4.7 BIOLOGICAL RESOURCES

4.7 BIOLOGICAL RESOURCES

This section discusses the vegetation and wildlife resources at the project site. These on-site resources were determined through a review of available information, conduct of a field reconnaissance survey, habitat suitability analysis, and a peer review of the *Biological Evaluation* (Estep, 2000) and *Tree Evaluation* (Tree Associates, 2001) prepared for the applicant. The *Biological Evaluation* provides information on existing vegetative cover, general wildlife use, and the potential for occurrence of special-status species and jurisdictional wetlands. The *Tree Assessment* provides an evaluation of individual trees on the site, including size, species, and general condition. A field reconnaissance was conducted for this EIR by James Martin, biologist and principal of Environmental Collaborative, on 12 January 2005 to verify existing conditions on the site, and provide a peer review of the information presented in the reports prepared for the applicant.

SETTING

Biological communities in the greater Solano County area include valley, coast range, and delta ecosystems, riparian forests, and grasslands. Vernal pool complexes are found within the southeastern part of the county. Oak woodlands interspersed with grasslands and chaparral occur in the rolling hills and mountainous western portion of the county. Salt and brackish marsh habitats occur along the fringe of Suisun Bay and the delta to the south. The majority of the level areas of Solano County are used for various types of agricultural production and urban development.

Vegetation and Associated Wildlife

The majority of the project site has been used for crop production and irrigated pasture for decades, and then for residential and the former commercial uses, resulting in the elimination of any natural communities that originally occurred in the vicinity. The site now supports a cover of non-native annual grasses and forbs typical of disturbed locations, irrigated pastures, and field margins, with ornamental landscaping planted around the remaining rural residences and remains of the former Milk Farm complex (Figure 4.7-1). Ornamental tree species include English walnut (*Juglans regia*), locust (*Robinia pseudoacacia*), olive (*Olea europea*), pine (*Pinus* spp.), and eucalyptus (*Eucalyptus* spp.), which grow with scattered shrubs, such as oleander (*Nerium oleander*) and cypress (*Cupressus* spp.). Areas of ruderal cover are dominated by non-native invasive species, such as Italian rye (*Lolium* spp.), yellow star thistle (*Centaurea solstitialis*), and morning glory (*Convolvulus arvense*). The pastures have been cultivated in the past, supporting alfalfa (*Medicago sativa*) or the row and grain crop rotation common to the area, but now are dominated by Bermuda grass (*Cynodon dactylon*) and other non-native cover species.

VEGETATIVE COVER/HABITAT TYPES Figure 4.7-1

Legend

- Irrigated Pasture
- Highly Degraded Irrigated Pasture
- Ruderal/Disturbed
- Rural Residence/Disturbed/Landscaping
- Ruderal/Abandoned Wastewater Ponds
- Seasonal Drainage Swale/Ditch
- Project Site Boundary

Milk Farm
Dixon, California

Source: ESTEP, 2000; Environmental Colloborative, 2005.

0 400 Feet

BASELINE

Y1263-B0.00017.Fig4.7-1.cdr-5/4/05

The lack of protective cover in the agricultural fields limits their importance and use as habitat for wildlife. A few species are able to use these marginal habitat areas, including California vole, California ground squirrel, black-tailed jackrabbit, gopher snake, western fence lizard, killdeer, and king bird. Raptors such as American kestrel, marsh hawk, red-tailed hawk, Swainson's hawk, barn owl, and great-horned owl may occasionally forage or pass over the site, but the low prey population levels generally make it of poor value to these species. Areas supporting perennial cover, such as the fields of irrigated pasture, can periodically support higher densities of smaller mammals, which provide an important prey base for raptors.

The trees on the site provide nest locations, roosting substrate, and cover for wildlife, particularly birds. Typical bird species that may frequent landscaped areas and use the scattered trees include: mourning dove, northern mockingbird, magpie, crow, American robin, house finch, European starling, and house sparrow. No raptor nests were observed in the trees on the site or adjacent properties during the field reconnaissance survey or *Biological Evaluation.*

The ruderal (weedy) cover along field margins supports smaller mammals and reptiles, and is occasionally used by several species of birds as seed becomes available. The field margins often serve as retreat cover for smaller wildlife as crops are harvested and fields disked. Species associated with the ruderal grasslands include those found in the agricultural fields, as well as occasional use by graniverous birds, such as American gold finch and several species of sparrow.

Areas of freshwater marsh habitat occur along a single drainage ditch, which bisects the site, dominated by yellow sedge. During the field reconnaissance, surface water was observed ponded near the Milk Farm Road frontage of the site where the drainage ditch passes through a culvert, but this is assumed to be due to the intense storm event earlier that week. Clumps of cattail and other emergent vegetation grow along two irrigation ditches on either side of Currey Road. These ditches do not appear to support any unique wildlife, but may be used as a source of drinking water as surface water dries in the late spring and early summer.

