

Draft

# Davis Innovation Center Biological Technical Report

Prepared for:

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**AECOM**

October 2014



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# 1 INTRODUCTION

The Davis Innovation Center (Project) is a proposed business development intended to serve an array of research and technology companies in Davis, California.

The Project site is located in unincorporated Yolo County within the sphere of influence of the City of Davis. The approximately 208-acre Project site is bounded to the east by County Road 99D (also known as John Jones Road), a frontage road that parallels State Route (SR) 113. Portions of the southeast border of the Project site share a boundary with Sutter Davis Hospital and the municipal site of the Northwest Davis water tank. Agricultural land adjoins the Project site to the west and the Binning Farms rural residential community adjoins the Project site to the northeast (Figure 1). Covell Boulevard forms the southern boundary of the Project site.

This biological technical report is intended to provide an overview of the potential biological constraints at the Project site, including special-status plant and wildlife species that may occur on the site and potential jurisdictional water features subject to Clean Water Act (CWA) Section 404 or Section 401 requirements. This report also includes a discussion of potential impacts of site development on sensitive biological resources and a description of suggested mitigation measures.

## 1.1 REGULATORY FRAMEWORK

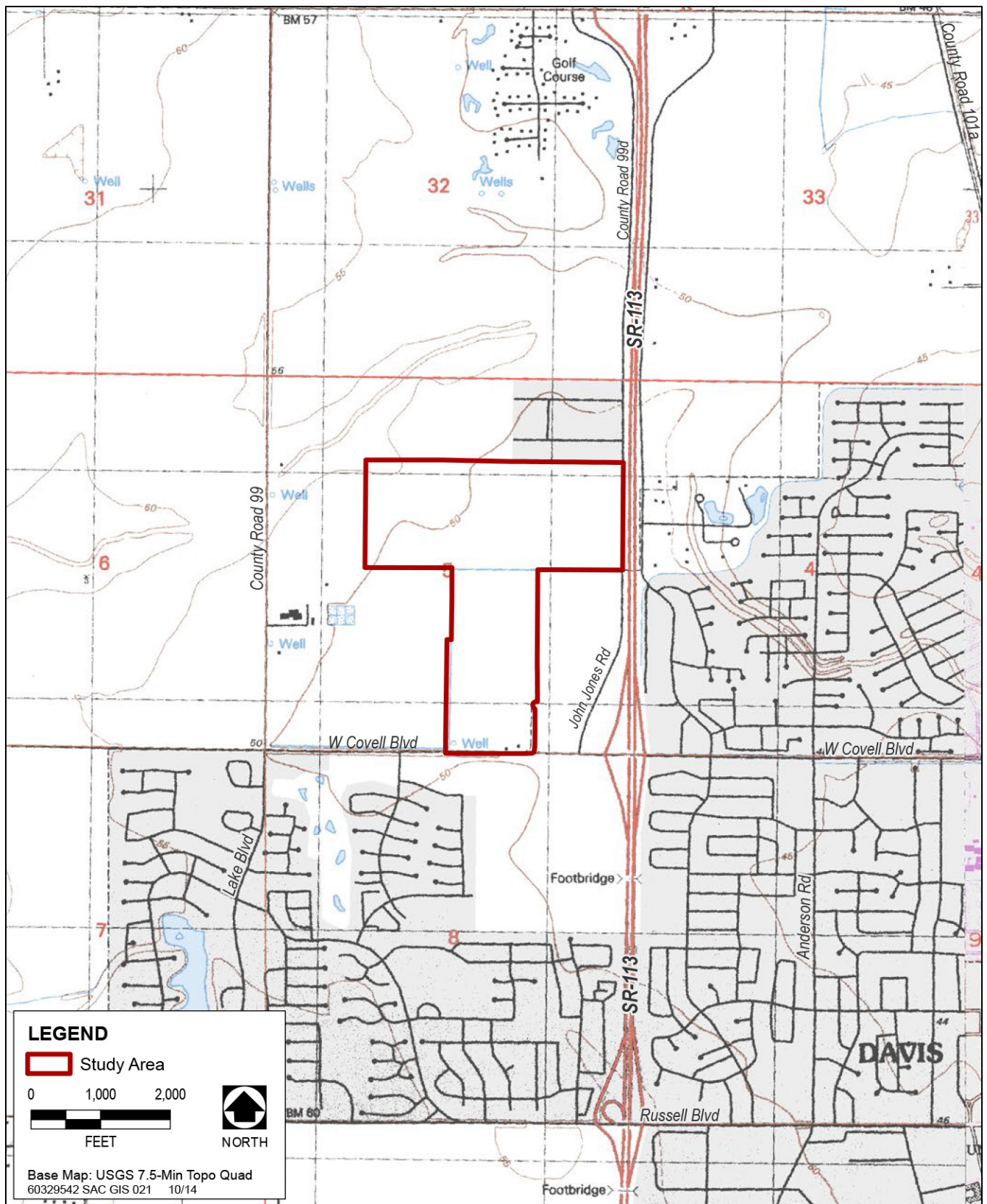
Several regulatory agencies are responsible for oversight of the natural resources of the state and nation. Among these agencies are the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and National Marine Fisheries Service (NMFS). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat types. An overview of the federal, state, and local regulations that may apply to Project development is provided below.

### 1.1.1 FEDERAL

#### FEDERAL ENDANGERED SPECIES ACT

The Federal Endangered Species Act (FESA), enacted in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed, it is fully protected from “take” unless USFWS issues a take permit. Take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting of wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 U.S. Code [USC] 1532, 50 Code of Federal Regulations [CFR] 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the *Federal Register*.



Source: Data compiled by AECOM in 2014

**Figure 1. Location of the Proposed Davis Innovation Center, Yolo County, California**

## **MIGRATORY BIRD TREATY ACT**

The Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain (acting on behalf of Canada), Mexico, Japan, and the former Soviet Union (now Russia as the successor state) and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs. Most actions that result in a taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA.

## **CLEAN WATER ACT—SECTION 404**

CWA Section 404 regulates all discharges of dredged or fill material into waters of the United States. Discharges of fill material include the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines (33 CFR 328.2[f]).

Waters of the United States include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b]). Waters of the United States exhibit a defined bed and bank and ordinary high-water mark. The ordinary high-water mark is defined by USACE as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 CFR 328.3[e]).

USACE is the agency responsible for administering the permit process for activities that affect waters of the United States. Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

## **CLEAN WATER ACT—SECTION 401**

Section 401 of the CWA (33 USC 1341) requires an applicant for a Section 404 permit to first obtain a water quality certification from the regional water quality control board. To obtain the water quality certification, the regional water quality control board must indicate that the proposed fill would be consistent with the standards set forth by the state.

## **1.1.2 STATE**

### **FISH AND GAME CODE SECTIONS 2050–2097—CALIFORNIA ENDANGERED SPECIES ACT**

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the state. CESA established that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon passage of the original Native Plant Protection Act (NPPA) and enhanced legal protection for plants. To be consistent with federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted the designation of animals as "rare" to a designation as "threatened," but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under state law, plant and animal species may be formally designated by official listing by the California Fish and Wildlife Commission.

