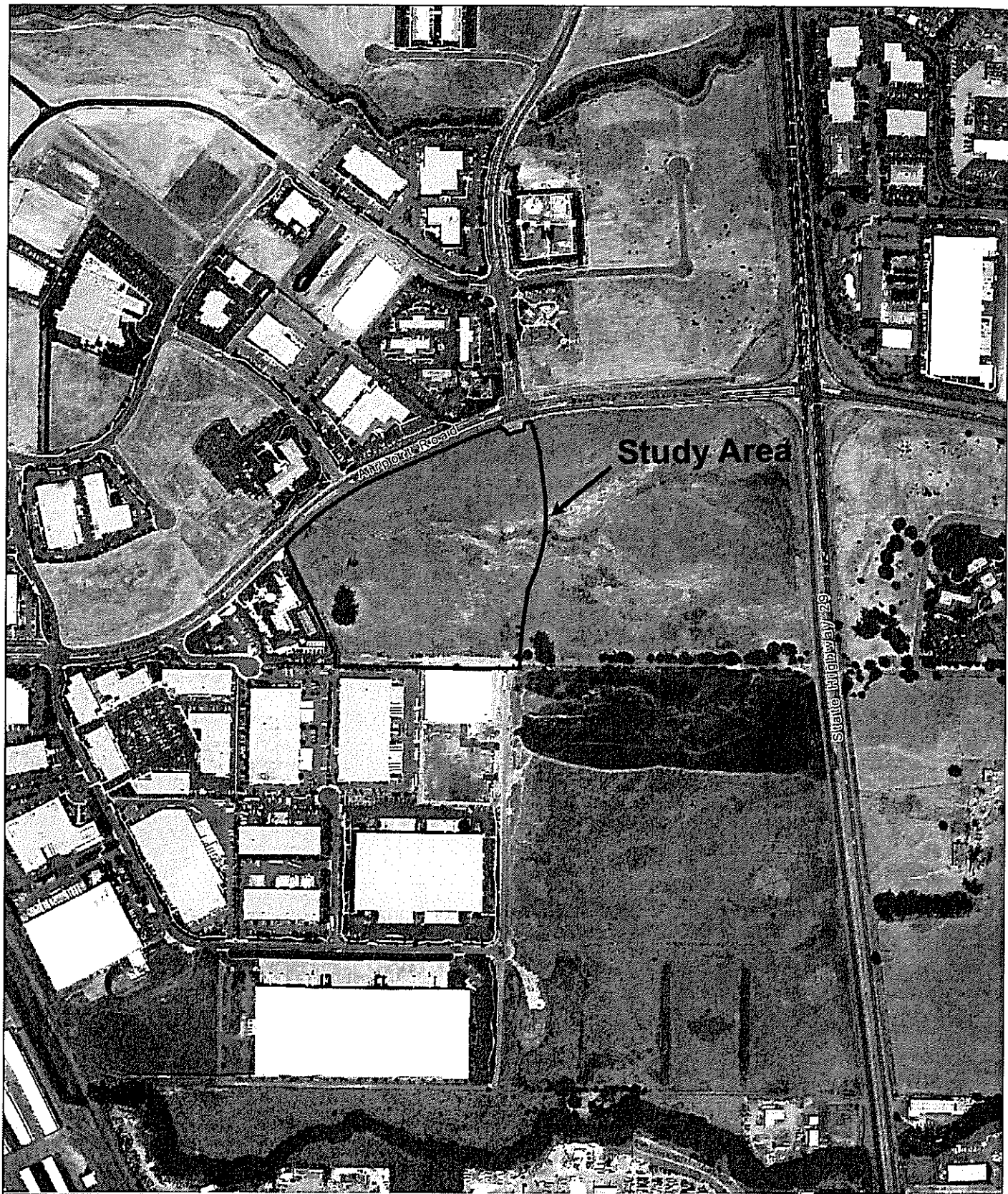
Objectives of Biological Resources Assessment

- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide conclusions and recommendations.

METHODS

Literature Review

A variety of resources were used in this assessment. An aerial photo was obtained from 2007 (taken in July, 2007), and Riechers Spence Associates supplied the digital base files, including a topographic map of the site. Geological information was taken from the



NOTES:
Aerial Photo Date: July 2007

Figure 2

Aerial Photo Map
Greenwood Commerce Center
Napa County, California

Geologic Map of California, Santa Rosa Sheet (California Department of Conservation 1963). Information on soils was taken from the Soil Survey Geographic (SSURGO) Database for Napa County, California (USDA, NRCS 2006).

Several publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring animal species. They include published books, peer-reviewed articles, field guides, and the California Wildlife Habitats Relationships Program.

Special-Status Species Reports

North Fork Associates queried the California Natural Diversity Database (CNDDDB 2008) for location records for special-status species known to occur in the region surrounding the study area. Quadrangles included in the query were Cuttings Wharf, Cordelia, Napa, Sears Point, Benicia, Mount George, Petaluma Point, Mare Island, and Sonoma. North Fork Associates biologists also reviewed the special-status species lists for the Cuttings Wharf USGS quadrangle and Napa County created by the U.S. Fish and Wildlife Service (USFWS). The California Native Plant Society (CNPS) Inventory was checked for special-status plants occurring in the area.

For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under the federal Endangered Species Act (including candidates and species proposed for listing);
- listed as endangered or threatened under the California Endangered Species Act (including candidates and species proposed for listing);
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code(CDFG);
- designated a Species of Concern by the CDFG;
- defined as rare or endangered under Section 15380 of the California Environmental Quality Act (CEQA); or
- occurring on List 1, 2, or 3 maintained by the California Native Plant Society.

Field Surveys

Preliminary surveys were conducted on July 10, 2007 by Pat Britton and Jeff Glazner as part of the wetland delineation for the study area. Additional surveys were conducted on February 12, 2008 by biologists Pat Britton (botany) and Stephanie Martin (wildlife). These surveys were conducted to assess habitat conditions and determine the potential for occurrence of special-status plant and wildlife species.

A special-status plant survey was conducted on March 25, 2008 by Barry Anderson. This survey was floristic according to guidelines for rare plant surveys issued by CDFG. Each individual encountered was identified to the extent needed to determine its rarity status. Appendix A is a list of plants observed during the 2007 and 2008 surveys. The list covered species found in the study area and the parcel to the east and some of the

surrounding areas. Not all species in Appendix A occur within the defined study area. Plant names are according to *The Jepson Manual* (Hickman 1993), except for changes obtained from the Jepson Interchange, an online database maintained by the University of California and Jepson Herbaria.

Wildlife surveys consisted of walking the site, recording notes of species observed or their respective sign (nests, burrows, tracks, scat), and assessing habitat conditions. Appendix B is a list of wildlife species observed. Standard manuals were used to identify wildlife species observed.

Monk & Associates conducted site assessments and surveys for vernal pool crustaceans (Monk & Associates 2008a) and California red-legged frog (Monk & Associates 2008b) in March 2008. The results of these surveys are incorporated into this resources assessment.

SURVEY AND LITERATURE SEARCH RESULTS

Geology and Soils

The geology map for the area shows that soils are derived from alluvium.

Two soil units have been mapped within the study area (Figure 3):

- Fagan clay loam, 5 to 15 percent slopes; and
- Haire loam, 2 to 9 percent slopes.

Fagan soils are deep, well-drained Argixerolls that have a heavy clay loam layer in the B1 horizon (between 10 and 16 inches). Fagan soils exhibit slow permeability and are not considered hydric.

Haire soils are clayey Haploxerults, usually with a dense clay layer in the B horizon. Haire soils are moderately well drained and have very slow permeability. Haire soils are not considered hydric, but they may have inclusions of Reyes and Clear Lake soils, some of which are hydric.

Hydrology

The Napa Gateway Business Park is in the San Pablo Bay watershed (HUC 18050002), water from the site flows to the west through an unnamed drainage system. Development around the airport has substantially altered the hydrology in the area to the north and west. It is likely that water in the unnamed drainage reaches the Napa River through culverts or ditches. The Napa River flows into San Pablo Bay at Vallejo just west of Carquinez Strait.