Special-Status Species

Special-status species[1] are plants and animals that are legally protected under the state and/or federal Endangered Species Acts[2] or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[3] of these species. Review of records maintained by the California Natural Diversity Database, together with other relevant information, indicates that historical occurrences of several plant and animal species with special status have been reported from the Dixon vicinity.

---

[1] Special-status species include:

- Officially designated (rare, threatened, or endangered) and candidate species for listing by the California Department of Fish and Game (CDFG).
- Officially designated (threatened or endangered) and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS).
- Species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those identified on lists 1A, 1B, and 2 in the *Inventory of Rare and Endangered Plants of California.*
- And possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on lists 3 and 4 in the CNPS *Inventory* or identified as animal "California Special Concern" species by the CDFG. California Special Concern (CSC) species have no legal protective status under the state Endangered Species Act but are of concern to the CDFG because of severe decline in breeding populations in California.

[2] The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal taxa. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California taxa.

[3] The USFWS and CDFG share responsibility for protection and management of natural resources. "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFG also considers the loss of listed species habitat as "take," although this policy lacks statutory authority and case law support under the CESA.

Two sections of FESA contain provisions that allow or permit "incidental take." Section 10(a) provides a method by which a state or private action that would result in "take" may be permitted. The applicant must provide the USFWS with an acceptable conservation plan and publish notification for a permit in the Federal Register. Section 7 pertains to a federal agency that proposes to conduct an action which may result in "take," requiring consultation with USFWS and possible issuance of a jeopardy decision. Under the CESA, "take" can be permitted under Section 2081 of the Fish and Game Code. The applicant must enter into a habitat management agreement with the CDFG, which defines the permitted activities and provides adequate mitigation.

The primary information source on the distribution of special-status species in California is the California Natural Diversity Database (CNDDB) inventory, which is maintained by the Wildlife and Habitat Data Analysis Branch of the CDFG. The CNDDB inventory provides the most comprehensive state-wide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data are obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question; only that no data have been entered into the CNDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location where there is evidence of potential occurrence.

Plant Species

Numerous special-status plant species have been reported from the Central Valley and Dixon vicinity. Those initially considered to have the greatest potential for occurrence in the site vicinity based on geographic range and general habitat characteristics are listed in Table 4.7-1. Most of these are considered rare (list 1B) by the CNPS, but a few, such as Contra Costa goldfield (*Lasthenia conjugens*), showy Indian clover (*Trifolium amoenum*), and soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) are all listed as federally endangered and soft bird's beak is also state listed as rare.

Due to the extent of past and on-going disturbance from agricultural production and former commercial uses, the potential for occurrence of any special-status plant species on the site is considered non-existent. This conclusion was also reached in the *Biological Evaluation*, which also noted the absence of any sensitive natural community types, such as vernal pools or native grasslands, typically necessary to support populations of special-status plant species.

Animal Species

A number of bird, mammal, reptile, fish, and invertebrate species with special status are known or suspected from the Central Valley and Dixon vicinity. These include: Cooper's hawk (*Accipiter cooperi*), burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus caeruleus*), prairie falcon (*Falco mexicanus*), American peregrine falcon (*Falco peregrinus anatum*), loggerhead shrike (*Lanius ludovicianus*), Suisun song sparrow (*Melospiza melodia maxillaris*), northwestern pond turtle (*Clemmys marmorata*), California red-legged

TABLE 4.7-1: Partial List of Special-status Plant Species Known or Suspected to Occur in the Vicinity of Dixon