### **FISH AND GAME CODE SECTIONS 1900–1913—CALIFORNIA NATIVE PLANT PROTECTION ACT**

In 1977 the California Legislature passed the NPPA in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Wildlife Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires that CDFW be notified 10 days in advance of approving a building site.

### **FISH AND GAME CODE SECTIONS 3503, 3503.5, AND 3800—PREDATORY BIRDS**

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

### **FISH AND GAME CODE SECTIONS 1601–1603—STREAMBED ALTERATION**

Under the California Fish and Game Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "streambed alteration agreement" from CDFW before any alteration of a lake bed, stream channel, or their banks. Through this agreement, CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.



## **PUBLIC RESOURCES CODE SECTION 21000—CALIFORNIA ENVIRONMENTAL QUALITY ACT**

The California Environmental Quality Act (CEQA) identifies that a species that is not listed under FESA or CESA may be considered rare or endangered if the species meets certain criteria. Under CEQA, public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA but are otherwise eligible for listing (i.e., candidate or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of “species of special concern,” developed by CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers or limited distribution, or that are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

## **CALIFORNIA WETLANDS CONSERVATION POLICY**

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will meet the following goals:

- ▶ Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- ▶ Reduce procedural complexity in the administration of state and federal wetland conservation programs.
- ▶ Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs The Resources Agency to establish an interagency task force to direct and coordinate administration and implementation of the policy.

## **PORTER-COLOGNE WATER QUALITY CONTROL ACT**

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to regulate state water quality and protect beneficial uses.

### **1.1.3 LOCAL**

#### **YOLO COUNTY NCCP/HCP JOINT POWERS AGENCY**

The Yolo County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Joint Powers Agency (JPA) was formed in August 2002 to acquire Swainson's hawk habitat conservation easements and serve as the lead agency for the preparation of a countywide NCCP/HCP, now known as the Yolo Natural Heritage Program. The JPA's governing board is composed of representatives from member agencies, who include two members of the Yolo County Board of Supervisors; one member each from the city councils of Davis, Woodland, West Sacramento, and Winters; and one ex-officio member from the University of California, Davis. The JPA is currently responsible for managing two programs: the Yolo Natural Heritage Program and the Swainson's Hawk Interim Mitigation Fee Program.

#### **YOLO NATURAL HERITAGE PROGRAM**

The Yolo Natural Heritage Program is a countywide NCCP/HCP for the 653,820-acre planning area. The Yolo Natural Heritage Program is being developed to conserve the natural open space and agricultural landscapes that provide habitat for many special-status and at-risk species found within the habitats and natural communities in Yolo County. The Yolo Natural Heritage Program will establish measures that will be undertaken to conserve important biological resources, obtain permits for urban growth and public infrastructure projects, and continue Yolo County's rich agricultural heritage.

The JPA established a Steering Advisory Committee and a Technical Advisory Committee, prepared a draft Ecological Baseline Report, developed a geographic information systems (GIS) database, completed the Independent Science Advisors process, prepared a draft HCP/NCCP, and has begun the CEQA/National Environmental Policy Act process.

#### **SWAINSON'S HAWK INTERIM MITIGATION FEE PROGRAM**

This program, established in 1993, utilizes mitigation fees to acquire conservation easements to protect Swainson's hawk habitat. Changes to the program in 2006 require project applicants with projects exceeding 40 acres in size to mitigate directly by providing land for conservation. The program is administered by the Yolo County NCCP/HCP JPA.

#### **CITY OF DAVIS GENERAL PLAN**

##### **CHAPTER 14. HABITAT, WILDLIFE, AND NATURAL AREAS**

**GOAL HAB 1.** Identify, protect, restore, enhance and create natural habitats. Protect and improve biodiversity consistent with the natural biodiversity of the region.

- ▶ **Policy HAB 1.1** Protect existing natural habitat areas, including designated Natural Habitat Areas.
- ▶ **Policy HAB 1.2** Enhance and restore natural areas and create new wildlife habitat areas.

- ▶ **Policy HAB 1.3** Commit adequate City resources and staff time so as to protect habitat and other natural resources.

**GOAL HAB 2.** Increase public awareness of habitat, wildlife and sensitive species.

- ▶ **Policy HAB 2.1** Develop environmental educational programs and public access areas and programs to allow viewing of wildlife and habitat through controlled interactions of people with natural areas.

## **CITY OF DAVIS TREE ORDINANCE**

The City of Davis acknowledges the importance of trees to the community's health, safety, welfare, and tranquility. Trees increase property values, provide visual continuity, provide shade and cooling, decrease wind velocities, control erosion, conserve energy, reduce stormwater runoff, filter airborne pollutants, reduce noise, provide privacy, provide habitat and food value, and release oxygen. On December 4, 2002, the City Council adopted the Tree Ordinance, Chapter 37 of the Municipal Code, to ensure that the community forest would be prudently protected and managed so as to ensure these multiple civic benefits. The Tree Ordinance protects the following trees:

- ▶ **Landmark Trees:** Any tree which has been determined by resolution of the City Council to be of high value because of its species, size, age, form, historical significance, or some other professional criterion. The Landmark Tree List, available from the Public Works Department, lists and identifies these trees.
- ▶ **Trees of Significance:** Any tree which measures 5 inches or more in Diameter at Breast Height (4–6 feet above ground height).
- ▶ **Street Trees:** Any tree planted and/or maintained by the City, or recorded as a street tree, adjacent to a street or within a city easement or right-of-way, on private property, within the street tree easement. The Public Works Department maintains a master list of street trees.
- ▶ **City Trees:** Any tree, other than a street tree, planted or maintained by the City within a City easement, right-of-way, park, greenbelt, public place or property owned or leased by the City.
- ▶ **Private Tree:** Any tree privately owned and growing on private property, which may include a tree designated as a landmark tree and/or tree of significance, as defined within the definitions section of the Tree Ordinance, Chapter 37.

## **2 METHODS**

### **2.1 DATABASE REVIEW**

The California Natural Diversity Database (CNDDDB) was reviewed for special-status species within a 3-mile radius around the Project boundaries. A nine-quadrangle search of CNPS's rare plant inventory was conducted for all rare and special-status plants within nine quadrangles from the Project site. The results of the database reviews and survey results are summarized in Tables 1 and 2, which describe the potential for occurrence of special-

