# APPENDIX D

*Biological Resources Assessment*

# BIOLOGICAL TECHNICAL REPORT
# for the
# McKinley Village Project
# City of Sacramento, California

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# 1.0 INTRODUCTION

Dudek conducted a biological resources assessment for the approximately 48.75-acre McKinley Village Project site in the City of Sacramento, California. The purpose of the assessment was to identify and characterize the biological communities present on and immediately adjacent to the project site, to record plant and animal species observed on the site, and to evaluate the site for its potential to support sensitive biological resources, including special-status plant and animal species and any other resources considered sensitive by local, state, and/or federal resource agencies, that could potentially be impacted by proposed development of the site.

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# 2.0 SETTING

## 2.1 Location

The project site is located approximately 2.4 miles northeast of downtown Sacramento, (see Figure 1, Regional Map). This location corresponds to Sections 68 and 69, Townships 8 and 9 North, and Range 5 East, of the Sacramento East, California U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle (Latitude 38°34'58" N, Longitude 121°27'25" W).

The project site is situated along the south side of Capital City freeway north of the Union Pacific Railroad (UPRR) tracks, largely east of Alhambra Boulevard and largely west of Lanatt Street. The American River is located approximately 0.25 mile east of the project site The Assessor's Parcel Number (APN) is 001-0170-028. Other properties that would be used for ingress and egress include the following APN numbers: extension of 40th Street 001-0170-025, 001-0170-009, 004-0010-031, 004-0010-002; A Street east of freeway 001-0170-013, 003-0061-011; Alhambra undercrossing 003-0010-003; and A Street west of freeway 003-0050-016, 003-0050-014, 003-0050-012.

The project site is located within the East Sacramento Community Plan area and is currently designated Planned Development (PD) in the City's 2030 General Plan and zoned Heavy Industrial (M-2).

## 2.2 General Physical Characteristics

The approximately 48.75-acre property is moderately flat with elevations on the site ranging from approximately 15 feet above mean sea level (AMSL) on the west side of the property, to approximately 20 feet AMSL on the east side of the property. The project site is currently vacant and contains a fallow field dominated by non-native grasses and scattered trees and shrubs. Four freestanding billboards and overhead utility lines and poles also occur on the site. Two groundwater monitoring wells and six soil gas probes are located along the northern portion of the project site used for post-closure monitoring of the 28th Street Landfill. Access to the project site is currently limited to an unimproved road (A Street) that connects to the downtown transportation grid at 28th Street. A two-lane roadway overpass across Capital City freeway connects to the western end of the site (Figure 2, Project Location Map).

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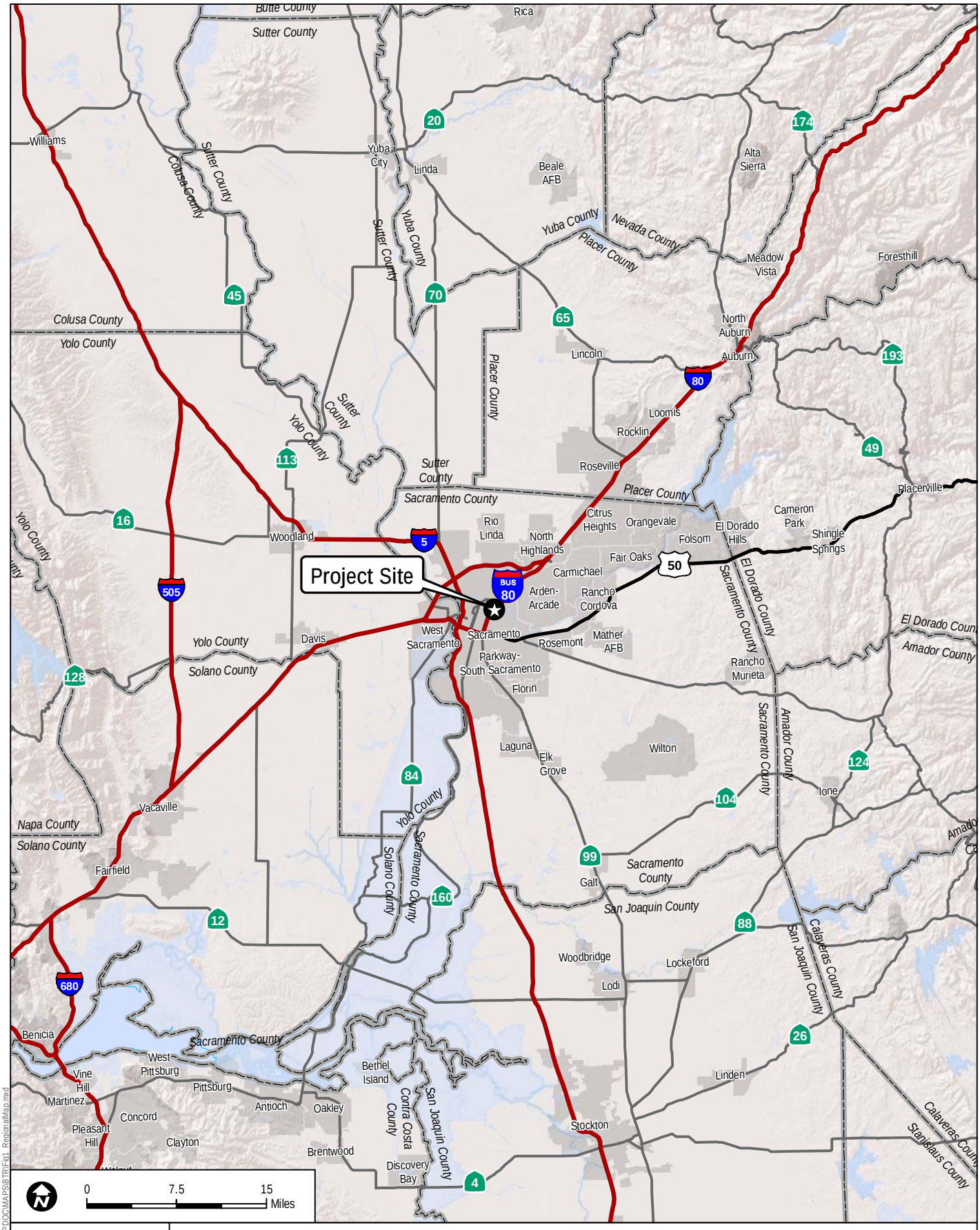


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**FIGURE 1**

**Regional Map**

MCKINLEY VILLAGE PROJECT BTR

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SOURCE: ESRI; County of Sacramento 2012

**FIGURE 2**

**Project Location Map**

MCKINLEY VILLAGE PROJECT BTR

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# 3.0 METHODS

## 3.1 California Natural Diversity Database and Literature Review

Prior to the field survey, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was queried for any reported occurrences of special-status species in the Sacramento East Quadrangle, within which the site is located, and then was expanded to include species occurrences within approximately 5 miles of the site (CDFW 2013). A search of existing biology reports for adjacent properties, soils reports, aerial photos, California Environmental Quality Act (CEQA) documents, and online resources also contributed to development of the list of special-status species with the potential to occur on site.

The CNDDB search revealed occurrences for 2 special-status plant species and 17 special-status wildlife species known to occur within the search area (Figure 3, 5-Mile Radius CNDDB Map). The 5-mile radius included some species that require very specialized habitats that do not occur near the project area (e.g., vernal pools, perennial flowing water, Gabbro soils, etc.), and were thus eliminated from further consideration. A summary of the CNDDB records search is included in Appendix A.

## 3.2 Field Survey

A field survey was conducted by Dudek Senior Biologist Kevin Derby on June 13, 2013. The field survey was conducted on foot and all areas of the project site were visited. On-site habitat types, species observations, and other field data were recorded during the visit. Due to the lack of suitable habitat for special-status species, no focused, protocol-level surveys for such species were conducted at the time. Another visit was conducted on July 1 to observe and photograph conditions after the site was mowed and disced. A follow up visit was conducted by Senior Biologist Keith Babcock on July 11 to investigate and confirm reports of an active Swainson's hawk (*Buteo swainsoni*) nest in an adjacent neighborhood and to evaluate overall site habitat values with respect to Swainson's hawk and other special-status raptor species potentially occurring on the site.

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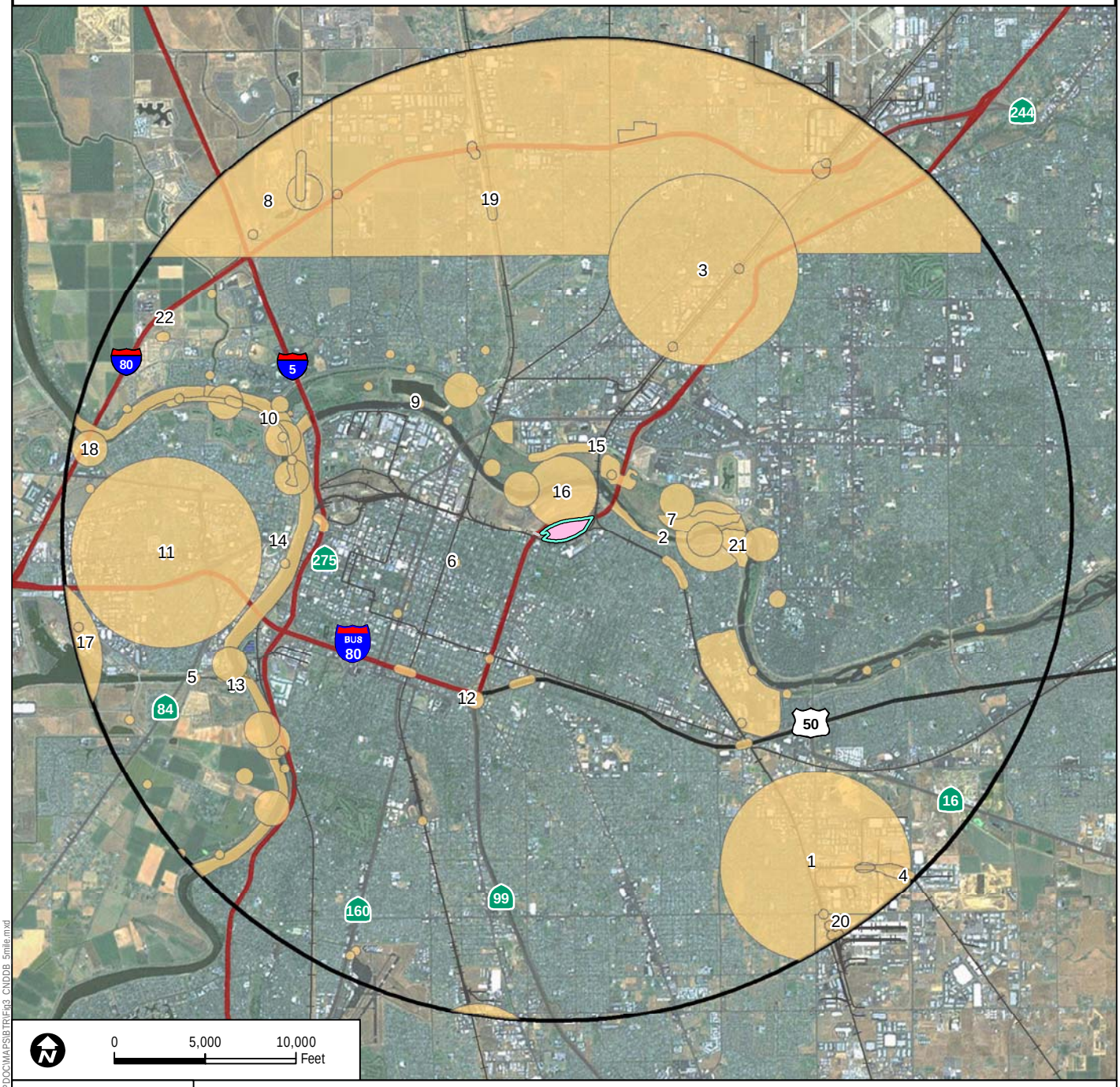
## Special Status Species Data

- Project Boundary
- 5-Mile Radius
- Special Status Species
  - 1, American badger
  - 2, bank swallow
  - 3, burrowing owl
  - 4, California linderiella
  - 5, chinook salmon - Central Valley spring-run ESU
  - 5, chinook salmon - Sacramento River winter-run ESU
  - 6, Cooper's hawk
  - 7, Elderberry Savanna
  - 8, giant garter snake
  - 9, great blue heron
  - 10, Great Valley Cottonwood Riparian Forest
  - 11, hoary bat
  - 12, purple martin
  - 13, Sacramento splittail
  - 14, Sacramento Valley tiger beetle
  - 15, Sanford's arrowhead
  - 16, Swainson's hawk
  - 17, tricolored blackbird
  - 18, valley elderberry longhorn beetle
  - 19, vernal pool fairy shrimp
  - 20, vernal pool tadpole shrimp
  - 21, white-tailed kite
  - 22, woolly rose-mallow




SOURCE: ESRI; County of Sacramento 2012

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**FIGURE 3**

**5 Mile Radius CNDDB Map**

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# 4.0 FINDINGS/RESULTS

## 4.1 Soils

Soil types and their distribution in the project area were identified through a review of maps provided by the U.S. Soil Conservation Service (now called the Natural Resources Conservation Service (NRCS)). Soil behavior characteristics identified by the NRCS include permeability, available water capacity, runoff, erosion, and shrink-swell potential. With the exception of urbanized areas where soils typically consist of engineered fill, the NRCS soil characteristics describe native, undisturbed soils (NRCS 1993).