Taxa Name	Status (Fed/ State/CNPS)	Habitat Characteristics	Distribution (Presumed Extirpated)	Flowering Period
Aster lentus Suisun marsh aster	-/-/1B	Brackish water marshes and swamps	Contra Costa, Napa, Sacramento, Solano	May-October
Astragalus tener var. *tener* Alkali milk-vetch	-/-/1B	Valley grassland, vernal pools, and playas	Merced, Solano, Yolo (Alameda, Contra Costa, Monterey, Napa, Santa Barbara, Santa Clara, San Francisco, San Joaquin, Stanislaus)	March-June
Atriplex joaquiniana San Joaquin saltbrush	-/-/1B	Alkaline grassland and scrub	Alameda, Contra Costa, Colusa, Glenn, Merced, Napa, Sacramento, Santa Barbara, Yolo (Santa Clara, San Joaquin, Solano, Tulare)	April-Sept.
Cordylanthus mollis ssp. *mollis* Soft bird's-beak	FE/SR/1B	Coastal salt marsh	Contra Costa, Marin, Napa, Solano	July-Nov.
Downingia pusilla Dwarf downingia	-/-/2	Vernal pools and grassland	Mariposa, Merced, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, South America	March-May
Fritillaria pluriflora Adobe fritillaria	-/-/1B	Chaparral, woodland, grassland on adobe soil	Butte, Colusa, Glenn, Lake, Napa, Plumas, Solano, Tehama, Yolo, Mendocino, Monterey, San Benito	February-April
Fritillaria liliacea Fragrant fritillary	-/-/1B	Coastal scrub and grassland	Alameda, Contra Costa, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Mateo, Solano, Sonoma	February-April
Lasthenia conjugens Contra Costa goldfield	FE/-/1B	Low flats and borders of vernal pools	Napa, Solano, (Alameda, Contra Costa, Mendocino, Santa Barbara, Santa Clara)	April-May
Lathyrus jepsonii ssp. *jepsonii* Delta tule pea	-/-/1B	Brackish water marshes and swamps	Alameda, Contra Costa, Fresno, Napa, San Benito, Santa Clara, San Joaquin, Solano	May-June
Legenere limosa Legenere	-/-/1B	Vernal pools	Lake, Napa, Placer, Sacramento, San Mateo, Solano, Tehama (Sonoma, Stanislaus)	May-June
Lilaeopsis masonii Mason's lilaeopsis	-/SR/1B	Brackish water marshes and swamps	Contra Costa, Napa, Sacramento, San Joaquin, Solano	June-August
Trifolium amoenum Showy Indian clover	FE/-/1B	Valley grassland	Sonoma (Alameda, Mendocino, Marin, Napa, Santa Clara, Solano)	April-June

Source: Environmental Collaborative, 2004; Estep, 2000; CNDDB, 2004.

Federal Status:
FE = Listed as "endangered" under the Federal Endangered Species Act.

State Status:
SE = Listed as "endangered" under CESA.
SR = Listed as "rare" under CESA.

CNPS Status:
1A = Plants of highest priority; plants presumed extinct in California.
1B = Plants of highest priority; plants rare and endangered in California and elsewhere.
2 = Plants rare, threatened, or endangered in California; more common elsewhere.

frog (*Rana aurora draytonii*), giant garter snake (*Thamnophis couchi gigas*), Delta smelt (*Hypomesus transpacificus*), Central Valley steelhead (*Oncorhynchus mykiss*), Sacramento splittail (*Pognichthys macrolepidotus*), conservancy fairy shrimp (*Branchinecta conservation*), vernal pool fairy shrimp (*Brachinecta lynchi*), mid-valley fairy shrimp (*Branchinecta mesovallensis*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), delta green ground beetle (*Elaphrus viridis*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), vernal pool tadpole shrimp (*Lepidurus packardi*), long-eared myotis (*Myotis evotis*), fringed myotis bat (*Myotis thysanodes*), Pacific western big-eared bat (*Plecotus townsendii townsendii*), salt marsh harvest mouse (*Reithrodontomys raviventris*), Suisun shrew (*Sorex ornatus sinuosus*). Table 4.7-2 provides information on the name, status, and preferred habitat for each of these species.

None of the special-status animal species listed in Table 4.7-2 have actually been reported by the CNDDB as occurring on the site, and suitable habitat was determined to be absent for most of these species in the *Biological Evaluation* and field reconnaissance by the EIR biologist. Suitable habitat for salt and brackish marsh, vernal pool, riverine, and aquatic or open water species is absent from the site. However, there remains a varying potential for a number of species to occur in the vicinity, as summarized below. Most of these are bird species, which may occasionally forage in the vicinity but are not currently suspected to nest on the site, including western burrowing owl, Cooper's hawk, loggerhead shrike, northern harrier, peregrine falcon, prairie falcon, Swainson's hawk, tricolored blackbird, and white-tailed kite.

It should be noted that there remains a potential for occasional use of the site vicinity by other species of concern as well, such as ferruginous hawk (*Buteo regalis*), long-billed curlew (*Numenius americanus*), mountain plover (*Charadrius montanus*), Aleutian Canada goose (*Branta canadensis leucopareia*), merlin (*Falco columbarius*), and sharp-shinned hawk (*Accipiter striatus*). This, however, would be limited to occasional wintering activity by migratory bird species or possible occasional foraging activity by species for which essential breeding habitat is absent from the project site.

Swainson's Hawk

Swainson's hawk is a summer breeding resident of the Central Valley, generally occurring in areas where riparian woodland and surrounding agricultural lands provide roosting, nesting, and foraging habitat. The loss of nesting and foraging habitat has greatly reduced the breeding range and abundance of Swainson's hawk in California. Originally adapted to open grasslands, it has become increasingly dependent on agricultural lands as native plant communities have been converted to agricultural uses.