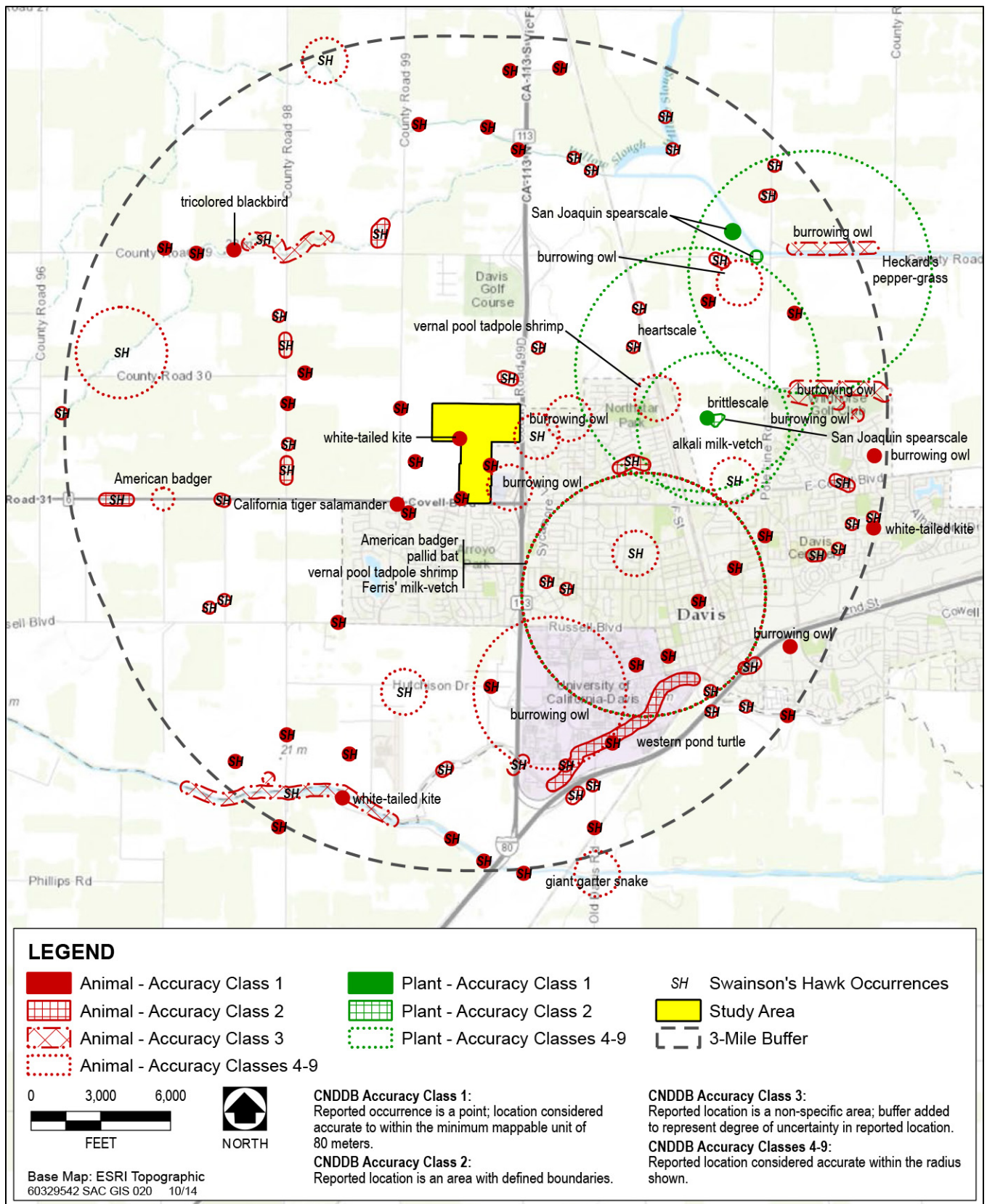
status plants and wildlife in the Project vicinity. Special-status species with the potential to occur at the Project site are discussed further in the “Results” section.

## **2.2 FIELD SURVEY METHODS**

Two AECOM biologists—Pamela Brillante and Joseph Huang—visited the Project site on September 15, 2014. The biologists conducted the reconnaissance field survey on foot with binoculars, a field map and a Trimble GPS to assess the existing biological conditions of the site and to map the locations of trees, water features and habitat types. The biologists surveyed the area for habitat of that could potentially support special-status species, identified potential jurisdictional water features, mapped habitat types, and recorded tree species at the site. Any wildlife species observed at the site were also recorded. Binoculars were used to survey for old nests in trees, as the survey was conducted outside the nesting season. Floristic surveys and protocol-level wildlife surveys were not conducted during the field visit.

## **2.3 DESKTOP GIS MAPPING**

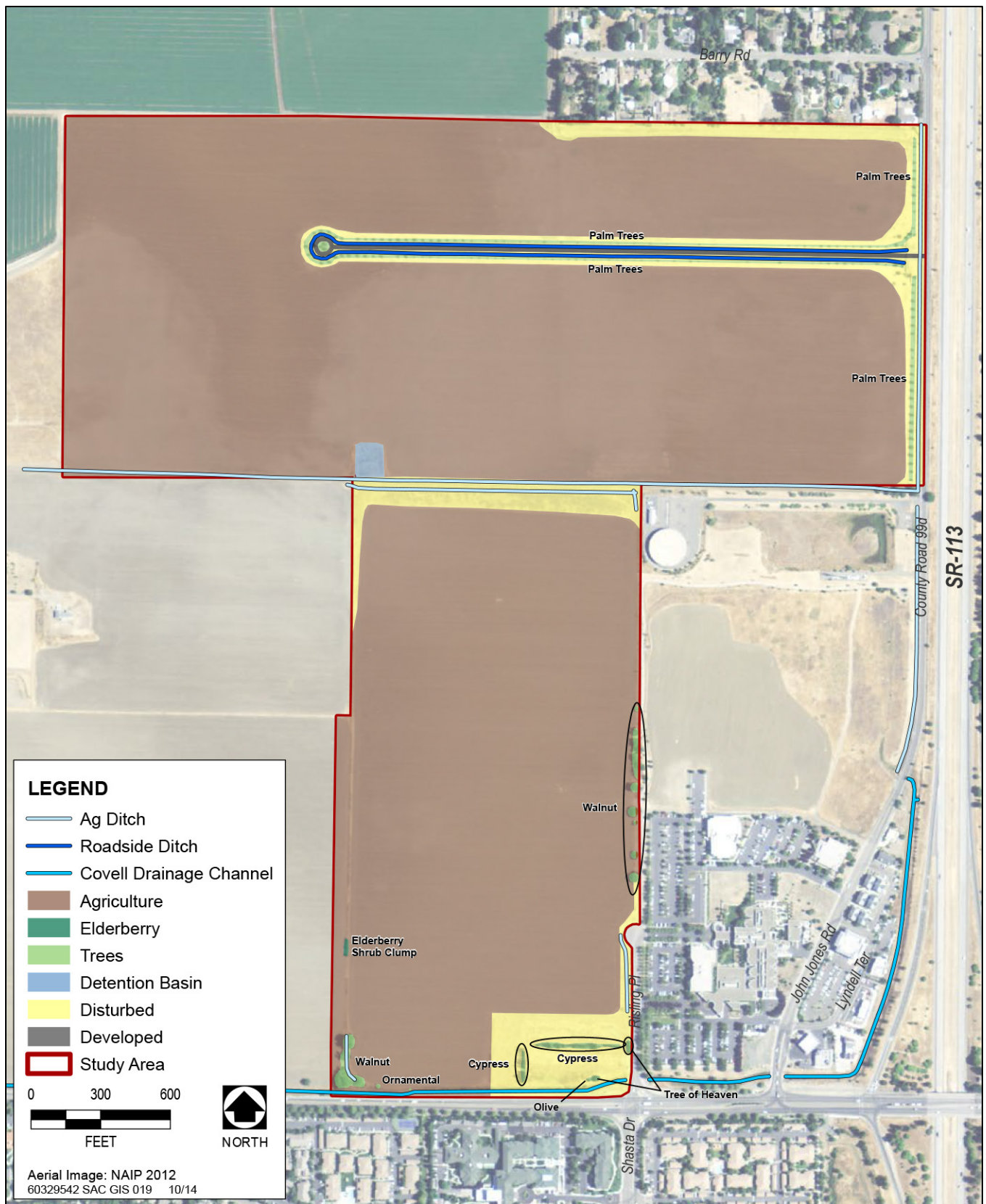
An AECOM GIS specialist—Phi Ngo—produced an exhibit showing all special-status species occurrences listed by the CNDDDB within a 3-mile radius around the Project site (Figure 2). A vegetation map was produced to show habitat types, potentially jurisdictional waters, and tree species within the Project site boundaries (Figure 3). Calculations were also made for the acreages of the different habitat types and linear feet of the waterways in the Project area.