According to the Soil Survey of Sacramento County, soils within the study area belong to the Columbia soil series (see Figure 4, Soil Cover). Descriptions of the soil units mapped to the study area are provided below. The Columbia soil is classified as an Aquic Xerofluvent, a recently formed soil subject to frequent flooding, which formed in a Mediterranean climate (NRCS 2013). The three map units described below are listed on the National Hydric Soils list as soils that are frequently flooded for long duration during the growing season (NRCS 2013).

### 4.1.1 Columbia Sandy Loam Drained, 0%–2% Slopes (map unit 117)

This very deep, artificially drained soil occurs on natural levees and on low floodplains along rivers and sloughs. The soil formed on somewhat poorly drained alluvium from mixed rock sources. A system of levees and large upstream dams has reduced flooding. Included in this unit are small areas of Columbia soils with a clayey substratum, and small areas of Sailboat and Vina soils; included areas account for 15% of the total acreage of this map unit. Permeability is moderately rapid in this Columbia soil. The effective rooting depth is 60 inches or more; depth to the water table is more than 72 inches. Runoff is slow and the hazard of water erosion is slight. The soil is subject to rare periods of flooding. This soil may provide wetland functions and values when not altered by artificial drainage.

A typical soil profile is yellowish brown sandy loam to a depth of approximately 11 inches. The underlying material, to an approximate depth of 60 inches, is light yellowish brown stratified sandy loam, silt loam, loam, and pale brown sand. In some areas, the surface layer may be loamy sand, loam, or silt loam.

### 4.1.2 Columbia Sandy Loam Occasionally Flooded, 0%–2% Slopes (map unit 118)

This very deep, artificially drained soil occurs on narrow, low floodplains along rivers and streams. Groundwater overdraft has altered the drainage patterns of this soil. This soil formed in poorly drained alluvium from mixed rock sources. Included in this map unit are small areas of Columbia soils with a clayey substratum, and small areas of Cosumnes, Hicksville, and Sailboat

soils; included areas account for 15% of the total acreage of this map unit. This soil is very similar to Columbia map unit 117, described above; however, this soil is occasionally flooded for brief periods during prolonged, high intensity storms. This soil may provide wetland functions and values when not altered by artificial drainage.

### 4.1.3 Columbia–Urban Land Complex, 0%–2% Slopes (map unit 124)

This map unit occurs on natural levees on low floodplains along rivers. A system of levees and large upstream dams has reduced the hazard of flooding. Levees, open and closed drains, and pumps have lowered the groundwater table and altered the drainage of the soil. The map unit is composed of approximately 60% Columbia soils and 30% Urban land. Included in this map unit are small areas of Cosumnes, Rossmoor, and Sailboat soils; these areas comprise approximately 10% of the total acreage. The effective rooting depth is limited by a high water table in the winter and early spring. Runoff is very slow and water erosion is a slight hazard. The shrink-swell potential of this soil is high. This soil is subject to rare periods of flooding.

A typical soil profile is very similar to map unit 117, except this Columbia–Urban complex typically has a buried clay layer at an approximate depth of 40 to 60 inches.

## 4.2 Vegetation and Habitat Types

The majority of the site consists of ruderal/disturbed habitat (non-native annual grass species and non-native forbs and/or bare dirt) that is annually mowed and disked in the late spring to early summer months (Figure 5, Vegetation Communities). Smaller areas dominated by sandbar willow (willow scrub) and Himalayan blackberry (blackberry scrub) occur within the western portion of the property. Representative photos of this area are in Appendix B. The plant species observed within the ruderal, willow scrub, and blackberry scrub areas is listed in Table 1 below.

**Table 1**
**Flora Observed on and Immediately Adjacent to the McKinley Village Property**

| Scientific Name | Common Name |
|---|---|
| *Acer negundo* | box elder |
| *Ailanthus altissima* | tree-of-heaven |
| *Alnus rubra* | red alder |
| *Anagalis arvensis** | scarlet pimpernel |
| *Anthemis cotula** | dog fennel |
| *Apocynum cannabium* | Indian hemp |
| *Avena fatua** | wild oat |
| *Baccharis pilularis* | coyote brush |
| *Brassica nigra** | black mustard |
| *Bromus diandrus** | ripgut brome |
| *Bromus hordeaceus** | soft chess |

**Table 1**
**Flora Observed on and Immediately Adjacent to the McKinley Village Property**

| Scientific Name | Common Name |
|---|---|
| *Carduus pycnocephalus** | Italian thistle |
| *Centaurea solstitialis** | yellow star-thistle |
| *Cephalanthus occidentalis* | button willow |
| *Chenopodium album** | white goosefoot |
| *Cichorium intybus** | chicory |
| *Cirsium arvense** | Canada thistle |
| *Cirsium vulgare** | bull thistle |
| *Convolvulus arvensis** | field bindweed |
| *Conyza canadensis* | Canada horseweed |
| *Cynodon dactylon** | Bermuda grass |
| *Datura wrightii* | jimsonweed |
| *Helianthus annus* | common sunflower |
| *Hirschfeldia incana** | shortpod mustard |
| *Lactuca serriola** | prickly lettuce |
| *Lolium multiflorum** | Italian ryegrass |
| *Melilotus alba** | sweet white clover |
| *Populus fremontii* | Fremont's cottonwood |
| *Prunus* sp.* | plum |
| *Raphanus sativus** | wild radish |
| *Rosa californica* | California rose |
| *Rubus discolor** | Himalayan blackberry |
| *Rumex crispus** | curly dock |
| *Salix exigua* | narrow-leaved willow |
| *Sambucus mexicana* | blue elderberry |
| *Sorghum halepense** | johnsongrass |
| *Torilis arvensis* | field hedge parsley |
| *Urtica dioica* | stinging nettle |
| *Vicia sativa* | common vetch |
| *Vitis californica* | California grape |
| *Xanthium strumarium* | cocklebur |

*non-native species

### 4.2.1 Blackberry Scrub

Blackberry scrub occurs along the northwestern edge of the project site (Appendix B; Photo 3). The dominant vegetation observed within this habitat includes Himalayan blackberry (*Rubus discolor*). Overstory vegetation includes scattered Fremont's cottonwood (*Populus fremontii*) and red alder (*Alnus rubra*). Herbaceous understory is composed primarily of non-native species such as johnsongrass (*Sorghum halepense*).

### 4.2.2 Willow Scrub

Willow scrub occurs on the west side of the project site (Appendix B; Photo 1). Dominant overstory vegetation observed within this habitat includes an open, scattered canopy of narrow-leaved willow (*Salix exigua*). Dominant understory vegetation observed within this habitat includes Bermuda grass (*Cynodon dactylon*), common sunflower (*Helianthus annuus*), Indian hemp (*Apocynum cannabinum*), prickly lettuce (*Lactuca serriola*), yellow star-thistle (*Centaurea soltitialis*), field bindweed (*Convolvulus arvensis*), white goosefoot (*Chenopodium album*), curly dock (*Rumex crispus*), Italian thistle (*Carduus pycnocephalus*), wild radish (*Raphanus sativa*), and dog fennel (*Anthemis cotula*).

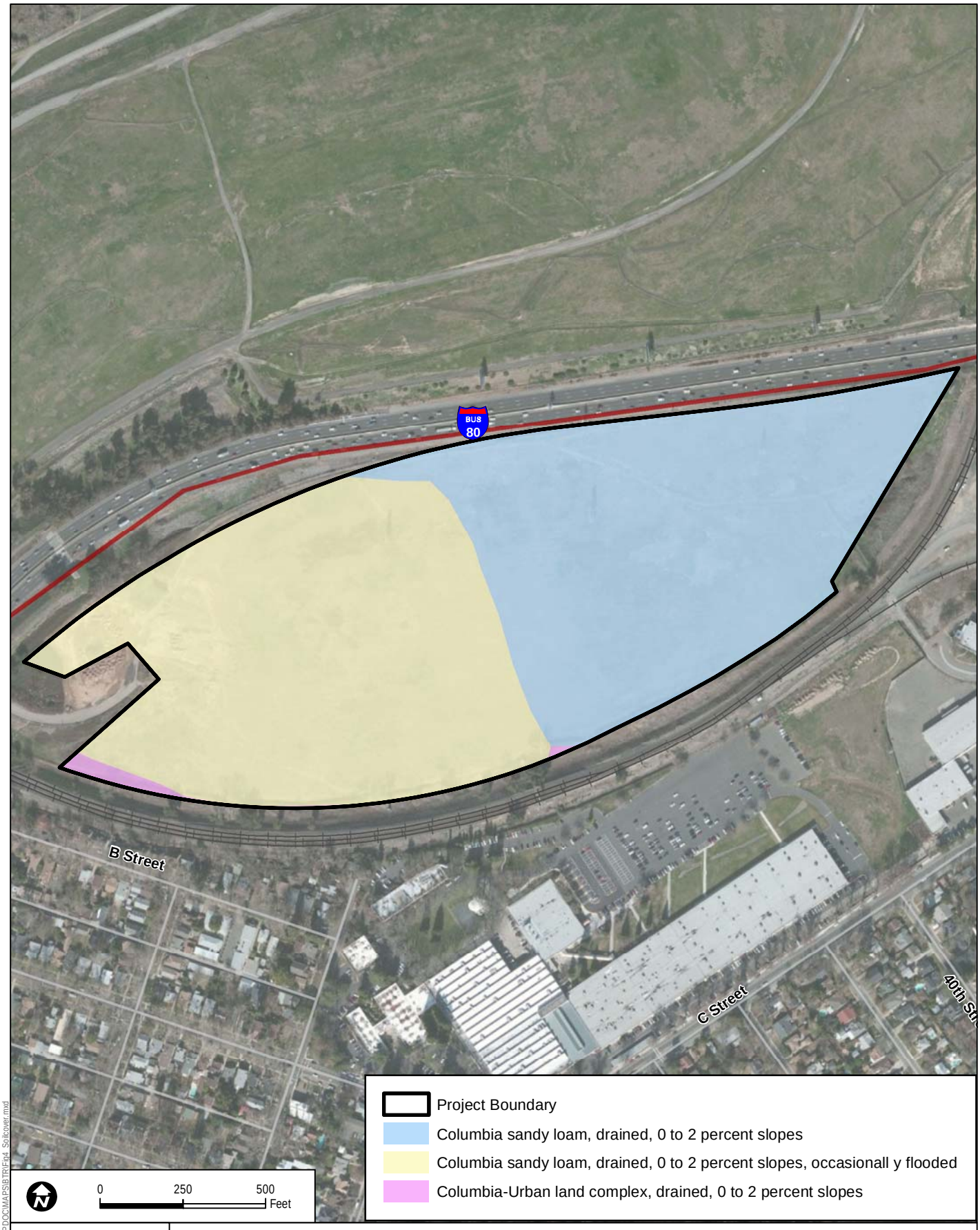
### 4.2.3 Ruderal/Disturbed

Ruderal/disturbed is not a classified community in the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), but is commonly used to describe areas where weedy, non-native species have outcompeted native vegetation and is the dominant cover type. Ruderal/disturbed areas are the dominant land cover type within the project site and includes dirt roads, open fields (that are regularly disked/mowed), fire breaks, and areas along the Union Pacific Railroad right-of-way (ROW) (Appendix B; Photos 2, 4, 5, and 6). Overstory vegetation in this habitat consists of scattered individual trees and shrubs, including valley oak (*Quercus lobata*), Fremont's cottonwood, and box elder (*Acer negundo*) along the ROW to the south side of the site, and blue elderberry (*Sambucus mexicana*) and button willow (*Cephalanthus occidentalis*) along the west side of the project site. Dominant understory vegetation observed in this habitat includes ripgut brome (*Bromus diandrus*), johnsongrass, Bermuda grass, yellow star-thistle, black mustard (*Brassica nigra*), white goosefoot, prickly lettuce, field bindweed, and jimsonweed (*Datura* sp.).

