

4.4

BIOLOGICAL RESOURCES

4.4.1 INTRODUCTION

The Biological Resources section of the EIR includes the results of a site-specific biological resources assessment, the purpose of which is to determine whether the proposed project site contains sensitive natural habitats and/or other habitats suitable to support special-status plant and wildlife species. These determinations are based upon known occurrences of special-status species within the site (as obtained from regulatory agency databases), and field reconnaissance surveys of the project site. The information contained in this analysis is based on the *Biological Resources Evaluation* prepared by Sycamore Environmental Consultants, Inc. (see Appendix D),¹ the *Jurisdictional Delineation Report* prepared by Sycamore Environmental Consultants, Inc.,² as well as information from the *Davis General Plan*.³

4.4.2 EXISTING ENVIRONMENTAL SETTING

The following sections describe the existing environmental setting and biological resources occurring, or potentially occurring, in the proposed project area.

Regional Setting

The 229-acre proposed project site is located at an elevation of approximately 26 feet above sea level, immediately east of the City of Davis city limits, near the “Mace Curve”, in unincorporated Yolo County, approximately 2.5 miles east of downtown Davis. The City is located approximately 12.25 miles west of the Sacramento metro area, approximately 9.25 miles south of the City of Woodland, and approximately 53 miles northeast of the San Francisco Bay Area. The City of Davis is surrounded by agricultural lands on the north, south, east, and west. The proposed project site is located in the eastern section of the City of Davis, on the northern side of Interstate 80 (I-80) and east of Mace Boulevard. Immediately west of the project site, on the opposite side of Mace Boulevard, are an AM/PM gas station and the University Covenant Church. The Mace 391 permanent agricultural easement and Howat Ranch property, totaling 718 acres, are adjacent to the north, northeast, and east of the site. The Union Pacific Railroad and I-80 are located to the south of the site.

¹ Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation for the Mace Ranch Innovation Center Project*. August 2015.

² Sycamore Environmental Consultants, Inc. *Jurisdictional Delineation Report for the Mace Ranch Innovation Center Project*. February 3, 2015.

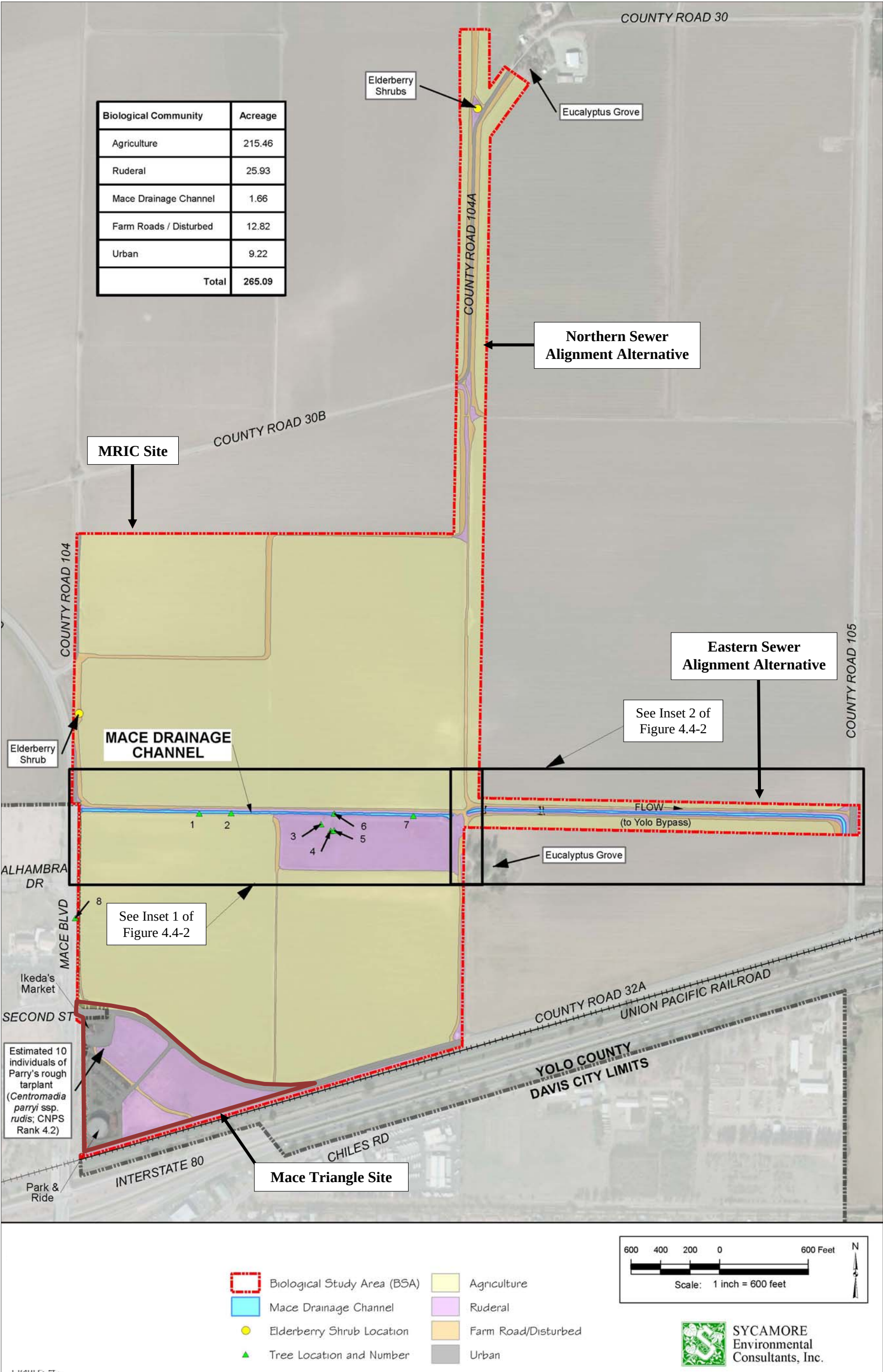
³ City of Davis. *Davis General Plan*. Adopted May 2001. Amended through January 2007.

Project Setting

The proposed project site consists of approximately 229 acres of relatively flat land. The 212-acre MRIC site is currently used for agricultural operations. The 17-acre Mace Triangle site currently contains agricultural land, Ikedas Market, a City-owned water tank, and a Park-and-Ride lot. In addition, the two proposed off-site sewer line connection alternatives, located north and east of the MRIC site, both contain row crop agriculture. The biological communities and other features found within the Study Area (defined as approximately 815 acres, including the MRIC site, Mace Triangle site, both off-site sewer alignment alternatives, and the off-site volume storage area) are summarized in Table 4.4-1 and are shown in Figure 4.4-1 and 4.4-2.

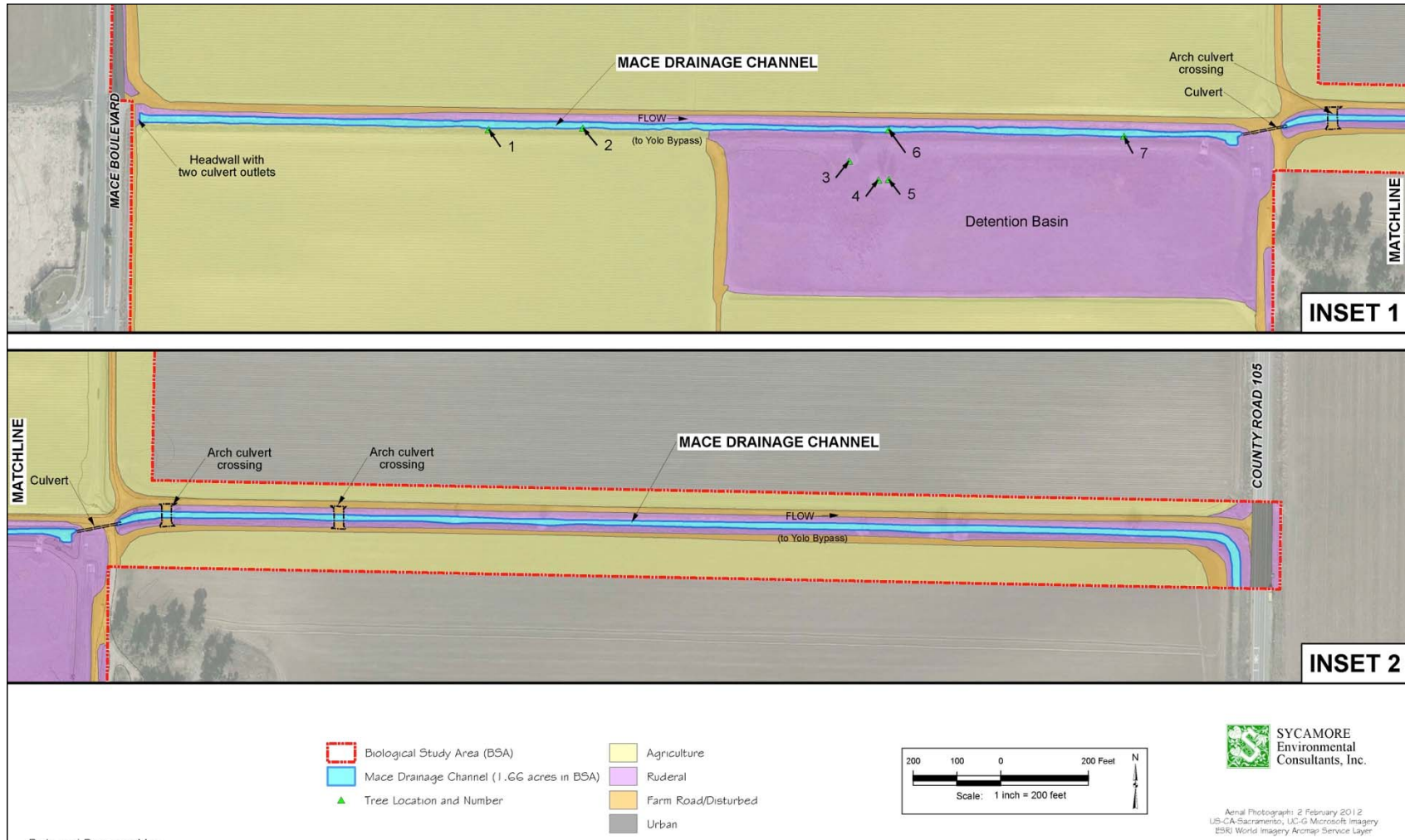
Table 4.4-1 Biological Communities and Other Features within Study Area			
Biological Community	Vegetation Alliances and CDFW Alliance Codes¹	Rarity Rank²	Acreage³
Agriculture	--	--	765.71
Ruderal	<i>Brassica nigra</i> and other mustards (upland mustards), Semi-natural Sands (CDFW 42.011.00) <i>Lepidium latifolium</i> (Perennial pepper weed patches), Semi-natural Stands (CDFW 52.205.00)	--	25.93
Mace Drainage Channel ⁴	<i>Typha (angustifolia, domingensis, latifolia)</i> , Herbaceous Alliance (CDFW 52.050.00) <i>Lepidium latifolium</i> (Perennial pepper weed patches), Semi-natural Stands (CDFW 52.205.00)	G5 S5 --	1.66
Other Features			
Farm Roads/Disturbed	--	--	12.82
Urban	--	--	9.22
Total			815.34
Notes: CDFW = California Department of Fish and Wildlife ¹ Vegetation alliances based on descriptions and classification methods in Sawyer et al. (2009). Alliance codes from CDFW (2010). Some communities may lack recognized vegetation alliances or contain multiple alliances. ² Rarity ranking follows NatureServe's Heritage Methodology and is based on degree of imperilment as measured by rarity, trends, and threats. State (S) ranks of 1 to 3 are considered highly imperiled by CDFW (2010). Non-native vegetation has no rarity rank. ³ Acreages were calculated using ArcMap functions. ⁴ The City of Davis regularly removes vegetation from the Mace Drainage Channel for stormwater management. See discussion of Mace Drainage Channel.			
Source: Sycamore Environmental Consultants, Inc. Biological Resources Evaluation. August 2015.			

Figure 4.4-1
Biological Resources Map (1 of 2)



Source: Sycamore Environmental Consultants, Inc. Biological Resources Evaluation. August 2015.

**Figure 4.4-2
Biological Resources Map (2 of 2)**



Source: Sycamore Environmental Consultants, Inc. Biological Resources Evaluation, August 2015

MRIC

The 212-acre MRIC site is primarily used for agricultural purposes and is generally disced and farmed. Tall, dense, and dry weed grasses occur along the perimeter of the site and along a City drainage ditch that runs west-east through the central portion of the project site. As shown in Table 4.4-1 and in Figure 4.4-1, the biological communities and features within the MRIC site include agriculture, ruderal vegetation, the Mace Drainage Channel (MDC), and farm roads/disturbed land. A discussion of both sewer alignment alternatives is also discussed.

Agriculture

The agricultural fields on the MRIC site have been used for agriculture since at least 1937.⁴ The agricultural fields on the MRIC site had recently been tilled during fieldwork and appear to be in active use. The fields are flat and utilize drip irrigation. Trees do not occur in the agricultural fields.

Ruderal

The ruderal habitat within the MRIC site is dominated by non-native weed species including mustard (*Brassica* sp., most likely, *Brassica nigra*) perennial pepperweed (*Lepidium latifolium*), Russian thistle (*Salsola tragus*), yellow-star thistle (*Centaurea solstitialis*), field bindweed (*Convolvulus arvensis*), poison hemlock, (*Conium maculatum*), prickly lettuce (*Lactuca serriola*), filaree (*Erodium* sp.), and non-native annual grasses (*Bromus*, *Avena*, *Hordeum*, etc.). The ruderal community occurs predominantly along untilled field edges, along roadsides, along the MDC, in roadside and irrigation ditches, and in the on-site detention basin.