TABLE 4.7-2: **Partial List of Special- Status Animal Species Known or Suspected to Occur in the Vicinity of Dixon**

Species	Status Federal/State	Preferred Habitat Type
Invertebrates:		
Conservancy fairy shrimp	FE/-	Vernal pools, swales, and depressions in grassland
Vernal pool fairy shrimp	FT/-	Vernal pools, swales, and depressions in grassland
Mid-valley fairy shrimp	FSC/-	Vernal pools, swales, and depressions in grassland
Valley elderberry longhorn beetle	FT/-	Elderberry shrubs in riparian woodlands and field margins
Delta green ground beetle	FT/-	Shoreline of vernal pools in grassland
Ricksecker's water scavenger beetle	FSC/-	Shallow margins of ponds, streams, marshes
Vernal pool tadpole shrimp	FE/-	Vernal pools with prolonged inundation
Amphibians/Reptiles/Fish:		
California tiger salamander	C/CSC, CP	Vernal pools, ponds, streams and adjacent grassland
California red-legged frog	FT/CSC, CP	Ponds, streams, adjacent riparian and upland
Delta smelt	FT/ST	Brackish zone of Delta; adjacent freshwater zones for spawning
Foothill yellow-legged frog	FSC/CSC, CP	Permanent streams with cobbles
Giant garter snake	FT/ST	Freshwater marsh, drainages, riparian and adjacent grassland
Sacramento splittail	FT/CSC	Sloughs and other slow-moving waters of Delta
Northwestern pond turtle	FSC/CSC, CP	Pond, rivers, and streams and adjacent grassland
Steelhead	FT/-	Open water of Bay and Delta, tributary rivers and streams
Winter- run chinook salmon	FE/SE	Open water of Bay and Delta, tributary rivers and streams
Birds:		
Western burrowing owl	FSC/CSC	Grassland and agricultural fields
California black rail	FSC/ST, FP	Salt marsh
California clapper rail	FE/SE, FP	Salt marsh
Cooper's hawk	-/CSC	Riparian, woodland, and grassland
Golden eagle	-/CSC,CP	Open grassland, savanna, and agricultural fields
Loggerhead shrike	FSC/CSC	Grassland and agricultural fields
Northern harrier	-/CSC	Grassland and agricultural fields
Peregrine falcon	Delisted/SE, CP	Open water and grassland
Prairie falcon	-/CSC	Salt and brackish water marsh
Salt marsh yellowthroat	-/CSC	Riparian and grassland
Suisun song sparrow	FSC/CSC	Salt and brackish water marsh
Swainson's hawk	FSC/ST	Grasslands and agricultural fields
Tricolored blackbird	FSC/CSC	Freshwater marsh and fields
White-tailed kite	-/CP	Grassland and agricultural fields
Mammals:		
Fringed myotis bat	FSC/CSC	Forages over grasslands and roosts in trees, buildings, caves
Long-eared myotis	FSC/CSC	Forages over grasslands and roosts in trees, buildings, caves
Pacific western big-eared bat	FSC/CSC	Forages over grasslands/riparian and roosts in caves, buildings
Salt marsh harvest mouse	FE/SE	Salt marsh and adjacent grassland
Suisun shrew	FSC/CSC	Salt marsh

Source: Environmental Collaborative, 2004; Estep, 2000; CNDDB, 2004.

Federal Status:
FE = Listed as "endangered" under the FESA.
FT = Listed as "threatened" under the FESA.
C = A candidate species under review for federal listing.
FSC = Federal Special Concern species.

State Status:
SE = Listed as "endangered" under CESA.
ST = Listed as "threatened" under CESA.
CP = California fully protected or protected species; individual may not be possessed or taken at any time.
CSC = California Special Concern species by the CDFG; species have no formal legal protection but nest sites and communal roosts are generally recognized as significant biotic features.

Agricultural crop patterns currently influence the distribution and abundance of Swainson's hawk in the Central Valley, and foraging behavior reflects changes in prey density and availability. Swainson's hawk is an opportunistic feeder, foraging in different areas as agricultural practices expose prey or prey populations become abundant. Suitable foraging habitat currently includes open grassland, lightly-grazed dryland or irrigated pasture, alfalfa and other hay crops, fallow fields, and combinations of hay, grain, and row crops such as tomato and beets. Unsuitable foraging habitat includes any crop type in which prey are inaccessible, or which do not support adequate prey populations, such as vineyards, orchards, and cotton fields.

Records maintained by the CNDDB indicate several active nests and sightings of Swainson's hawk in the northwest Dixon vicinity, although no active nests have been reported from the project site or were observed during preparation of the *Biological Evaluation* or the field reconnaissance survey by this EIR biologist. The closest known nest location is approximately one mile north of the project site in a eucalyptus tree along Currey Road. The irrigated pasture on the site is considered suitable foraging habitat, although its overgrazed condition limits the value to prey species.

Two basic criteria are generally used by the CDFG in determining whether a particular area is considered to provide potential foraging habitat for Swainson's hawk, which must be mitigated for if converted to urban development (CDFG, 1997). These criteria include: 1) location within a one- to ten-mile radius of an active nest site, and 2) suitable foraging habitat type. All of the site falls within a five-mile radius of several known nesting territories in the northwestern Dixon vicinity. Approximately 40 acres of irrigated pasture provide marginally suitable foraging habitat on the site; the remaining 20 acres are unsuitable due to past disturbance and ornamental landscaping.