## 4.3 Common Wildlife

During the June 13, 2013 survey, a total of eight (8) animal species (one mammal, seven birds) were observed within the boundaries of the project site (Table 3). The animal species observed or likely to occur on the project site are generally common species that are adapted to life in proximity to human activity and the urban/suburban environment.

No amphibians or reptiles were observed on site. However, the site would likely support some reptile species that are adapted to the suburban environment. These species could include, but are not limited to, California king snake (*Lamprepeltis getuda californiae*), western fence lizard (*Sceloporus occidentalis*), and Pacific gopher snake (*Pituophis catenifer catenifer*). Due to the dry and disturbed nature of the site, amphibian species are generally not expected to occur on site.

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SOURCE: ESRI; County of Sacramento 2012

**FIGURE 4**

**Soil Cover**

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SOURCE: ESRI 2013

**FIGURE 5**

**Vegetation Communities**

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One mammal, the California ground squirrel (*Otospermophilus beecheyi*), was observed along the access road. However, no large burrow complexes were observed on the project site, likely due to the fairly recent mowing and disking of most of the site. Other common mammal species expected to occasionally occur on the project include, but are not limited to, Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), striped skunk (Mephitis mephitis), raccoon (*Procyon lotor*), Virginia opossum (*Dipdelphis virginiana*), and coyote (*Canis latrans*). Like the bird and amphibian/reptile species, these mammals are adapted to life in an urban setting and are therefore relatively tolerant of human interaction and activity.

**Table 2**
**Fauna Observed on the Project Site**

| Scientific Name | Common Name |
|---|---|
| *Otospermophilus beecheyi* | California ground squirrel |
| *Sturnis vulgaris* | European starling* |
| *Carpodacus mexicanus* | house finch |
| *Zenaida macroura* | mourning dove |
| *Mimus polyglottos* | northern mockingbird |
| *Buteo jamaicensis* | red-tailed hawk |
| *Agelaius phoeniceus* | red-winged blackbird |
| *Tyrannus verticalis* | western kingbird |

*non-native species

## 4.4 Special-Status Species

Special-status species are those that are state- or federally listed as rare, threatened, or endangered; are candidates for listing or proposed for listing; are state fully protected; are considered of special concern by state and/or federal resource agencies; or, for plants, are also considered rare by the California Native Plant Society. Special-status plant and/or animal species known to occur, or with some potential of occurring, are discussed below.

### 4.4.1 Flora

Two special-status plant species occurrences are documented within a 5-mile radius of the project area. To ensure no species are overlooked, a list of special-status plants in Sacramento County was reviewed, but most of the special-status plant species in the County are associated with Gabbro soils, vernal pools, or perennial wetlands, none of which occurs on the project site. The two species that have documented occurrences within 5 miles of the project site are Sanford's arrowhead (*Sagittaria sanfordi*) and wooly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*), both of which are associated with perennial wetlands which do not occur on site. Because of its disturbed nature, history of development, and the lack of specialized suitable habitats (e.g., Gabbro soils, perennial marsh, vernal pool), the project site is not expected to support occurrences of any special-status plant species.

### 4.4.2 Fauna

The results of the CNDDB search and other literature review resulted in the identification of 17 special-status animal species known to occur in the project site region (Sacramento Quad and/or within 5 miles). The U.S. Fish and Wildlife Service (USFWS) search resulted in additional species not included in the CNDDB occurrences, most of which have specialized habitats not present on the project site. Special-status animal species that occur within 5 miles of the project site, but that are dependent on specialized habitat types that do not occur on or near the project site, were eliminated from further investigation and were not included in Table 3. These included giant garter snake (*Thamnophis gigas*), California linderiella (*Linderiella occidentalis*), spring-run chinook salmon (*Onchorynchus tshawytscha*), winter-run chinook salmon (*Onchorynchus tshawytscha*), Sacramento splittail (*Pogonichthys macrolepidotus*), tri-colored blackbird (*Agelaius tricolor*), western pond turtle (*Emys marmorata*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*). All are dependent on either perennial flowing water, perennial marsh habitat, or vernal pool grassland habitat, none of which occurs on or adjacent to the project site.

The eight remaining special-status animal species are known to occur in non-native grasslands, disturbed habitats, and riparian areas, all of which occur to some degree on or adjacent to the site. While the project is disturbed and surrounded by development, the potential for these eight species to potentially occur within the project site could not be discounted. Table 3 and the narrative below include more detailed information regarding these species.

**Table 3**
**Special-Status Animal Species with the Potential to Occur on the Project Site**

| Scientific Name | Common Name | Status (Federal/ State) | Primary Habitat Associations | Potential to Occur On the Project Site |
|---|---|---|---|---|
| *Accipiter cooperi* | Cooper's hawk | None/WL | Cismontane woodland; riparian forest; riparian woodland; upper montane coniferous forest. | Low; site is disturbed and does not have nesting habitat within its boundaries, but suitable nesting and roosting trees are on adjacent properties and the nearby American River Parkway. Some potential to forage along the margins of the site. |
| *Athene cunicularia* (burrow sites and some wintering sites) | burrowing owl | BCC, BLM / CSC | Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas with rodent burrows or other dry burrow site. | Low; very little ground squirrel activity was observed on the site; potential habitat for foraging on irregular basis. |
| *Buteo regalis* (Nonbreeding/ wintering) | ferruginous hawk | BLM, BCC / WL | Open, dry country; grasslands; open fields; agriculture. | Low; there are records within 5 miles but this raptor generally prefers larger areas of habitat within which to forage and does not nest in this region; possible irregular visitor as a migrant. |
| *Buteo swainsoni* (nesting) | Swainson's hawk | BCC/ ST, ABC | Breeds in riparian woodlands and | Moderate; no suitable nesting habitat exists onsite, but known active nests in |

## Table 3
## Special-Status Animal Species with the Potential to Occur on the Project Site

| Scientific Name | Common Name | Status (Federal/ State) | Primary Habitat Associations | Potential to Occur On the Project Site |
|---|---|---|---|---|
| | | | occasionally in open oak woodlands/savannas near rivers. Forages in open grassland, shrublands, and croplands. | nearby neighborhood and along American River Parkway. The site is suitable for foraging during and immediately after disking, but may be too overgrown with weeds and forbs from infrequent maintenance to provide consistently high quality foraging habitat. |
| *Elanus leucurus* | white-tailed kite | BLM / P | Cismontane woodland; riparian woodland; Valley and foothill grassland; wetland. | Moderate; nesting occurrences within 5 miles. Some potential nest trees at edge of site. Pair observed at adjacent Sutter's Landing Park during biological survey, habitat on site suitable for foraging during and immediately after disking but may be too overgrown with weeds/forbs between site maintenance activities. |
| *Falco columbaris* | merlin | None / WL | Estuary; great basin grassland; valley and foothill grassland. | Low; species is known from the area, but on-site habitat is marginal. Only expected to occur as a migrant or winter visitor. |
| *Progne subis* | purple martin | None / CSC | Broadleaved upland forest; lower montane coniferous forest. Bridges and underpasses in urban areas. | Low; species is known from within 5 miles of the project site, and freeway overpass bridges, oak trees, and billboards provide suitable nesting habitats. However, site surveys found no occurrences of this species on site. |
| *Desmocerus californicus dimorphus* | Valley elderberry longhorn beetle | FT / None | Occurs only in the Central Valley of California in association with blue elderberry (*Sambucas Mexicana*). | Moderate; elderberry shrubs exist on site and on adjacent property, and stem counts indicate there is suitable VELB habitat. |

**Federal Designations:**
BCC Fish and Wildlife Service: Birds of Conservation Concern
BLM Bureau of Land Management Sensitive Species
FE Federally-listed Endangered
FT Federally-listed as Threatened
**State Designations:**
CSC California Species of Special Concern
P California Department of Fish and Game Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
WLCalifornia Department of Fish and Game Watch List
**Other:**
ABC American Bird Conservancy: United States Watch List of Birds of Conservation Concern:
**Potential to Occur on the Project Site**
**Moderate**: Species is known to occur in the site vicinity, but the suitability of habitat on the site is considered moderate such that the species would only be expected to occur on an occasional basis.
**Low**: Species is known to occur in the vicinity of the site, but habitat on site is considered marginally suitable for the species or the species is only expected to occur on an irregular basis.

**Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)**

The valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), a federally listed threatened species, is dependent on elderberry shrubs (*Sambucus* spp.) for breeding and feeding habitat. Elderberry shrubs are a common component of riparian forests and adjacent upland habitats in California's Central Valley. The VELB spends most of its life in the larval stage, living within the stems of the elderberry plant. USFWS considers all elderberry shrubs 2.5 centimeters (1 inch) or greater diameter at ground level within the species' range to be potential habitat (USFWS 1999b). The exit holes made by the emerging adults are distinctive 0.5- to 1-centimeter round or oval openings. The entire life cycle of the VELB revolves around the elderberry. Adults eat the elderberry foliage until about June when they mate. The females lay eggs in crevices in the bark. Upon hatching, the larvae then begin to tunnel into the tree, where they will spend 1 to 2 years eating the interior wood, which is their sole food source.

Elderberry shrubs were mapped on and adjacent to the project site by EDAW/AECOM in 2008 (EDAW/AECOM 2008) and a Biological Opinion (BO) was issued by the USFWS in June 2008, authorizing development of the project site pursuant to stated terms and conditions. Since that time, Union Pacific Railroad conducted vegetation clearing within their ROW along the edge of the McKinley Village site. Foothill Associates conducted an updated assessment of elderberry shrubs, as documented in their June 10, 2013 letter. They noted that most of the understory vegetation was removed, including elderberry shrubs. Foothill Associates also noted that a fire had destroyed most of the vegetation in the northeastern portion of the property. The results showed that elderberry Group 5 and Groups 7-17 were no longer present, resulting in project impacts to 66 total stems, down from the 87 stems included in the anticipated take detailed in the BO. The BO details the avoidance and minimization measures and other terms and conditions required to minimize impacts to the species.

**Cooper's hawk (*Accipiter cooperii*)**

The Cooper's hawk is a California Species of Special Concern and protected under the Migratory Bird Treaty Act (MBTA). This species typically nests in densely canopied trees such as oak and riparian woodlands in lower elevations, and ponderosa pine forests at upper elevations. In the Sacramento region, Cooper's hawks breed from approximately March to August and typically nest in open interrupted or marginal type woodland habitats. Nest sites are mainly found in live oaks and in riparian habitats with deciduous trees, as in canyon bottoms of river floodplains. Cooper's hawks prey almost exclusively on small to medium-sized birds.

Because of the lack of woodland habitat on site, Cooper's hawk is not expected to nest or regularly forage within the project site, but could do so in treed areas adjacent to the project site.

**Western burrowing owl (*Athene cunicularia hypogea*)**

The western burrowing owl is a California Species of Special Concern. Burrowing owls in the Sacramento region are typically found in annual and perennial grasslands, although owl habitat may also include more vegetated areas if the canopy covers less than 30% of the ground surface. Burrows are the essential component of burrowing owl habitat. Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. Western burrowing owls exhibit high site-fidelity and reuse burrows year after year (Gervais et al. 2008). They are opportunistic feeders, primarily feeding on arthropods, small mammals and birds found in grasslands, mowed areas, overgrazed grasslands, and agricultural areas near nest sites (Gervais et al. 2008). Western burrowing owls breed from March through August, with a peak in April and May.

Very little ground squirrel activity was observed on site. As noted above, burrowing owls are typically found in association with ground squirrel burrow complexes in the region, but the lack of burrow complexes on the project site indicates that the species is likely only to occur in low numbers, if at all. However, an individual owl could briefly forage on the site during migration or movement periods and some undiscovered mammal burrow or other cavity could occur that could support burrowing owls.

**Ferruginous hawk (*Buteo regalis*)**

The ferruginous hawk is a California Species of Special Concern. This raptor is also protected under the MBTA. Ferruginous hawks typically occur in open country such as grasslands, sagebrush, deserts, shrublands, and the outer edges of pinyon-pine and other forests. They select rocky outcrops, hillsides, rock pinnacles, or trees for nest sites. Small to medium-sized mammals make up the majority of their diet.

Ferruginous hawks do not nest in the Sacramento region and are only expected to occur as an irregular migrant.