Detention Basin

A 1,200- by 330-foot detention basin occurs adjacent and south of the MDC near the eastern boundary of the MRIC site. A concrete spillway allows water from the MDC to flow into the detention basin during extreme high water events. Two one-way metal flap gates in the spillway allow water to flow back into the MDC as water in the channel recedes. The basin was constructed in approximately 1993, but was never used.⁵ The feature is visible on aerial photographs dating back to 1993 and none of the aerial photographs available in Google Earth show standing water in the feature. Prior to 2014, the detention basin had never held standing water. During a site survey on December 10, 2014, wrack deposition consistent with recent inundation was observed in the feature. The location of wrack deposition on the sides of the detention basin indicated that approximately two to three feet of water had been present in the detention basin sometime between October 7 and December 10, 2014. Water was not observed in the detention basin on December 10, 2014. Soil pits dug throughout the basin as part of the concurrently prepared wetland delineation showed that soils in the detention basin are composed mostly of silt and sand.

⁴ Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation* [pg. 21]. August 2015.

⁵ *Ibid.*

Mace Drainage Channel

A total of 1.66 acres of the MDC occurs in the MRIC site and the proposed eastern sewer alignment. The MDC is a manmade storm drainage ditch that transports urban runoff from the Mace Ranch Drainage Basin in the City of Davis east through the center of MRIC site, to the Yolo Bypass approximately 2.5 air miles to the east. On the MRIC Site, vegetation in the MDC is dominated by cattail (*Typha* sp.), bulrush (*Schoenoplectus acutus* var. *occidentalis*), annual saltmarsh aster (*Symphyotrichum subulatum*), nutsedge (*Cyperus eragrostis*), and smartweed (*Persicaria* sp.). A few young non-native sycamores (*Platanus* sp.), one non-native Chinese tallow tree (*Triadica sebifera*) sapling, one young native Goodding's black willow (*Salix gooddingii*), and one young Fremont's cottonwood (*Populus fremontii*) occur along the portion of the MDC within the MRIC site. Vegetation in the MDC is dominated by cattail and would be classified as *Typha* (*angustifolia*, *domingensis*, *latifolia*).

East of the MRIC site, along the eastern sewer alignment alternative, the MDC is dominated by perennial pepperweed and vegetation that could be classified as *Lepidium latifolium*. East of the MRIC site, the MDC is not dominated by cattail and bulrush. A few cottonwoods and willows occur along the MDC along the eastern sewer alignment alternative.

Vegetation in the MDC is periodically removed by the City of Davis.⁶ Vegetation clearing has occurred in much of the ditch within the last year. On both October 7 and December 10, 2014, water with an estimated depth of zero to 12 inches was observed in the western half of the MDC within the MRIC site. Water was not observed in the eastern half of the MDC on the MRIC site, or in the MDC along the eastern sewer alignment alternative.

Farm Roads / Disturbed

Farm roads occur north of and adjacent to the MDC on the MRIC site, on both sides of the MDC along the eastern sewer alignment alternative, along agricultural field edges, and in fallow fields south of County Road (CR) 32A. Farm roads and disturbed areas typically do not contain vegetation.

Mace Triangle

The 17-acre Mace Triangle site, located south of CR 32A, consists of three parcels which are being included in the project boundaries for annexation purposes. Existing uses on the Mace Triangle site include Ikedas Market (APN 033-630-011), a City-owned water tank, a Park-and-Ride lot (APN 033-630-006), and agricultural uses (APN 033-630-012). As shown above in Table 4.4-1, the biological communities and features within the Mace Triangle site include ruderal vegetation, farm roads/disturbed land, and urban land.

The ruderal habitat within the Mace Triangle site is dominated by non-native weed species including mustard (*Brassica* sp., most likely, *Brassica nigra*) perennial pepperweed (*Lepidium*

⁶ Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation* [pg. 22]. August 2015.

latifolium), Russian thistle (*Salsola tragus*), yellow-star thistle (*Centaurea solstitialis*), field bindweed (*Convolvulus arvensis*), poison hemlock, (*Conium maculatum*), prickly lettuce (*Lactuca serriola*), filaree (*Erodium* sp.), and non-native annual grasses (*Bromus*, *Avena*, *Hordeum*, etc.). The ruderal community occurs predominantly in fallow fields south of CR 32A. The aforementioned ruderal vegetation does not have a special status.

As noted previously, farm roads and disturbed areas typically do not contain vegetation. A total of 9.22 acres of urban land occurs in the Mace Triangle site. Urban land includes developed lots, paved roads, and structures. Areas mapped as urban include a portion of CR 32A, CR 104, CR 105, the Park-and-Ride driveway, the Park-and-Ride facility, Ikedas Market, and associated parking lots.

Potential Off-Site Improvement Areas

The following section describes the habitat within the potential off-site sewer alignments and runoff storage pond.

Sewer Alignment Alternatives

As noted previously, the two proposed off-site sewer line connection alternatives being evaluated include the northern sewer alignment and the eastern sewer alignment. As shown in Figure 4.4-1, the northern sewer alignment alternative extends from the northeast side of the MRIC Site, northward approximately 0.6 miles, along CR 104. The eastern sewer alignment alternative extends from the east side of the MRIC site, eastward approximately 0.5 miles, along a farm road, to CR 105.

The eastern sewer line alternative crosses Assessor's Parcel Number (APN) 033-290-04. The northern sewer line alternative crosses APN 033-290-02, -04, -82, and -83; 033-650-027; and 042-130-03.

Northern Sewer Alignment Alternative

As shown in Figure 4.4-1, the valley elderberry longhorn beetle (VELB) host plant, the elderberry shrub, was observed along the west side of CR 104 along the northern sewer alignment alternative. The northern sewer alignment alternative contains row crop agriculture.

Eastern Sewer Alignment Alternative

The eastern sewer alignment alternative contains row crop agriculture. A few cottonwoods and willows occur along the MDC along the eastern sewer alignment alternative. Farm roads occur on both sides of the MDC along the eastern sewer alignment alternative. Farm roads and disturbed areas typically do not contain vegetation.

The MDC passes under two arch culvert crossings approximately 130 feet and 530 feet east of the MRIC site, along the eastern sewer alignment alternative. East of the MRIC site, along the eastern sewer alignment alternative, the MDC is dominated by perennial pepperweed and vegetation which could be classified as *Lepidium latifolium* semi-natural stand.

Potential Off-Site Volume Storage Area

As discussed in the project description section of this EIR, two options are being evaluated for temporarily storing the increased volume of runoff resulting from the proposed project's impervious surfaces. One option involves development of low-level storage pond on agricultural properties east of the MRIC site. The potential location for off-site runoff volume storage, as shown in Figure 4.4-3, consists of 550.25 acres of active agricultural fields currently planted with wheat and alfalfa. The agricultural fields are similar to the agricultural fields at the nearby MRIC site. The only trees in the off-site survey area are a few willow trees (*Salix* sp.) in a dry ditch at the southeast corner of the survey quadrants, on APN 033-300-015.

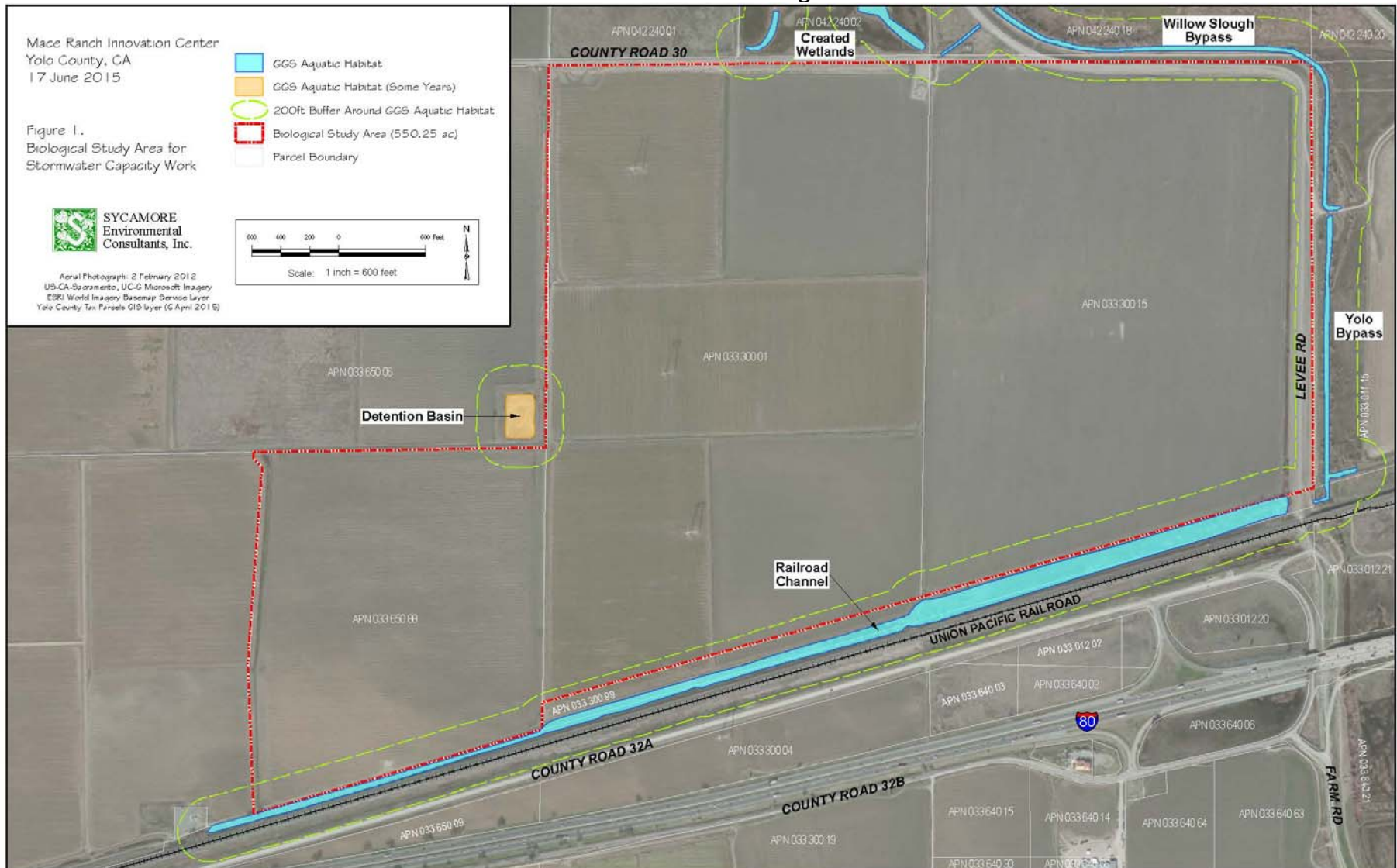
In the event that this off-site improvement is approved for the project, this Biological analysis evaluates the potential off-site impacts associated with said improvement.

Special-Status Species

Special-status species are those listed (or candidate or proposed) under the federal or State endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by the California Department of Fish and Wildlife (CDFW), or that are Rank 1 or 2 in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2014). CNPS Rank 3 and Rank 4 plants may also be considered special-status when they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) or §15380. Special-status natural communities are waters, wetlands, riparian communities, and any natural community or vegetation alliance ranked S1, S2, or S3 by CDFW (2010). Special-status species and communities may also include those considered locally important or sensitive.

As described below, State and federal laws have provided the CDFW and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the State. A number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. In addition, the CNPS has developed a set of lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special-status species."

**Figure 4.4-3
Potential Off-Site Volume Storage Area**



The *Biological Resources Evaluation* prepared by Sycamore Environmental Consultants, Inc. queried the CDFW California Natural Diversity Database (CNDDDB) and CNPS Rare Plant Inventory for the Davis and eight surrounding USGS quads to determine which species could occur in the Study Area. Sycamore also consulted the USFWS Special-Status Species Database website. Based upon the query results and Sycamore's October 7, and December 10, 2014 field surveys of the Study Area, Sycamore concluded that 19 special-status species have the potential to occur within the Study Area.

Listed and Special-Status Plants

Table 4.4-2 summarizes the 12 special-status plant species that Sycamore determined have the potential to occur within the Study Area. None of the special-status plants were observed during Sycamore's October 7 and December 10, 2014 site surveys, with the exception of Parry's rough tarplant.

Table 4.4-2 Special-Status Plants with Potential to Occur within the Study Area		
Scientific and Common Name	CNPS Rank	Habitat Present? / Species Observed?
<i>Astragalus tener</i> var. <i>ferrisiae</i> (Ferris' milk vetch)	1B.1	Yes / No
<i>Astragalus tener</i> var. <i>tener</i> (Alkali milk-vetch)	1B.2	Yes / No
<i>Atriplex cordulata</i> var. <i>cordulata</i> (Heartscale)	1B.2	Yes / No
<i>Atriplex depressa</i> (Brittlescale)	1B.2	Yes / No
<i>Atriplex joaquiniana</i> (San Joaquin spearscale)	1B.2	Yes / No
<i>Carex comosa</i> (Bristly sedge)	2B.1	Yes / No
<i>Centromadia parryi</i> ssp. <i>rudis</i> (Parry's rough tarplant)	4.2	Yes / Yes
<i>Hesperervax caulescens</i> (Hogwallow starfish)	4.2	Yes / No
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> (Woolly rose-mallow)	1B.2	Yes / No
<i>Ledipidium latipes</i> var. <i>heckardii</i> (Heckard's pepper-grass)	1B.2	Yes / No
<i>Symphyotrichum lentum</i> (Suisun Marsh aster)	1B.2	Yes / No
<i>Trifolium hydrophilum</i> (Saline clover)	1B.2	Yes / No
Notes: CNPS Rank: 1A = Presumed Extinct in CA; 1B = Rare or Endangered (R/E) in CA and elsewhere; 2 = R/E in CA and more common elsewhere; 3 = Need more information; 4 = Plants of limited distribution. CNPS Rank Decimal Extensions: .1 = Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in California (20 to 80 percent of occurrences threatened); .3 = Not very endangered in California (< 20 percent of occurrences threatened or no current threats known). Source: Sycamore Environmental Consultants, Inc. <i>Biological Resources Evaluation</i> . August 2015.		