Source: ESRI Topographic Map

**Figure 2. Records of Special-Status Species CNDDB Occurrences within 3 Miles of the Proposed Davis Innovation Center Project Site**





Source: NAIP 2012

**Figure 3. Location of Habitat Types, Trees, and Water Features in the Proposed Davis Innovation Center Project Site**

**Table 1. Potential for Occurrence of Special-Status Plant Species at the Project Site**

Family	Scientific Name	Common Name	Status <sup>1</sup>	Habitat	Bloom Period	Elevation L (m)	Elevation H (m)	Potential for Occurrence
Apiaceae	<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	List 1B.1, SR	Marshes and swamps (brackish or freshwater), Riparian scrub	Apr-Nov	0	10	Not expected; no suitable habitat.
Asteraceae	<i>Lessingia hololeuca</i>	woolly-headed lessingia	List 3	Broadleaved upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland/clay, serpentinite	Jun-Oct	15	305	Not expected; outside elevational range.
Boraginaceae	<i>Plagiobothrys hystriculus</i>	bearded popcorn-flower	List 1B.1	Valley and foothill grassland (mesic), Vernal pools margins/often vernal swales	Apr-May	0	274	Not expected; no suitable habitat.
Brassicaceae	<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	List 1B.2	Valley and foothill grassland (alkaline flats)	Mar-May	2	200	Not expected; no suitable habitat.
Campanulaceae	<i>Downingia pusilla</i>	dwarf downingia	List 2B.2	Valley and foothill grassland (mesic), Vernal pools	Mar-May	1	445	Not expected; no suitable habitat.
Chenopodiaceae	<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	List 1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)/saline or alkaline	Apr-Oct	0	560	Low potential to occur; marginal habitat and soils present on-site; CNDDDB records within 3 miles of the site.
	<i>Atriplex depressa</i>	brittlescale	List 1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools/alkaline, clay	Apr-Oct	1	320	Low potential to occur; marginal habitat and soils present on-site; CNDDDB records within 3 miles of the site.
	<i>Atriplex joaquinana</i>	San Joaquin spearscale	List 1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland/alkaline	Apr-Oct	1	835	Low potential to occur. marginal habitat and soils present on-site; CNDDDB records within 3 miles of the site.

**Table 1. Potential for Occurrence of Special-Status Plant Species at the Project Site**

Family	Scientific Name	Common Name	Status <sup>1</sup>	Habitat	Bloom Period	Elevation L (m)	Elevation H (m)	Potential for Occurrence
Fabaceae	<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	List 1B.1	Meadows and seeps (vernally mesic), Valley and foothill grassland (subalkaline flats)	Apr-May	2	75	Not expected; no suitable habitat.
	<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	List 1B.2	Playas, Valley and foothill grassland(adobe clay), Vernal pools/alkaline	Mar-Jun	1	60	Not expected; no suitable vernal pool habitat.
	<i>Trifolium hydrophilum</i>	saline clover	List 1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools	Apr-Jun	0	300	Low potential to occur; marginal habitat present on-site; No CNDDDB records within 3 miles of the site.
Geraniaceae	<i>California macrophylla</i>	round-leaved filaree	List 1B.1	Cismontane woodland, Valley and foothill grassland/clay	Mar-May	15	1,200	Not expected; outside elevational range.
Liliaceae	<i>Fritillaria pluriflora</i>	adobe-lily	List 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland/often adobe	Feb-Apr	60	705	Not expected; outside elevational range.
Malvaceae	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	List 1B.2	Marshes and swamps (freshwater)/Often in riprap on sides of levees.	Jun-Sep	0	120	Not expected; no suitable habitat.
Orobanchaceae	<i>Chloropyron palmatum</i>	palmate-bracted bird's-beak	List 1B.1, FE, SE	Chenopod scrub, Valley and foothill grassland/alkaline	May-Oct	5	155	Low potential to occur; marginal habitat present on-site; No CNDDDB records within 3 miles of the site.
Poaceae	<i>Neostapfia colusana</i>	Colusa grass	List 1B.1, FT, SE	Vernal pools(adobe, large)	May-Aug	5	200	Not expected; no suitable habitat.
	<i>Tuctoria mucronata</i>	Crampton's tuctoria or Solano grass	List 1B.1, FE, SE	Valley and foothill grassland (mesic), Vernal pools	Apr-Aug	5	10	Not expected; no suitable habitat.



**Table 1. Potential for Occurrence of Special-Status Plant Species at the Project Site**

Family	Scientific Name	Common Name	Status <sup>1</sup>	Habitat	Bloom Period	Elevation L (m)	Elevation H (m)	Potential for Occurrence
Polemoniaceae	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	List 1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools/mesic	Apr-Jul	5	1,740	Not expected; no suitable habitat.
Ranunculaceae	<i>Delphinium recurvatum</i>	recurved larkspur	List 1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland/alkaline	Mar-Jun	3	790	Low potential to occur; marginal habitat present on-site; No CNDDB records within 3 miles of the site.
	<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	List 3.1	Valley and foothill grassland, Vernal pools(alkaline)	Mar-Jun	20	640	Not expected; outside elevational range.

Notes:

<sup>1</sup> Legal Status Definitions:

U.S. Fish and Wildlife Service:

FE = endangered

FT = threatened

California Department of Fish and Wildlife:

SE = endangered

ST = threatened

SR = rare

Source: CNPS 2014; data compiled by AECOM in 2014.

California Native Plant Society California Rare Plant Ranks:  
 1B = plant species considered rare, threatened, or endangered in California and elsewhere.  
 2 = plant species considered rare, threatened, or endangered in California but more common elsewhere.  
 3 = plant species about which we need more information—a review list.  
 4 = plants of limited distribution—a watch list.

California Rare Plant Rank Extensions:  
 1 = seriously endangered in California (>80% of occurrences are threatened and/or have high degree and immediacy of threat).  
 2 = fairly endangered in California (20–80% of occurrences are threatened and/or have moderate degree and immediacy of threat).  
 3 = not very threatened in California (<20% of occurrences are threatened and/or have low degree and immediacy of threat or no current threats known).