Biological Communities

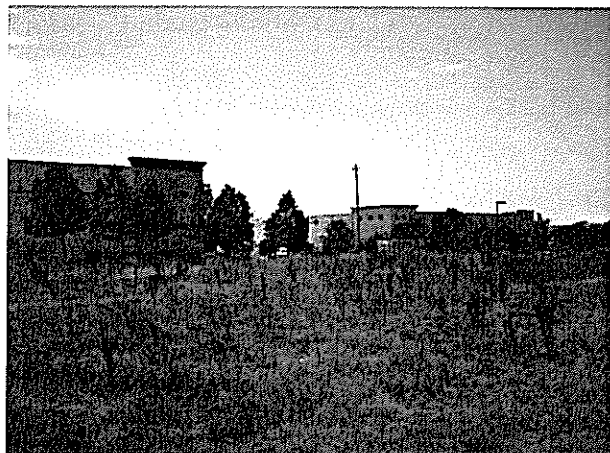
In the study area one biological community was identified (see Table 1 and Figure 3), ruderal grassland.

Table 1. Biological Communities Present Within the Greenwood Commerce Center Study Area

Biological Community	Estimated Acreage
Ruderal grassland	21.0
Total	21.0

Ruderal Grassland

The study area is open, ruderal grassland dominated by introduced grasses and forbs. Common species include ripgut grass, soft chess, Italian ryegrass, Italian thistle, bristly



ox-tongue, filed mustard, wild mustard, and radish. In March, much of the southern portion of the site was covered in a dense growth of grasses, radish, and mustards, often four to five feet high. The ruderal aspect of the grassland is apparent from the number of non-native species in Appendix A. Very few native species occur in the study area, and some of those are adapted to disturbance and are sometimes considered weedy.

Most community classification systems for California vegetation focus on relatively undisturbed habitats (Holland 1986; Mayer and Laudenslayer 1988; and Sawyer and Keeler-Wolf 1995). These systems do not have categories for habitats created by human activity, such as crops, orchards, pastures, ruderal areas, and urban landscapes. Holland and Keil (1995) includes descriptions of anthropogenic communities. The community present on the site in the study area is not truly a grassland community, and it supports many species that would be considered ruderal. To maintain continuity, other communities in the vicinity are named according to Holland and Keil (1995).

The study area supports little woody vegetation, except for four large blue gum trees near the western boundary. Coyote brush shrubs are widely scattered throughout.



Small amounts of wetland vegetation are embedded in this larger habitat. A few coast live oaks and one large blue gum tree are located near the southeastern corner of the study area boundary.

Most of the habitats in the surrounding area within 1.25 miles of the study area are also of anthropogenic origin. These include urban mix (landscaping around developments and golf courses), plantations (vineyards), agrestal

(agricultural crops), and ruderal (weedy habitats). Farther west, saltmarsh habitats occur along the Napa River estuary.

The study area is not expected to support a diversity of wildlife because it lacks important habitat features, including nesting sites, escape and thermal cover, and a variety of food sources. The ephemeral wetland swale provides only a seasonal source of water for wildlife. The adjacent remnant woodland community is small, but it and the four large eucalyptus trees onsite may provide roosting and nesting opportunities for birds and shelter for mammals. The taller eucalyptus trees onsite provide good nesting habitat for raptors, such as red-tailed hawk, and migratory songbirds, such as Anna's hummingbirds.

The animals observed in the ruderal grassland during field surveys include western scrub jay, purple finch, Anna's hummingbird, yellow-rumped warbler, American crow, black-tailed jackrabbit, and turkey vulture. In addition, two red-tailed hawks were observed flying over grassland areas of the site and perching in the eucalyptus trees near an old stick nest, and this species may nest in the area. Anna's hummingbirds were observed collecting nest materials. The study area probably supports small rodents, such as voles, but larger rodents, such as ground squirrels, may be absent, and no burrows were found.

Regulated Habitats

The following habitats are considered regulated by federal, state, city, or county laws and ordinances.

Waters of the United States

Waters of the U.S. within the study area include wetland swales and seeps. Discharges of dredge or fill material to Waters of the U.S. are regulated by the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act.

Streams, Ponds, and Riparian Habitats

No streams, ponds, or riparian habitat are present in the study area. The swale in the study area is represented on the USGS topo map as an intermittent stream. Although this feature carries water during storm events and has some groundwater contribution, it functions more as a vegetated swale than as a stream. It does not support riparian habitat. The feature may be within the jurisdiction of CDFG pursuant to Section 1602 of the California Fish and Game Code.

Oak Woodland, Oaks and Other Trees

The site does not support oak woodland or other regulated trees.

Special-Status Species

Appendix C is a list of potentially occurring special-status plants, and Appendix D is a similar list of special-status wildlife compiled from our queries as described in the Methods section. The USFWS list for Napa County includes species from the San Pablo Bay region to the northern edge of the county. Species requiring habitats not occurring

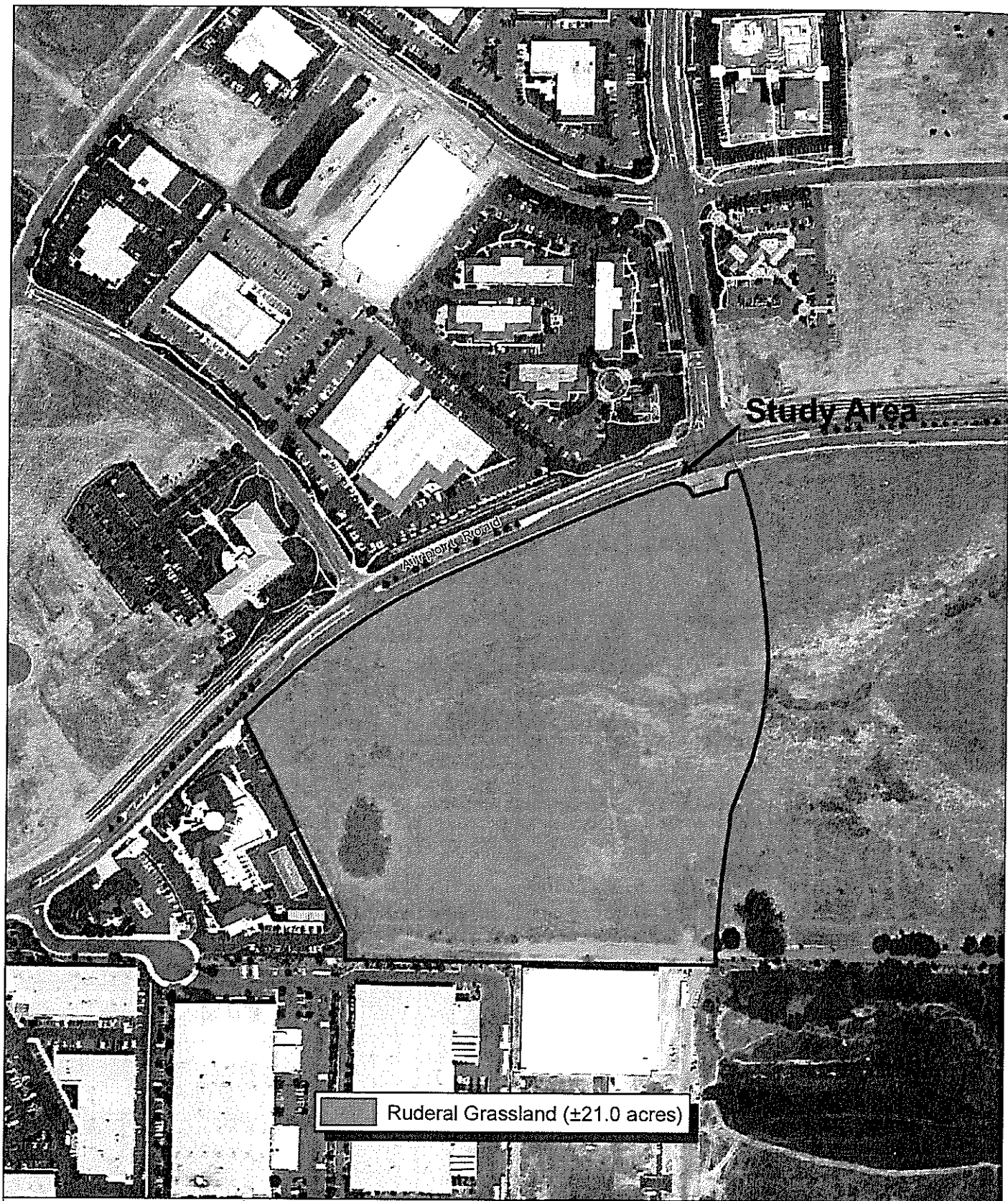
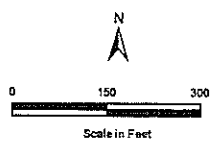