Ferris' Milk Vetch (Astragalus tener var. ferrisiae)

The following section describes the habitat, biology, range, and known records of Ferris' milk vetch in the Study Area.

Habitat and Biology

Ferris' milk vetch is an annual herb found in vernal mesic meadows and seeps and subalkaline flats in valley and foothill grassland from seven to 250 feet. Ferris' milk vetch blooms from April through May.

Range

Ferris' milk vetch is known to occur in Butte, Colusa, Glenn, Sutter, and Yolo Counties.

Known Records

Four CNDDB records for Ferris' milk vetch exist in the nine-quad area centered on the Study Area. The closest record is from 1954 and is located approximately 2.5 miles east of the project area on the Sacramento West quad. The exact location of the record is unknown and is mapped as a best guess by CNDDB along the Yolo Causeway.

Habitat in the Study Area

Marginal habitat for Ferris' milk vetch occurs in the detention basin on the MRIC Site. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Alkali Milk Vetch (Astragalus tener var. tener)

The following section describes the habitat, biology, range, and known records of alkali milk vetch in the Study Area.

Habitat and Biology

Alkali milk vetch is an annual herb found in alkaline conditions of playas, adobe clay valley and foothill grassland, and vernal pools from three to 200 feet. Alkali milk vetch blooms from March through June.

Range

Alkali milk vetch is known to occur in Alameda, Merced, Napa, Solano, and Yolo Counties.

Known Records

Ten CNDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is from 1951 and is located approximately 1.8 miles west of the project area on the Davis quad. The exact location of the record is unknown. The location is described as "1.1 miles north of Davis." Surveys in 2002 and 2006 did not find plants or natural habitat. CNDDB considers the occurrence probably extirpated.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin on the MRIC site. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Heartscale (Atriplex cordulata var. cordulata)

The following section describes the habitat, biology, range, and known records of heartscale in the Study Area.

Habitat and Biology

Heartscale is an annual herb found in saline or alkaline conditions of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland from three to 1,850 feet. Heartscale blooms from April through October.

Range

Heartscale is known to occur in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, San Luis Obispo, Solano, Tulare, and Yolo Counties.

Known Records

One CNDDDB record exists for the species in the nine-quad area centered on the Study Area. The record is from 1952 and is located approximately 1.7 miles west of the project area on the Davis quad. Suitable habitat does not exist at the site of the occurrence. Some areas with suitable alkaline soils remain, but have been plowed or paved. CNDDDB considers the occurrence extirpated.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin and along the eastern margin of the project area outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Brittlescale (Atriplex depressa)

The following section describes the habitat, biology, range, and known records of brittlescale in the Study Area.

Habitat and Biology

Brittlescale is an annual herb found in alkaline and clay soils of chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from three to 1,050 feet. Brittlescale blooms from April through October.

Range

Brittlescale is known to occur in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo Counties.

Known Records

Five CNDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is from 1996 and is located approximately 2.4 miles west of the project area on the Davis quad. An estimated 70 plants were observed in 1996 in habitat described as highly disturbed (plowed) alkali sink with *Hemizonia pungens*, *Atriplex argentea* ssp. *mohavensis*, *A. joaquiniana*, *Spergularia* sp., and *Hordeum depressum*.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin in the MRIC Site and along the eastern margin of the project area outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

San Joaquin Spearscale (Atriplex joaquiniana)

The following section describes the habitat, biology, range, and known records of San Joaquin spearscale in the Study Area.

Habitat and Biology

San Joaquin spearscale is an annual herb found in alkaline soils in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from three to 2,750 feet. San Joaquin spearscale blooms from April through October.

Range

San Joaquin spearscale is known to occur in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Solano, Yolo and possibly San Luis Obispo Counties.

Known Records

Eight CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is from 1996 and is located approximately 2.4 miles west of the project area on the Davis quad. An estimated 85 plants were observed in 1996 in highly disturbed (plowed) alkali sink habitat with *Hemizonia pungens*, *Atriplex argentea* ssp. *mohavensis*, *A. joaquiniana*, *Spergularia* sp., and *Hordeum depressum*.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin and along the eastern margin of the project area outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Bristly Sedge (Carex comosa)

The following section describes the habitat, biology, range, and known records of bristly sedge in the project area.

Habitat and Biology

Bristly sedge is a perennial rhizomatous herb found in coastal prairie, marshes and swamps along lake margins, and valley and foothill grassland from zero to 2,051 feet. Bristle sedge blooms from May through September.

Range

Bristly sedge is known to occur in Contra Costa, Lake, Mendocino, Sacramento, Santa Cruz, Shasta, San Joaquin, and Sonoma Counties.

Known Records

One CNDDDB record exists for the species in the nine-quad area centered on the project area. The record is from 2009 and is located approximately 15.7 miles southeast of the project area on the Courtland quad. A total of 54 plants were observed in riparian habitat.

Habitat in the Study Area

The MDC provides marginal habitat for this species. The habitat is considered marginal due to vegetation maintenance.

Parry's Rough Tarplant (Centromadia Parryi ssp. Rudis)

The following section describes the habitat, biology, range, and known records of Parry's rough tarplant in the Study Area.

Habitat and Biology

Parry's rough tarplant is an annual herb found in alkaline, vernal mesic seeps in valley and foothill grassland, vernal pools, and sometimes along roadsides from zero to 328 feet. The species is often associated with disturbed sites and blooms from May through October.

Range

Parry's rough tarplant is known to occur in Butte, Colusa, Glenn, Lake, Merced, Sacramento, San Joaquin, Solano, Sutter and Yolo Counties. Based on herbarium specimen records, the species is distributed primarily in the Central Valley from Chico to Merced.

Known Records

An estimated 10 individual Parry's rough tarplant individuals were observed in ruderal habitat located just south of Ikedas Market and north of the Davis Park-and-Ride. The Parry's rough tarplant individuals occur in the Mace Triangle Site, south of CR 32A. Parry's rough tarplant is a CNPS Rank 4.2 species considered "uncommon and fairly endangered in California" (CNPS 2014). CNPS Rank 4.2 species may be considered under CEQA at the Lead Agency's discretion.

Based on herbarium specimen records, this species is not especially uncommon locally or regionally (CCH 2014). The Parry's rough tarplant individuals observed in the Study Area are not at the periphery of the taxon's range. Sycamore Environmental botanists have encountered this taxon on many disturbed/agricultural sites in the Central Valley within the last 5 years. The Parry's rough tarplant individuals observed in the Study Area did not exhibit unusual morphology and they were not observed on unusual substrate. The Parry's rough tarplant observed in the Study Area does not meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) or §15380.⁷

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin in the MRIC Site and in ruderal areas outside tilled fields. The habitat is considered marginal because of previous and on-going soil disturbance.

Hogwallow Starfish (Hesperevax Caulexcens)

The following section describes the habitat, biology, range, and known records of hogwallow starfish in the Study Area.

⁷ Sycamore Environmental Consultants, Inc. *Biological Resources Evaluation* [pg. 36]. August 2015.

Habitat and Biology

Hogwallow starfish is an annual herb found in valley and foothill grassland in mesic and clay soils and in shallow vernal pools from zero to 1,650 feet. Hogwallow starfish blooms from March to June.

Range

Hogwallow starfish is known to occur in Alameda, Amador, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Monterey, Sacramento, San Joaquin, San Luis Obispo, Solano, Stanislaus, Sutter, Tehama, and Yolo Counties.

Known Records

CNDDDB does not have geographical record information available for the species. The Consortium of California Herbaria shows 10 hogwallow starfish specimens collected in the Davis-Vacaville-Woodland area and approximately 156 specimens from the Central Valley and surrounding foothills.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin in the MRIC site and along the eastern margin of the MRIC site, outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Wooly Rose-Mallow (Hibiscus Lasiocarpus var. Occidentalis)

The following section describes the habitat, biology, range, and known records of wooly rose-mallow in the Study Area.

Habitat and Biology

Wooly rose-mallow is a perennial, rhizomatous, aquatic emergent herb found in freshwater marshes and swamps from zero to 400 feet. The species occurs in freshwater-soaked river banks and low peat islands in sloughs, often in riprap on sides of levees. Wooly rose-mallow blooms from June through September.

Range

Wooly rose-mallow is known to occur in Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo Counties.

Known Records

Seven CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is from 1996 and is located approximately 7.2 miles northeast of the project area on the Grays Bend quad. A single shrub was observed along the water's edge on the bank of a canal.

Habitat in the Study Area

The MDC provides marginal habitat for this species. The habitat is considered marginal due to vegetation maintenance.

Heckard's Pepper-Grass (Lepidium Latipes var. Heckardii)

The following section describes the habitat, biology, range, and known records of Heckard's pepper-grass in the Study Area.

Habitat and Biology

Heckard's pepper-grass is an annual herb found in alkaline flats of valley and foothill grassland from six to 660 feet. The species blooms from March through May. *Lepidium latipes* var. *heckardii* is no longer recognized as distinct from the common *Lepidium latipes* var. *latipes* in *The Jepson Manual: Vascular plants of California, 2nd edition*.

Range

Heckard's pepper-grass is known to occur in Glenn, Merced, Sacramento, Solano, and Yolo Counties.

Known Records

Six CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is from 1957 and is located approximately 1.3 miles northwest of the project area on the Davis quad. The exact location of the record is unknown and is mapped as a best guess by CNDDDB as three miles northeast of Davis. The habitat is described as alkaline flats.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin in the MRIC site and along the eastern margin of the project area outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Suisun Marsh Aster (Symphyotrichum Lentum)

The following section describes the habitat, biology, range, and known records of Suisun Marsh aster in the Study Area.

Habitat and Biology

Suisun Marsh aster is a perennial rhizomatous herb found in brackish and freshwater marshes and swamps from zero to 10 feet. Suisun Marsh aster blooms from May to November.

Range

Suisun Marsh aster is known to occur in Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo Counties.

Known Records

One CNDDB record for the species exists in the nine-quad area centered on the Study Area. The record is from 2013 and is located approximately 4.5 miles east of the project area on the Sacramento West quad. Plants were observed during 2005 vegetation surveys and scattered clumps were observed in 2013. The specimen identification is questioned.

Habitat in the Study Area

The MDC provides marginal habitat for this species. The habitat is considered marginal due to vegetation maintenance.

Saline Clover (Trifolium Hydrophilum)

The following section describes the habitat, biology, range, and known records of saline clover in the Study Area.

Habitat and Biology

Saline clover is an annual herb found in marshes, mesic and alkaline soils of valley and foothill grassland, and vernal pools from zero to 985 feet. Saline clover blooms from April through June.

Range

Saline clover is known to occur in Alameda, Colusa, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, and Yolo Counties.

Known Records

Three CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is approximately 5.1 miles north of the project area on the Grays Bend quad. Five plants were observed growing in hydric alkaline grassland on the edge of vernal pool habitat in 2011. The species is associated with *Plagiobothrys stipitatus*, *Hordeum brachyantherum*, *H. marinum*, and *Festuca perennis*.

Habitat in the Study Area

Marginal habitat for the species occurs in the detention basin in the MRIC site and along the eastern margin of the Study Area outside tilled fields. The habitat is considered marginal because of previous soil disturbance and because the detention basin may not be sufficiently mesic/alkaline.

Listed and Special-Status Wildlife

Based upon the database query results and Sycamore's October 7 and December 10, 2014 field surveys of the Study Area, Sycamore concluded that seven special-status animal species have the potential to occur within the Study Area. In addition, based on comments received during the scoping process for the project, giant garter snake (GGS) and western pond turtle have been added to the table, even though Sycamore concluded that suitable habitat does not exist on the project site. Only white-tailed kite was observed on-site during the site reconnaissance surveys. Information including common and scientific name, federal and State status, habitat suitability of the site, and field observations are detailed in Table 4.4-3.

Table 4.4-3 Special-Status Wildlife with Potential to Occur within the Study Area		
Scientific and Common Name	Federal Status / State Status	Habitat Present? / Species Observed?
REPTILES		
<i>Thamnophis gigas</i> Giant garter snake	-- / ST	No / No
<i>Emys marmorata</i> Western pond turtle	SSC	No / No
INVERTEBRATES		
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	T, CH / SC	Yes / No
BIRDS		
<i>Agelaius tricolor</i> Tricolored blackbird	-- / EL, SC	Yes / No
<i>Athene cunicularia</i> Burrowing owl	-- / SC	Yes / No
<i>Buteo swainsoni</i> Swainson's hawk	-- / T	Yes / No

(Continued on next page)

Table 4.4-3 Special-Status Wildlife with Potential to Occur within the Study Area		
Scientific and Common Name	Federal Status / State Status	Habitat Present? / Species Observed?
<i>Charadrius montanus</i> Mountain plover	-- / FP	Yes / No
<i>Elanus leucurus</i> White-tailed kite	-- / SC	Yes / Yes
<i>Melospiza melodia</i> Song sparrow ("Modesto" population)	-- / SC	Yes / No
Notes: Federal status determined from USFWS (2014) letter. State status determined from CDFW (2014e). Codes used in table are: E = Endangered; T = Threatened; P = Proposed; C = Candidate; CH = Critical habitat designated; R = California Rare; EL = California Emergency Listed; and SSC = CDFW Species of Special Concern. <i>Source: Sycamore Environmental Consultants, Inc. Biological Resources Evaluation. August 2015.</i>		

Giant Garter Snake (Thamnophis gigas)

The following section describes the habitat, biology, range, and known records of GGS in the Study Area.

Habitat and Biology

GGS historically inhabits natural wetlands, but now mostly inhabit agricultural wetlands and other waterways, such as irrigation and drainage canals, riceland, marshes, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands. Essential habitat components consist of:

- 1) Adequate water during the snake's active season (early spring through mid-fall) to provide adequate permanent water to maintain dense populations of food organisms;
- 2) Emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season;
- 3) Upland habitat with grassy banks and openings in waterside vegetation for basking; and
- 4) Higher elevation upland habitats for cover and refuge from flood waters during the snake's inactive season in the winter.