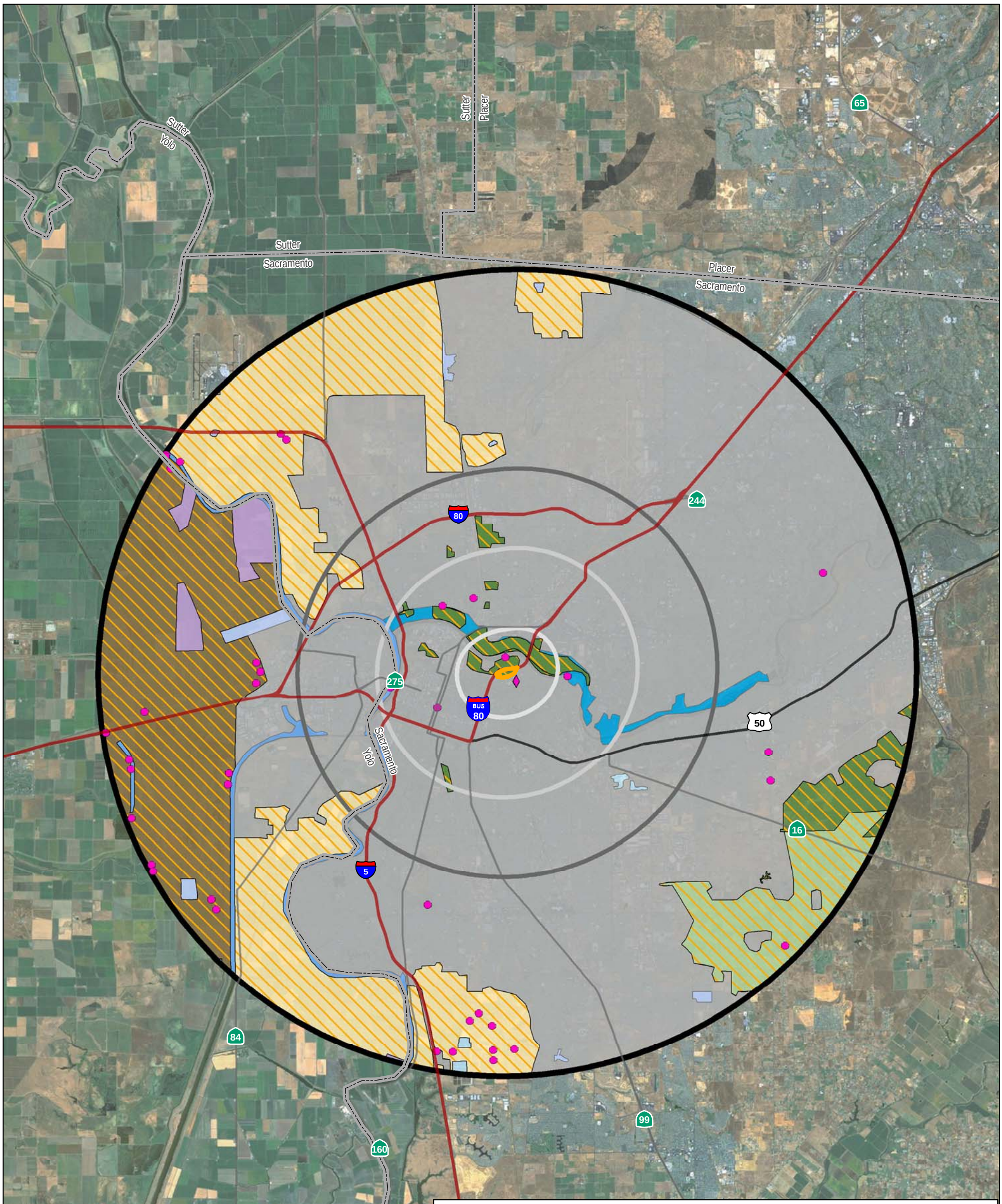
**Swainson's hawk (*Buteo swainsoni*)**

The Swainson's hawk is listed as threatened in California and protected under the MBTA. This species migrates into California from South America in the spring to establish breeding territories for the summer and typically migrates out of California by the end of September. In the Sacramento Valley region, Swainson's hawks typically nest in woodland habitats, tree clusters, or isolated trees, usually near riparian systems and generally adjacent to or in close proximity to suitable foraging habitat, which includes rangelands, grasslands, and various agricultural fields (Estep 1989).

The CDFW CNDDB and BIOS databases report several Swainson's hawk nests along the American River Parkway to the north of the project site (see Figure 3). Not reported in this data but known to several local environmental organizations and individuals, an active Swainson's hawk nest occurs in a conifer tree in a residential area just south of the project site (see Figure 3). The location and status (active) of this nest was confirmed by Dudek on a site visit on July 11, 2013. Potential nest trees for Swainson's hawk occur on and adjacent to the site, but no Swainson's hawk (or other raptor) nests were observed in these areas during site surveys.

The disturbed/ruderal habitat on the site can provide foraging opportunities for Swainson's hawks, especially during and after annual mowing and disking of the site, which occurs in the late spring to early summer when Swainson's hawks are actively nesting and foraging in the area. However, after mowing/disking occurs, the relative value of this habitat for Swainson's hawk and other raptors likely declines over time as the prey base decreases in numbers due to lack of vegetative cover. Conversely, once the non-native grasses and ruderal vegetation grows back later in the year, the site likely becomes overgrown such that foraging quality again declines until the site is mowed. Consequently, while the site does provide some foraging habitat value to Swainson's hawks, the cyclical nature of management activities on the site likely results in a range of habitat values during the time that Swainson's hawks are in the region (generally April through September), with the highest values expected to occur during and immediately after mowing and disking of the site.

Therefore, it can be assumed that those Swainson's hawks that utilize the site as a source of prey likely forage in other areas in the region as well to adequately address foraging demands during the breeding season. In an effort to assess this site's value to Swainson's hawks in the area, all potential foraging habitats (i.e., agricultural, open space, open fields, etc.) within 10 miles of the known Swainson's hawk nest near the project site were mapped (Figure 6). Ten miles is the radius from an active Swainson's hawk nest within which the CDFW recommends considering whether a proposed project will adversely affect suitable foraging habitat and is the approximate maximum flight distance that Swainson's hawk adults will fly from an active nest in search of prey (CDFG 1994). It is assumed that nests west of the Sacramento River would generally utilize agricultural lands to the west, so this analysis focused on a study area within 10 miles of the nearest nest to the project site. Based on this analysis, approximately 29,266 acres of suitable Swainson's hawk foraging habitat occurs within 10 miles of the nest nearest to the study area, and east of the Sacramento River. An additional 31,852 acres of habitat occurs west of the Sacramento River. The project site represents 0.09% of the total amount of available foraging habitat within the 10-mile assessment area.

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DUDEK

7828

SOURCE: ESRI 2013, County of Sacramento 2012

**FIGURE 6**

**Regional Swainson's Hawk Foraging Habitat per Analysis of GAP data**

MCKINLEY VILLAGE PROJECT BTR

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**White-tailed kite (*Elanus leucurus*)**

The white-tailed kite (*Elanus leucurus*) is a California Fully Protected species. This year-round resident breeds between February and October. White-tailed kites are known to forage for small rodents and insects in agricultural areas, especially alfalfa fields. Nests are generally built in available trees near hunting grounds. Nest sites are closely associated with suitable foraging habitat with high rodent populations in the immediate vicinity of the nest. The white-tailed kite breeds from February to October, with a peak from May to August. While no white-tailed kites were observed on the site during surveys, a pair was observed off site near the A Street Bridge, and suitable nesting and foraging habitat is present within the project area. Similar to Swainson's hawk, the value of the site as foraging habitat is likely variable given the cyclic nature on on-site management activities, with the highest habitat values expected to be during and immediately following vegetation mowing and disking of the site in the early summer.

**Purple martin**

This California Watch List species occurs as a summer resident and migrant, primarily from mid-March to late September. Breeds from May (rarely late April) to mid-August. Purple martins are widely but locally distributed in forest and woodland areas at low to intermediate elevations throughout California. Populations are densest in central and northern coastal conifer forests and smaller and more localized in the Sierra Nevada, interior foothills, and Southern California. The species' range, has contracted substantially on the central and southern coastal slope and in the Central Valley and probably, at least locally, in the Sierra Nevada and Cascades and are now virtually extirpated from most interior and south coastal lowland areas, presumably by nest competition from the European starling. A significant remnant population in Sacramento nested in buildings and riparian habitats from Stockton in the Sacramento–San Joaquin River Delta north through the Sacramento Valley through the 1960s to early 1970s. While no purple martins were observed on the site during surveys, suitable habitat is present within the annual grasslands or ruderal habitat and cropland edges within the project area.

**Merlin (*Falco columbarius*)**

Merlin is an uncommon winter migrant in California from September to May. It can be found in a variety of habitat types, including coastlines, grasslands, oak savannahs, woodlands, and wetlands. In California, the species generally occurs below 3900 feet in elevation (Polite 1999). The merlin feeds primarily on small birds, but also small mammals and insects. Merlins generally do not breed in California, but rather further north in Canada and Alaska.

On the project site, the species is only expected to occur as an irregular migrant or winter visitor.

### 4.4.3 Wildlife Movement Corridors

The project site is not part of a regional wildlife corridor, as it is largely surrounded by urban development and other artificial land uses. The closest habitat corridor in the area is associated with the American River approximately 0.25 mile east of the site and 0.4 mile north of the site, separated by the Capital City freeway and Sutter's Landing Regional Park to the north, and roads and a single-family home subdivision to the east. Consequently, while a number of common wildlife species will utilize the site as habitat for breeding, foraging, and shelter to some degree, due to the fact that it is essentially surrounded by urban and suburban development, the site itself does not function as part of a corridor that links large open space areas.

### 4.4.4 Wetlands

A jurisdictional delineation for the McKinley Village Project site was conducted in 2008 (EDAW/AECOM 2007), and was verified by the U.S. Army Corps of Engineers (ACOE) on February 21, 2008 (ACOE 2008). The willow scrub habitat that was delineated was deemed not jurisdictional by the ACOE because the soils are not typically hydric; it does not have sufficient wetland hydrology; and much of the understory vegetation is consistent with upland and/or disturbed areas. Therefore, no waters of the United States or wetlands, as defined by the ACOE, were identified as occurring on the site.

# 5.0 RECOMMENDATIONS

Other than the existence of Valley elderberry longhorn beetle habitat that has been previously addressed, the only other substantial biological constraints associated with the project site are those associated with the potential for various bird species, primarily raptors, to occur on the site. The following recommendations will help ensure compliance with applicable biological resources laws and regulations:

- If project construction work is required to be scheduled during the nesting season of native birds potentially nesting on the site (March through August), a qualified ornithologist should conduct a preconstruction survey of the work area to determine if any native birds are nesting on or immediately adjacent to the site. The preconstruction survey should be conducted within 30 days prior to the start of work from March through August. If active nests are found in the work area, the biologist will determine an appropriately sized buffer around the nest in which no work shall be allowed until the young have successfully fledged. The size of the nest buffer shall be determined by the biologist and in consideration of the affected species, type, and extent of ground disturbance, and other site conditions. Surveys for special-status species shall be conducted pursuant to accepted survey protocols, if available.
- Because the white-tailed kite is a state Fully Protected species, no impacts that could result in take of the species can occur should the species nest on or immediately adjacent to the site. Similar to the above measure for native nesting birds, a qualified biologist shall conduct surveys for this species if construction and ground-disturbing activities would occur during the species nesting season (March through July). If an active nest is identified on or immediately adjacent to the project site, the biologist shall establish a non-disturbance buffer of at least 500 feet (or as otherwise determined by the biologist in consideration of site-specific conditions and proposed activities) until the young have fledged and are no longer dependent upon the nest for survival, as determined by the biologist. The applicant shall consult with the CDFW on any other measures deemed necessary to avoid take.
- While no Swainson's hawks are expected to nest on site, the species has been observed foraging on site after mowing activities. The site may be used as foraging habitat by known active Swainson's hawk nests in the site vicinity. Therefore, the loss of this habitat is likely to be considered a significant impact with respect to CEQA. A strategy for mitigating the loss of this habitat, possibly through acquisition and/or preservation of suitable foraging habitat elsewhere in the Sacramento area, will likely be necessary to offset significant impacts.
- To protect the continued existence of valley elderberry longhorn beetle habitat, the project should proceed pursuant to the proposed conservation measures and terms and conditions of the June 25, 2008 Biological Opinion issued by the USFWS (Appendix D).