Figure 3

HABITAT MAP
Greenwood Commerce Center
 Napa County, California



NOTES:
 Aerial Photo Date: July 2007

in or around the study area and species occurring far outside the study area are not considered in Appendices C or D. Field surveys and the best professional judgment of North Fork Associates biologists were used to further refine the tables in Appendices C and D. Additionally, plants species found on the CNPS List 3 are not considered further in the document.

This refined list of special-status species in the region of the study area includes 51 plants and 39 animals (Appendix C and Appendix D, respectively). Of the 51 plant species in Appendix C and 39 animal species in Appendix D, five plants and five animals either occur onsite or they are rated likely or possible to occur because the site has some areas of suitable habitat or they are known from nearby locations. Some species rated unlikely to occur may be discussed if they have high status or when further clarification is needed. Table 2 is a summary of these species, and they are discussed in more detail in the paragraphs following the table.

Table 2. Special-Status Species That Could Occur Within the Greenwood Commerce Center Study Area

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Plants					
Big-scale balsam-root <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-	-	CNPS List 1B.2	Valley and foothill grassland	Unlikely. Marginal habitat is present.
Pappose tarplant <i>Centromadia parryi</i> subsp. <i>parryi</i>	-	-	CNPS List 1B.2	Vernally wet grasslands.	Possible. Wetlands in the study area may provide suitable habitat.
Contra Costa Goldfields <i>Lasthenia conjugens</i>	FE	-	CNPS List 1B.1	Vernal pools and seasonal wetlands.	Unlikely. Some wetlands in the study area may provide suitable habitat.
Dwarf downingia <i>Downingia pussilla</i>	-	-	CNPS List 2.2	Vernal pools and seasonal wetlands.	Unlikely. Swales in the study area may provide habitat.
Showy Indian clover <i>Trifolium amoenum</i>	FE	-	CNPS List 1B.1	Valley and foothill grasslands.	Possible. Marginal habitat is present, and the species in known historically from nearby locations.

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Invertebrates					
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	-	-	Vernal pools.	None. Habitat unsuitable. No individuals found during field surveys.
Amphibians					
California red-legged frog <i>Rana aurora draytonii</i>	FT	CSC	-	Lowlands and foothills in ponds, deeper pools, and slow moving streams, usually with emergent vegetation.	None. No habitat onsite for breeding or dispersal.
Birds					
White-tailed kite <i>Elanus leucurus</i>	-	CFP	-	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near grasslands.	Observed. Foraging habitat occurs onsite, and potential nesting habitat is nearby.
Burrowing owl <i>Athene cunicularia</i>	-	CSC	-	Nests in annual and perennial grasslands in burrows created by small mammals.	Possible. Marginal habitat is present, although burrows are not common. Not likely to use the site when dense vegetation is present.
Swainson's hawk <i>Buteo swainsoni</i>	-	CT	-	Nests in trees located adjacent to large open areas, such as grasslands and agricultural fields.	Possible. Marginal foraging habitat is present when vegetation is removed to reduce the fire hazard. Known nesting location approximately 1.25 miles to the north.

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		

*Status Codes:

Federal

FE Federal Endangered
 FT Federal Threatened
 FP Federal Proposed Species

State

CE California Endangered
 CT California Threatened
 CR California Rare (plants only)
 CSC California Species of Concern
 CFP California Fully Protected

CNPS

List 1B Rare, Threatened, or Endangered in California
 List 2 R, T, or E in California, more common elsewhere
 1- Seriously threatened in California
 2- Fairly threatened in California
 3- Not very threatened in California

**Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Plants

The potential for occurrence for species in Appendix C and Table 2 were evaluated before the March 2008 surveys. Based on the results of that survey, these lists were revised. The high level of past and present disturbance, and the presence of very tall, dense vegetation, probably precludes the presence of species that may have had suitable habitat historically.

Big-scale balsam-root (*Balsamorhiza macrolepis* var. *macrolepis*) is an herbaceous perennial member of the sunflower family (Asteraceae). It has no state or federal status, but it is on the CNPS List 1B. This species has large yellow flowering heads and leaves that arise from the ground. It differs, in part, from other balsam-roots by having coarsely serrate leaves. Big-scale balsam-root grows in open woodlands and grasslands at widely scattered locations in northern California, and will tolerate serpentine soil. It blooms from March to June.

Historically, the study area may have provided some habitat for this species, and the Jepson Herbarium has a specimen from the hills near American Canyon (although this was on serpentine soil). The high levels of disturbance and the thick cover of non-native species may preclude the presence of big-scale balsam-root in the study area. No members of the genus *Balsamorhiza* or the similar genus *Wyethia* were found during surveys. Big-scale balsam-root has distinctive leaves that would have been evident in March 2008, even without blooms. This species is presumed to be absent from the study area.

Pappose tarplant (*Centromadia parryi* subsp. *parryi*) is an annual member of the sunflower family (Asteraceae). It has no state or federal status, but is on the CNPS List 1B. It differs from related species and subspecies by having dark anthers and glandular herbage. Pappose tarplant grows in a variety of wetlands that are often saline or alkaline from Butte and Glenn Counties south to Monterey County. It blooms between May and November.

Very marginal habitat for the pappose tarplant is present. However, all specimens in the Consortium of California Herbaria for Napa County are near Calistoga. Specimens from Solano County are from the area around Suisun Bay near Cordelia. The wetland swale in the study area is the only available habitat in the study area, and this species, if present, may not have been identifiable in March 2008. Further surveys may be needed to show absence.

Contra Costa goldfields (*Lasthenia conjugens*) is an annual member of the sunflower family (Asteraceae). It is a federal endangered species with CNPS List 1B status. It differs from other goldfields by having phyllaries fused less than ½ their length and with mostly pinnately cut leaves. Contra Costa goldfields occurs in mesic grasslands and vernal pools in a number of Bay Area counties. It blooms from March to June.

The wetland swale in the study area provides marginal habitat for this species, and it apparently tolerates some level of disturbance. It is known to occur on Suscol Ridge northeast of the study area. As a genus, *Lasthenia* is recognizable without flowers, and no members of the genus were observed in March 2008. Nevertheless, additional surveys may be needed to show absence.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. The CNPS places the dwarf downingia on their List 2, meaning that, although it is rare in California, it is more widespread elsewhere. Dwarf downingia also occurs in Chile where the type specimen was collected. Dwarf downingia is distinguished from other members of the genus by having very small flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools. It blooms from March to May, depending on the amount and distribution of winter rains.

Marginal habitat for dwarf downingia occurs in the wetland swale portion of the study area, and the species is known to occur at several locations near Napa. No members of the genus *Downingia* were observed during March surveys, but additional surveys may be needed to prove absence.

Showy Indian clover (*Trifolium amoenum*) is a robust, annual member of the pea family (Fabaceae) that is listed as endangered by the USFWS. It has no state status, but it is on the CNPS List 1B. Showy Indian clover was thought to be extinct, but has recently been found in the North Bay. It is similar to the widespread *T. albopurpureum*, but it has much larger flowers. Showy Indian clover grows in moist grasslands, ditches, and other disturbed areas. It blooms from April to June.