GGS are most active from spring to mid-fall (approximately April through the end of October). The breeding season begins after emergence from overwintering sites, approximately March through May, and resumes briefly in September. Females brood young internally and give birth to live young from late July through early September. Young scatter immediately into dense cover and absorb their yolk sacs and begin feeding on their own. GGS feed primarily on aquatic prey, such as fish and amphibians. They appear to take advantage of pools that trap and concentrate prey items. GGS are known to

bask in openings in vegetation created by rip-rap placed around water control structures. Small mammal burrows and other soil crevices above the flood elevation are used during the winter. Burrows are typically located in sunny exposure along south and west facing slopes.

Ideal marsh habitat contains shallow water, deep water, and high ground. The habitat is often found in rice fields where GGS appear to be the most numerous. GGS are generally absent from larger rivers and from wetlands with sand, gravel or rock substrates. Riparian woodlands do not typically provide suitable habitat because of excessive shade, lack of basking sites, and lack of aquatic prey.

Range

GGS is endemic to wetlands in the Central Valley of California from Red Bluff to Bakersfield. Once common throughout the Central Valley, GGS is currently found in the Sacramento Valley and isolated populations in San Joaquin Valley. The GGS Recovery Plan recognizes 13 separate populations of GGS that coincide with riverine flood basins and tributary streams: Butte Basin, Colusa Basin, Sutter Basin, American Basin, Yolo Basin/Willow Slough, Yolo Basin/Liberty Farms, Sacramento Basin, Badger Creek/Willow Creek, Caldoni Marsh, East Stockton – Diverting Canal and Duck Creek, North and South Grasslands, Mendota, and Burrel/Lanare. The populations occur in Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties. Studies conducted in Sacramento, Sutter, Butte, Colusa, and Glenn Counties showed that GGS populations were distributed in areas where rice was grown.

Known Records

Sixty-nine CNDDDB records of GGS exist in the nine-quad area centered on the Study Area. The nearest record is located in the Willow Slough Bypass near the Davis Landfill, approximately two miles north of the MDC in the MRIC site. Several other GGS records occur in or north/east of the Willow Slough Bypass within approximately three miles of the project area. None of the records occur on the project side of the Willow Slough Bypass.

Habitat in the Study Area

Sycamore concluded that habitat for GGS does not exist in the project site. The MDC is dry for much of the year and is not habitat for GGS. While suitable habitat for GGS within the MDC is currently lacking, according to the City's Wildlife Resource Specialist,⁸ suitable habitat has been present in the past. The existing conditions within the MDC are likely the result of the on-going drought conditions in the region. The

⁸ Personal email communication with Nick Pappani, Vice President of Raney Planning & Management, Inc. and John T. McNerney, Wildlife Resource Specialist, City of Davis, February 27, 2015.

possibility exists that more favorable habitat conditions may return during average rainfall years, or with a change in crop type and associated irrigation runoff on adjacent fields, which may occur over the long-term buildout of the proposed project. In addition, a significant GGS source population exists within the Yolo Bypass and Willow Slough Bypass, which increases the possibility of the snake being present, whether resident or vagrant, in the MDC. See Impact 4.4-2 for additional technical discussion of GGS in relation to the project site.

Potential aquatic habitat for federal threatened GGS occurs within 200 feet of the survey area for the off-site volume storage location, in 1) the Railroad Channel to the south; 2) a channel in Willow Slough Bypass north of the levee; 3) a channel on the east side of the Yolo Bypass levee; 4) created wetlands north of Road 30; and 5) an existing detention basin on APN 033 650 006. These features are shown in Figure 4.4-3. All of these features contain emergent aquatic vegetation, basking habitat, and water, or at least evidence of frequent inundation during the GGS active season (early spring through mid fall). Minor irrigation ditches occur along field edges in the off-site storage volume survey area. These ditches were dry during fieldwork, do not contain emergent aquatic vegetation, and do not provide aquatic habitat for GGS.

Western Pond Turtle (Emys Marmorata)

The following section describes the habitat, biology, and known records of western pond turtle in the Study Area.

Habitat and Biology

Western pond turtle are commonly found in aquatic habitats with abundant vegetative cover. The species requires exposed basking sites such as logs, rocks, floating vegetation, or open mud banks. Western pond turtle is associated with permanent or nearly permanent water in a wide variety of habitat types, such as ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams, from sea level to 4,690 feet.

Known Records

Four CNDDDB records of the western pond turtle species exist in Yolo County.⁹ The closest record is approximately 2.8 miles southwest of the Study Area at the UC Davis Arboretum Waterway (CNDDDB Occurrence No. 362). The turtles occurred in association with the non-native red eared slider (*Trachemys scripta elegans*) which outnumbered the western pond turtles at that location.

⁹ California Department of Fish and Wildlife. CNDDDB RareFind 5, Yolo County, California – Western pond turtle (*Emys marmorata*). Accessed March 17, 2015.

Habitat in the Study Area

Habitat for the western pond turtle species does not exist. The MDC is dry for much of the year and does not contain sufficient water for the species. Therefore, this species is not evaluated further in this section.

Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)

The following section describes the habitat, biology, range, and known records of VELB in the Study Area.

Habitat and Biology

VELB is a two-centimeter long beetle found only in association with the host plant, elderberry (*Sambucus mexicana* and *S. racemosa* var. *microbotrys*). Adults emerge from mid-March through June. During this period, adults feed on foliage, perhaps also the flowers, and mate. Eggs are deposited on living elderberry plants. The first larval bores through the center of an elderberry stem and develops for one to two years while feeding on the pith. Prior to pupation, the larva chews a hole through the bark and plugs the bark with wood shavings. The larva crawls back into the pupal chamber, metamorphoses, and emerges as an adult.

The elderberry host plant for VELB occurs in a variety of habitats, most commonly in riparian forests and margins and adjacent grassy savannas. Elderberries also occur in oak woodland and mixed chaparral foothill woodland. VELB is found in population clusters that are unevenly distributed across available host plants. Host plants are typically large mature plants. Exit holes are circular or slightly oval and between seven and 10 millimeters in diameter. VELB do not disperse long distances, and unoccupied drainages tend to remain unoccupied. Aggregations of occupied shrubs typically occur on the order of about 0.5 miles, which is consistent with limited dispersal ability. Isolated elderberry shrubs separated from contiguous habitat by extensive development are not typically considered viable habitat for VELB. The Yolo Natural Heritage Program defines potential VELB habitat as stands of elderberry shrubs adjacent to or contiguous with riparian forest, floodplains, or relict elderberry savannah. On September 17, 2014, the USFWS determined that proposed delisting of VELB was not warranted. VELB will remain a federally threatened species for the foreseeable future.

Range

VELB is endemic to the Central Valley and occurs from southern Shasta County south to Fresno County, and from the east side of the Coast Range to the foothills of the Sierra Nevada.

Known Records

Nine CNDDDB records exist in the nine-quad area centered on the Study Area. The closest record is approximately 7.2 miles east of the project area on the Sacramento West quad. A dense stand of elderberry shrubs, approximately 50 percent with exit holes, was observed adjacent to the railroad tracks near I-80 along the Sacramento River in West Sacramento in 1985.

Habitat in the Study Area

Blue elderberry (*Sambucus nigra* ssp. *caerulea*; formerly, *Sambucus mexicana*) shrubs in the Study Area provide marginal habitat for VELB. The habitat is considered marginal due to the non-riparian/agricultural context and the degree of shrub isolation.

Tricolored Blackbird (Agelaius tricolor)

The following section describes the habitat, biology, range, and known records of tricolored blackbird in the Study Area.

Habitat and Biology

Tricolored blackbirds form the largest breeding colonies of any North American inland bird species. Colonies vary in size from a minimum of about 50 nests to over 20,000 in an area of 10 acres or less.

Basic breeding site requirements are open, accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Historically, most colonies nested in freshwater marshes dominated by cattails or tules, while some colonies nested in nettles, thistles, and willows. However, the use of freshwater marshes as breeding colony sites has decreased. An increasing percentage of colonies since the 1970s have been reported in Himalayan blackberry and thistles, and some of the largest recent colonies were in silage and grain fields near dairies in the San Joaquin Valley. Other less commonly used substrates include safflower, tamarisk, elderberry, western poison oak, giant reed, riparian scrublands, and riparian forests.

Ideal foraging conditions for this species are created when shallow flood irrigation, mowing, or grazing keeps the vegetation less than six inches tall. Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feedlots, and dairies. Tricolored blackbirds also forage in native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders. Proximity to suitable foraging habitat appears important for the establishment of colony sites.

Range

In California, tricolored blackbird breeding occurs in the Sacramento and San Joaquin valleys, the foothills of the Sierra Nevada south to Kern County, the coastal slope from Sonoma County south to the Mexican border, and, sporadically, the Modoc Plateau. Tricolored blackbirds are a permanent resident in California, but make extensive migrations and movements within their range, both in the breeding season and in winter. Individuals usually move north after first nesting efforts (March to April) in the San Joaquin Valley and Sacramento County to new breeding locations in the Sacramento Valley, northeastern California, and rarely Oregon, Nevada, and Washington.

Known Records

Nine CNDDDB records of the tricolored blackbird species exist in the nine-quad area centered on the Study Area. The closest record is approximately 2.4 miles northwest of the Study Area on the Davis 7.5-minute quadrangle. About 15,000 tricolored blackbirds were observed nesting in 1999 in habitat consisting of cattails and rice.

A Petition to list the Tricolored Blackbird as Endangered with Emergency Regulations was submitted to the CDFW by the Center for Biological Diversity on October 8, 2014.¹⁰ Subsequently, the tricolored blackbird was granted as State-listed endangered on December 3, 2014.¹¹ Subsequently, on June 11, 2015, the California Fish and Game Commission (Commission) determined not to make the tricolored blackbird a candidate for listing under the California Endangered Species Act (CESA), and the bird's emergency status expired on June 30, 2015.

Habitat in the Study Area

Marginal nesting habitat for the tricolored blackbird species occurs in the portion of the MDC located on the MRIC site. Nesting habitat is considered marginal due to regular vegetation removal and the relatively small width of the MDC, which may not provide sufficient protection for colony nesting species. The Railroad Channel, south of the off-site volume storage area (see Figure 4.4-3), contains undisturbed vegetation that could provide suitable nesting habitat. Agricultural and ruderal areas in the project area provide foraging habitat.

Burrowing Owl (Athene cunicularia)

The following section describes the habitat, biology, range, and known records of burrowing owl in the Study Area.

¹⁰ California Department of Fish and Wildlife. *A Petition to the State of California Fish and Game Commission*. Submitted October 8, 2014. Available at: <http://www.fgc.ca.gov/CESA/tcbpet.pdf>.

¹¹ LA Times. *Tricolored blackbird gains endangered species protection in California*. December 4, 2014. Available at: <http://www.latimes.com/science/la-me-1204-blackbirds-20141204-story.html>.

Habitat and Biology

Burrowing owls primarily inhabit open, dry grassland and desert habitats, such as grasses, forbs, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation. Burrowing owls most commonly use ground squirrel burrows, but may also use badger, coyote, and fox holes or dens, or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes. An active nest chamber is often lined with excrement, pellets, debris, grass, and feathers. Burrowing owls also thrive in highly altered human landscapes. In agricultural areas, burrowing owls nest along roadsides, under water conveyance structures, and near and under runways and similar structures. In urban areas, burrowing owls persist in low numbers in highly developed parcels, busy urban parks, and adjacent to roads with heavy traffic. In the Imperial Valley, owls are able to excavate their own burrows in soft earthen banks of ditches and canals.

Burrowing owls are a semi-colonial species that breed in California from March through August, though breeding can begin as early as February and extend into December. A large proportion of adults show strong nest site fidelity. Burrowing owls typically feed on a broad range of insects, but also on small rodents, birds, amphibians, reptiles, and carrion. Foraging usually occurs close to their burrow.

Range

Burrowing owls are a year-round resident in most of California, particularly in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley. The species is generally absent from the humid coastal counties north of Marin and mountainous areas above 5,300 feet.

Known Records

Seventy-six CNDDB records for burrowing owl exist in the nine-quad area centered on the Study Area. The two closest records are mapped partially overlapping the project area. One record occurs near the intersection of Mace Boulevard and CR 104 and consists of several burrowing owls that were observed nesting in a disturbed dirt area surrounded by cultivated land and development in 2003 and 2004. The nests were located about 10 feet from the edge of Mace Road.

The second record is mapped along the southern border of the project site and includes areas east and west of Mace Boulevard. The second record consists of more than eight owls and two active burrows observed in 2004, and six owls and four burrows observed in 2005. CNDDB reports the location as the “corner of frontage road (adjacent to I-80) and Mace Boulevard, near Ikedas Market,” and the detailed location as “near road, between the two Park-and-Ride signs. Wintering burrow along the CR 32A right-of-way.” Habitat is described as “mowed nonnative grassland, surrounded by a frontage road, a Park-and-Ride lot, and Ikedas Market.

Habitat in the Study Area

Nesting habitat for burrowing owl occurs in the Study Area. California ground squirrel burrows were observed along Mace Boulevard, along the ruderal eastern edge of the Study Area, along the MDC, and especially along the railroad berm located south of the Study Area. Agricultural and ruderal areas in the area provide foraging habitat. In addition, burrows potentially suitable for burrowing owl were observed along the existing off-site detention basin (shown in Figure 4.4-3) and along the edge of the off-site Railroad Channel.

Swainson's hawk (Buteo swainsoni)

The following section describes the habitat, biology, range, and known records of Swainson's hawk in the Study Area.

Habitat and Biology

Swainson's hawks nest in open riparian habitat, in scattered trees or in small groves in sparsely vegetated flatlands. Nesting areas are usually located near water, but are occasionally found in arid regions. Typical habitat includes open desert, grassland, or cropland containing scattered, large trees or small groves. Swainson's hawk breeds from late March to late October. The species forages in adjacent grasslands, suitable grain or alfalfa fields, or in livestock pastures, feeding on rodents, small mammals, small birds, reptiles, large arthropods, amphibians, and, rarely, fish.