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# APPENDIX A

*Summary of CNDDB Query Results*

| Group | Name | Population | Status | Lead Office | Recovery Plan Name | Recovery Plan Stage |
|---|---|---|---|---|---|---|
| Amphibians | California tiger Salamander | U.S.A. (CA - Sonoma County) | Endangered | Sacramento Fish And Wildlife | | |
| Crustaceans | Conservancy fairy shrimp | Entire | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Vernal Pool | Final |
| Crustaceans | Vernal pool tadpole shrimp | Entire | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Vernal Pool | Final |
| Fishes | Delta smelt (Hypomesus | Entire | Threatened | San Francisco Bay - Delta Fish | Recovery Plan for the | Final |
| Flowering Plants | Ione manzanita (Arctostaphylos | | Threatened | Sacramento Fish And Wildlife | | |
| Flowering Plants | Stebbins' morning-glory | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Gabbro Soil | Final |
| Flowering Plants | Fleshy owl's-clover (Castilleja | | Threatened | Sacramento Fish And Wildlife | Recovery Plan for Vernal Pool | Final |
| Flowering Plants | Pine Hill ceanothus (Ceanothus | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Gabbro Soil | Final |
| Flowering Plants | Soft bird's-beak (Cordylanthus | | Endangered | Sacramento Fish And Wildlife | Draft Recovery Plan for the | Draft |
| Flowering Plants | Ione (incl. Irish Hill) buckwheat | | Endangered | Sacramento Fish And Wildlife | | |
| Flowering Plants | Pine Hill flannelbush | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Gabbro Soil | Final |
| Flowering Plants | El Dorado bedstraw (Galium | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Gabbro Soil | Final |
| Flowering Plants | Colusa grass (Neostapfia | | Threatened | Sacramento Fish And Wildlife | Recovery Plan for Vernal Pool | Final |
| Flowering Plants | Layne's butterweed (Senecio | | Threatened | Sacramento Fish And Wildlife | Recovery Plan for Gabbro Soil | Final |
| Flowering Plants | Keck's Checker-mallow | | Endangered | Sacramento Fish And Wildlife | | |
| Flowering Plants | Palmate-bracted bird's beak | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Upland | Final |
| Flowering Plants | Sacramento Orcutt grass | | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Vernal Pool | Final |
| Insects | Lange's metalmark butterfly | Entire | Endangered | Sacramento Fish And Wildlife | Revised Recovery Plan for | Final Revision 1 |
| Insects | Valley elderberry longhorn | Entire | Threatened | Sacramento Fish And Wildlife | Valley Elderberry Longhorn | Final |
| Mammals | San Joaquin kit fox (Vulpes | U.S.A(CA) | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Upland | Final |
| Mammals | Salt marsh harvest mouse | U.S.A.(CA) | Endangered | Sacramento Fish And Wildlife | Draft Recovery Plan for the | Draft |
| Mammals | Salt marsh harvest mouse | U.S.A.(CA) | Endangered | Sacramento Fish And Wildlife | Salt Marsh Harvest Mouse and | Final |
| Mammals | Riparian brush rabbit (Sylvilagus | (CA) | Endangered | Sacramento Fish And Wildlife | Recovery Plan for Upland | Final |
| Reptiles | Giant garter snake (Thamnophis | Entire | Threatened | Sacramento Fish And Wildlife | Draft Recovery Plan for the | Draft |

# APPENDIX B

*Representative Photos*

# Appendix B
# Representative Photos

Photo 1: Willow Scrub Habitat – Looking south from western access road.

Photo 2: Ruderal Habitat – Looking east from western side of property.

Photo 3: Blackberry Scrub – Looking north from western side of property (access road).

Photo 4: Ruderal Habitat with billboard – Looking south from the north side of the property.

Photo 5: Ruderal Habitat in the foreground with UPRR track in the distance – Looking south from the northwestern part of the property.

Photo 6: Ruderal Habitat – Looking northeast from the western side of the property.

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# APPENDIX C

*Elderberry Shrub Report (Foothill Associates)*

June 10, 2013

Bret Hogge
RCI McKinley
c/o Riverview Capital Investments
3001 I Street, Suite 200
Sacramento, CA 95816

**RE: McKinley Village Biological Assessment**

Dear Mr. Hogge:

As requested, Foothill Associates has reviewed several documents pertaining to elderberry plants and the Valley Elderberry Longhorn Beetle (VELB) developed for the McKinley Village site. The site is located in the City of Sacramento. The following documents were reviewed:

- *Effects Analysis on Valley Elderberry Longhorn Beetle* (EDAW|AECOM, February 2008).
- *Memorandum of Understanding Between McKinley Investors and the U.S. Fish and Wildlife Service* (U.S. Fish and Wildlife Service, May 23, 2008).
- *Formal Consultation Regarding the McKinley Village Project, Sacramento, California* (U.S. Fish and Wildlife Service, June 2008).
- A graphic exhibit "McKinley Village Elderberry Shrub Locations" derived from the February 2008 Analysis (EDAW|AECOM, November 2008) (**Attachment A**).

In addition, a Foothill Associates' biologist conducted a site inspection on February 18, 2013. The purpose of the inspection was to verify the current condition of elderberry shrub locations mapped in 2008.

**Results - General Site Conditions**
The site supports primarily non-native grasses and forbs, with woody vegetation limited primarily to fence lines and the railroad right-of-way. Woody species included both natives (willows, live oaks, box elder, and cottonwood) and non-natives (black locust, cork oak, pecan, and tree-of-heaven). Himalayan blackberry is common along the fence separating the site from the Union Pacific right-of-way. There are several groups of elderberry shrubs on site, primarily in the far-eastern portion of the subject property.

**Results - Elderberry Shrub Locations**
It is our understanding that following the EDAW|AECOM elderberry mapping, Union Pacific Railroad conducted vegetation clearing operations within their right-of-way in the

vicinity of the McKinley Village site. While a few native and non-native trees were left standing, most of the understory vegetation was removed (see **Figure 1A**), including elderberry shrubs. Further, a fire burned the northeastern portion of the subject property, resulting in destruction of most of the vegetation in that area.

Field surveys revealed that Group 5 and Groups 7-17 (see enclosed **Figure 1B**) were no longer present as of the date of our survey. Although Group 1 was thought to have been removed by the Union Pacific right-of-way clearing operation, a large stand of fairly uniform-sized elderberry plants were found. Presumably these plants represent re-growth of those plants destroyed by fire. In addition, an elderberry was found growing from the Himalayan blackberry "hedge" near the location of Group 11.

**Results - Elderberry Mitigation and the Biological Opinion**

The Formal Consultation with U.S. Fish and Wildlife Service resulted in an MOU between the Service and the project proponent. The MOU assumed impacts to all elderberry plants in Groups 2, 3, 4, and 6. Using the ratios described in the "*Conservation Guidelines for the Valley Elderberry Longhorn Beetle*" (USFWS), the MOU obligated the project proponent to purchase 30 credits from the Wildlands, Inc. River Ranch Conservation Bank, along with other measures intended to minimize incidental take of Valley Elderberry Longhorn Beetle.

Stem counts made during the site inspection for Groups 2, 3, 4, and 6 are presented in **Table 1** below:

| Group | Stem Class | | | Exit Holes |
|---|---|---|---|---|
| | 1"-3" | 3"-5" | >5" | |
| 2 | 34 | 0 | 0 | N |
| 3 | 10 | 3 | 2 | Y |
| 4 | 4 | 1 | 1 | N |
| 6 | 15 | 11 | 10 | Y |
| 11* | 9 | 0 | 0 | N |
| **Subtotal** | **72** | **15** | **13** | |
| **Grand Total** | **100** | | | |

* New occurrence near the location of Group 11

Applying the stem-count multipliers results in the following:

| Stem Class | Elderberry Seedlings |
|---|---|
| 1-3 with | 50 |
| 1-3 without | 47 |
| 3-5 with | 56 |
| 3-5 without | 2 |
| >5 with | 72 |
| >5 without | 3 |
| **Seedling Total** | **230** |
| **Bank Credits** | **46** |

**Discussion and Conclusions**
Aside from growth of existing and new elderberry stems, and the right-of-way clearing by Union Pacific, project site conditions are little changed from those reported in the documents prepared by EDAW|AECOM

Based on my understanding of the limits of project construction, the project will completely avoid Group 1 and Group 2 and will be able to implement a 100' construction setback during the spring emergence and breeding season (March 15th to June 15th) and at least a 20' setback from the project development limit. This project configuration would result in substantially fewer stems impacted (66 total stems) which is well below the 87 stems included in the anticipated take detailed in the Biological Opinion.

Please contact me if you have any questions or need any additional information.

Sincerely,

Kenneth D. Whitney, Ph.D.

Enclosures

Description: Removal of understory vegetation
Date: February 18, 2013 Photographer: K. Whitney

Description: Removal of understory vegetation
Date: February 18, 2013 Photographer: K. Whitney

# PHOTO DOCUMENTATION

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE



FIGURE 1A

Description: Groups 7-17 looking Southwest
Date: February 18, 2013 Photographer: K. Whitney

Description: Groups 7-17 looking Northeast
Date: February 18, 2013 Photographer: K. Whitney

# PHOTO DOCUMENTATION

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE



FIGURE 1B

# Attachment A — McKinley Village
# Elderberry Shrub Locations


Source: Calthorpe Associates 2007, Wood Rodgers 2007, EDAW 2007, SACOG 2006

McKinley Village Elderberry Shrub Locations

# APPENDIX D

*USFWS Correspondence*

Read copy
Rockey

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
81420-2008-F-1204

JUN 25 2008

Memorandum

To: Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California

From: Peter A. Cross
Acting Assistant Field Supervisor, Endangered Species Program, Sacramento, California

Subject: Formal Consultation Regarding the McKinley Village Project, Sacramento, California

This letter is in response to a request from the McKinley Investors, LLC (McKinley Investors) to have the U.S. Fish and Wildlife Service (Service) aid them in constructing and completing the proposed McKinley Village Project (proposed project) while providing for the protection of federally listed species. The applicants and the Service signed a Memorandum of Understanding (MOU) on May 23, 2008, to formalize the agreement between McKinley Investors and the Service to document that McKinley Investors proposes to complete the proposed project and to implement specific measures for the purpose of conserving and avoiding jeopardizing the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) consistent with the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531). The MOU also formalizes that the Service agreed to facilitate a Federal nexus for the purposes of conducting consultation pursuant to Section 7 of the ESA, as described in its implementing regulations (50 **CFR** 402).

The Service has determined that the proposed project is likely to adversely affect the VELB; therefore, this document represents the Service's biological opinion on the effects of the proposed project on the VELB, in accordance with the Act. The proposed project is outside of the critical habitat (50 **CFR** §17.95[i]) that has been designated for the VELB; therefore none will be affected by the proposed project.

**Consultation History**

*March 13, 2008* Meeting between C. Nagano (Service), K. Fitzgerald (EDAW, Inc.), Tina Thomas (Remy, Thomas, Moose and Manley, LLP), Bret Hogge (River West Investments), and Ashley Feeney (John Laing Homes) to discuss the proposed McKinley Village development, its impacts on VELB and mitigation for those impacts.

*April 28, 2008* Meeting between K. Sanchez (Service), E. Htain, K. Fitzgerald (EDAW, Inc.), and Bret Hogge (River West Investments) to discuss the following: (1) existing site conditions and locations of on-site elderberry plants; (2) review photos of existing elderberry plants; (3)

effects of proposed project on VELB; (4) mitigation strategy and approach; (5) section 7 process and roles and responsibilities of the Service, EDAW, and the applicant.

*May 14, 2008* K. Sanchez (Service) sent an email to T. Thomas (McKinley Investors) with proposed MOU language.

*May 22, 2008* Phone conversations and electronic mails, between R. Montgomery (Service), E. Htain (EDAW), and T. Thomas (McKinley Investors) regarding the removal of elderberry shrubs at project site within Union Pacific Railroad (UP) right-of-way (ROW), by UP personnel.

*May 22, 2008* Meeting at Sacramento Service Office between P. Cross (Service), R. Montgomery (Service), and T. Thomas (McKinley Investors), informally discussing above event, and Ms. Thomas received copy of MOU to be signed and returned to Service.

*May 23, 2008* R. Montgomery (Service) received electronic mail from E. Htain (EDAW) with revised table of elderberry stem count and compensation amounts.

*June 5, 2008* Site visit R. Montgomery (Service), SA D. Crum (Service), E. Htain (EDAW), B. Hogge (McKinley Investors) to observe damage done to elderberry shrubs don e by Union Pacific Rail Road contractor.