Showy Indian clover grows in heavy, disturbed soils. Whether it tolerates long-term disturbance, such as that in the study area is unknown. Consequently, the study area may provide marginal habitat, and is known historically from Napa Junction. No unknown species of *Trifolium* were found during March surveys, but an additional survey in April may be needed to show absence.

Wildlife

Numerous state and federally listed species are known to occur in the region surrounding the study area, including the **California freshwater shrimp** (*Syncaris pacifica*), **California tiger salamander** (*Ambystoma californiense*), **California clapper rail** (*Rallus longirostris obsoletus*), **California black rail** (*Laterallus jamaicensis coturniculus*), **western snowy plover** (*Charadrius alexandrinus nivosus*), and the **saltmarsh harvest mouse** (*Reithrodontomys raviventris*). Each of these species occurs in specific habitats in the Napa region and is known to occur in the region surrounding the study area. Collectively, these species occur within a range of specific environmental conditions that include vegetation characteristics, water depth, inundation duration, and water quality. None of the specific habitats for these species occur onsite and they are, therefore, not discussed further in this document.

Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally-listed threatened species, resides and breeds in vernal pools from Mt. Shasta south to Riverside County. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. The ephemeral life span of the fairy shrimp reduces the limiting factors on their population. They are unlikely to be heavily preyed upon by other vernal pool inhabitants because they use the pool before the majority of carnivorous insects have colonized the pool. Vernal pool fairy shrimp have been collected from early December to early May. Resting fairy shrimp eggs are known as cysts and are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in springtime some of the cysts may hatch, other cysts may remain in the soil. Average time to maturity is between 18 and 41 days depending on the temperature of the pool.

A site assessment and surveys for vernal pool crustaceans by Monk & Associates (2008a) determined that the study area does not provide suitable habitat for these species. Furthermore, none were found during surveys using approved USFWS methods.

California red-legged frog (*Rana aurora draytonii*), a federally-listed threatened species and a California Species of Special Concern, breeds in permanent and semi-permanent aquatic habitats, such as cold-water ponds, slow-moving streams, and deep pools in intermittent streams. Inhabited waters typically are at least two feet deep and contain emergent and shoreline vegetation that provides cover from predators and depositional sites for eggs. This species is associated most frequently with arroyo willow (*Salix lasiolepis*), cattail (*Typha* spp.), and bulrush (*Schoenoplectus* spp.). During dry periods, California red-legged frog will aestivate in ground-squirrel burrows, earthen cracks, and under boulders and logs. Aestivation habitat can occur up to 300 feet from aquatic habitats.

The wetland swale onsite is ephemeral and does not provide suitable breeding habitat. Monk & Associates conducted a site assessment in accordance with current USFWS protocols (USFWS 1996). This assessment determined that the study area has no breeding or dispersal habitat, and that projects on the site would not affect the CRLF (Monk & Associated 2008b). The assessment will be submitted to the USFWS for concurrence.

White-tailed kite (*Elanus leucurus*), a California fully protected species, is an uncommon to locally fairly common resident and is typically found in grassy foothill slopes interspersed with oaks (including interior live oak, agricultural areas, and marshy bottomlands). They generally forage in undisturbed open grasslands, farmlands, meadows, and emergent wetlands, in areas with a high prey base. Nest trees range from single isolated trees to trees within larger stands. Nests of white-tailed kite are constructed near the top of oaks, willows, or other tall trees from 20 to 100 feet above ground. Breeding takes place from February to October, with peak activity from May to August. Incubation lasts between 28 and 30 days, and young usually fledge by October.

Burrowing owl (*Athene cunicularia*) is a California species of special concern. This species is primarily associated with open, dry grasslands, deserts, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows (Zeiner et al. 1990). Burrowing owls may also use man-made structures such as debris piles, culverts, and cement piles for cover. Distinctive burrow characteristics for burrowing owl are not known. However, given the size of this owl, burrow entrances are expected to be at least seven centimeters in diameter. Circumstantial evidence of burrowing owl occurrence within an area typically consists of the presence of molted feathers, cast pellets, prey remains, or excrement near a burrow entrance. Breeding of burrowing owl occurs from March to late August and incubation lasts between 28 to 30 days. Young are fledged at about 44 days but remain near the burrow and join the adults to forage at dusk. Young burrowing owls often establish nest sites the following year near their natal sites.

No burrowing owls and little evidence of suitable nesting habitat was observed during field surveys. Vegetation on much of the study area was three to four feet high during the March plant surveys, and burrowing owls generally avoid tall vegetation. During the spring or summer, vegetation is often removed, and this activity may provide better nesting and denning habitat. Vegetation on the property to the east is substantially shorter, and this area may provide better habitat.

Swainson's hawk (*Buteo swainsoni*) is a state listed threatened species pursuant to the California Endangered Species Act. Although it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act. Swainson's hawks, their nests, eggs, and young are also protected under provisions of the California Fish and Game Code.

The Swainson's hawk is generally a summer visitor to California. During the fall, most Swainson's hawks migrate to South America before returning to the United States to breed once again in the late spring. The nesting population of Swainson's hawks in California has declined greatly due primarily to habitat loss. This raptor inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands. It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall. Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads.

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture. The Swainson's hawk

generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole. Agricultural and other disturbed areas are often preferred over more natural grassland habitats because these activities tend to allow more access to prey species. During the nesting season Swainson's hawks usually forage within two miles of the nest.

A known nesting location occurs approximately 1.25 miles north of the study area. The eucalyptus trees on the site may provide nesting habitat. During portions of the year the study area supports a dense growth of mustard and grasses that is not suitable foraging habitat. However, vegetation is often removed in the spring or summer by disking to reduce the fire hazard, and this activity may result in more suitable foraging habitat.

POTENTIAL IMPACTS FROM DEVELOPMENT

Special-status plant surveys are not yet complete, however, it seems unlikely that the project is likely to adversely affect any special-status species (plant or animal). The main community on the site is ruderal grassland, and this is not a habitat warranting protection. The wetland swale is highly degraded and the water source is largely from developments upstream of the site. Nevertheless, the Corps of Engineers would consider the loss of waters of the United States to be significant if left unmitigated. The use of an in-lieu fund or mitigation bank is probably the most environmentally viable method of mitigating these losses.

RECOMMENDATIONS

Waters of the United States

1. The study area has areas considered waters of the United States. Activities that affect these areas would require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. The project would also need to obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act. The Corps and the Regional Board would add conditions to the permits that would stipulate the appropriate mitigation, which could include one or more of the following: onsite creation, offsite creation, purchase of credits in a mitigation bank, or payments to an in-lieu fund. The precise mitigation and monitoring requirements would depend on the extent of impacts.

Streams and Riparian Habitat

1. Although it is unclear whether the swale in the study area is within CDFG jurisdiction, the applicant intends to submit a 1602 application to CDFG.

Other Trees

1. The site does not support oak woodland or other regulated trees.

Special-Status Plants

1. Several special-status plants have at least some potential to occur in the study area. Rare plant surveys should be conducted in March eliminated the potential for some species. However, several species may not have been evident in March, and a second survey in April or May is recommended. All additional surveys should be floristic, conducted according to guidelines issued by the CDFG and the USFWS.