**Table 2. Potential for Occurrence of Special-Status Wildlife Species at the Project Site**

Species Name	Status <sup>1</sup>	Habitat	Potential for Occurrence
<b>Invertebrates</b>			
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT	Dependent upon elderberry plant ( <i>Sambucus nigra</i> ssp. <i>caerulea</i> ) as primary host species.	Moderate potential to occur. Elderberry shrub clump located on western boundary of the Project site. No beetles or exit holes observed. No CNDDDB records within 3 miles of the site.
<i>Lepidurus packardi</i> vernal pool tadpole shrimp	FE	Vernal pools or other seasonal wetlands.	No potential to occur. No suitable habitat present on-site.
<b>Amphibians and Reptiles</b>			
<i>Ambystoma californiense</i> 1. California tiger salamander	FT, ST	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	No potential to occur; no suitable breeding habitat present on-site. Active disking on-site for agriculture likely precludes use of site as upland refugia habitat. There is one CNDDDB occurrence within 3 miles of the site.
<i>Emys marmorata</i> western pond turtle	SSC	Ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	Low potential to occur. Marginal habitat present within Covell Drainage Canal. There are several CNDDDB records for this species within 3 miles of the site.
<i>Thamnophis gigas</i> giant garter snake	FT, ST	Rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	Low potential to occur. Marginal habitat present within Covell Drainage Canal. There are CNDDDB records for this species within 3 miles of the site.
<b>Birds</b>			
<i>Agelaius tricolor</i> tricolored blackbird	SSC	Colonial nester in cattails, bulrush, or blackberries associated with wetland or drainage habitats.	Moderate potential to occur. Suitable nesting and foraging habitat present. One CNDDDB record within 3 miles of the site
<i>Asio flammeus</i> short-eared owl	SSC	Breeds/winters in grasslands and emergent wetlands with dense vegetation.	Low potential to occur. Marginally suitable nesting and foraging habitat present. No CNDDDB records within 3 miles of the site.
<i>Athene cunicularia</i> burrowing owl	SSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats.	High potential to occur. Suitable nesting and foraging habitat present on-site. Ground squirrel burrows observed during site survey. Several CNDDDB records within 3 miles of the site.
<i>Buteo swainsoni</i> Swainson's hawk	ST	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	High potential to occur. Suitable nesting and foraging habitat present on-site. Old raptor nest in walnut tree observed during site assessment. Numerous CNDDDB records within 3 miles of the site.

**Table 2. Potential for Occurrence of Special-Status Wildlife Species at the Project Site**

Species Name	Status <sup>1</sup>	Habitat	Potential for Occurrence
<i>Circus cyaneus</i> northern harrier	SSC	Nests on ground near emergent wetlands or in grassland. Forages over grassland.	Moderate potential to occur. Suitable nesting and foraging habitat present on-site. There are no CNDDDB records within 3 miles of the Project site.
<i>Elanus leucurus</i> white-tailed kite	FP	Nests in riparian corridors along streams and rivers or isolated trees in open country, and forages in nearby grasslands and fields.	High potential to occur. Suitable nesting and foraging habitat present. There is a CNDDDB record for this species on the Project site.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC	Nests in trees or shrubs, particularly those with spines or thorns. Forages in open country.	Moderate potential to occur. Suitable nesting and foraging habitat present. There are no CNDDDB records within 3 miles of the Project site.
<b>Mammals</b>			
<i>Antrozous pallidus</i> pallid bat	SSC	Roosts in rock outcrops, hollow trees, abandoned mines, barns, and attics.	Moderate potential to occur. Suitable foraging and roosting habitats present on-site. There is one CNDDDB record within 3 miles of the site.
<i>Taxidea taxus</i> American badger	SSC	Found in a variety of grassland and shrubland habitats throughout California.	Low potential to occur. Suitable foraging habitat present on-site, but no suitable burrows were found during site assessment. Agricultural land use likely precludes this species from majority of the site. There is one CNDDDB record within 3 miles of the site.

Notes:

<sup>1</sup>Legal Status Definitions:

Federal Endangered Species Act (ESA):

FE = endangered

FT = threatened

California Endangered Species Act (CESA):

SE = endangered

ST = threatened

FP = CDFW Fully Protected

SSC = CDFW Species of Special Concern

Source: CNDDDB 2014; data compiled by AECOM in 2014.

## 3 RESULTS/ENVIRONMENTAL SETTING

### 3.1 HABITAT TYPES

The Project site is dominated by three habitat types: agricultural, developed, and disturbed (Figure 3).

#### 3.1.1 AGRICULTURAL

Agricultural land composes 185 acres out of the 208-acre Project site. At the time of the site visit on September 15, 2014, the agricultural fields were fallow and appeared recently disked. The northern section of the Project site appeared to have been previously planted with wheat.

#### 3.1.2 DEVELOPED

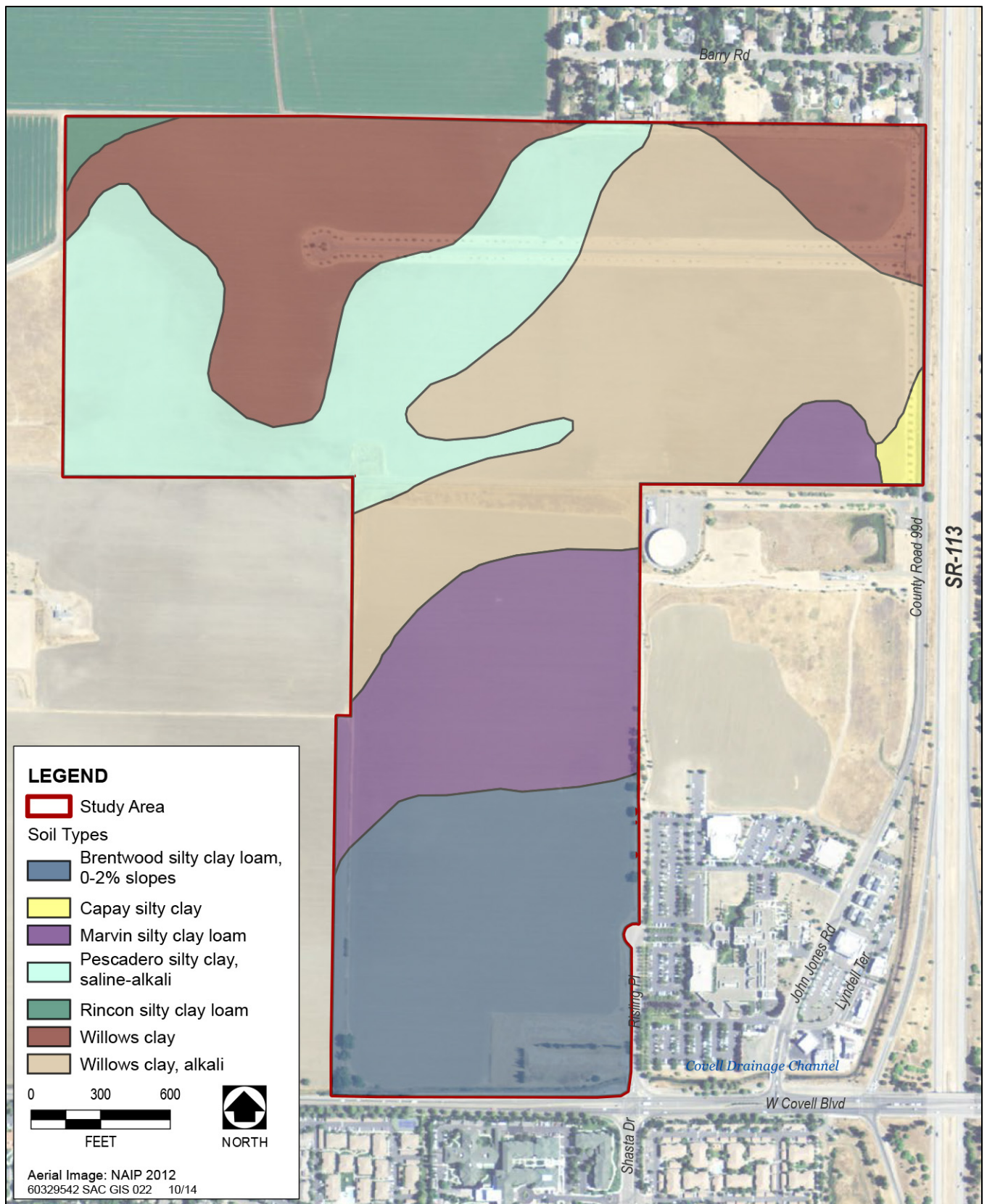
Approximately 4 acres of the site have been previously developed. One paved road is located in the northern section of the Project site. The road is an offshoot of County Road 99D and begins on the northeastern boundary of the Project site and extends west for approximately 0.5 mile before terminating in a roundabout. Palm trees line the roundabout and the road on the north and south. Palm trees also extend the length of the northeastern boundary of the Project site.