Range

Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Swainson's hawks breed and forage in the California Central Valley in spring and summer. California populations of the species are believed to overwinter in Mexico.

Known Records

Four-hundred-ninety-four CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The two closest records are mapped partially overlapping the Study Area. The records occur in association with eucalyptus groves located outside the Study Area to the east and north, respectively. The first record consists of two Swainson's hawks that were observed nesting in 1987 and 1988 in a eucalyptus tree surrounded by farm houses. The nest site was inactive in 1994. The second record indicates that nesting activities occurred in a farmyard eucalyptus from 1992 to 2002, with successful young last detected in 1992, and hawks last detected in 2002. The nest tree was reported as being in poor condition, and the nest site was reported as inactive in 2004 and 2005.

Habitat in the Study Area

The Fremont cottonwood trees in the detention basin and along the MDC provide marginal nesting habitat. Nesting habitat is considered marginal because the trees are young. Just north and east of the project area are groves of eucalyptus trees that could serve as nesting habitat. In addition, the sparse willow trees located at the southeast corner of the off-site volume storage pond survey area (see Figure 4.4-3), provide potential nesting habitat. Agricultural and ruderal areas in the Study Area provide foraging habitat.

Mountain Plover (Charadrius montanus)

The following section describes the habitat, biology, range, and known records of mountain plover in the Study Area.

Habitat and Biology

Mountain plover are a winter resident from September through March. The species is found in open grasslands, plowed fields with little vegetation, and open sagebrush areas. Areas with high and dense cover are avoided. Foraging occurs in short grasslands and plowed fields, and their diet consists of large insects, especially grasshoppers. The species is not known to nest in California. Mountain plover winters below 3,200 feet.

Range

The species exists in the Central Valley to Sutter and Yuba Counties southward. The species is also found in foothill valleys west of San Joaquin Valley, Imperial Valley, plowed fields of Los Angeles and western San Bernardino counties, and along the central Colorado River valley.

Known Records

Four CNDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is approximately 7.5 miles northwest of the Study Area on the Grays Bend quad. Two mountain plover were observed within an area containing basins and ponds surrounded by cultivated fields in 1970. The record states that the ponds are no longer found in the area.

Habitat in the Study Area

Agricultural and ruderal areas in the Study Area provide foraging habitat.

White-Tailed Kite (Elanus laevis)

The following section describes the habitat, biology, range, and known records of white-tailed kite in the Study Area.

Habitat and Biology

White-tailed kite is a fully-protected species by CDFW. White-tailed kites occur in herbaceous and open stages of most habitats in cismontane California. Areas with substantial groves of dense, broad-leaved deciduous trees are used for nesting and roosting. The species also roosts in saltgrass and Bermuda grass in southern California. White-tailed kites breed from February to October, with peak activity from May to August. Nests are typically located near the top of dense oak, willow, or other tree stands from 20 to 100 feet above the ground, and are often located near an open foraging area with a dense population of voles.

Range

White-tailed kites are a year-round resident of coastal and valley lowlands in cismontane California. The species is absent from higher elevations in the Sierra Nevada, the Modoc Plateau, and most desert regions.

Known Records

Nine CNDDDB records for the species exist in the nine-quad area centered on the Study Area. The closest record is approximately 0.1 miles north of the Study Area on the Davis quad. The record reports two nesting trees at this location, describing one as *Cedrus* sp. and the other as an olive tree, in habitat consisting of agricultural fields of wheat, alfalfa, and safflower. In 1993, two young fledged and in 1999 three young fledged. The record indicates that, in 1999, all of the trees at the site were removed.

Habitat in the Study Area

Fremont cottonwood trees in the detention basin and along the MDC provide marginal nesting habitat. Nesting habitat is considered marginal because the trees are young and isolated. The groves of eucalyptus trees located just north and east of the project area could serve as nesting habitat. In addition, the sparse willow trees located at the southeast corner of the off-site volume storage pond survey area (see Figure 4.4-3), provide potential nesting habitat. Agricultural and ruderal areas in the project area provide foraging habitat.

Song Sparrow (Modesto Population) (Melospiza melodia)

The following section describes the habitat, biology, range, and known records of song sparrow (Modesto population) in the Study Area.

Habitat and Biology

The Modesto song sparrow is a year-round resident that prefers emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of

blackberry, along vegetated irrigation canals and levees. Seeds are the most important foods in annual diet, but insects, spiders, other small invertebrates, make up almost half of diet in nesting season. Minor foods include berries and other small fruits. The species usually forages on ground or in low vegetation, under cover of dense thickets, or in wetland vegetation. The species sometimes forages a short distance from cover.

Range

The Modesto song sparrow is restricted to California where the species is locally numerous in the Sacramento Valley, Sacramento-San Joaquin River Delta, and the northern San Joaquin Valley. The Modesto song sparrow remains locally numerous in areas where extensive wetlands remain. The highest densities occur in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. Immediately adjacent to the Butte Sink, song sparrows breed in sparsely vegetated irrigation canals, yet are almost entirely absent from the main stem and tributaries of the Sacramento River above Sacramento.

Known Records

Nine CNDDDB records of the species exist in the nine-quad area centered on the Study Area. The closest record is approximately five miles southwest of the Study Area on the Sacramento West quad. In July 2011, two adult and two fledgling song sparrows were observed along the south fork of Putah Creek in riverine riparian scrub surrounded by agricultural cropland.

Habitat in the Study Area

Marginal nesting habitat for the species occurs in the MDC, and in undisturbed vegetation along the Railroad Channel. Nesting habitat is considered marginal due to regular vegetation removal and the relatively small width of the MDC. Agricultural and ruderal areas in the project area provide marginal foraging habitat. Foraging habitat is considered marginal because of little vegetation cover.

Other Migratory Birds and Birds of Prey

Fish and Game Code 3503.5 protects all birds in the orders *Falconiformes* and *Strigiformes* (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). All migratory bird species are protected by the MBTA. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law. The project area provides nesting and foraging habitat for birds of prey and other migratory birds.

Trees

The City of Davis requires permits for the removal of some species and sizes of trees pursuant to Chapter 37 of Davis Municipal Code. The term “protected tree” (§37.01) includes City trees and street trees on City land, easements, or right-of-way, as well as some trees that may occur outside of public easements on private land including trees of significance and landmark trees. The Municipal Code contains a list of trees which are considered “trees of significance.” Table 4.4-4 identifies the potentially affected protected trees that occur on the MRIC site. Trees in the parking lot of the Park-and-Ride near Mace Boulevard are not included in the table because no development is anticipated for this parcel. As summarized in Table 4.4-4, eight trees were observed on the MRIC site by the Sycamore Environmental Consultants biologist/arborist during the reconnaissance-level field survey on December 23, 2014. The trees on the project site are primarily confined to the MDC, the detention basin on the MRIC site, and along Mace Boulevard. See Figure 4.4-1 above for the location of the on-site trees.

Table 4.4-4 Trees Observed On-Site				
Tree	Scientific Name and Common Name	Location	Diameter at Breast Height (DBH) (inches)¹	City Status
1	<i>Platanus x acerifolia</i> London Plane	Adjacent to Mace Drainage Channel	7.0	Tree of Significance
2	<i>Platanus x acerifolia</i> London Plane	Adjacent to Mace Drainage Channel	4.6	--
3	<i>Populus fremontii</i> ssp. <i>fremontii</i> Fremont Cottonwood	Detention Basin	15.3, 23.5, 8.6	Tree of Significance
4	<i>Populus fremontii</i> ssp. <i>fremontii</i> Fremont Cottonwood	Detention Basin	24.8	Tree of Significance
5	<i>Populus fremontii</i> ssp. <i>fremontii</i> Fremont Cottonwood	Detention Basin	8.4, 9.5, 9.7, 16.2	Tree of Significance
6	<i>Salix gooddingii</i> Goodding's black willow	Adjacent to Mace Drainage Channel	9.2, 5.7	Tree of Significance
7	<i>Populus fremontii</i> ssp. <i>fremontii</i> Fremont Cottonwood	Adjacent to Mace Drainage Channel	16.2	Tree of Significance
8	<i>Ulmus parvifolia</i> Chinese elm	Along Mace Boulevard	6.0, 6.3, 7.0	Tree of Significance Street Tree
Notes: ¹ The DBH for each trunk of a multi-trunk tree are listed.				
Source: Sycamore Environmental Consultants, Inc. Biological Resources Evaluation. August 2015.				

A total of seven trees on the MRIC site qualify for protection under the City of Davis' Municipal Code as the trees are considered trees of significance. The eighth tree on the site is not considered protected due to insufficient diameter at breast height (DBH) for protection by Davis' Municipal Code.

Sensitive Natural Communities

Sensitive natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection (i.e., wetlands and other waters under Sections 404 and 401 of the Clean Water Act (CWA), Section 1600 *et seq.* of the California Fish and Wildlife Code, and/or the Porter-Cologne Act). In addition, the CNDDDB has designated a number of communities as rare; these communities are given the highest inventory priority (Holland 1986, CDFW 2003e).

Special-status natural communities are waters, wetlands, riparian communities, and any natural community or vegetation alliance ranked S1, S2, or S3 by CDFW. Special-status communities may also include those considered locally important or sensitive. The MDC contains 0.81-acre of freshwater marsh vegetation (*Typha* alliance), a special-status natural community. Freshwater marsh vegetation does not occur in the portion of the MDC located between the MRIC site and CR 105. Vegetation in the MDC is regularly removed by the City. The MDC is discussed below.

Aquatic Features

Potentially jurisdictional waters or wetlands do not exist on the project site.¹² The online National Wetland Inventory (NWI) map does not identify any wetlands or waters in the project area. The MDC is not identified on either NWI map. The 1990 NWI map identifies an isolated feature in the southwest corner of the project area, north of CR 32A, which is no longer present. The 1,850-foot long palustrine, emergent, seasonally flooded wetland (PEMC) occurred entirely on APN 033-630-009 (located on the MRIC Site). Other wetland or drainage features are not shown nearby on the NWI map. See the discussion of the MDC below for additional discussion of the isolated feature.

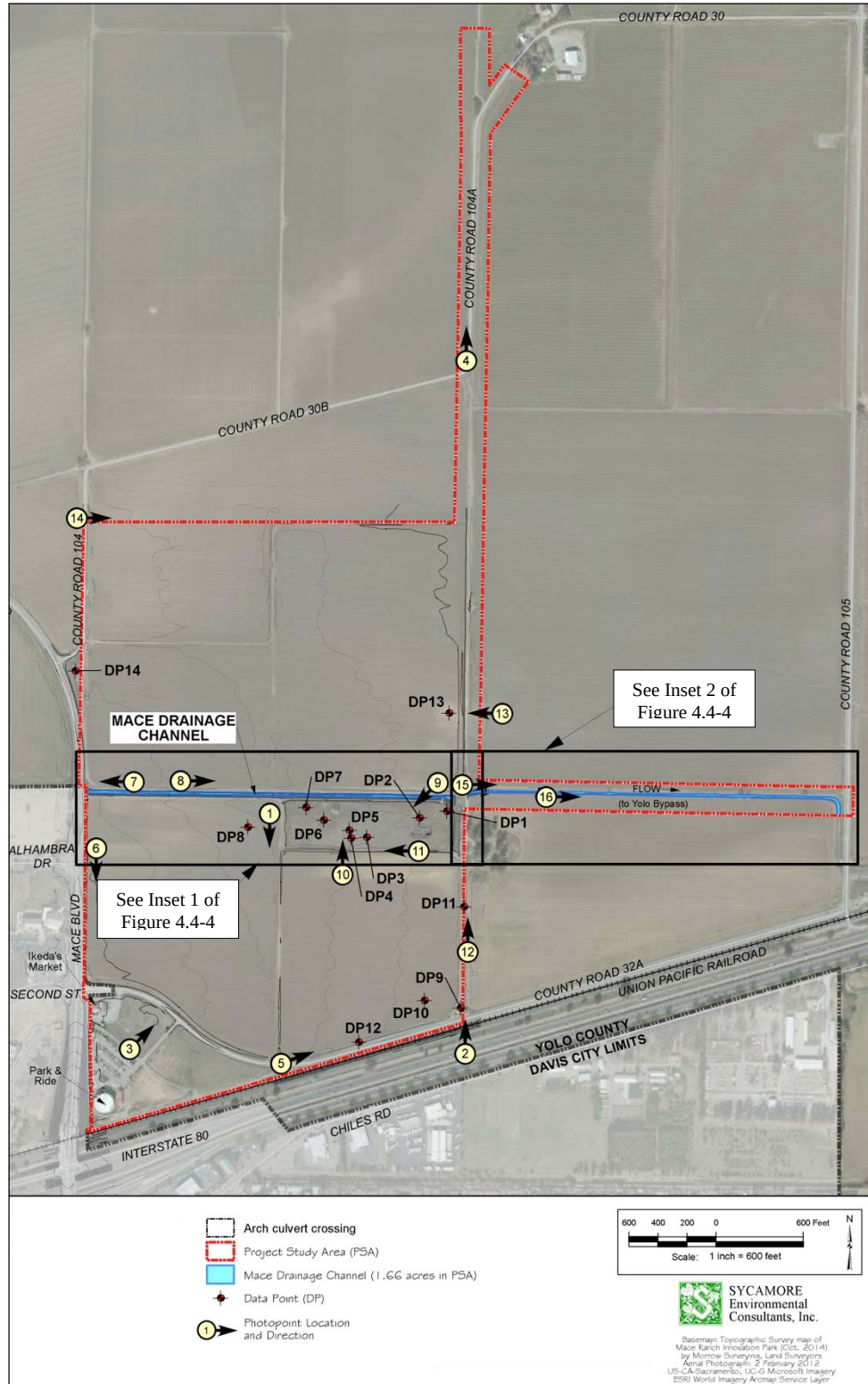
The MDC, minor roadside drainage ditches, minor irrigation ditches, and other features located on the project site are discussed in further detail below.