Special-Status Wildlife

1. A site assessment for vernal pool crustaceans has been completed and determined that there were no occurrences of this species in the study area and the site does not support habitat for these species. The assessment has been submitted to the USFWS for review and concurrence.
2. A site assessment for the CRLF was completed and determined that there were no occurrences of this species in the study area, nor does the site provide suitable habitat for this species. The assessment has been submitted to the USFWS for review and concurrence.
3. The study area provides suitable nesting habitat for raptors (including white-tailed kite and red-tailed hawk), especially in the large eucalyptus trees onsite. If construction occurs during the typical breeding season (approximately March 1 through August 31), and is within 500 feet of the trees, potential disturbance of nesting activities could occur. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5. To avoid take of active raptor nests, pre-construction surveys should be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. Survey results should then be submitted to CDFG. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated with CDFG to determine appropriate avoidance measures. If no nests are found, tree removal could proceed without further surveys.
4. Dense vegetation in the study area during the late winter and early spring may prevent burrowing owls from nesting there. In addition, the study area may lack the small mammal burrows used for nesting. A nesting survey should be conducted for western burrowing owl 30 days prior to construction of the project. Burrowing owl surveys shall be conducted according to the methodologies prescribed by CDFG in their 1995 *Staff Report on Burrowing Owl Mitigation* (CDFG 1995). If burrowing owls are found during surveys, CDFG should be contacted for the appropriate avoidance and mitigation measures.
5. The eucalyptus trees on the study area are unlikely to support nesting Swainson's hawks because of nearby human activities. Nevertheless, portions of the study area may provide foraging habitat. A nest is known to occur within 1.25 miles of the study area, and CDFG considers all suitable areas within a 10-mile radius of a nest to be foraging habitat. CDFG has produced a report titled *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) that describes potential mitigation for foraging habitat. The applicant should consult with CDFG to determine what, if any, mitigation might be required.

6. The study area provides suitable nesting habitat for a number of common and special status bird species. These birds, although not listed as threatened or endangered by either FESA or CESA, are protected under the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3513. Both the federal act and state code prohibit the intentional take of nests of any migratory bird species. Standard recommendations include removal of vegetation outside of the typical nesting season (April through August). If nesting habitat is to be removed during the nesting season, it is recommended that consultation should be initiated with CDFG to determine appropriate avoidance measures. If no nests are found, vegetation removal could proceed without further surveys.

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Appendix A.
Plant Species Observed Within the Greenwood Commerce Center Study Area

Appendix A

Plant Species Observed Within the Greenwood Commerce Center Study Area

Angiosperms - Dicots

Apiaceae

**Foeniculum vulgare*

Sweet fennel

Asteraceae

Baccharis pilularis

Coyote brush

**Carduus pycnocephalus*

Italian thistle

**Centaurea calcitrapa*

Purple star-thistle

**Centaurea solstitialis*

Yellow star-thistle

**Cichorium intybus*

Chicory

**Cirsium vulgare*

Bull thistle

**Dittrichia graveolens*

Stinkwort

**Helminthotheca echioides*

Bristly ox-tongue

**Hypochaeris glabra*

Smooth cat's-ear

**Hypochaeris radicata*

Rough cat's-ear

**Lactuca serriola*

Prickly lettuce

Madia elegans

Common madia

**Senecio vulgaris*

Common groundsel

**Silybum marianum*

Milk thistle

**Soliva sessilis*

Soliva

**Sonchus asper*

Prickly sow-thistle

**Sonchus oleraceus*

Common sow-thistle

Xanthium strumarium

Cocklebur

Boraginaceae

Amsinckia menziesii

Common fiddleneck

Brassicaceae

**Brassica rapa*

Field mustard

**Hirschfeldia incana*

Short-podded mustard

**Raphanus raphanistrum*

Jointed charlock

**Raphanus sativus*

Wild radish

**Sinapis arvensis*

Wild mustard

**Sisymbrium officinale*

Hedge mustard

Callitrichaceae

Callitriche sp.

Water-starwort

Caryophyllaceae

**Spergula arvensis* subsp. *arvensis*

Stickwort

**Stellaria media*

Common chickweed

Convolvulaceae

**Convolvulus arvensis*

Bindweed

Dipsacaceae

**Dipsacus fullonum*

Wild teasel

Euphorbiaceae

Croton setigerus

Turkey mullein

Fabaceae

**Lotus corniculatus*

Lotus purshianus var. *purshianus*

Lupinus bicolor

**Medicago polymorpha*

**Trifolium subterraneum*

**Vicia sativa*

**Vicia* sp.

**Vicia villosa*

Birdfoot trefoil

Spanish-clover

Miniature lupine

California burclover

Subterranean clover

Common vetch

Vetch

Hairy vetch

Fagaceae

Quercus agrifolia var. *agrifolia*

Coast live oak

Geraniaceae

**Erodium botrys*

**Erodium moschatum*

**Geranium dissectum*

Broad-leaf filaree

White-stem filaree

Cut-leaf geranium

Lamiaceae

**Mentha pulegium*

Stachys ajugoides var. *ajugoides*

Pennyroyal

Bugle hedge-nettle

Lythraceae

**Lythrum hyssopifolium*

Hyssop loosestrife

Myrsinaceae

**Anagallis arvensis*

Scarlet pimpernel

Myrtaceae

**Eucalyptus* sp.

Eucalyptus

Onagraceae

Epilobium brachycarpum

Epilobium ciliatum

Summer cottonweed

Hairy willow-herb

Papaveraceae

Eschscholzia californica

California poppy

Plantaginaceae

**Plantago lanceolata*

English plantain

Polygonaceae

Persicaria amphibia

**Polygonum aviculare*

**Rumex acetosella*

**Rumex crispus*

**Rumex pulcher*

Water smartweed

Common knotweed

Sheep sorrel

Curly dock

Fiddle dock

Ranunculaceae

**Ranunculus muricatus*

Spiny-fruit buttercup

Rosaceae

**Rubus discolor*

Himalayan blackberry

Rubiaceae**Galium aparine*

Goose grass

Salicaceae*Salix sp.*

Willow

Scrophulariaceae**Parentucellia viscosa*

Yellow glandweed

Triphysaria versicolor subsp. versicolor

Triphysaria

Solanaceae*Solanum americanum*

Black nightshade

Angiosperms -Monocots

Araceae*Lemna sp.*

Duckweed

Cyperaceae*Cyperus eragrostis*

Tall flatsedge

Eleocharis macrostachya

Creeping spikerush

Schoenoplectus acutus var. occidentalis

Hard-stem tule

Juncaceae*Juncus bufonius*

Toad rush

Juncus mexicanus

Mexican rush

Juncus oxymeris

Pointed rush

Juncaginaceae*Lilaea scilloides*

Flowering quillwort

Poaceae**Aira caryophyllea*

Silver European hairgrass

**Avena barbata*

Slender wild oat

**Avena fatua*

Wild oat

**Briza minor*

Small quaking grass

**Bromus diandrus*

Ripgut grass

**Bromus hordeaceus*

Soft chess

**Dactylis glomerata*

Orchard grass

Distichlis spicata

Saltgrass

**Hordeum marinum subsp. gussoneanum*

Mediterranean barley

**Hordeum murinum*

Foxtail barley

Leymus triticoides

Creeping wildrye

**Lolium multiflorum*

Italian ryegrass

**Paspalum dilatatum*

Dallis grass

**Phalaris aquatica*

Harding grass

**Poa annua*

Annual bluegrass

**Polypogon monspeliensis*

Annual beard grass

**Vulpia bromoides*

Brome fescue

Typhaceae*Typha angustifolia*

Narrow-leaved cattail

Typha latifolia

Broad-leaved cattail

Appendix B.
Wildlife Species Observed Within the Greenwood Commerce Center Study Area

Appendix B
Wildlife Species Observed Within the Greenwood Commerce Center Study Area

Birds

Great blue heron	<i>Ardea herodias</i>
Turkey vulture	<i>Cathartes aura</i>
Canada goose	<i>Branta canadensis</i>
White-tailed kite	<i>Elanus leucurus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Killdeer	<i>Charadrius vociferus</i>
Anna's hummingbird	<i>Calypte anna</i>
Black phoebe	<i>Sayornis nigricans</i>
Western scrub-jay	<i>Aphelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Oak titmouse	<i>Baeolophus inornatus</i>
American robin	<i>Turdus migratorius</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Purple finch	<i>Carpodacus purpureus</i>