#### 3.1.3 DISTURBED GRASSLAND

Disturbed areas on the site are dominated by ruderal vegetation in areas that are subject to repeated disturbance. These areas compose approximately 19 acres of the Project site and consist of several patches of ruderal and nonnative grass species, generally found along the periphery of the Project site and along the paved road. There is also ruderal vegetation in a strip roughly 100 feet wide in the middle of the Project area between two agricultural fields and on the southwestern corner of the Project site. This patch of disturbed habitat appears to have been a parking lot in the past, based on previous years' aerial imagery. The disturbed area is dominated by wild oats (*Avena* sp.). Other weedy species observed in this community include prickly lettuce (*Lactuca serriola*), yellow star thistle (*Centaurea solstitialis*), mustard (*Brassica* sp.), perennial pepperweed (*Lepidium latifolium*), milk thistle (*Silybum marianum*), and Italian thistle (*Carduus pycnocephalus*). Hedgerows of cypress (*Cupressus* sp.) and scattered tree of heaven (*Ailanthus altissima*) and olive (*Elaeagnus angustifolia*) were observed in the southwest corner of the Project site. Other tree species observed on the periphery of the Project site include black walnut (*Juglans hindsii*), blue elderberry shrubs (*Sambucus nigra* ssp. *caerulea*), and ornamentals. The black walnut trees may be considered a sensitive species, although these individuals were likely planted on the site.

### 3.2 SPECIAL-STATUS SPECIES

Special-status species are generally defined as (1) species listed as a candidate, threatened, or endangered under FESA or CESA; (2) plants considered rare, threatened, or endangered in California by CNPS (Lists 1B, 2, 3 and 4); (3) animals listed as Species of Special Concern (SSC) by CDFW; and (4) animals fully protected in California by the California Fish and Game Code.



Source: NAIP 2012

**Figure 4. Soils Map**

CNDDDB and CNPS database searches revealed 29 special-status species within the region: 20 plant species and nine wildlife species. Four additional wildlife species are considered in this discussion because they have the potential to occur on the Project site. Table 1 provides a list of special-status plant species that are documented in the region, their habitat, current protective status, and potential for occurrence on the site. Table 2 provides a list of special-status wildlife species that are documented in the region, their habitat, current protective status, potential for occurrence, and survey results. Figure 2 illustrates the general location of these records maintained by the CNDDDB within 3 miles of the site.

### 3.2.1 SPECIAL-STATUS PLANTS

Of the 20 special-status plants that occur in the region, six special-status plant species have low potential to occur within the Project site: heartscale (*Atriplex cordulata* var. *cordulata*), brittlescale (*A. depressa*), San Joaquin spearscale (*A. joaquinana*), palmate-bracted bird's-beak (*Chloropyron palmatum*), recurved larkspur (*Delphinium recurvatum*), and saline clover (*Trifolium hydrophilum*). All six of these plants have similar habitat requirements and typically can be found in valley grassland in seasonally flooded, saline-alkali soils. The CNDDDB records indicate the presence of two of these species (brittlescale, San Joaquin spearscale) within 3 miles of the Project site. Suitable saline soils that could support these species have been mapped on the site including Willows clay, alkali and Pescadero silty clay, saline alkali (Figure 4). However, agriculture and other activities have significantly modified the hydrology and vegetation of the Project site, and given the highly disturbed nature of the site it is unlikely that these species occur there. However, a floristic survey (CNPS 2001) would be needed to confirm the absence of special-status plant species at the Project site.

### 3.2.2 SPECIAL-STATUS WILDLIFE

Of the 14 special-status wildlife species that may occur in the region of the site, suitable habitat is present within the Project site for 11 special-status wildlife species. Suitable habitat is not present within the Project site for California tiger salamander (*Ambystoma californiense*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Suitable habitat is present on-site for American badger (*Taxidea taxus*). However, agricultural land use and soil disking on-site likely precludes this species from occurring. Therefore, these species are not discussed further.

#### **PALLID BAT (*ANTROZOUS PALLIDUS*), CALIFORNIA SPECIES OF SPECIAL CONCERN**

The pallid bat favors roosting sites in crevices in rock outcrops, caves, hollow trees, abandoned mines, and human-made structures such as barns, attics, and sheds. They tend to group in small colonies of 10 to 100 individuals. The pallid bat is a nocturnal hunter. Trees located within the Project site provide suitable roosting habitat. If tree removal is necessary for construction, direct impacts on special-status bat species could occur if the species are present.

#### **WESTERN BURROWING OWL (*ATHENE CUNICULARIA*), CALIFORNIA SPECIES OF SPECIAL CONCERN**

Burrowing owl typically uses burrows made by mammals, notably burrows created by ground squirrel within this region. The species may also use artificial burrows, including cement, asphalt, or wood debris piles; cement culverts; or openings beneath cement or asphalt pavement. Burrowing owls inhabit annual grasslands; however, tall grasses tend to exclude the species. Active ground squirrel burrows were observed in the disturbed areas

within the Project site. No burrowing owls or their signs were observed during the site visit, although this species has been recorded in the immediate vicinity of the Project site (CNDDDB 2014). Any ground disturbance has potential to result in direct impacts on this species if present.