Mace Drainage Channel

The MDC is a storm water drainage ditch that transports urban runoff from the Mace Ranch Drainage Basin in the City of Davis east through the center of the project site, to the Railroad Channel, which drains to the Yolo Bypass approximately 2.5 air miles east of the project area. The Mace Ranch Drainage Basin and the MDC are shown on the City's stormwater drainage map. The MDC is maintained by the City. The portion of the MDC in the project site occupies 1.66 acres, has a total length of 5,175 feet, and an average width of 13.9 feet (see Figure 4.4-4 and 4.4-5).

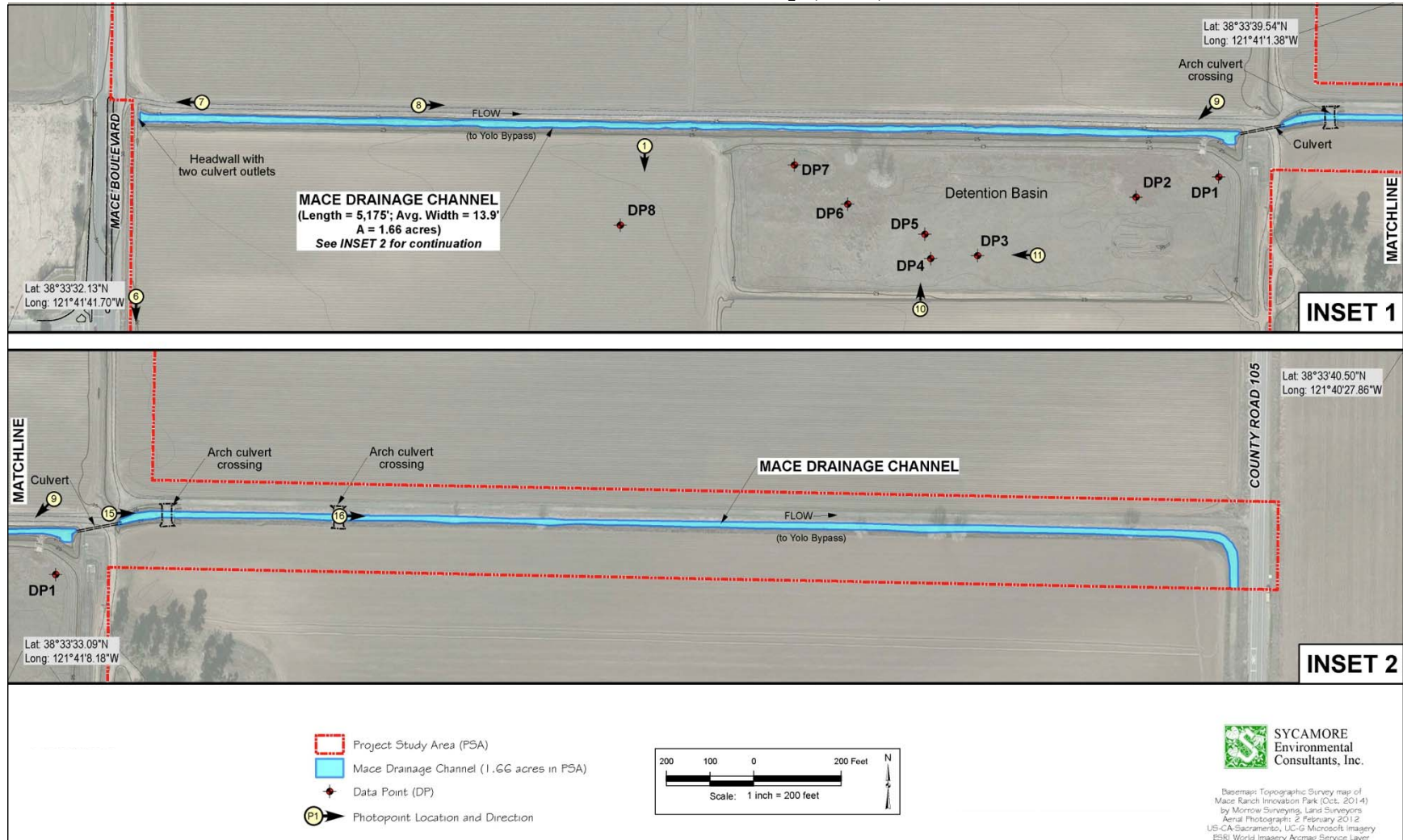
¹² Sycamore Environmental Consultants, Inc. *Jurisdictional Delineation Report for the Mace Ranch Innovation Center Project* [pg. 15]. February 3, 2015.

**Figure 4.4-4
Wetland Delineation Map (1 of 2)**



Source: Sycamore Environmental Consultants, Inc. Jurisdictional Delineation Report for the Mace Ranch Innovation Center Project. February 3, 2015.

Figure 4.4-5
Wetland Delineation Map (2 of 2)



Within the project site, the MDC has been excavated in uplands. Based on the historical aerial photos, from 1937, 1952, 1964, 1971, 1984, many aerial photos from 1993 to present, and historic U.S. Geological Survey topographic maps from 1907 to 1992, the MDC is not part of a realigned natural drainage. The MDC was historically an agricultural irrigation ditch that was widened and improved for storm drainage in approximately 1992. A discussion of the hydrology, bed and banks, and history and improvements for the MDC is provided below.

Hydrology

The watershed for the portion of the MDC in the project site is about 730 acres and is entirely within the City of Davis in areas dominated by urban development. Hydrology for the portion of the MDC in the project site is provided by stormwater and residential/ commercial irrigation runoff from within the City of Davis. Based on drainage maps, aerial photographs, and field inspection, groundwater sources do not exist and natural channel realignments associated with the MDC in or upstream of the project area do not exist. Ditches or channels do not drain to the MDC on the MRIC Site. A small irrigation ditch along the west side of CR 105 drains to the MDC at the eastern edge of the project site, near CR 105. Agricultural irrigation runoff is not a substantial source of hydrology for the portion of the MDC in the project area.

The MDC enters the project site through a double culvert under Mace Boulevard, along the western edge of the site. West of Mace Boulevard, the MDC is culverted for approximately 1,000 feet. Further upstream, the channel is open. Within the project site, the MDC is straight. One culvert crossing exists in the MRIC Site. At the eastern edge of the MRIC site, the MDC passes under a dirt farm road through one or two culverts. The MDC passes under two arch culvert crossings approximately 130 feet and 530 feet east of the MRIC site, along the eastern sewer alignment alternative. From the east side of the MRIC site, the MDC flows ± 1.1 miles to the Railroad Channel, which then flows ± 1.5 miles to the Yolo Bypass. The Railroad Channel drains through a 170-foot wide levee into the Yolo Bypass through a box culvert with a one-way metal flap gate. The following hydrological observations of MDC were made during fieldwork:

- On October 7, 2014, the MDC was dry except for no more than 12 inches of standing water in the western half of the MRIC Site. The channel was dry in the center of the MRIC site and to the east along the eastern sewer line alternative. At the Yolo Bypass, the Railroad Channel was dry.
- On December 10, 2014, after 3.5 inches of rain in the preceding 12 days, the MDC was dry except for no more than 12 inches of standing water in the western half of the MRIC site. The channel was dry in the center of the MRIC site and to the east along the eastern sewer line alternative. Downstream and east of the project site, the channel was dry in all portions visible from CR 105. The only water observed in the MDC was in the western half of the MRIC site, near Mace Boulevard.
- On December 23, 2014, after additional major rain events, the MDC was dry except for 12 to 16 inches of standing water in the western half of the MRIC site (deeper than on December 10 because some debris was obstructing drainage). The only water observed in the MDC was in the western half of the MRIC site, near Mace Boulevard.

- In May 2014, the portions of the MDC visible from CR 105 (between the project site and the Yolo Bypass) were dry.
- In May 2012, the portions of the MDC visible from CR 105 (between the project site and the Yolo Bypass) were dry.

Hydrology of the portion of the MDC in the project site is artificial and ephemeral. Based on drainage maps, aerial photographs, and field observations, the portion of the MDC in the project site is anticipated to flow only during and immediately after precipitation events and in association with artificial input due to urban irrigation or other urban runoff within the City of Davis.

At the eastern edge of the MRIC site, flow within the MDC appears to be constricted by an undersized and/or partially blocked culvert that passes flow beneath a farm road crossing. The flow constriction likely contributed to a back-up within the MDC, which filled the detention basin with an estimated two to three feet of water sometime prior to December 10, 2014 (see discussion of detention basin below).

Bed and Banks

The bed and banks of MDC are earthen and vegetated in the project site. On the MRIC site, the bed is vegetated with freshwater marsh species (regularly removed as described above) and the banks are vegetated with ruderal species. East of the MRIC site, both the bed and banks are vegetated with ruderal species. The bed is roughly six to eight feet below the top of the banks. An ordinary high water mark (OHWM) caused by the fluctuations of water is present within the MDC in the project site. The OHWM was identified by the following indicators: presence of litter and debris, wracking, vegetation matted down, leaf litter disturbed or washed away, and change in plant community.

History and Improvements

Prior to widening and deepening of the MDC in 1992, a smaller agricultural irrigation ditch was present in approximately the same alignment. The ditch was likely functioning in a stormwater drainage capacity at that time. The project site has been part of a large area of farmed land since at least 1937. Historic aerial photographs do not clearly show whether or not an irrigation ditch was present at the location of the MDC.

Just east of the detention basin (described below), along the eastern edge of the MRIC site on locally elevated ground, is a small concrete structure that includes an outfall for water, an approximately 17 foot long, concrete-lined portion of a ditch, and metal pipes rising from the ground. Associated with the Mace Ranch development, the structure was constructed in approximately 1993 as an interim solution to phased MDC improvements. The structure was designed to pump water from the detention basin, south across the MRIC site, then east to the MDC further downstream, around an unimproved portion of the MDC. Because the phased MDC improvements were completed shortly after construction of the concrete structure/pump, the structure/pump was never used. The structure is non-functional. Interim improvements include a culvert with a concrete apron at the southeast corner of the MRIC site, which was to

pass water through the concrete outlet underneath CR 32A. A ditch was not observed delivering water to the apron/culvert. Currently, an approximately 250-foot long, one-foot wide earthen ditch connects the concrete structure back to the detention basin at its southeast corner. The ditch does not have an OHWM, is excavated in uplands, is higher elevation than the detention basin and MDC, and is dominated by weedy upland vegetation. The ditch's watershed is negligible and appears to convey only precipitation runoff from immediately adjacent uplands to the detention basin. The non-operational concrete structure/pump and the associated 250-foot ditch are not potentially jurisdictional waters.¹³

Channels, ditches or other potential water features do not occur at the location of the MDC on any of the historic topographic maps (1907, 1915, 1952, 1954, 1968, 1981, and 1992) or on either of the NWI maps. An isolated, linear depression is shown approximately 1,000 feet south of the MDC on historical topographic maps from 1915 to 1992. Evidence that the isolated feature was ever connected to the MDC does not exist.

Galloway Consulting, Inc. conducted a wetland delineation field assessment on July 5, 2005 for the nearby 2nd Street Crossing (Target Store) Project. The report concluded that the nearby portion of the MDC (approximately 0.5 miles upstream of the MRIC site) was excavated in an upland area for the purpose of receiving drainage from the Mace Ranch Park Project and that the MDC was not regulated by the U.S. Army Corps of Engineers (USACE). The City of Davis incorporated Galloway's findings in Chapter 4.7 of the 2nd Street Crossing (Target Store) Project Draft EIR.

Minor Roadside Drainage Ditches

Roadside drainage ditches roughly one to two feet wide occur along the east side of Mace Boulevard, along both sides of CR 32A, along both sides of the Park-and-Ride driveway, and along portions of an unnamed dirt road that travels from the Ikedas Market parking lot southeast to the southern edge of the project site. The features are man-made, excavated in uplands, and drain only uplands. The features are dominated by upland ruderal weeds. An OHWM was not observed in the features. The roadside ditches drain into existing storm drains that likely drain to the MDC outside the project site. Ditches excavated wholly in and draining only uplands are not jurisdictional under the CWA.

Minor Irrigation Ditches

One irrigation ditch roughly one to two feet wide occurs along the eastern edge of the MRIC Site north of the MDC. The ditch appears to drain irrigation runoff from fields north of the site. The ditch drains to the MDC just east of the MRIC site. Irrigation ditches also occur on both sides of CR 105 at the eastern end of the project site. The ditches may also drain runoff from along CR 105, but the primary purpose appears to be irrigation drainage. The ditches drain to the MDC. The irrigation ditch on the west side of CR 105 drains to the MDC through a pipe beneath the

¹³ Sycamore Environmental Consultants, Inc. *Jurisdictional Delineation Report for the Mace Ranch Innovation Center Project* [pg. 17]. February 3, 2015.

dirt road adjacent and north of the MDC as the MDC turns south at the eastern edge of the project site. The irrigation ditches in the project site are man-made and excavated in uplands. The ditches are dominated by upland ruderal weeds. The ditches do not drain wetlands or potential Waters of the U.S. and are not realigned natural features. An OHWM was not observed in the features. Irrigation ditches excavated wholly in and draining only uplands are not jurisdictional under the CWA. Waters, including wetlands, created as a result of irrigation are not considered Waters of the U.S. even when augmented on occasion by precipitation.

Other Features

An approximately 1,200 foot long by 330 foot wide detention basin occurs adjacent to and south of the MDC near the eastern boundary of the MRIC site. The basin was constructed in 1992 to attenuate peak flow in the MDC while waiting for MDC improvements east of the MRIC property. Wetlands do not occur within the detention basin based on seven data points taken in the nine-acre feature. The basin is separated from the MDC by an approximately 23 foot wide, five foot tall earthen berm. A concrete weir located between the basin and the MDC near the eastern edge of the MRIC site allows high water from the MDC to flow into the detention basin during extreme high water events. Two one-way metal flap gates in the weir allow water in the detention basin to flow back into the MDC as water in the MDC recedes.