Mammals

Black-tailed jackrabbit	<i>Lepus californicus</i>
Coyote	<i>Canis latrans</i>

Appendix C.
Special-Status Plant Species Known to Occur in the Region of the Greenwood
Commerce Center Study Area

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family	Taxon	Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae						
	<i>Viburnum ellipticum</i>	Western viburnum	Fed: - State: - CNPS: List 2.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	None. No suitable habitat present onsite.
Amaranthaceae						
	<i>Atriplex joaquiniana</i>	San Joaquin saltbush	Fed: - State: - CNPS: List 1B.2	April-September	Chenopod scrub; meadows; valley and foothill grassland; [alkaline].	None. No suitable habitat present onsite.
Apiaceae						
	<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	Fed: - State: CR CNPS: List 1B.1	April-October	Marshes and swamps (brackish or freshwater); riparian scrub.	None. No suitable habitat present onsite.
Asteraceae						
	<i>Balsamorhiza macrolepis macrolepis</i>	Big-scale balsam-root	Fed: - State: - CNPS: List 1B.2	March-June	Cismontane woodland; valley and foothill grassland; [sometimes serpentine].	Unlikely. Marginal habitat is present onsite, but high levels of disturbance may preclude this species.
	<i>Blennosperma bakeri</i>	Sonoma sunshine	Fed: FE State: CE CNPS: List 1B.1	March-April	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Marginal habitat is present onsite, but the species is known only from Sonoma County.
	<i>Blepharizonia plumosa</i>	Big tarplant	Fed: - State: - CNPS: List 1B.1	July-October	Valley and foothill grassland.	Unlikely. The site is outside the historical range for the species.

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Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Centromadia parryi condonii</i> Congdon's tarplant	Fed: - State: - CNPS: List 1B.2	June-November	Valley and foothill grassland (alkaline).	Unlikely. No suitable habitat is present and the site is outside the historical range of the species..
<i>Centromadia parryi parryi</i> Pappose tarplant	Fed: - State: - CNPS: List 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernal wet grassland (sometimes alkaline).	Possible. Marginal habitat is present onsite.
<i>Erigeron angustatus</i> Narrow-leaved daisy	Fed: - State: - CNPS: List 1B.2	May-September	Chaparral (serpentine).	None. No suitable habitat present onsite.
<i>Erigeron biolettii</i> Streamside daisy	Fed: - State: - CNPS: List 3.	June-September	Broad-leaved upland forest; cismontane woodland; northern coniferous forest [rocky, mesic].	None. No suitable habitat present onsite.
<i>Helianthella castanea</i> Diablo helianthella	Fed: - State: - CNPS: List 1B.2	April-June	Broadleaved upland forest; chaparral; cismontane woodland; coastal scrub; riparian woodland; valley and foothill grassland.	Unlikely. Only marginal habitat is present, and the site is outside the historical range of the species.
<i>Holocarpha macradenia</i> Santa Cruz tarplant	Fed: FT State: CE CNPS: List 1B.1	June-October	Coastal prairie; valley and foothill grassland; [often clay].	Unlikely. The site is outside the historical range of the species.
<i>Lasthenia conjugens</i> Contra Costa goldfields	Fed: FE State: - CNPS: List 1B.1	March-June	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Marginal habitat is present onsite.

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Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Lessingia hololeuca</i> Woolly-headed lessingia	Fed: - State: - CNPS: List 3.	June-October	Coastal scrub, lower montane coniferous forest; valley and foothill grassland; [clay, serpentine].	None. No suitable habitat present onsite.
<i>Micropus amphibolus</i> Mount Diablo cottonweed	Fed: - State: - CNPS: List 3.2	April-May	Broad-leaf upland forest; cismontane woodland; valley and foothill grassland.	None. No suitable habitat present onsite.
<i>Senecio aphanaxis</i> Rayless ragwort	Fed: - State: - CNPS: List 2.2	January-April	Foothill woodland; coastal scrub; (alkaline).	None. No suitable habitat present onsite.
<i>Symphyotrichum lentum</i> Suisun Marsh aster	Fed: - State: - CNPS: List 1B.2	August-November	Marshes and swamps (brackish and fresh water)	None. No suitable habitat present onsite.
Boraginaceae <i>Plagiobothrys strictus</i> Calistoga popcornflower	Fed: FE State: CT CNPS: List 1B.1	March-June	Broad-leaved upland forest; meadows; valley and foothill grassland; [alkaline areas near thermal springs].	None. No suitable habitat present onsite.
Campanulaceae <i>Downingia pusilla</i> Dwarf downingia	Fed: - State: - CNPS: List 2.2	March-May	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Marginal habitat is present onsite.

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Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Legenere linosa</i> Legenere	Fed: - State: - CNPS: List 1B.1	April-June	Vernal pools.	Unlikely. Only very marginal habitat is present.
Cyperaceae <i>Rhynchospora californica</i> California beaked-rush	Fed: - State: - CNPS: List 1B.1	May-July	Lower montane coniferous forest; meadows (seeps), marshes and swamps (freshwater).	None. No suitable habitat present onsite.
Ericaceae <i>Arctostaphylos bakeri bakeri</i> Baker's manzanita	Fed: - State: CR CNPS: List 1B.1	February-April	Broad-leaved upland forest; chaparral; [often serpentine].	None. No suitable habitat present onsite.
<i>Arctostaphylos canescens sonomensis</i> Sonoma manzanita	Fed: - State: - CNPS: List 1B.2	January-March	Chaparral; lower montane coniferous forest.	None. No suitable habitat present onsite.
<i>Arctostaphylos hookeri montana</i> Mt. Tamalpais manzanita	Fed: - State: - CNPS: List 1B.3	February-April	Chaparral; valley and foothill grassland; [serpentine].	None. No suitable habitat present onsite.
Fabaceae <i>Amorpha californica napensis</i> Napa false indigo	Fed: - State: - CNPS: List 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	None. No suitable habitat present onsite.

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Astragalus claranus</i> Clara Hunt's milkvetch	Fed: FE State: CT CNPS: List 1B.1	March-May	Cismontane woodland; valley and foothill grassland; [serpentine, volcanic clay].	None. No suitable habitat present onsite.
<i>Astragalus tener tener</i> Alkali milkvetch	Fed: - State: - CNPS: List 1B.2	March-June	Playas; valley and foothill grassland (adobe clay); vernal pools (alkaline).	None. No suitable habitat present onsite.
<i>Lathyrus jepsonii jepsonii</i> Delta tulle pea	Fed: - State: - CNPS: List 1B.2	May-September	Marshes and swamps (freshwater and brackish).	None. No suitable habitat present onsite.
<i>Lupinus sericatus</i> Cobb Mountain lupine	Fed: - State: - CNPS: List 1B.2	March-June	Chaparral; cismontane woodland; lower coniferous forest.	None. No suitable habitat present onsite.
<i>Trifolium amoenum</i> Showy Indian clover	Fed: FE State: - CNPS: List 1B.1	April-June	Valley and foothill grassland (sometimes serpentine)	Possible. Marginal habitat is present onsite, and the species is known historically from Napa Junction. Disturbance may preclude this species.
<i>Trifolium depauperatum hydrophilum</i> Saline clover	Fed: - State: - CNPS: List 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	None. No suitable habitat present onsite.
Juglandaceae <i>Juglans hindsii</i> Northern California black walnut	Fed: - State: - CNPS: List 1B.1	April-May	Riparian forest; riparian woodland.	None. No suitable habitat present onsite.