### **SWAINSON'S HAWK (*BUTEO SWAINSONII*), STATE LISTED—THREATENED**

The Central Valley population of Swainson's hawks is typically present in the northern Sacramento Valley only during the breeding season (March through September). Swainson's hawks begin to arrive in the Central Valley in March. Nesting territories are usually established by April, followed by incubation and rearing of young through June. In the fall, they migrate as far south as central Mexico. Swainson's hawks most commonly occur in grasslands, low shrublands, and agricultural habitats that include large trees for nesting. Nests are found in riparian woodlands, roadside trees, trees along field borders, and isolated trees. The riparian habitat along Willow Slough, approximately 2.5 miles north of the Project site, supports a relatively high density of nesting Swainson's hawks. Suitable nesting trees are located within the Project site, and Swainson's hawks have been recorded in and near the Project site (CNDDDB 2014). An old raptor nest was observed in a black walnut within the Project site. The majority of the site provides suitable foraging habitat for Swainson's hawk. If tree removal were necessary, or if construction were to occur during the nesting season and an active Swainson's hawk nest were present, the potential would exist for direct effects on the species. The Project would also have a direct impact on Swainson's hawk through the loss of foraging habitat.

### **OTHER SPECIAL-STATUS BIRDS**

Other special-status birds that may potentially occur within the Project site include the loggerhead shrike (*Lanius ludovicianus*, SCC), white-tailed kite (*Elanus leucurus*, CDFW Fully Protected), northern harrier (*Circus cyaneus*, SSC), short-eared owl (*Asio flammeus*, SSC) and tricolored blackbird (*Agelaius tricolor*, SSC). The Project site provides suitable nesting and foraging habitat for these five species. Project activities have the potential for direct and indirect impacts on these species, particularly if construction were to occur during the nesting season (February 1 to August 31).

### **WESTERN POND TURTLE (*EMYS MARMORATA*), CALIFORNIA SPECIES OF SPECIAL CONCERN**

The western pond turtle inhabits ponds, marshes, rivers, and sloughs and are active from March through September. They nest in nearby uplands. Marginal habitat was observed for western pond turtle within the Project site along the Covell Drainage Channel and the ditch that parallels to County Road 99D. Ground disturbance or construction activities in or adjacent to these water features have the potential for direct and indirect impacts on this species.

### **GIANT GARTER SNAKE (*THAMNOPHIS GIGAS*), FEDERALLY LISTED—THREATENED, STATE LISTED—THREATENED**

The giant garter snake occurs in marshes, sloughs, slow-moving streams, rice fields, and irrigation/drainage ditches. They also bask near these aquatic habitats and seek shelter in nearby burrows during hot weather. From October through April, giant garter snakes are inactive and hibernate in burrows within 200 feet of aquatic habitat above the high-water line. Marginal habitat was observed for giant garter snake within the Project site along the Covell Drainage Channel and the ditch that parallels County Road 99D. Ground disturbance or

construction activities in or adjacent to these water features have the potential for direct and indirect impacts on this species.

### **VALLEY ELDERBERRY LONGHORN BEETLE (*DESMOCERUS CALIFORNICUS DIMORPHUS*), FEDERALLY LISTED–THREATENED**

The valley elderberry longhorn beetle (VELB) is nearly always found on or close to its host plant, the blue elderberry shrub, on which it is dependent for reproduction and survival. The beetle is rarely seen because it spends most of its life cycle as a larva within stems of the shrub that are greater than 1 inch in diameter at ground level. Use of the shrub by the beetle is typically evident only as an exit hole created by the larva just before the pupal stage. Females lay their eggs on the bark, and larvae hatch and burrow into the stems. The larval stage can last 2 years, after which the larvae enter the pupal stage and transform into adults. Adults are active (feeding and mating) from March through June. An elderberry shrub clump consisting of approximately 10 shrubs was observed on the western boundary of the Project site. However, no VELB or exit holes on the elderberry shrubs were observed. If trimming or removal of any of these shrubs is necessary, there is potential for direct impacts on VELB.

### **3.3 POTENTIALLY JURISDICTIONAL WATERS**

Nine water features were observed on the Project site (Figure 3). A 0.42-acre detention basin occurs in the middle of the Project site. The basin contains ruderal vegetation dominated by wild oats. A roadside ditch extends approximately 5,201 linear feet north and south of the paved road and connects to an agricultural ditch parallel to County Road 99D through culverts on the north and south sides of the road. The roadside ditch was dry at the time of the site visit.

Six agricultural ditches totaling 5,422 linear feet were observed within the Project site. One agricultural ditch is located along the northeastern boundary of the Project site, adjacent to County Road 99D. At the time of the site visit on September 15, 2014, the ditch was holding water and contained some dead and live emergent vegetation. The slopes of this ditch are vegetated with annual grasses and weedy broadleaf species. This ditch connects to an excavated agricultural ditch that runs east-west along the southern boundary of the northern agricultural field. Only the western section of this ditch is within the Project limits. At the time of the site visit, this section of the ditch was dry and unvegetated. The eastern section of the ditch (outside of the Project limit) held between 1 and 6 inches of water and had some vegetation growing on the slopes. A third agricultural ditch is located on the northern edge of the strip of ruderal vegetation in the middle of the Project site, just south of the aforementioned ditch. This ditch was completely covered in upland vegetation (wild oats) at the time of the site visit. There is also a roughly 150-foot ditch on the eastern edge of the disturbed strip that dissipates into the agricultural field at its southern end and ends in a depression on the northern end that does not connect to the east-west excavated agricultural ditch. Another agricultural ditch extends along the western boundary of the Project site. The ditch begins at a well on the southwestern corner and extends north approximately 200 feet, where it dissipates into the adjacent agricultural fields. Finally, another agricultural ditch begins at the north end of Riesling Court on the eastern boundary of the Project site and extends approximately 200 feet south, parallel to Riesling Court. This ditch was covered in upland vegetation at the time of the site visit.



The Covell Drainage Channel extends along the southern boundary of the Project site for approximately 1,271 linear feet. At the time of the site visit, the channel was dry but supports growth of hydrophytic vegetation as evidenced by the presence of cattails (*Typha* sp.), tules (*Schoenoplectus acutus*), and sedge (*Cyperus eragrostis*). The slopes are vegetated with annual grassland and weedy species. A wetland delineation has not been performed at the Project site and the jurisdictional status of these water features has not been determined.

## 4 SUGGESTED MITIGATION

Based on the potential for regulated habitats including potentially jurisdictional waters of the United States and habitats that could support special-status plant and wildlife species, the following mitigation measures are suggested to avoid or minimize impacts on sensitive biological resources:

**Mitigation Measure 1:** The Project proponent should implement the following measures to avoid or minimize impacts on special-status bats:

- ▶ If removal of trees with suitable roost cavities and/or dense foliage must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts will be conducted by a qualified biologist in trees designated for removal. The surveys will be conducted from dusk until dark.
- ▶ If a special-status bat maternity roost is located, appropriate buffers around the roost sites will be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other Project activities. The size of the buffer will depend on the species, roost location, and specific construction activities to be performed in the vicinity. No Project activity will commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist confirms the maternity roost is no longer active.