*June 9, 2008* R. Montgomery (Service) received electronic mail from E. Htain (EDAW) of revised table of elderberry shrubs that will be impacted by the proposed project.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The proposed project includes 28 multi-family residential units on 1.16 acres (ac) (Tuck Under), 277 detached single-family units on 20.31 ac (Single family Units and Green-Courts), 86 attached single-family units on 4.14 ac (Townhomes), 7.66 ac of civic space for development of a church, 2.70 ac of open space/parks, 1.23 ac of linear vegetated buffer between the Capital City Freeway (Bus 80) and the townhomes, and 11.55 ac of paved streets (see Exhibit 3, EA). Additionally, the proposed project will involve constructing a tunnel under the Union Pacific Railroad in order to create access from Lanatt Street (St), situated on the south side of the site, to the proposed project.

In order to construct the tunnel, the railroad tracks in that area will need to be temporarily re-aligned. A portion of the railroad and embankment will be extended out from the existing tracks on the east side of the proposed project site to facilitate construction of the tunnel. Once the tunnel is constructed, the railroad tracks and embankment will be returned to their previous alignment.

*Proposed Conservation Measures*

In order to minimize adverse effects on the VELB, the following conservation measures will be implemented during construction activities:

1. A worker awareness training program for construction personnel shall be conducted by a qualified biologist prior to the commencement of construction activities. The program shall inform all construction personnel about the life history and status of the VELB, the need to avoid damaging the elderberry plants, and the possible penalties for not complying with these requirements. Written documentation of the training shall be submitted to the Service within 30 days of the completion of training.

2. Signs will be posted along the edge of avoidance areas. These signs shall state: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." Signs shall be clearly readable from a distance of 20 feet and shall be maintained during construction and restoration activities.

3. Highly visible construction fencing shall be placed at the edge of the Project footprint to denote the limit of disturbance and beginning of the avoidance area. Additionally, temporary construction barriers such as plastic "k-rail" shall be placed behind the highly visible construction fencing to prevent vehicular and pedestrian encroachment into the avoidance area.

4. Roadways and areas disturbed by project activities within 100 feet of elderberry shrubs shall be watered at least twice a day to minimize dust emissions.

5. Unavoidable effects to the VELB shall be mitigated in accordance with the *Conservation Guidelines for the Valley Longhorn Beetle, 9 July 1999* (Conservation Guidelines). The mitigation shall include:

    - Shrubs that cannot be preserved in place shall be transplanted to an area that will have minimal human use and where associated native riparian species are located or an alternative Service-approved mitigation site.

    - Elderberry shrubs shall be transplanted when the plant is dormant (November 1 through February 14) to increase the success of the transplanting, if feasible; the timing of the transplantation may be based on when the anticipated Incidental Take Permit is issued. A qualified biologist shall be available to monitor transplanting activity.

    - If transplantation is not feasible during the dormant period (*i.e.,* because of timing constraints), the number of elderberry seedlings and associated native plants shall be increased to an appropriate amount, based on consultation with the Service.

    - Each elderberry stem measuring one inch or greater in diameter at ground level that is adversely affected (*i.e.,* transplanted or destroyed) shall be replaced with elderberry seedlings and seedlings of associated species, in accordance with the Conservation Guidelines. Elderberry seedlings or cuttings shall be replaced at

ratios ranging from 1:1 to 6:1 (new plantings to affected stems), depending on the diameter of the affected elderberry stems and the presence of beetle exit holes.

- Associated native plants shall be planted at 1:1 or 2:1 ratios, depending on the presence of beetle exit holes in the affected elderberry stems. Stock of seedlings and/or cuttings should be obtained from local sources.

6. McKinley Investors is proposing to compensate for the unavoidable effects to the VELB through the Wildlands, Inc. (Wildlands), River Ranch Conservation Bank, or another Service-approved conservation bank. Wildlands has stated that they have capacity at the River Ranch Conservation Bank to accommodate the compensation planting for the proposed project. The parties signing the MOU for the McKinley Village Project understand that on May 21, 2008, a third party removed many of the elderberry shrubs that the project would have affected. The purchase of VELB habitat credits from the Wildlands bank for impacts to the remaining shrubs will satisfy the requirement for establishing elderberry seedlings and associated native plant seedlings. Each credit purchased will provide for the planting of five elderberry seedlings and five associated native plant seedlings. McKinley Investors will purchase a total of 30 credits from Wildlands, Inc., River Ranch Conservation Bank.

**Table 1: Stem Counts for Remaining Elderberry Shrubs as of May 21, 2008; McKinley Village Project, Sacramento County, California**

| Elderberry Shrub # (See EA) | Stem Diameter 1" to 3" | Stem Diameter 3" to 5" | Stem Diameter > 5" | Riparian | Exit Holes |
|---|---|---|---|---|---|
| #2 | 22 | 0 | 0 | No | No |
| #3 | 0 | 4 | 2 | No | Yes |
| #4 | 4 | 2 | 0 | No | Yes |
| #6 | 47 | 5 | 1 | No | No |
| **Totals** | **73** | **11** | **3** | | |

**Table 2: Elderberry Stem Size and Stem Numbers and Compensation; McKinley Village Project, Sacramento County, California**

| Stem Size | # of Stems | Exit Holes | Riparian Habitat | Elderberry Seedling Ratio | # Elderberry Seedlings | Associated Native Ratio | # Associated Natives |
|---|---|---|---|---|---|---|---|
| 1"-3" | 69 | no | no | 1:1 | 69 | 1:1 | 69 |
| 3"-5" | 5 | no | no | 2:1 | 10 | 1:1 | 10 |
| >5" | 1 | no | no | 3:1 | 3 | 1:1 | 3 |
| 1"-3" | 4 | yes | no | 2:1 | 8 | 2:1 | 16 |
| 3"-5" | 6 | yes | no | 4:1 | 24 | 2:1 | 48 |
| 5" + | 2 | yes | no | 6:1 | 12 | 2:1 | 24 |
| **Total** | **87** | | | | **126** | | **170** |

**Action Area**

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed action, the Service considers the action area to be the proposed project location. The proposed project is located in Sacramento County, California, within the City of Sacramento (City), southwest of the American River Parkway (Pkwy) and California Exposition (Cal Expo) and east of downtown. The proposed project is in an open, undeveloped parcel directly south and east of the Capital City Freeway (Business 80) and Sutter's Landing Regional Park; directly north and west on the Union Pacific Railroad tracks and C St, and west of Elvas Avenue (Ave). The proposed project is within the U.S. Geological Survey (USGS) Quadrangle (quad) of Sacramento East (512CB); straddling the border of T9N and T8N, R 5E, with no designated Sections; UTM 634377E, 4271697N.

**Status of the Species**

Valley Elderberry Longhorn Beetle

On August 8, 1980, the valley elderberry longhorn beetle was listed as a threatened species (45 **FR** 52803). Critical habitat for this species was designated and published at 50 CFR §17.95. Two areas along the American River in the Sacramento metropolitan area have been designated as critical habitat for the beetle. These designated areas of critical habitat are the American River Parkway Zone, an area along the lower American River at Goethe and Ancil Hoffman Parks, and the Sacramento Zone, an area located approximately one-half-mile from the American River downstream from the American River Parkway Zone. In addition, an area along Putah Creek, Solano County, and the area east of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to the Recovery Plan for the beetle (Service 1984). These critical and essential habitat areas support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

The beetle is dependent on its host plant, elderberry (*Sambucus* species), which is a locally common component of the remaining riparian forests and savannah areas and, to a lesser extent, the mixed chaparral-foothill woodlands of the Central Valley. Each stage of the beetle's life cycle requires a slightly different part of the elderberry plant as its habitat. The adult beetles feed on the nectarines, flowers, and leaves. Gravid females lay eggs on leaves and in crevices of green stems (Barr 1991). Larvae feed down the pith of a healthy stem into the larger living branches (Halstead and Oldham 2000). Use of the elderberry shrubs by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the shrub's use by the beetle is an exit hole created by the larva just prior to the pupal stage. Emergence holes are usually observed in living stems more than one inch in diameter and less than nine feet from the ground (Talley and Holyoak, in prep.). Observations made of elderberry shrubs along the Cosumnes River, in the Folsom Lake area, and near Blue Ravine in Folsom indicate that the beetle may be present in an elderberry shrubs with no evidence of exit holes; the larvae either succumb prior to constructing an exit hole or are not far enough along in the developmental process to construct an exit hole. Larvae appear to be distributed in stems which are one inch or greater in diameter at

ground level. The *Valley Elderberry Longhorn Beetle Recovery Plan* (Service 1984) and Barr (1991) contain further details on the beetle's life history.

**Environmental Baseline**

Valley Elderberry Longhorn Beetle

*Status with Respect to Recovery* – When the beetle was listed as threatened in 1980, the species was known from less than ten localities along the American River, the Merced River, and Putah Creek. By the time the *Valley Elderberry Longhorn Beetle Recovery Plan* was prepared in 1984, additional species localities had been found along the American River and Putah Creek. As of 2004, the CNDDB included 215 occurrences for this species in 23 counties throughout the Central Valley, from a location along the Sacramento River in Shasta County southward to an area along Caliente Creek in Kern County (CNDDB 2004). The beetle continues to be threatened by habitat loss and fragmentation, invasion by Argentine ants (*Linepithema humile)*, and possibly other factors such as pesticide drift, exotic plant invasions, and grazing.

*Habitat Loss* - Habitat loss has been ranked as the single greatest threat to biodiversity in the United States (Wilcove *et al.* 1998). In the final rule to list the beetle as threatened, habitat destruction was cited as the primary factor contributing to the need to list the species (45 **FR** 52803). At the time the species was listed, its habitat had largely disappeared throughout much of its former range due to agricultural conversion, levee construction, and stream channelization. The recovery plan reiterated that the primary threat to the beetle was loss and alteration of habitat by agricultural conversion, livestock overgrazing, levee construction, stream and river channelization, removal of riparian vegetation, riprapping of shoreline, plus recreational, industrial and urban development (Service 1984).

Some accounts state that the Sacramento Valley, as of 1848, supported approximately 775,000 to 800,000 acres of riparian forest (Smith 1977; Katibah 1984). No comparable estimates are available for the San Joaquin Valley. Based on early soil maps, however, more than 921,000 acres of riparian habitat are believed to have been present throughout the Central Valley under pre-settlement conditions (Katibah 1984). Another source estimates that of approximately five million acres of wetlands in the Central Valley in the 1850s, approximately 1,600,000 acres were riparian wetlands (Warner and Hendrix 1985; Frayer *et al.* 1989).

Extensive destruction of California's Central Valley riparian forests has occurred during the last 150 years due to expansive agricultural and urban development (Katibah 1984; Smith 1977; Thompson 1961; Roberts *et al.* 1977). Since colonization, these forests have been "...modified with a rapidity and completeness matched in few parts of the United States" (Thompson 1961). As of 1849, the rivers and larger streams of the Central Valley were largely undisturbed. They supported continuous bands of riparian woodland four to five miles in width along some major drainages, such as the lower Sacramento River, and generally about two miles wide along the lesser streams (Thompson 1961). Most of the riverine floodplains supported riparian vegetation to about the 100-year flood line (Katibah 1984). A large human population influx occurred after 1849, however, and much of the Central Valley riparian habitat was rapidly converted to agriculture and used as a source of wood for fuel and construction to serve a wide area

(Thompson 1961). By as early as 1868, riparian woodland had been severely affected in the Central Valley, as evidenced by the following excerpt:

> This fine growth of timber which once graced our river [Sacramento], tempered the atmosphere, and gave protection to the adjoining plains from the sweeping winds, has entirely disappeared - the woodchopper's axe has stripped the river farms of nearly all the hard wood timber, and the owners are now obliged to rely upon the growth of willows for firewood. (Cronise 1868 *in* Thompson 1961).

The clearing of riparian forests for fuel and construction made this land available for agriculture (Thompson 1961). Natural levees bordering the rivers, once supporting vast tracts of riparian habitat, became prime agricultural land (Thompson 1961). As agriculture expanded in the Central Valley, needs for increased water supply and flood protection spurred water development and reclamation projects. Artificial levees, river channelization, dam building, water diversion, and heavy groundwater pumping have further reduced riparian habitats to small, isolated fragments (Katibah 1984). In recent decades, these riparian areas have continued to decline as a result of ongoing agricultural conversion as well and urban development and stream channelization. As of 1989, there were over 100 dams within the Central Valley drainage basin, as well as thousands of miles of water delivery canals and stream bank flood control projects for irrigation, municipal and industrial water supplies, hydroelectric power, flood control, navigation, and recreation (Frayer *et al.* 1989). Riparian forests in the Central Valley have dwindled to discontinuous strips of widths currently measurable in yards rather than miles.

Between 1980 and 1995, the human population in the Central Valley grew by 50 percent, while the rest of California grew by 37 percent. The Central Valley's population was 4.7 million in 1999, and it is expected to more than double by 2040. The American Farmland Trust estimates that by 2040 more than one million cultivated acres will be lost and 2.5 million more put at risk (Ritter 2000). With this growing population in the Central Valley, increased development pressure is likely to result in continuing loss of riparian habitat.