Burrowing Owl

Burrowing owl is a small, ground nesting owl that typically occupies underground burrows dug by California ground squirrels and other rodents. The typical habitat characteristics of burrowing owl include lowland, dry, and arid grasslands throughout California. The occurrence of this species in Solano County is generally associated with agricultural areas, with nesting occurring along ditch and canal banks, railroad rights-of-way, and other set-aside areas that provide suitable nesting burrows and hiding cover.

No occurrences of burrowing owl have been reported from the immediate vicinity of the site, and no evidence of any burrowing owl nesting or foraging activity was described in the *Biological Evaluation* or detected during the field reconnaissance survey by the EIR

biologist. However, there is a possibility that individuals could establish new nests in ground squirrel burrows on the site prior to initiation of construction activities.

Tricolored Blackbird

Tricolored blackbird is a colonial nesting species that is widespread in marshes and agricultural fields of the Central Valley. This species has been in decline since the 1930s as a result of loss of wetland habitat used for nesting, conversion of foraging habitat, disturbance and mortality by predators and humans, destruction of colonies by agricultural practices, and poisoning. Tricolored blackbirds typically nest in large flocks in dense vegetation near open water or in emergent wetland vegetation. During the non-breeding season, the blackbird uses more open habitats, such as croplands and grassy fields. No tricolored blackbirds were observed during the field reconnaissance by the EIR biologist and suitable habitat for this species is absent on the site.

Other Bird Species

There is also a possibility that one or more special-status bird species could establish nests on the project site, all of which would be protected by the Migratory Bird Treaty Act when in active use. No nests were noted in the *Biological Evaluation* or observed during the field reconnaissance survey by the EIR biologist, but nests could be established in the future before construction proceeds. This includes nesting by white-tailed kite, northern harrier, and loggerhead shrike, all of which are recognized as CSC species by the CDFG. The few trees also provide suitable nesting habitat for more common raptors, such as red-tailed hawk, great horned owl, and American kestrel. Additional detailed surveys would be necessary to confirm the presence or absence of any nesting activity, and this could change in the future as nests are abandoned and new nests established.

Wetlands

Although definitions vary to some degree (see Regulatory Framework discussion below), wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted for life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions.

The CDFG and U.S. Army Corps of Engineers (Corps) have jurisdiction over modifications to wetlands and "Waters of the U.S." Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material without a permit. Jurisdictional authority of the CDFG over wetland areas

is established under Sections 1601-1607 of the Fish and Game Code, which pertain to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream.

A preliminary evaluation for potential wetlands was conducted as part of the *Biological Evaluation* (Estep, 2000), which concluded that potential wetlands are limited to the sparse areas of emergent vegetation along the drainage ditch that bisects the site (Figure 4.7-1). Although this and other ditches along Milk Farm and Currey roads are of man-made origin, a determination must be made by the Corps to verify whether they are considered regulated waters of the U.S. There is a possibility that the drainages may be considered exempt from Corps regulations as man-made ditches constructed in uplands. Such exemptions are determined on a case-by-base basis, but some or all of the ditches may be determined by the Corps to be non-jurisdictional. Again, the extent of actual waters subject to Section 404 jurisdiction must still be determined by the Corps as part of their verification process. No other conspicuous potential wetlands were observed during the field reconnaissance by the EIR biologist.

REGULATORY FRAMEWORK

The following section describes relevant federal, state, and local regulations governing biological resources that could be applicable to development of the project site.

Special-Status Species Regulations

Federal Endangered Species Act

The Endangered Species Act (ESA) requires that projects ensure their actions do not jeopardize the continued existence of species listed as endangered or threatened or result in the destruction or adverse modification of the critical habitat of these species.

California Endangered Species Act

The CDFG is responsible for protection and conservation of fish and wildlife resources in California. Under the California Endangered Species Act of 1984 (CESA), CDFG is responsible for ensuring that projects do not adversely affect a species listed as endangered or threatened under CESA (Section 2090 of the Fish and Game Code).

The state and federal Endangered Species Acts are intended to operate in conjunction with the CEQA and the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The USFWS is responsible for implementation of the federal ESA, while CDFG implements CESA.

Native Plant Protection Act

The legal protection afforded listed plants under the Native Plant Protection Act involves provisions that prohibit the taking of plants from the wild and a salvage requirement for landowners. Once they have been notified of the presence of a listed species on their property, landowners are required to tell CDFG at least ten days prior to any land use change. This allows for the salvaging of plants that would otherwise be destroyed.