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Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Lamiaceae				
<i>Monardella villosa globosa</i> Robust monardella	Fed: - State: - CNPS: List 1B.2	June-July	Chaparral (openings); cismontane woodland.	None. No suitable habitat present onsite.
Liliaceae				
<i>Allium peninsulare franciscanum</i> Franciscan onion	Fed: - State: - CNPS: List 1B.2	May-June	Cismontane woodland; valley and foothill grassland [clay, often serpentine]. 100-300 m.	None. No suitable habitat present onsite.
<i>Calochortus pulchellus</i> Mt. Diablo fairy lantern	Fed: - State: - CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; valley and foothill grassland.	None. No suitable habitat present onsite.
<i>Fritillaria liliacea</i> Fragrant fritillary	Fed: - State: - CNPS: List 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentine].	None. No habitat is present onsite, and the species is not known to occur in Napa County.
Linaceae				
<i>Hesperolinon breweri</i> Brewer's dwarf flax	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland; valley and foothill grassland; [mostly serpentine].	None. No suitable habitat present onsite.
<i>Hesperolinon serpentinum</i> Napa dwarf flax	Fed: - State: - CNPS: List 1B.1	May-July	Chaparral (serpentine).	None. No suitable habitat present onsite.

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Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family	Taxon	Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Malvaceae	<i>Sidalcea hickmanii viridis</i> Marin checkerbloom		Fed: -	May-June	Chaparral (serpentine).	None. No suitable habitat present onsite.
			State: -			
			CNPS: List 1B.3			
Poaceae	<i>Poa napensis</i> Napa bluegrass		Fed: FE	May-August	Meadows (alkaline, near hot springs).	None. No suitable habitat present onsite.
			State: CE			
			CNPS: List 1B.1			
Polenoniaceae	<i>Leptosiphon jepsonii</i> Jepson's linanthus		Fed: -	May-July	Chaparral: cismontane woodland (usually volcanic).	None. No suitable habitat present onsite.
			State: -			
			CNPS: List 1B.2			
Navarretia leucocephala pauciflora	Few-flowered navarretia		Fed: FE	June-June	Vernal pools (volcanic ash flow).	None. No suitable habitat present onsite.
			State: CT			
			CNPS: List 1B.1			
Polygonaceae	<i>Chorizanthe valida</i> Sonoma spineflower		Fed: FE	June-August	Coastal prairie (sandy).	None. No suitable habitat present onsite.
			State: CE			
			CNPS: List 1B.1			
Eriogonum luteolum caninum	Tiburon buckwheat		Fed: -	June-September	Chaparral; coastal prairie; valley and foothill grassland; [serpentine].	None. No suitable habitat present onsite.
			State: -			
			CNPS: List 1B.2			

Appendix C

Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Polygonum marinense</i> Marin knotweed	Fed: - State: - CNPS: List 3.1	June-August	Marshes and swamps (coastal salt)	None. No suitable habitat present onsite.
Rhamnaceae				
<i>Ceanothus purpureus</i> Holly-leaf ceanothus	Fed: - State: - CNPS: List 1B.2	February-April	Chaparral (volcanic).	None. No suitable habitat present onsite.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	Fed: - State: - CNPS: List 1B.2	February-April	Chaparral (sandy, serpentine, or volcanic).	None. No suitable habitat present onsite.
Scrophulariaceae				
<i>Castilleja affinis neglecta</i> Tiburon Indian paintbrush	Fed: FE State: CT CNPS: List 1B.2	April-June	Valley and foothill grassland [serpentine]	None. No suitable habitat present onsite.
<i>Cordylanthus mollis mollis</i> Soft bird's-beak	Fed: FE State: CR CNPS: List 1B.2	July-September	Marshes and swamps (coastal salt).	None. No suitable habitat present onsite.
Themidaceae				
<i>Brodiaea californica leptandra</i> Narrow-anthered California brodiaea	Fed: - State: - CNPS: List 1B.2	May-July	Broadleaved upland forest; chaparral; lower montane coniferous forest. 110-915 m.	None. No suitable habitat present onsite.

Appendix C Special-Status Plant Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Family	Taxon	Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Thymelaeaceae	<i>Dirca occidentalis</i>	Western leatherwood	Fed: - State: - CNPS: List 1B.2	January-April	Chaparral; riparian, broadleaf, and coniferous woodlands and forests; [mesic locations].	None. No suitable habitat present onsite.

*Status

Federal: FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State: CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List-RED Code):
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D.
Special-Status Wildlife Species Known to Occur in the Region of the Greenwood
Commerce Center Study Area

Appendix D

Special-Status Wildlife Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Status*		Habitat	Probability on Project Site
Invertebrates			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Fed: FT State: - Other: -	Vernal pools and other temporary bodies of water in southern and Central Valley of California. Most common in smaller grass or mud bottomed swales or basalt flow depression pools in unplowed grasslands.	None. No habitat present onsite.
California freshwater shrimp <i>Syncaris pacifica</i>	Fed: FE State: CE Other: -	Endemic to Marin, Napa, and Sonoma counties in low gradient streams with moderate to heavy riparian canopy. Needs shallow pools away from the main stream flow. Prefers undercut banks with exposed roots.	None. No habitat onsite.
Insects			
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Fed: FT State: - Other: *	Requires host plant, elderberry (<i>Sambucus</i> spp.) for most of its life cycle. Shrubs must have stem diameters at ground level of 1.0 inch or greater and shrubs must be found less than 3,000 feet in elevation. Typically riparian and upland associated.	None. No habitat onsite.
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	Fed: FE State: - Other:	Occurs on grassy and shrubby woodlands around San Francisco Bay. <i>Viola pedunculata</i> is the host plant. Males congregate on hilltops.	None. No habitat onsite.
Myrtle's silverspot butterfly <i>Speyeria zerene myrtilae</i>	Fed: FE State: - Other:	Inhabits the foggy coastal dunes at Point Reyes Peninsula. Extirpated from San Mateo County. <i>Viola adunca</i> is the larval food plant.	None. Out of species known range and no habitat onsite.
Fish			
Green sturgeon <i>Acipenser medirostris</i>	Fed: FC State: CSC Other:	Found in rivers, estuaries, and marine waters. Spawns in the Sacramento River and Klamath River. Prefers lower reaches of large rivers for spawning. Needs swift currents and large cobble.	None. No habitat onsite.
Coho salmon - Central California Coast ESU <i>Oncorhynchus kisutch</i>	Fed: FE State: CE Other: -	One of six distinct groups, Evolutionarily Significant Units (ESUs). Found in short, coastal drainages from Punta Gorda, CA south to Monterey Bay. Spawning habitat is small streams with stable gravel substrates.	None. No habitat onsite.

Appendix D **Special-Status Wildlife Species Known to Occur in the Region of the Greenwood Commerce Center Study Area**

Status*		Habitat	Probability on Project Site
Steelhead - Central California Coast ESU <i>Oncorhynchus mykiss iridens</i>	Fed: FT State: - Other: -	Central coastal basins from the Russian River, south to Soquel Creek, including San Francisco and San Pablo Bay basins, but excludes the Sacramento-San Joaquin River basins.	None. No habitat onsite.
Delta smelt <i>Hypomesus transpacificus</i>	Fed: FT State: CT Other: -	Endemic to the Sacramento-San Joaquin Delta in coastal and brackish waters. Occurs seasonally in Suisun and San Pablo bays. Spawning usually occurs in dead-end sloughs and shallow channels.	None. No habitat onsite.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Fed: FT State: CSC Other:	Found in: (1) the Delta, (2) Suisun Bay, (3) Suisun Marsh, (4) Napa River, (5) Petaluma River, and (6) other parts of the Sacramento-San Joaquin Estuary. Requires flooded vegetation for spawning and rearing.	None. No habitat onsite.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	Fed: FT State: CSC Other: -	Occurs in annual grassland habitat (<1500 feet) and occasionally in grassy understorey of valley-foothill hardwood habitats where lowland aquatic sites are available for breeding. Breeds primarily in vernal pools.	Unlikely. Marginal habitat onsite, no vernal pools present but seasonal wetland swale may provide dispersal habitat.
California red-legged frog <i>Rana aurora draytonii</i>	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Unlikely. Very marginal dispersal habitat onsite.
Reptiles			
Western pond turtle <i>Actinemys marmorata</i>	Fed: - State: CSC Other: -	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying.	None. No habitat onsite. Pond found adjacent to site may support individuals.
Alameda striped racer (Alameda whipsnake) <i>Masticophis lateralis euryxanthus</i>	Fed: FT State: CT Other:	Valley and foothill woodland between Monterey and San Francisco Bay. Prefers south-facing slopes with a mosaic of shrubs, trees, and grassland.	None. Out of species known range and no habitat onsite.