Based on a CDFG riparian vegetation distribution map, only about 102,000 acres out of an estimated 922,000 acres of Central Valley riparian forest remain (Katibah 1984). This represents a decline in acreage of approximately 89 percent as of 1979 (Katibah 1984). More extreme figures were given by Frayer *et al.* (1989), who reported that approximately 85 percent of all wetland acreage in the Central Valley was lost before 1939; and that from 1939 to the mid-1980s, the acreage of wetlands dominated by forests and other woody vegetation declined from 65,400 acres to 34,600 acres. Differences in methodology may explain the differences between the studies. In any case, the historical loss of riparian habitat in the Central Valley strongly suggests that the range of the beetle has been reduced and its distribution greatly fragmented. Loss of non-riparian habitat where elderberry occurs (*e.g.* savanna and grassland adjacent to riparian areas, oak woodland, mixed chaparral-woodland), and where the beetle has been recorded (Barr 1991), suggests further reduction of the beetle's range and increased fragmentation of its upland habitat.

A number of studies have focused on riparian habitat loss along the Sacramento River, which supports some of the densest known populations of the beetle. Approximately 98 percent of the middle Sacramento River's historic riparian vegetation was believed to have been extirpated by 1977 (DWR 1979). The State Department of Water Resources estimated that native riparian habitat along the Sacramento River from Redding to Colusa decreased 34 percent from 27,720 acres to 18,360 acres between 1952 and 1972 (McGill 1975; Conrad *et al.* 1977). The average rate of riparian loss on the middle Sacramento River was 430 acres per year from 1952 to 1972, and 410 acres per year from 1972 to 1977. In 1987, riparian areas as large as 180 acres were observed converted to orchards along this river (McCarten and Patterson 1987). There is no comparable information on the historic loss of non-riparian beetle habitat, such as elderberry savanna and other vegetation communities where elderberry occurs, including oak or mix-chaparral woodland, or grasslands adjacent to riparian habitat. All natural habitats throughout the Central Valley, however, have been heavily impacted within the last 200 years (Thompson 1961), and it can, therefore, be assumed that non-riparian beetle habitat also has suffered a widespread decline.

*Habitat Fragmentation* - But while habitat loss is clearly a large factor leading to the species' decline, other factors are likely to pose significant threats to the long-term survival of the beetle. Approximately, nine percent of 79 Central Valley sites that had supported beetle habitat in 1991, no longer supported beetle habitat in 1997, a decrease over a six year period in the number of sites with beetle habitat. Only approximately 20 percent of riparian sites with elderberry observed by Barr (1991) and Collinge *et al.* (2001) were found to support beetle populations. Jones and Stokes (1988) found that only 65 percent of 4,800 riparian acres on the Sacramento River has evidence of beetle presence. The fact that a large percentage of apparently suitable habitat is unoccupied suggests that the beetle is limited by factors other than habitat availability, such as habitat quality or limited dispersal ability. The beetle's current distribution is patchy throughout the remaining habitat of the Central Valley from Redding to Bakersfield.

Destruction of riparian habitat in central California has resulted not only in a loss of acreage, but also in habitat fragmentation. Habitat fragmentation can be an important factor contributing to species declines because (1) it divides a large population into two or more small populations that become more vulnerable to direct loss, inbreeding depression, genetic drift, and other problems associated with small populations, (2) it limits a species' potential for dispersal and colonization, and (3) it makes habitat more vulnerable to outside influences by increasing the edge-to-interior ratio (Primack 1998).

Barr (1991) found that small isolated habitat remnants were less likely to be occupied by beetles than larger patches, indicating that beetle subpopulations are extirpated from small habitat fragments. Barr (1991) and Collinge *et al.* (2001) consistently found beetle exit holes occurring in clumps of elderberry bushes rather than isolated bushes, suggesting that isolated shrubs do not typically provide long-term viable habitat for this species. The beetle appears to be only locally common, *i.e.*, found in population clusters which are not evenly distributed across available elderberry shrubs. Plants used by the beetle usually show evidence of repeated use over a period of several years, but sometimes only one or two exit holes are present. Similar observations on the clustered distributions of exit holes were made by Jones and Stokes (1988). Barr (1991)

noted that elderberry shrubs and trees with many exit holes were most often large, mature plants; young stands were seldom occupied.

The beetle, a specialist on elderberry plants, tends to have small population sizes and to occur in low densities (Barr 1991; Collinge *et al.* 2001; Service 1984). Studies suggest that the beetle is unable to re-colonize drainages where the species has been extirpated because of its limited dispersal ability (Huxel 2000; Barr 1991; Collinge *et al.* 2001). Low density and limited dispersal capability cause the beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation. With extensive riparian habitat loss and fragmentation, these naturally-small beetle populations are broken into even smaller and more isolated populations. Once a small beetle population has been extirpated from an isolated habitat patch, the species may be unable to re-colonize this patch if it is unable to disperse from nearby occupied habitat. Insects with limited dispersal and colonization abilities may persist better in large habitat patches than small patches because small fragments may be insufficient to maintain viable populations and the insects may be unable to disperse to more suitable habitat (Collinge 1996). Recent research indicates that isolated habitats unoccupied by the beetle remain so (Barr 1991; Collinge *et al.* 2001).

Species that characteristically have small population sizes, such as habitat specialists, are more likely to become extinct than species that typically have large populations (Primack 1998), and populations of species that naturally occur at lower density become extinct more rapidly than do those of more abundant species (Bolger *et al.* 1991). Small, isolated subpopulations are susceptible to extirpation from random demographic, environmental, and/or genetic events (Shaffer 1981; Lande 1988; Primack 1998). While a large area may support a single large population, the smaller subpopulations that result from habitat fragmentation may not be large enough to persist over a long time period. As a population becomes smaller, it tends to lose genetic variability through genetic drift, leading to inbreeding depression and a lack of adaptive flexibility. Smaller populations also become more vulnerable to random fluctuations in reproductive and mortality rates, and are more likely to be extirpated by random environmental factors.

Habitat fragmentation not only isolates small populations, but also increases the interface between habitat and urban or agricultural land, increasing negative edge effects such as the invasion of non-native species (*e.g.* the Argentine ant; *see* Huxel 2000), pesticide contamination (Barr 1991), and livestock grazing (Service 1984). These threats are described in further detail below.

*Invasive Species* - Recent evidence indicates that the invasive Argentine ant poses a risk to the long-term survival of the beetle. Surveys along Putah Creek found beetle presence where Argentine ants were not present or had only recently colonized, and beetle absence from otherwise suitable sites where Argentine ants had become established (Huxel 2000). The Argentine ant has negatively affected populations of other native arthropod species (Holway 1995; Ward 1987). Predation on eggs, larvae, and pupae are the most likely impacts these ants have on the beetle. In Portugal, Argentine ants have been found to be significant egg predators on the eucalyptus borer (*Phorocantha semipunctata*), another cerambycid like the beetle. Egg

predation on the beetle could lead to local extirpations, as indicated by a population viability study that suggested that egg and juvenile mortality are significant factors affecting the probability of extinction for the beetle (Huxel and Collinge, in prep.). The Argentine ant has been expanding its range throughout California since its introduction in 1907, especially in riparian woodlands associated with perennial streams (Holway 1995; Ward 1987). Huxel (2000) states that, given the potential for Argentine ants to spread with the aid of human activities such as movement of plant nursery stock and agricultural products, this species may come to infest most drainages in the Central Valley along the valley floor where the beetle is found.

Competition from invasive exotic plants, such as giant reed (*Arundo donax*), negatively affects riparian habitat supporting the beetle. Giant reed, a native of Asia, has become a serious problem in California riparian habitats, forming dense, homogenous stands essentially devoid of wildlife (Rieger and Kreager 1989). This species grows up to 2.5 inches per day and yields 8.3 tons of oven-dry cane per acre (Rieger and Kreager 1989, Perdue 1958). It can tolerate drought, floods, and extreme temperatures, and is not significantly affected by insects, disease, herbivory, fire, or mechanical disturbance. It has an extensive root system allowing it to resprout rapidly after any disturbance and out-compete native riparian vegetation. Giant reed also introduces a more frequent fire cycle into the riparian ecosystem, disrupting natural riparian dynamics and eventually forming homogenous climax communities. The extent to which giant reed has affected elderberry shrubs and the beetle specifically, however, has not been studied.

*Pesticide Contamination* - Direct spraying and drift of pesticide, including herbicides and/or insecticides, in or near riparian areas (which is done to control mosquitoes, crop diseases, invasive and/or undesirable plants, or other pests) is likely to adversely affect the beetle and its habitat. Although there have been no studies specifically focusing on the effects of pesticides on the beetle, evidence suggests that the species is likely to be affected by pesticides. As of 1980, the prevalent land use adjacent to riparian habitat in the Sacramento Valley was agriculture, even in regions where agriculture was not generally the most common land use (Katibah 1984); therefore, the species is likely vulnerable to pesticide contamination from adjacent agricultural practices. Recent studies of major rivers and streams documented that 96 percent of all fish, 100 percent of all surface water samples, and 33 percent of major aquifers contained one or more pesticides at detectable levels (Gilliom 1999). Pesticides were identified as one of the 15 leading causes of impairment for streams included in the section 303(d) lists of impaired waters of the Federal Water Pollution Control Act, as amended (Clean Water Act). As the beetle occurs primarily in riparian habitat, the contamination of rivers and streams affects this species and its habitat. Pesticides have been identified as one of a number of potential causes of the decline of both pollinator species declines and other insects beneficial to agriculture (Ingraham *et al.* 1996); therefore, it is likely that the beetle, typically occurring adjacent to agricultural lands, has suffered a similar decline due to pesticides.

*Livestock Grazing* - Livestock grazing damages or destroys elderberry plants and inhibits regeneration of seedlings. Cattle readily forage on new elderberry growth, which may explain the absence of beetles at manicured elderberry stands (Service 1984). Habitat fragmentation exacerbates problems related to exotic species invasion and livestock overgrazing by increasing the edge to interior ratio of habitat patches, facilitating penetration of these influences.

To summarize, the Service believes that the beetle, though wide-ranging, is in long-term decline due to widespread alteration and fragmentation of its riparian habitats, and to a lesser extent, its upland habitats, by human activities. Long-term protection of habitat for the beetle would be provided by the creation and protection of conservation areas and the implementation of various protective measures.

*Distribution of Habitat within the Action Area* – Within the action area there are 29 clumps of elderberry (*Sambucus* ssp) plants along the southern perimeter adjacent to the Union Pacific Railroad, each consisting of a number of various sized emergent stems. Of these 29 clumps, 9 exhibit telltale exit hole indicating past occupancy by VELB. The Service considers any elderberry plant, within the VELB's range, with 1 or more stems greater than 1 inch in diameter as potential VELB habitat. Those elderberry plants that are within riparian habitat are considered greater potential value for VELB occupancy, and those with exit holes are considered occupied habitat. None of the elderberry plants within the action area are riparian habitat.

**Effects of the Proposed Action**

The proposed action is likely to adversely affect the beetle by removing 4 elderberry shrubs located within 20 feet of the proposed project's footprint. All of the shrubs (EDAW 2008; see Effect Analysis for Project Exhibit 5) are located in non-riparian, grassland habitat, and have stems greater than one inch in diameter at ground level, for a total of 87 stems. Shrubs #3 and #4 contain beetle exit holes, shrubs #2 and #6 do not (EDAW 2008; see Effect Analysis for Project Exhibit 5). On May 21, 2008, a third party removed many of the elderberry plants that were to be affected by the McKinley Village Project. For that reason, none of those shrubs that were removed are considered in this biological opinion. McKinley Investors has agreed to compensate for the impacts that their project will have on the remaining plants unaffected by the third party's actions. McKinley Investors will compensate for their impacts following approval of the project by the City of Sacramento and prior to any construction activities related to the project.

**Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Continued human population growth in the Central Valley, in general, and the Sacramento area, in particular, is expected to drive further development of agriculture, cities, industry, transportation, and water resources in the foreseeable future. Some of these future activities will not be subject to Federal jurisdiction, and thus are considered to enter into cumulative effects. These future activities are likely to result in loss of riparian and other habitats where elderberry shrubs and the beetle occur.