California Environmental Quality Act

In addition to formal listing under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Section 15380 of the CEQA Guidelines includes provisions that serve to protect species considered to be of special status by the scientific community but which have not yet received formal listing by the CDFG or USFWS. In addition, essential habitat for species maintained on the CDFG list of "California Special Concern" species is also considered sensitive under CEQA and must be considered during environmental review.

Migratory Bird Treaty Act / Fish and Game Code

Raptors (birds of prey), migratory birds, and other avian species are protected by both state and federal laws. Disturbance to nesting raptors is prohibited by Section 3503 of the California Fish and Game Code and by the federal Migratory Bird Treaty Act (MBTA). Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes 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."

The MBTA states that it is "unlawful to take any migratory bird listed in 50 CFR (10), including nests, eggs, or products." It prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Disturbance that causes nest abandonment is considered a "taking," and is prohibited.

Wetlands Regulations

Section 404 of the Clean Water Act

The Corps regulates discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA). "Discharge of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to, the following: placement of fill that is necessary for the construction of any

structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 CFR §328.2(f)].

Waters of the U.S. include a range of wet environments, such as lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways, depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

Wetlands are defined as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" [33 CFR §328.3(b)]. Presently, to be classified a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation; hydric soils; and wetland hydrology existing under the "normal circumstances" for the site.

The lateral extent of non-tidal waters is determined by delineating the Ordinary High Water Mark (OHWM) [33 CFR §328.4(c)(1)]. The OHWM is defined by the Corps as "*that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*" [33 CFR §328.3(e)].

Section 401 of the Clean Water Act

In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant (including fill material) into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The Regional Water Quality Control Board (RWQCB) is responsible for implementing Section 401 of the CWA.

Section 1600 – 1607 of the California Fish and Game Code

The CDFG has jurisdiction under Section 1600 *et seq.* of the California Fish and Game Code over fish and wildlife resources of the state. Under Section 1603, a private party must notify the CDFG if a proposed project will "*substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds ... except when the department has been notified pursuant to Section 1601.*" If an existing fish or wildlife resource may be

substantially adversely affected by the activity, the CDFG may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the party, they may enter into an agreement with the CDFG identifying the approved activities and associated mitigation measures.

Dixon General Plan Policies

The Dixon General Plan includes one policy relevant to biological issues (Dixon, 1993). The policy applicable to this project is identified in the Natural Environmental Element and states:

Dixon General Plan Policy	Project Consistency
NATURAL ENVIRONMENT	
13: The City shall require the proponents of new development projects to submit a study identifying the presence or absence of special-status species at proposed development sites. If special-status species are determined by the City to utilize a development site, appropriate mitigation measures must be incorporated as part of the proposed development prior to final approval.	Development has not yet been proposed at the project site; however, this EIR assessed anticipated future impacts associated with site development based on a conceptual site plan. Anticipated future mitigation measures have been recommended that will be considered by the City during CEQA review of actual development proposals for the site.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

Based on the Environmental Checklist in Appendix G of the CEQA Guidelines, a proposed project could be considered to have significant biological resource impacts if it would have:

- A substantial adverse effect, either directly or through habitat modifications, on any special-status species.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- A substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act 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.

- 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.

Impacts Determined to Be Less than Significant

- **Effect on any riparian habitat or other sensitive natural community**.

No sensitive natural communities, such as riparian woodland, native grasslands, or vernal pools, remain on the site, and no future impacts are therefore anticipated.

- **Interfere substantially with the movement of native wildlife or substantially diminish wildlife habitat values**.

Future site development would displace common wildlife species that currently use the site for foraging and other opportunities, while species common to suburban habitat would eventually occupy structures and landscape areas. Some of the 181 non-native trees on the site could provide habitat for a wide variety of birds and could be used for nesting by raptors in the future; some trees would be retained, and measures to address potential impacts on Swainson's hawk and raptors would serve to mitigate for loss of the more sensitive wildlife habitat values of the site. The species present on the site, with the possible exception of Swainson's hawk and other foraging raptors, are common to agricultural and ruderal habitat. The loss of habitat to these species would not be significant.

- **Conflict with local policies and ordinances**.

The project conforms to local policies and ordinances related to protection of biological and wetland resources; the project would require removal of many of the existing trees on the site, however, none of the trees is a naturally occurring native species, such as valley oak.

- **Conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved conservation plan**.

While a draft Solano County Multi-Species Habitat Conservation Plan and Natural Community Conservation Plan (HCP) is currently being prepared for participating agencies in Solano County, it has not been adopted and must still undergo a long process of refinement and agency approval; no adopted conservation plans encompass the project site, and no impact would therefore occur.

Impacts Determined to Be Potentially Significant

- Effects on special-status species; and
- Effect on federally protected wetlands.

Anticipated Future Impact 4.7-1

Several special-status bird species could be affected by future development of the site, including Swainson's hawk, raptors, and other special-status bird species. This is a potentially significant impact.