Prior to 2014, the detention basin had never been observed with standing water. None of the aerial photographs available in Google Earth show standing water in the feature. On December 10, 2014, wracking was observed along the northern and eastern sides of the detention basin at an elevation indicating that two to three feet of water had recently inundated the basin. The wracking was not observed along the edge of the basin on October 7, 2014 and most likely originated from the piles of vegetation that were removed from the MDC and placed in the basin earlier in 2014. A partially blocked culvert just downstream of the spillway in the MDC at the eastern edge of the MRIC site could have caused water levels in the ditch to overtop the spillway, which would have flooded the basin.

Surface water or saturated soils were not observed in the detention basin on December 10, 2014 despite over 3.5 inches of rain within the 12 preceding days, and evidence of two to three feet of inundation. Soil pits excavated throughout the basin showed that much of the basin is underlain by permeable sand and silt. Vegetation in the detention basin was dominated by perennial pepperweed, prickly lettuce (*Lactuca serriola*), milk thistle, poison hemlock, yellow star-thistle, hairy hawkbit (*Leontodon saxatilis*), curly dock (*Rumex crispus*), clover (*Trifolium* sp.), redstem filaree (*Erodium cicutarium*), and immature grass seedlings (most likely nonnative annual grasses). The detention basin does not contain other wetlands or waters under the jurisdiction of the USACE or the State.

In addition, an isolated linear depression is visible on the 1990 NWI map, on historical USGS quadrangle maps from 1915 to 1992, and on aerial photographs dated 1970 and earlier. The feature was analyzed to determine whether it was a natural feature and whether it was realigned to form any of the features present on the site today. The isolated linear depression feature was located approximately 1,000 feet south of the present day MDC and does not appear to have been hydrologically connected to any other features. Tributaries to or outlets from the feature are

not shown on any of the historical maps and aerial photographs. The feature was likely used for irrigation purposes. A well (no longer present) is shown along the east side of Mace Boulevard, immediately adjacent to the isolated feature on the 1968 and 1992 Davis topographic maps. The isolated feature was filled and graded in approximately 1993.

4.4.3 REGULATORY CONTEXT

A number of Federal, State, and local policies provide the regulatory framework that guides the protection of biological resources. The following discussion summarizes those laws that are most relevant to biological resources in the vicinity of the project site.

Federal Regulations

The following are the Federal environmental laws and policies relevant to biological resources.

Federal Endangered Species Act

The primary focus of the FESA of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA has been amended several times in the past to correct perceived and real shortcomings. FESA contains three key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies. In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Sections 7, 9, and 10 of FESA are discussed below because they are the three sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the take of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, take of fish or wildlife species listed as threatened is prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where wildlife is actually killed or injured by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (*Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity*) ruled that the USFWS must show that a threatened or endangered species is present on a project site and would be taken by the project activities. According to the ruling, the USFWS cannot require mitigation based on the probability that the species could use the site; rather the USFWS must show that the species is actually present.

The project site is located in an area that is regulated by the USFWS' Sacramento Endangered Species Office. The office believes the above case was narrowly focused on federal grazing leases and the effects of the leases on federal listed species. Due to the narrow focus, the Sacramento office believes that the case has little bearing in northern California. The office claims that probable use of habitat by a federal listed species would still be subject to the provisions of FESA.

Section 9 applies not only to federal agencies but to any local or State agency, and to any individual as well. If take of a listed species is necessary to complete an otherwise lawful activity, which triggers the need for consultation under Section 7 of FESA (for Federal agencies and projects with a federal "nexus" (that is, an authorized, funded or carried out by a federal agency)), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each Federal agency shall, in consultation with and with the assistance of the USFWS, insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat. Critical habitat identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection. Section 4 of the Act requires USFWS to consider economic and other relevant impacts of specifying any particular area as critical habitat.

Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the USACE for a permit). As an example, if a federally listed endangered species is present in "waters of the United States" on a project site, prior to authorizing impacts to "waters of the United States," the USACE (who administers the Clean Water Act) would be required to initiate "formal consultation" with USFWS pursuant to Section 7 of FESA. As part of the formal consultation, the USFWS would then be required to prepare a Biological Opinion based on a review and analysis of the project applicant's avoidance and mitigation plan. The Biological Opinion will either state that the project will or will not result in take or threaten the continued existence of the species (not just that population). If an endangered species could be harmed by a proposed project, USFWS has to be in complete concurrence with the proposed avoidance and mitigation plan. If USFWS is not in complete concurrence with the mitigation plan, they would submit a Biological Opinion to the USACE containing a "jeopardy decision" and state that a USACE permit should not be issued for the pending project. The applicant would then have an opportunity to submit a revised mitigation plan that provides greater protection for the species.

In the 1982 amendments to FESA, Congress established a provision in Section 10 that allows for the "incidental take" of endangered and threatened species of wildlife by non-federal entities (for example, project applicants, state and local agencies). "Incidental take" is defined by FESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant would

undertake to minimize and mitigate such impacts, and the funding that would be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Wildlife Code states, "It is unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the United States under Section 404 of the CWA. "Discharge of fill material" is defined as the addition of fill material into Waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2[f]). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the United States include a range of wet environments such as lakes, rivers, streams (including intermittent streams), 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 C.F.R. §328.3[b]).

Furthermore, Jurisdictional Waters of the United States can be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the 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 C.F.R. §328.3[e]).

State Regulations

The following are the State environmental laws and policies relevant to biological resources.

California Endangered Species Act

The State of California enacted the CESA in 1984. The CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the CDFW when preparing CEQA documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that “overriding considerations” exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA prohibits the taking of State-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFW requires preparation of mitigation plans in accordance with published guidelines.

The CDFW exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Wildlife Code Sections 1600 to 1607. The CDFW has the authority to regulate work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In addition, CDFW enforces the Fish and Wildlife Code of California, which provides protection for “fully protected birds” (§3511), “fully protected mammals” (§4700), “fully protected reptiles and amphibians” (§5050), and “fully protected fish” (§5515). The California Code of Federal Regulations (Title 14) prohibits the take of Protected amphibians (Chapter 5, §41), Protected reptiles (Chapter 5, §42) and Protected furbearers (Chapter 5, §460). The California Endangered Species Act, which prohibits ‘take’ of state-listed Endangered or Threatened species, is also enforced by CDFW.

For projects resulting in significant impacts to biological resources, mitigation measures are required to minimize adverse environmental effects. Mitigation measures often include, for example, replacement of removed trees and mitigation for impacts to wetlands and/or waters. Depending on the quality and extent of the area impacted, the mitigation ratio can vary between 1:1 (mitigation:impact) and 5:1. For non-water-dependent projects located near creeks, the CDFW also typically requires the establishment of a buffer zone immediately adjacent to creeks and wetlands. Depending upon the specific project components and the presence of State- or federally-listed species, the buffer zone may be as little as 50 feet or as much as 300 feet.

Section 1602 of the California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream that CDFW typically considers to include riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

Local Regulations

The following are the local environmental laws and policies relevant to biological resources.

Yolo Natural Heritage Program

The Yolo Natural Heritage Program (YNHP) is a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) and Local Conservation Strategy for Yolo County, California. The YNHP aims to conserve natural open space and agricultural areas that provide habitat for special status and at-risk species found within the habitats and natural communities in Yolo County.¹⁴ The habitat conservation goals are supplemented by additional goals related to preservation of the County's agricultural character and promotion of economic development, as well as enhancement of opportunities for recreation in natural areas. When completed and approved, the YNHP plan will incorporate measures to conserve important biological resources, provide streamlined permitting for appropriate urban growth and public infrastructure projects, and support the preservation of Yolo County's rich agricultural heritage. All activities of the YNHP are conducted under the oversight of the Yolo County Joint Powers Agency (JPA).

The Second Administrative Draft Yolo HCP/NCCP was released on March 31, 2015, and the public comment period for the Second Administrative Draft closed on May 29, 2015. The final HCP/NCCP is expected to be adopted by May 2017. At that time covered activities will be subject to new permit procedures and mitigation/conservation requirements for impacts to covered species/habitat. The MRIC is included as a covered activity under the Second Administrative Draft Plan.

It should be noted that the Yolo Habitat JPA provided e-mail correspondence regarding the proposed project on March 9, 2015. The Biological Resources section and following impact analysis addresses the concerns identified in the comment letter submitted for the project by the Yolo Habitat JPA.

¹⁴ Yolo Natural Heritage Program. *About The Yolo Natural Heritage Program*. Accessed March 2, 2015. Available at: <http://www.yoloconservationplan.org/>.

Swainson's Hawk Mitigation Program

The Yolo County NCCP/HCP JPA administers a program for the County, and the cities of Davis, Woodland, Winters, and West Sacramento, to implement the agreement with the California Department of Fish and Wildlife regarding impacts to Swainson's hawk foraging habitat ("Swainson's Hawk Interim Mitigation Fee" program). The JPA reviews applications for development of open land within the NCCP/HCP planning area and collects acreage-based mitigation fees for development of the lands. The mitigation fees are to be sufficient to fund the acquisition, enhancement, and long-term management of one acre of Swainson's hawk foraging habitat for every one acre of foraging habitat that is lost to urban development. The interim program, which is dependent on completion of the Yolo County NCCP/HCP, is limited to providing mitigation for impacts to foraging habitat and does not authorize incidental take of Swainson's hawks.

City of Davis General Plan

The applicable Davis General Plan policies and standards relating to biological resources are presented below in Table 4.4-6.

City of Davis Municipal Code

The City of Davis regulates tree planting and removal within the community in Chapter 37, Tree Planting, Preservation, and Protection, of the Municipal Code. Article 37.01 contains the administrative provisions, the pertinent sections of which are as follows:

37.01.020 Definitions

City tree. 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.

Landmark tree. A tree that has 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 community services department, lists these identified trees.

Private tree. Any tree privately owned and growing on private property, which may include landmark trees and/or trees of significance.

Street tree. 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.

Tree. Any woody perennial plant having one or several main stems commonly achieving ten or more feet in height and capable of being pruned and shaped to develop a branch-free trunk at least nine feet in height. Reference to any tree

indicates the entire plant, including both visible (canopy, trunk) and below grade (roots).

Tree of significance. Any tree included but not limited to those listed as per Section 37.03.050 as small and large trees which measure five inches or more in diameter (DBH).

In addition, Article 37.03 contains the criteria for landmark trees and trees of significance, the pertinent sections of which are as follows:

37.03.020 Landmark tree designation criteria

- (a) Any person may and is encouraged to submit a proposal to designate a tree as a landmark tree. Property owners of trees under consideration shall be notified that a proposal has been submitted and shall have the opportunity to be fully involved in the designation process. Proposals shall be reviewed by the director and sent to the tree commission for its review. Upon recommendation of the tree commission and approval of the City Council, a tree may be designated as a landmark tree if it meets any of the following criteria:
 - (1) The tree is an outstanding specimen of a desirable species;
 - (2) The tree is one of the largest or oldest trees in Davis;
 - (3) The tree is of historical interest;
 - (4) The tree is of distinctive form; or,
 - (5) The tree is an unusual species, significant grove or is otherwise unique.

The director shall notify, in writing, the person who submitted the proposal and the tree owner (if different from the applicant) of the City Council's decision.

- (b) When considering designating, removing designation (per Section 37.03.040) or removing (per Sections 37.03.060 and 37.03.070) landmark trees of historic value, the historical resources management commission shall be given the opportunity to comment on the proposal prior to tree commission review. (Ord. 2099 § 1, 2002)

37.03.050 Trees of significance – Identification and classification

All trees of significance are considered significant at five inches or greater in diameter (DBH). The following list of potential trees of significance divides tree species into two separate categories based upon their potential size at maturity; however, this list is not exhaustive. Should a property owner not know how a specific tree(s) five inches or greater may be affected by this section, (such as identification of species or species not on the list), the property owner may contact the city arborist. Not all trees on the following lists are appropriate for street trees or parking lot trees. For recommended street trees and parking lot trees, the City of Davis master tree list should be consulted.

Section 37.03.050 of the Municipal Code protects 25 small tree species and 43 large tree species. However, as noted above, the listed tree species is not exhaustive.

Furthermore, Article 37.05 contains protection procedures to be implemented during construction, the pertinent sections of which are as follows:

37.05.010 Protection while trenching, grading, performing construction, or other related site work.

Prior to any demolition, trenching, grading, construction, repair, alteration, removal or moving of any building, house or structure, or other site work, all trees to be preserved in compliance with this chapter shall be protected in accordance with the tree preservation and protection standards, and as follows:

- (a) Approved development plans and specifications shall state protection procedures for trees that are to be preserved as outlined in the tree protection specifications and shall be available at the project site. From the conception of plans, developers, architects, landscape architects, engineers and/or planners shall accurately locate and identify all existing trees on proposed project site plans and shall comply with the city policies for tree preservation. Tree care practices, such as the cutting of roots, pruning the top, etc., shall be described in the approved tree modification permit, tree preservation plan or project conditions.
- (b) It is the responsibility of the property owner or his or her designated representative to ensure that all trades/subcontractors and utility companies abide by the preservation conditions of this provision.
- (c) Violation or failure to comply with the requirements of this section or the condition of permit approval may result in a penalty pursuant to Section 37.06.040. (Ord. 2099 § 1, 2002)

4.4.4 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to biological resources.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan; or
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to biological resources.

Method of Analysis

The information contained in this analysis is primarily based on a Biological Resources Evaluation and the Jurisdictional Delineation Report prepared for the proposed project by Sycamore Environmental Consultants.

Biological Resources Evaluation

The *Biological Resources Evaluation* included conducting baseline biological field surveys, a botanical survey, obtaining and analyzing data from State and federal agencies, and reviewing maps, aerial photographs, and published literature. The reconnaissance survey was performed on October 7, 2014, the biological and botanical survey was completed on December 10, 2014, and the arborist survey was completed on December 23, 2014. An evaluation of biological resources was conducted to determine if any State or federal-listed special-status plant or wildlife species or their habitat occur in the project area.