Appendix D **Special-Status Wildlife Species Known to Occur in the Region of the Greenwood Commerce Center Study Area**

	Status*	Habitat	Probability on Project Site
Giant garter snake <i>Thamnophis gigas</i>	Fed: FT State: CT Other: -	Primarily associated with marshes and sloughs, less with slow-moving creeks, and absent from larger rivers. Nocturnal retreats include mammal burrows and crevices. During the day, basks on emergent vegetation such as cattails and tules.	None. No habitat onsite.
Birds			
California brown pelican <i>Pelicanus occidentalis californicus</i>	Fed: FE State: CE Other: *	Nests colonially on coastal islands.	None. No habitat onsite.
Osprey <i>Pandion haliaetus</i>	Fed: - State: CSC Other: *	Found near large, fish-bearing waters, usually in ponderosa pine and mixed conifer habitats. Nests in large platform of sticks at the top of large snags, dead-topped trees, on cliffs, or on human-made structures.	None. No habitat onsite.
White-tailed kite <i>Elanus leucurus</i>	Fed: - State: CRP Other: *	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Observed. One individual observed foraging onsite, but no nesting habitat present.
Northern harrier <i>Circus cyaneus</i>	Fed: - State: CSC Other: -	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; seldom found in wooded areas. Found in or near freshwater and salt marshes. Nests on the ground in shrubby vegetation near marsh edge.	Unlikely. Habitat is marginal for foraging with no nesting habitat present.
Cooper's hawk <i>Accipiter cooperii</i>	Fed: - State: CSC Other: -	Breeds in deciduous, mixed, and coniferous forests. Becoming more common in suburban and urban areas. Occurs in open to interrupted woodland.	Unlikely. Habitat present onsite is not preferred.
Swainson's hawk <i>Buteo swainsoni</i>	Fed: - State: CT Other: *	Breeds in open areas with scattered trees; prefers riparian and sparse oak woodland habitats. Requires nearby grasslands, grain fields, or alfalfa for foraging. Rare breeding species in Central Valley.	Unlikely. Habitat is marginal to support breeding individuals and presence of red-tailed hawk pair suggest habitat is occupied.
Ferruginous hawk <i>Buteo regalis</i>	Fed: - State: CSC Other: *	Winters in California where it inhabits open grasslands, sagebrush flats, desert scrub, foothill woodlands, and grasslands.	Possible. Winter foraging habitat present onsite.

Appendix D **Special-Status Wildlife Species Known to Occur in the Region of the Greenwood Commerce Center Study Area**

	Status*	Habitat	Probability on Project Site
Golden eagle <i>Aquila chrysaetos</i>	Fed: - State: CSC Other: *	Found in rolling foothill grassland with scattered trees. Nests on cliffs and in large trees in open areas.	None. No habitat.
American peregrine falcon <i>Falco peregrinus anatum</i>	Fed: - State: CE Other: *	Nests on cliffs, banks, dunes, mounds, and tall man-made structures.	None. No habitat onsite.
California black rail <i>Laterallus jamaicensis coturniculus</i>	Fed: - State: CT Other: *	Inhabits salt, fresh, and brackish water marshes with little daily and/or annual water fluctuations. In freshwater habitats, preference is for dense bulrush and cattails. Several scattered populations documented from Butte Co. to southern Nevada Co.	None. No habitat onsite.
California clapper rail <i>Rallus longirostris obsoletus</i>	Fed: FE State: CE Other: -	Inhabits salt water and brackish marshes with tidal sloughs in San Francisco Bay. Prefers dense pickleweed for cover, but forages for invertebrates along mud-bottomed sloughs.	None. No habitat onsite.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	Fed: FT State: CSC Other: -	Prefers sandy beaches, salt pond levees, and shores of large alkali lakes. Requires sandy, gravelly, or friable soil for nesting.	None. No habitat.
Burrowing owl <i>Athene cunicularia</i>	Fed: - State: CSC Other: *	Found in annual and perennial grasslands. Nests in burrows dug by small mammals, primarily ground squirrels.	Unlikely. No burrow systems present. May act as foraging habitat for dispersing individuals.
Northern spotted owl <i>Strix occidentalis caurina</i>	Fed: FT State: CSC Other: -	Dense, old growth, multi-layered, mixed conifer, redwood, and Douglas fir habitats with large trees and snags. Sea level to 7,600 feet.	None. No habitat onsite.
Black swift <i>Cypseloides niger</i>	Fed: - State: CSC Other: *	Breeds on steep, usually wet cliffs in interior canyons and along the ocean coast.	None. No habitat onsite.

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Status*	Habitat	Probability on Project Site
<p>Saltmarsh common yellowthroat <i>Geothlypis trichas simosa</i></p> <p>Fed: - State: CSC Other:</p>	Resident of freshwater and salt water marshes in the San Francisco Bay region. Requires thick, continuous cover for foraging and tall grasses, tules, or willows for nesting.	None. No habitat onsite.
<p>Suisun song sparrow <i>Melospiza melodia maxillaris</i></p> <p>Fed: - State: CSC Other:</p>	Resident of brackish marshes surrounding Suisun Bay. Prefers cattails, tules, sedges, and pickleweed. Also found in tangles bordering sloughs.	None. No habitat onsite.
<p>San Pablo song sparrow <i>Melospiza melodia samuelis</i></p> <p>Fed: - State: CSC Other:</p>	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the California marshes; nests in grindelia bordering slough channels.	None. No habitat onsite.
<p>Tricolored blackbird <i>Agelaius tricolor</i></p> <p>Fed: - State: CSC Other: *</p>	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Unlikely. No nesting habitat onsite, may forage onsite. Pond adjacent to site may support individuals with known CNDDB occurrences from 1992.
Mammals		
<p>Suisun shrew <i>Sorex ornatus sinuatus</i></p> <p>Fed: - State: CSC Other:</p>	Inhabits tidal marshes in the northern end of San Pablo and Suisun Bays. Requires dense, low cover of plants, driftwood, and other litter above the mean high tide line.	None. No habitat onsite.
<p>Pallid bat <i>Antrozous pallidus</i></p> <p>Fed: - State: CSC Other: *</p>	Occurs in grasslands, woodlands, deserts & urban habitats; open habitat required for foraging. Common in dry habitats with rocky outcrops, cliffs, and crevices for roosting. Roosts include caves, mines, bridges & occasionally hollow trees, buildings.	None. No roosting habitat present. May forage over the study area from nearby roosts.
<p>Saltmarsh harvest mouse <i>Reithrodontomys raviventris</i></p> <p>Fed: FE State: CE Other: CFP</p>	Inhabits saline emergent wetlands in the San Francisco Estuary. Prefers pickleweed marshes. Requires higher areas for escaping high water.	None. No habitat onsite.
<p>American badger <i>Taxidea taxus</i></p> <p>Fed: - State: CSC Other: -</p>	Occurs in dry, open soils in herbaceous, shrub, and forest habitats. Needs friable, uncultivated soil. Preys on rodents.	None. No habitat onsite.

Appendix D Special-Status Wildlife Species Known to Occur in the Region of the Greenwood Commerce Center Study Area

Status*		Habitat	Probability on Project Site
*Status	Federal:		
	FE - Federal Endangered	State:	Other:
	FT - Federal Threatened	CE - California Endangered	Some species have protection under the other designations, such as the California
	FPE - Federal Proposed Endangered	CT - California Threatened	Department of Forestry Sensitive Species, Bureau of Land Management Sensitive
	FPT - Federal Proposed Threatened	CR - California Rare	Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act.
	FC - Federal Candidate	CC - California Candidate	Raptors and their nests are protected by provisions of the California Fish and Game
	FPD - Federal Proposed for Delisting	CFP - California Fully Protected	Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected
		CSC - California Species of Special Concern	by policies of the California Department of Fish and Game.