Habitat loss is the most significant threat to the remaining populations of Swainson's hawk, as agricultural practices change or agricultural lands are converted to urban uses and nest trees are destroyed. In the absence of adequate mitigation, the CDFG may consider the loss of suitable foraging habitat and construction disturbance within five miles of a known active nest to constitute "take" under Section 2081 of the California Endangered Species Act. Future development of the project site could eliminate much of the approximately 40 acres of marginally suitable Swainson's hawk foraging habitat on the site, which could be considered a significant loss to the CDFG. Although approximately 25 acres of the site are to be retained for agricultural use, the conceptual site plan indicates that some of these agricultural use areas may be planted in orchards, which are unsuitable as potential foraging habitat for Swainson's hawk.

The CDFG has developed detailed mitigation guidelines in an effort to protect critical habitat for Swainson's hawk. The *Draft Mitigation Guidelines for Swainson's Hawk in the Central Valley of California* were prepared by the CDFG to provide information on recommended management, natural history and population status, nesting and foraging requirements, and mitigation criteria for Swainson's hawk, with a general goal of no net loss of breeding or foraging habitat. The guidelines are intended to provide lead agencies and project sponsors with an interim framework for developing adequate measures to mitigate the loss of habitat until a comprehensive habitat resource plan is completed by the CDFG or habitat conservation plans are implemented on a local level.

The mitigation criteria specified in the guidelines include: consultation with representatives of the Department; restrictions on disturbance within one-half mile of a known nest site from March 1 through August 15; prevention of loss of nest trees, maintenance of sufficient foraging habitat to support breeding pairs and successful fledging of young; and restoration and enhancement of nesting and foraging habitat.

Anticipated Future Mitigation Measure 4.7-1a

The applicant shall obtain all legally required permits from the USFWS, CDFG, RWQCB, Corps, and U.S. EPA and implement mitigation measures, as required by federal and state law, to avoid, minimize, or offset impacts to any species listed under either the state or federal Endangered Species Act or protected under any other state or federal law prior to site development. Evidence that the applicant has complied with the requirements of these agencies shall be submitted to the Dixon Community Development Department prior to issuance of any grading or building permits for future development of the project site.

Anticipated Future Mitigation Measure 4.7-1b

Mitigation for impacts to Swainson's hawk, prior to site development, shall include preparation of a project-specific plan to provide for replacement habitat, or participation in a county-wide effort to establish a program for habitat management and conservation of "threatened" and "endangered" species in Solano County, if required by the CDFG. Until the county-wide HCP is completed, the applicant shall be required to consult with the CDFG to determine whether potential impacts on Swainson's hawk nesting or foraging habitat would be considered significant, and shall prepare a project-specific Swainson's Hawk Mitigation Plan, if required by the CDFG prior to site development. A qualified biologist shall be retained to develop a plan that addresses on-site protection or replacement habitat for Swainson's hawk and generally complies with the most recent version of the CDFG Draft Mitigation Guidelines for Swainson's Hawks in the Central Valley of California. Aspects of any required mitigation plan shall include the following:

- *The plan shall be prepared in consultation with, and with the approval of, the CDFG and shall provide for a habitat management agreement with the CDFG that will ensure a highly productive foraging habitat in perpetuity for Swainson's hawk.*
- *Replacement habitat could be established by obtaining a conservation easement over suitable agricultural lands, specifying acceptable and unacceptable crop types, prohibiting rodent control and, possibly, including management requirements for habitat enhancement, such as planting and maintenance of fence rows.*
- *A copy of the fully executed habitat management agreement with the CDFG shall be submitted to the Dixon Community Development Department prior to the issuance of any construction permit or initiation of project site improvements, whichever occurs first.*

Upon effectuation of any county-wide and CDFG-approved HCP that provides a habitat management and conservation program for threatened and endangered species (including Swainson's hawk) and requires payment of developer mitigation fees for implementation, the applicant may elect to pay the specified fees prior to issuance of any construction permit or initiation of site improvements, whichever occurs first. Payment of these fees shall be in-lieu of entering into a separate habitat management agreement with the CDFG.

Implementation of these mitigation measures would reduce this anticipated future impact to a less-than-significant level.

Anticipated Future Impact 4.7-2

Several special-status bird species could be affected by future site development, including burrowing owl. This is a potentially significant impact.

Future site development would result in the loss of potential nesting habitat for loggerhead shrike, burrowing owl, white-tailed kite, northern harrier, and other raptors on the site. Although no evidence of nesting by raptors was observed on the site, there is a possibility that new nests could be established in the future. Destruction of a raptor nest in active use would be a violation of the Migratory Bird Treaty Act. Given the possibility that new nests could be established on the site in the future before site development is initiated, this anticipated future impact is considered potentially significant, and would require a pre-construction survey and appropriate mitigation if nests are encountered. Protection of any active raptor nests until young have fledged would be adequate mitigation.