**Mitigation Measure 2:** The Project proponent should implement the following measure to avoid or minimize impacts on western burrowing owl: No less than 14 days before initiating ground disturbance activities, the Project proponent will complete an initial take avoidance survey using the recommended methods described in the Detection Surveys section of the March 7, 2012, CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Implementation of avoidance and minimization measures (as presented in the March 7, 2012, CDFW *Staff Report on Burrowing Owl Mitigation*) would be triggered if the initial take avoidance survey results in positive owl presence on the Project site where Project activities will occur. If needed, the development of avoidance and minimization approaches will be developed in coordination with CDFW.

**Mitigation Measure 3:** The Project proponent should implement the following measures to avoid or minimize impacts on Swainson's hawk:

- ▶ No more than 30 days before the commencement of construction, a qualified biologist will perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).
- ▶ Appropriate buffers will be established and maintained around active nest sites during construction activities to avoid nest failure as a result of Project activities. The appropriate size and shape of the buffers

will be determined by a qualified biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. Monitoring will be conducted to confirm that Project activity is not resulting in detectable adverse effects on nesting birds or their young. No Project activity will commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.

- ▶ Before the commencement of construction, the Project proponent will provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat to the Yolo County HCP/NCCP JPA in accordance with its Swainson's Hawk Interim Mitigation Program. If the Project is constructed after adoption of the Yolo Natural Heritage Program, the Project proponent will comply with all requirements of the Yolo Natural Heritage Program.

**Mitigation Measure 4:** The Project proponent should implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:

- ▶ Preconstruction surveys for active nests of special-status birds will be conducted by a qualified biologist in all areas of suitable habitat within 500 feet of Project disturbance. Surveys will be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.
- ▶ If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites will be determined by a qualified biologist to avoid nest failure resulting from Project activities. The size of the buffer will depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that Project activity is not resulting in detectable adverse effects on nesting birds or their young. No Project activity will commence within the buffer areas until a qualified biologist has determined that the young have fledged or the nest site is otherwise no longer in use.

**Mitigation Measure 5:** The Project proponent should implement the following measures to avoid or minimize impacts on western pond turtle:

- ▶ Ground-disturbing activities in areas of potential pond turtle nesting habitat will be avoided during the nesting season (April–August), to the extent feasible.
- ▶ A preconstruction survey for western pond turtles within aquatic habitats and adjacent suitable uplands to be disturbed by Project activities will be conducted by a qualified biologist. In aquatic habitats to be dewatered during Project construction, surveys will be conducted immediately after dewatering and before any subsequent disturbance. Elsewhere, surveys will be conducted within 24 hours before Project disturbance.
- ▶ If pond turtles are found during preconstruction surveys, a qualified biologist, with approval from CDFW, will move the turtles to the nearest suitable habitat outside the area subject to Project disturbance. The

construction area will be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.

- ▶ Construction personnel performing activities within aquatic habitats and adjacent suitable uplands to be disturbed by Project activities will receive worker environmental awareness training from a qualified biologist to instruct workers to recognize western pond turtle, their habitats, and measures being implemented for its protection.
- ▶ Construction personnel will observe a 15-miles-per-hour speed limit on unpaved roads.

**Mitigation Measure 6:** The Project proponent should implement the following measures to avoid or minimize impacts on giant garter snake:

The Project proponent will consult with USFWS regarding the potential for the Project to affect giant garter snake habitat. If USFWS determines that giant garter snake may be potentially affected by Project construction, the Project proponent shall obtain an incidental take permit from USFWS and implement the minimization guidelines for giant garter snake as follows:

- ▶ Unless authorized by USFWS, construction and other ground-disturbing activities within 200 feet of suitable aquatic habitat for the giant garter snake will not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance will be completed by October 1.
- ▶ To the extent possible, construction activities will be avoided within 200 feet from the banks of giant garter snake aquatic habitat. Movement of heavy equipment in these areas will be confined to existing roadways, where feasible, to minimize habitat disturbance.
- ▶ Construction personnel will receive USFWS-approved worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.
- ▶ Within 24 hours before construction activities, the Project area will be surveyed for giant garter snake. The survey will be repeated if a lapse in construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it is determined by the qualified biologist and City staff, in coordination with USFWS and CDFW, that the giant garter snake will not be harmed. Any sightings or incidental take will be reported to USFWS and CDFW immediately.
- ▶ Any aquatic habitat for the snake that is dewatered will remain dry for at least 15 consecutive days after April 15 and before excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (e.g., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the construction area.
- ▶ Giant garter snake habitat to be avoided within or adjacent to construction areas will be fenced and designated as environmentally sensitive areas. These areas will be avoided by all construction personnel.

**Mitigation Measure 7:** The Project proponent should implement the following measures to avoid or minimize impacts on valley elderberry longhorn beetle:

- ▶ All elderberry shrubs that are located adjacent to construction areas, but can be avoided, will be fenced and designated as environmentally sensitive areas. These areas will be avoided by all construction personnel. Fencing will be placed at least 20 feet from the dripline of each shrub, unless otherwise approved by USFWS.
- ▶ No insecticides, herbicides, or other chemicals that might harm the beetle or its host plant will be used within 100 feet of the elderberry shrubs.
- ▶ Any elderberry shrubs that cannot be avoided during construction and operation will be mitigated according to USFWS guidelines (USFWS 1999).

**Mitigation Measure 8:** The Project proponent should implement the following measure to avoid or minimize impacts on special-status plant species:

- ▶ Before the commencement of construction, a preconstruction rare plant survey should be conducted during the appropriate phenological period for heartscale, brittlescale, San Joaquin spearscale, palmate-bracted bird's-beak, recurved larkspur, and saline clover. If special-status plant species are found on the site that cannot be avoided during Project construction or operation, the appropriate regulatory agency should be consulted to determine appropriate mitigation for impacts on special-status plant species.

**Mitigation Measure 9:** The Project proponent should implement the following measure to avoid or minimize impacts on potentially jurisdictional waters:

- ▶ Before any activities that would result in discharge, fill, removal, or hydrologic interruption of any of the water features within the Project site, a wetland delineation and jurisdictional determination should be conducted by a qualified delineator and the delineation that determines the extent of jurisdictional waters should be approved by USACE.
- ▶ Any impacts on jurisdictional features should obtain the appropriate CWA Section 404 and or 401 permits. All permit conditions including required avoidance, minimization, and mitigation measures included as conditions of the permit will be followed.

**Mitigation Measure 10:** The Project proponent should implement the following measure to avoid or minimize impacts on trees protected by the City of Davis:

- ▶ Before the commencement of construction, the Project proponent will retain a qualified arborist to perform a survey of all trees on the site. The tree surveys and arborist report will detail the number, species, size, and relative health and structure of all trees on the site. The report will also describe which trees on-site are subject to regulation under the City of Davis Tree Ordinance.
- ▶ A tree protection plan should be prepared that includes measures to avoid or minimize impacts on trees that are to be preserved on-site and well as proposed mitigation for regulated trees subject to impact or removal. Compliance with the tree protection plan will be required before and during any site

disturbance and construction activity and before issuance of building permits. A tree modification permit shall be submitted to the City for any proposed removal of a tree. Fees shall be assessed by the City, and paid by the Project proponent, in accordance with Davis Municipal Code Chapter 37, "Tree Planting, Preservation, and Protection."

## 5 REFERENCES

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