Many of the activities affecting the beetle may affect elderberry shrubs located within riparian ecosystems adjoining or within jurisdictional wetlands. These projects will be evaluated via

formal consultation between the Service and the Corps via the Federal nexus provided by section 404 of the Clean Water Act. There are, however, a number of projects for which there is no need to discharge dredged or fill materials into waters of the U.S. These projects, for which no section 404 permit is required, may lack a Federal nexus and, thus, move forward with no formal consultation. These projects pose a significant threat to the recovery of the beetle, particularly when they result in the removal of elderberry savanna ecosystems. These foothill/upland landscapes often consist of mixed stands of elderberry shrubs and oak (*Quercus* spp.) trees which are interspersed with open grasslands in a savanna-like arrangement.

Elderberry shrubs in these savanna systems often achieve great size, perhaps due to the lack of light competition from broadleaf trees and/or entanglement with California grape (*Vitus californicus*) and/or Himalayan blackberry (*Rubus discolor* syn. *procerus*) vines, as often occurs in riparian communities. Elderberry savanna communities are important in that they represent a large portion of the diverse habitat in which elderberry shrubs occur and because urban sprawl threatens a significant acreage of these systems. This loss of habitat negatively affects the environmental baseline and is difficult to quantify.

**Conclusion**

Analytical Framework for the Jeopardy/No Jeopardy Determination

The following analysis relies on four components to support the jeopardy/no jeopardy determination for the species that may be affected by the proposed project: 1) the *Status of the Species*, which evaluates the species' range-wide condition, the factors responsible for that condition, and its survival and recovery needs; 2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the role of the action area in the species' survival and recovery; 3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and 4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.
In accordance with the implementing regulations for section 7 and Service policy, the jeopardy/no jeopardy determination is made in the following manner: the effects of the proposed Federal action are evaluated with the aggregate effects of everything that has led to the species' current status and, for non-Federal activities in the action area, those actions likely to affect the species in the future, to determine if, given the aggregate of all of these effects, implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

The following analysis places an emphasis on using the range-wide survival and recovery needs of the species and the role of the action area in meeting those needs as the context for evaluating the effects of the proposed Federal action combined with other relevant effects. In short, a non-jeopardy determination is warranted if the proposed action is consistent with maintaining the role of habitat and the species population in the action area for the survival and recovery of the species.

After reviewing the current status of the valley elderberry longhorn beetle, the environmental baselines for the action area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the proposed McKinley Village Project, as proposed, is not likely to jeopardize the continued existence of this species. The proposed project is not likely to destroy or adversely modify designated critical habitat for the VELB because no critical habitat for this species has been designated or proposed within the action area of the proposed project

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The Service extends incidental take authorization to McKinley Investors in order to construct and complete the proposed project known as McKinley Village. The measures described below are non-discretionary, and must be implemented by McKinley Investors so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. McKinley Investors has a continuing duty to regulate the activity covered by this incidental take statement for the Service. If McKinley Investors (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### Amount or Extent of Take

The Service anticipates incidental take of the beetle will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of an injured or dead specimen unlikely. The species occurs in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of valley elderberry longhorn beetles that will be taken as a result of the proposed project, the Service is quantifying take incidental to the project as all valley elderberry longhorn beetles inhabiting or otherwise utilizing the elderberry shrubs/savannas containing stems 1.0 inch or greater in diameter at ground level located within

20 feet of the construction zone of the proposed project site. Therefore, the proposed project may incidentally take all beetles inhabiting 4 elderberry clusters, totaling 73 stems measuring between one and three inches in diameter, 11 stems measuring between three and five inches in diameter, and 3 stems measuring greater than five inches in diameter on the proposed project site. Therefore, the Service estimates that all beetles and larvae inhabiting the 87 elderberry stems which are greater than 1.0 inch in diameter at ground level will become harassed, harmed, injured, or killed as a result of the proposed project.

**Effect of the Take**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the VELB. The proposed project is not likely to destroy or adversely modify designated critical habitat for the VELB because no critical habitat for this species has been designated or proposed within the action area of the proposed project.

**Reasonable and Prudent Measures**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the effects of take on the listed species that may be affected by the proposed project:

1. Take in the form of harassment and/or harm of the VELB during construction activities and associated with implementing the project shall be minimized.

2. The permanent and temporary loss and degradation of habitat of the VELB shall be confined to the proposed project site, and minimized and restored to the greatest extent practicable.

**Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Service must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following terms and conditions implement reasonable and prudent measure number one (1):

    a. McKinley Investors shall minimize the potential for harm, harassment, and direct mortality of the VELB resulting from project-related activities by implementation of the project, including the conservation measures as described on pages 9-13 of the *Effects Analysis* (EDAW 2008), and appearing in the project description (pages 2-4) of this biological opinion.

b. At least 30 days prior to initiating construction activities, McKinley Investors shall submit the names and résumé(s) of the biological monitor(s) for the proposed project.

c. A Worker Environmental Awareness Training Program for construction personnel shall be conducted by the Service-approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. The program shall provide workers with information on their responsibilities with regard to the VELB, an overview of the life-history of this species, information on take prohibitions; protections afforded this animal under the Act, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within 30 days of the completion of training. As needed, training shall be conducted in Spanish for Spanish language speakers.

d. Project construction within 100 feet of elderberry shrubs shall be prohibited during the beetle emergence and mating period (*e.g.*, March 15 through June 15) to eliminate any indirect effects of construction on the beetle or its eggs. Note the Service's incorporation of a Term and Condition limiting the time during which the shrub may be transplanted.

e. A Service-approved biologist shall inspect construction-related activities at the proposed project site to ensure that no unauthorized take of federally-listed species or destruction of their habitat occurs. The biologist shall be available for monitoring throughout all phases of construction that may result in adverse affects to the valley elderberry longhorn beetle. Furthermore, the biologist shall have the authority through communication with the resident engineer to stop construction activities in the immediate area if a VELB is encountered during construction until appropriate corrective measures have been completed or until the VELB is determined to be unharmed. VELB encountered during construction activities shall be allowed to move away from the area on their own volition. The biologist shall notify the Service immediately if any listed species are found on-site, and will submit a report, including date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The biologist shall be require to report any take of listed species to the Service immediately by telephone at 916/ 414-6600 and by electronic mail or written letter addressed to the Chief, Endangered Species Program, within three (3) working days of the incident.

f. Measures consistent with the current Construction Site Best Management Practices (BMPs), will be implemented to minimize effects to the VELB during construction. Best management practices will be implemented to prevent sedimentation from entering Environmentally Sensitive Areas (ESA) and to reduce erosion, dust, noise, and other deleterious aspects of construction related activities. These BMPs may include, but are not limited to, silt fencing, temporary berms, restrictions on cleaning equipment in or near ESAs, installation

of vegetative strips, and temporary sediment disposal. Runoff from dust control and hazardous materials will be retained on the construction site and prevented from flowing into the ESAs.

g. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance. Project-related vehicles shall observe a 20-mile-per-hour speed limit within construction areas, except on County roads and on State and Federal highways. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period.

h. During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the ESAs. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur.

i. To eliminate an attraction to predators, all food-related trash items, such as wrappers, cans, bottles, and food scraps, must be disposed of in closed containers and removed at the end of each work day from the entire project site.

j. No application of herbicides, insecticides, and/or other chemical agents shall occur within 100-feet of the elderberry plants or where they might drift or wash into the area of the elderberry plants.

k. The project proponent shall require documentation from the contractor that aggregate, fill, or borrow material provided for the proposed project was obtained in compliance with the Act. Evidence of compliance with the Act shall be demonstrated by providing the resident engineer with one of the following: 1) a letter from the Service stating that the use of the borrow pit will not result in the incidental take of species; 2) an incidental take permit for contractor-related activities issued by the Service pursuant to section 10(a)(1)(B) of the Act; 3) a biological opinion or letter concurring with a "not likely to adversely affect" determination issued by the Service to the Federal agency having jurisdiction over contractor-related services' 4) a letter from the Service concurring with the "no effect" determination for contractor-related activities; or 5) contractor submittal of information to the project manager indicating compliance with the State Mining and Reclamation Act (SMARA) and provision of County land use permits and California Environmental Quality Act (CEQA) clearance.

2. The following terms and conditions implement reasonable and prudent measure number two (2):

   a. The project proponents shall minimize the potential for loss, modification, or degradation of habitat of the VELB resulting from project-related activities by implementation of the conservation measures as described on pages 9-13 of the *Effects Analysis* (EDAW 2008), and appearing in the project description (pages 2-4) of this biological opinion.

   b. McKinley Investors shall ensure that the temporary loss of valley elderberry longhorn beetle habitat is confined to the proposed project site.

   c. Prior to the commencement of construction activities, high visibility fencing will be erected around the habitats of these federally-listed species to identify and protect these designated Environmentally Sensitive Areas (ESAs) from encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing shall be inspected before the start of each work day and maintained by the project proponents until completion of the project. The fencing may be removed only when the construction of the project is completed.

      - Fencing will be established at a minimum setback of 20 feet from the dripline of each elderberry shrub that is between 20 and 100 feet of the proposed project construction activity. These shrubs will not be removed or transplanted. There will be no physical alterations of any type within the area enclosed by the fencing.

   d. Signs will be posted every 50 feet along the edge of the ESAs, with the following information: "This area is habitat of federally-threatened and/or endangered species, and must not be disturbed. These species are protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

   e. A post-construction walkthrough will be conducted to assess whether any damage occurred to vegetation within the buffer areas. Damage may include accidental cutting of vegetation or visible physical damage to roots, stems, and leaves. If damage is observed, vegetation within the buffer areas will be restored with appropriate native plant species. Erosion control measures and exotic weed abatement measures shall be implemented. If unanticipated damage is done to elderberry shrubs, the Service will be notified and appropriate compensation will be implemented.

f. After construction activities are complete, any temporary fill or construction debris shall be removed and disturbed areas restored to their pre-project conditions. An area subject to "temporary" disturbance includes any area that is disturbed during the project, but that, after project completion, will not be subject to further disturbance and has the potential to be re-vegetated.

g. McKinley Investors shall ensure compliance with the reporting requirements.

h. As described on pages 8-13 of the *Effects Analysis* (EDAW 2008), and appearing in the project description (pages 2-4) of this biological opinion, prior to the commencement of construction activities the project proponent shall compensate for the temporary and permanent loss habitat of the VELB as follows:

- Prior to ground breaking activities at the project site, the project proponents will purchase the equivalent of 30 beetle habitat credits at a Service-approved conservation bank. At least 126 rooted elderberry seedlings and 170 associated native plant species will be planted. A minimum area required to ensure that no more than five elderberry seedlings/transplants and five associated native plants are planted per 1,800 square feet.

- The conservation area shall be managed and monitored in perpetuity as outlined in the Conservation Guidelines (Service 1999a). This includes the management and monitoring of the conservation area for either ten (10) consecutive years or seven (7) years over a 15-year period, with monitoring reports submitted for each monitoring year. The project proponent must identify an adequate funding source (*i.e.*, endowment) to ensure the protection and management of the conservation area in perpetuity. Additionally, a management plan must be prepared which describes the long-term protection of this conservation area in order to protect the area in perpetuity as habitat for the valley elderberry longhorn beetle.

**Reporting Requirements**

The Sacramento Fish and Wildlife Office is to be notified within one (1) working day of the finding of any dead or injured listed wildlife species or any unanticipated take of the species addressed in this biological opinion. Any other federally-listed or candidate species found on or adjacent to the project area must be reported within three working days of its finding. The Service contact person for this is the Chief, Endangered Species Division at (916) 414-6620. Any dead or severely injured valley elderberry longhorn beetles found (adult, pupae, or larvae) shall be deposited in the Entomology Department of the California Academy of Sciences. The Academy's contact is the Senior Curator of Coleoptera at (415) 750-7239. All observations of valley elderberry longhorn beetle—live, injured, or dead—or fresh beetle exit holes shall be

recorded on California Natural Diversity Data Base (CNDDB) field sheets and sent to California Department of Fish and Game, Wildlife Habitat Data Analysis Branch, 1416 Ninth Street, Sacramento, California 95814. The project proponents shall submit a post-construction compliance report prepared by the monitoring biologists to the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of construction activity. This report shall detail the following: (1) dates that construction occurred; (2) pertinent information concerning the success of the project in meeting conservation measures; (3) an explanation of failure to meet such measures, if any and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on the beetle, if any; (5) occurrence of incidental take of the beetle, if any; and (6) other pertinent information.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

## REINITIATION STATEMENT

This concludes formal consultation on the proposed South Sacramento Corridor Phase 2 Project in Sacramento County, California. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion on the proposed McKinley Village Project, please contact Richard Montgomery or the Chief, Sacramento Valley Branch, at the letterhead address or at telephone 916/414-6630.

cc:
Eric Htain, EDAW Inc., Sacramento, CA
Tina Thomas, RTMM Law, Sacramento, CA

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