Anticipated Future Mitigation Measure 4.7-2a

Pre-construction surveys for burrowing owl shall be conducted throughout the year to determine whether any nesting owls are present and to provide for their protection during the active breeding season or passive relocation during the non-breeding season if nests are encountered prior to future site construction. Aspects of the pre-construction survey effort shall include the following:

- *The surveys shall be conducted by a qualified biologist no more than 30 days prior to initiation of grading and shall extend to 300 feet beyond the limits of the site.*
- *The surveys shall be conducted by a qualified biologist and shall comply with Burrowing Owl Protocol and Mitigation Guidelines.*
- *If a breeding pair and/or a colony of owls is encountered, a detailed mitigation program shall be prepared to address significant impacts. The detailed mitigation program shall be prepared in consultation with the CDFG and meet with the approval of the Dixon Community Development Department prior to any grading or construction disturbance.*
- *A survey report by a qualified biologist summarizing the results of the survey effort, verifying that any young have fledged, or that the detailed mitigation program has been implemented shall be submitted to the Dixon Community Development Department prior to initiation of grading in any nest-setback zone.*

Anticipated Future Mitigation Measure 4.7-2b

Pre-construction nesting surveys for loggerhead shrike and raptors shall be conducted during the months of April through July prior to any destruction of suitable nesting habitat. Aspects of the pre-construction survey effort shall include the following:

- *The surveys shall be conducted by a qualified biologist no more than 30 days prior to initiation of grading and shall extend to 300 feet beyond the limits of the site.*
- *If any of these species is found within the future construction area after April of the construction year, grading and construction in the area shall either stop or continue only after the nests are protected by an adequate setback approved by a qualified biologist.*
- *If avoidance of nests is not feasible, impacts to foraging habitat and shrike and raptor nests shall be minimized by avoiding disturbance to the birds during the nesting season unless a qualified biologist verifies that the birds have either: 1) not begun egg-laying and incubation, or 2) that the juveniles from those nests are foraging independently and capable of survival at an earlier date.*
- *A survey report by a qualified biologist summarizing the results of the survey effort or verifying that any young have fledged shall be submitted to the Dixon Community Development Department prior to initiation of grading in any nest-setback zone.*

Implementation of these mitigation measures would reduce this anticipated future impact to a less-than-significant level.

Anticipated Future Impact 4.7-3

Future site development could have an adverse effect on wetlands. This is a potentially significant impact.

Potential impacts to wetlands would include direct modifications to potential jurisdictional waters to accommodate future development and drainage improvements, and indirect changes associated with the increased potential for erosion and water quality degradation. Potential erosion and degradation of wetlands may result from increased urban runoff volumes and degraded water quality associated with future development. Future development would magnify the volume of runoff and potential for urban pollutants, with perhaps the greatest potential damage resulting from sedimentation during the construction phase and from new non-point discharge of automobile by-products, fertilizers, and herbicides. These anticipated future impacts and appropriate mitigation are discussed in detail in Section 4.3, Hydrology and Water Quality, of this EIR.

The conceptual site plan indicates that future development could eliminate the drainage ditch that crosses the site. It is uncertain whether the Corps would exert jurisdiction over

this feature. A preliminary wetland delineation must be submitted for verification by the Corps. However, there appears to be adequate opportunities to create replacement wetland habitat on the site even if this feature were determined to be jurisdictional by the Corps. Because the ditch is man-made, the CDFG may not have jurisdiction under Section 1600 of the California Fish and Game Code.

Anticipated Future Mitigation Measure 4.7-3a

The preliminary wetland delineation for the site shall be submitted by the applicant's consulting wetland specialist to the Corps for verification prior to site development. If the identified drainage channels and ditches to be filled and modified are not considered jurisdictional, then no additional mitigation is considered necessary. If these features are considered jurisdictional and must be filled, then a mitigation program shall be prepared by a qualified wetland specialist, and shall at minimum provide for permanent protection or creation of replacement habitat of greater or equal acreage and values at a secure location. Any mitigation program involving wetland creation shall include:

- *Monitoring and management for a minimum of five years to ensure success of wetlands creation;*
- *Specify success criteria, maintenance, monitoring requirements, and contingency measures;*
- *Define site preparation and re-vegetation procedures, along with an implementation schedule, and funding sources to ensure long-term management;*
- *If required, the detailed mitigation program shall be prepared in consultation with the Corps and RWQCB, and meet with the approval of the Dixon Community Development Department prior to initiation of any modifications to jurisdictional waters.*

Anticipated Future Mitigation Measure 4.7-3b

As recommended in Section 4.3, Hydrology and Water Quality, an SWPPP shall be prepared and implemented using BMPs to control both construction-related erosion and sedimentation and project-related non-point discharge into waters of the U.S. prior to site development.

Implementation of these mitigation measures would reduce this anticipated future impact to less than significant.