Potential impacts of the proposed project on biological resources were identified by first comparing the habitat requirements of those species identified during the above data reviews to the habitat available on and adjacent to the proposed project site. Sycamore Environmental Consultants queried the CDFW CNDDDB for the Woodland, Merritt, Dixon, Grays Bend, Davis, Saxon, Taylor Monument, Sacramento West, and Clarksburg U.S. Geological Survey (USGS) 7.5 minute quadrangles, as well as the USFWS Species List website for the Davis USGS 7.5 minute topographic quadrangle for any recorded occurrences of special-status plant or wildlife species in the vicinity of the project site (see Appendix D).

Biological surveys conducted for the Biological Resources Evaluation consisted of biologists walking through the on- and off-site Study Areas while looking for special-status wildlife species, their sign, and their habitat. Both off-site sewer alignment alternatives were surveyed, including the northern alignment (21.50 acres) and the eastern alignment (12.29 acres). Areas adjacent to the project site were also inspected for important habitat features such as elderberry shrubs, vernal pools, burrows, and other wetlands/waters. The locations of important habitat

features were recorded with a sub-meter accurate global positioning system (GPS). All wildlife observed in or near the project site was recorded. The botanical survey for the Biological Resources Evaluation followed the guidelines set forth by USFWS (1996), CDFW (2009), and CNPS (2001), where applicable. The on- and off-site project area was walked by botanists searching for special-status plants. Emphasis was placed on areas that were not recently tilled as a result of on-going agricultural operations, including: the edges of fields, the nonoperational detention basin, and the bed and banks of the MDC. Surveys coincided with the evident and identifiable period for some but not all special-status species with potential to occur. Plant species observed were either identified on-site or collected and identified later. All plants species observed in or near the project site were recorded.

Jurisdictional Delineation Report

An evaluation of potential wetlands and other Waters of the U.S. in the project area was conducted by Sycamore Environmental Consultants. A reconnaissance-level field survey was conducted on October 7, 2014. Data collection for the formal wetland delineation report was conducted on December 10, 2014. A second reconnaissance survey was conducted on December 23, 2014.

The *Jurisdictional Delineation Report* has been prepared in accordance with the Sacramento District minimum standards, USACE Wetland Delineation Manual, Regulatory Guidance Letter 05-05, South Pacific District Procedures for Irrigated Lands, and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. Regional supplements are intended to bring the USACE Manual up to date with current knowledge and practice in specific regions. The Arid West Supplement is applicable to the project site because the site is located in California's Central Valley, which experiences long, hot summers typical of Mediterranean California. All water features were identified and mapped. Hydrophytic classifications of plants were determined from the USFWS national list of plant species that occur in wetlands.

The jurisdictional delineation was conducted using the Routine On-Site Determination Method. Jurisdictional data were recorded using the Wetland Determination Data Form for the Arid West Region. Soil, vegetation, and hydrology data were recorded at the data points. Plant species were identified by a staff biologist. Features observed in the project site were mapped using a Trimble Geo-XT sub-meter accurate GPS. The GPS data were exported to ArcMap and Google Earth, where feature boundaries were completed. Acreages were calculated using ESRI ArcMap functions.

Off-Site Volume Storage Area Survey

On June 11, 2015, Sycamore conducted a biological and botanical survey of the off-site stormwater capacity biological survey area, located east of the project site on APNs 033-300-001 and -015, and a portion of 033-650-088.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above.

4.4-1 Impacts to Special-status plant species. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

The Study Area contains marginal habitat for the following special-status plant species: ferris' milk vetch, alkali milk vetch, heartscale, brittlescale, San Joaquin spearscale, bristly sedge, Parry's rough tarplant, hogwallow starfish, wooly rose-mallow, Heckard's pepper-grass, Suisun Marsh aster, and saline clover. Depending upon the special-status plant species, the marginal habitat consists of the MDC, on-site detention basin, and outside of the tilled fields in the eastern portion of the Study Area. The marginality of the habitat depends upon the area in question, but is either a function of soil disturbance, ongoing MDC maintenance, and/or the soils not being sufficiently mesic/alkaline.

MRIC

As shown in Table 4.4-1 and in Figure 4.4-1, the biological communities and features within the MRIC Site include agriculture, ruderal vegetation, the MDC, and farm roads/disturbed land. The agricultural fields on the MRIC site had recently been tilled during fieldwork and appear to be in active use. The ruderal habitat within the MRIC site is dominated by non-native weed species.

In addition, vegetation in the MDC is dominated by cattail (*Typha* sp.), bulrush (*Schoenoplectus acutus* var. *occidentalis*), annual saltmarsh aster (*Symphyotrichum subulatum*), nutsedge (*Cyperus eragrostis*), and smartweed (*Persicaria* sp.). A few young non-native sycamores (*Platanus* sp.), one non-native Chinese tallow tree (*Triadica sebifera*) sapling, one young native Goodding's black willow (*Salix gooddingii*), and one young Fremont's cottonwood (*Populus fremontii*) occur along the portion of the MDC within the MRIC site. Vegetation in the MDC is dominated by cattail and would be classified as *Typha* (*angustifolia*, *domingensis*, *latifolia*).

Special-status plant species were not observed on the MRIC site during Sycamore Environmental's site reconnaissance surveys conducted on October 7 and December 10, 2014.

Another botanical survey was conducted by Sycamore Environmental on May 19, 2015 for the overall project site, excluding the potential off-site pond location shown in Figure 4.4-3, though this area was subsequently surveyed on June 11, 2015. This survey coincided with the evident and identifiable period for the 12 special-status plants identified for the Study Area, as having the potential to occur. No special-status plants were found within the Study Area.

Mace Triangle

As shown above in Table 4.4-1 and in Figure 4.4-1, the biological communities and features within the Mace Triangle site include ruderal vegetation, farm roads/disturbed land, and urban. A total of 9.22 acres of urban land occurs in the Mace Triangle site. Urban land includes developed lots, paved roads, and structures. The ruderal habitat within the Mace Triangle site is dominated by non-native weed species. The ruderal community occurs predominantly in fallow fields south of CR 32A. The aforementioned ruderal vegetation does not have a special status.

Parry's rough tarplant was observed during Sycamore Environmental's site reconnaissance on October 7 and December 10, 2014. An estimated 10 individuals of Parry's rough tarplant, a CNPS Rank 4.2 plant species, were found in the Mace Triangle site, south of Ikedas Market. CNPS Rank 4.2 species may be considered under CEQA at the Lead Agency's discretion. Based on herbarium specimen records, this species is not especially uncommon locally or regionally (CCH 2014). The Parry's rough tarplant individuals observed in the Study Area are not at the periphery of the taxon's range. Sycamore Environmental botanists have encountered this taxon on many disturbed/agricultural sites in the Central Valley within the last 5 years. The Parry's rough tarplant individuals observed in the Study Area did not exhibit unusual morphology and they were not observed on unusual substrate. The Parry's rough tarplant observed in the Study Area do not meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) or §15380.¹⁵

As mentioned above, another botanical survey was conducted by Sycamore Environmental on May 19, 2015, which included the Mace Triangle site. This survey coincided with the evident and identifiable period for the 12 special-status plants identified for the Study Area, as having the potential to occur. No special-status plants were found. CNPS Rank 4.2 Parry's rough tarplant was again located in the shallow depression adjacent to the Ikedas gravel parking lot.

Conclusion

Although special-status plants were not observed within the Study Area during Sycamore's site reconnaissance, the reconnaissance survey was not conducted during the identified blooming periods for all special-status plant species having the potential to occur within the Study Area. As a result, with the following avoidance and minimization measures implemented prior to any construction activities, the proposed project would have a ***less-than-significant*** impact to special-status plant species.

¹⁵ Sycamore Environmental Consultants. *Biological Resources Evaluation for the Mace Ranch Innovation Center* [pg. 36]. August 2015.

Mitigation Measure(s)

MRIC and Mace Triangle

4.4-1 *To ensure avoidance and minimization of potential impacts to special-status plant species, the following measures shall be implemented:*

- *Prior to initiation of any ground disturbance activities for the Mace Triangle and for each phase of the MRIC, the applicant shall retain a qualified botanist to conduct a botanical survey during spring (April to May) and fall (July to September), during the evident and identifiable periods for special-status plants with potential to occur on the site. The botanical survey must also cover all potential utility line alignments and any other off-site work required for any phase of development. The survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.*
- *Any special-status plants that are within the limits of grading for on- or off-site improvements shall be propagated to suitable habitat in designated open space areas, or for the Mace Triangle, another pre-approved location. The propagation shall be overseen by a qualified botanist, approved by the City of Davis Department of Community Development and Sustainability and CDFW. The botanist shall identify the location to receive the plants, identify the methods of propagation, and oversee the work.*

4.4-2 Impacts to VELB. Based on the analysis below and with implementation of mitigation, the impact is less than significant.

The VELB host plant, the elderberry shrub, was observed within the Study Area during biological surveys. As shown above in Figure 4.4-1, elderberry shrubs occur in two areas within the Study Area: along the western MRIC site boundary, in the northwest portion of the site; and along the west side of CR 104 along the northern sewer alignment alternative.

MRIC

The single elderberry shrub on the western boundary of the MRIC is small and isolated from other woody vegetation and riparian corridors. A total of six stems measuring between one and three inches at ground level, and one stem measuring three to five inches at ground level, occur on the individual shrub. The single shrub was inspected for exit holes on December 10 and December 23, 2014. Potential VELB exit holes were not observed on the stems.

The clump of elderberry shrubs located along the west side of CR 104, along the northern sewer alignment alternative, are isolated and not associated with a riparian corridor. The elderberry shrubs are growing with non-native tamarisk (*Tamarix* sp.). A total of 22

stems measuring between one and three inches at ground level, one stem measuring between three and five inches at ground level, and three stems over five inches diameter at ground level, occur in this clump of elderberry shrubs. The clump of shrubs was inspected for exit holes on December 10 and December 23, 2014. Potential VELB exit holes were not observed on the stems.

With respect to this northerly sewer pipe alignment option for the MRIC, it should be noted that, based upon discussions with the MRIC engineering team, it has been assumed for analysis purposes that installation of the sewer pipe would require a 25-foot wide work area. This total disturbance width would account for the width of the sewer pipe trench, and the work area on both sides of the trench. Because design-level work has not been done at this time, it has not been determined whether the sewer pipe will be installed within, 1) the existing paved ROW of CR 104 and CR 30, 2) along the east side of CR 104 and south side of CR 30, or 3) along the west side of CR 104 and north side of CR 30, prior to connecting the pipe to the existing manhole at the approximate point where CR 104 turns east and becomes CR 30. Under installment option #2, sewer pipe construction would require removal of the elderberry shrubs along CR 104.

The elderberry shrubs within the Study Area occur in non-riparian habitat. The shrubs are isolated in a disturbed, agricultural setting. The nearest riparian habitat that may have elderberry shrubs appears to be over one mile north of the project site, along the Willow Slough Bypass. Talley et al. (2007) modeled potentially suitable areas for VELB adjacent to the riparian zone as areas within 250 feet from potentially suitable riparian habitat. The shrubs within the project site are much farther than 250 feet from potentially suitable VELB habitat.

Mace Triangle

VELB was not observed in the Mace Triangle site during biological surveys. Although elderberry shrubs do not exist on the Mace Triangle site, several elderberry shrubs occur off-site along the shoulder of I-80, south of the Mace Triangle site. However, the individual shrubs are over 100 feet from the Mace Triangle site and are separated from the site by the railroad prism. As such, future development of the Mace Triangle site would not impact VELB or their habitat.

Conclusion

The elderberry shrubs in the Study Area are unlikely to be occupied by VELB. However, due to the presence of the elderberry shrubs on the MRIC site and along the northerly off-site sewer alignment option, avoidance and minimization measures for the elderberry shrubs are recommended out of an abundance of caution. As a result, with implementation of the following measures, the proposed project would have a ***less-than-significant*** impact to VELB.

Mitigation Measure(s)

MRIC

4.4-2(a) *To ensure avoidance and minimization of impacts to VELB, the project applicant for the MRIC shall implement the following measures prior to initiation of any ground disturbance activities within the Phase 3 portion of the MRIC along Mace Boulevard:*

- *The project applicant for the MRIC shall avoid the single elderberry shrub along Mace Boulevard by restricting all construction and ground-disturbance during Phase 3 of development within 20 feet from the dripline of the shrub, subject to inspection by the City of Davis Department of Community Development and Sustainability. Restriction would include installing temporary orange fencing around the dripline so the area is clearly visible to workers; or*
- *If the shrub cannot be avoided during Phase 3 through re-design, as determined by the City of Davis Public Works Department in conjunction with the project applicant, the project applicant shall mitigate for potential impacts to the shrub by either (1) purchasing VELB conservation credits from a USFWS-approved conservation bank, or (2) transplanting the individual shrub that is not avoided to a suitable mitigation site in a manner consistent with the USFWS' 1999 Conservation Guidelines for the VELB. The mitigation shall be overseen by a qualified biologist, approved by the City of Davis Department of Community Development and Sustainability and USFWS.*

4.4-2(b) *To ensure avoidance and minimization of impacts to VELB, the project applicant for the MRIC shall implement the following measures, prior to initiation of ground disturbance activities, if the northerly off-site sewer alignment is selected by the project applicant:*

- *The project applicant for the MRIC shall avoid the elderberry shrubs along County Road 104 by restricting all construction and ground-disturbance within 20 feet from the dripline of the shrubs, subject to inspection by the City of Davis Department of Community Development and Sustainability. Restriction would include installing temporary orange fencing around the dripline so the area is clearly visible to workers; or*
- *If the shrubs cannot be avoided in such a fashion, the project applicant shall mitigate for potential impacts to the shrubs by either (1) purchasing VELB conservation credits from a*

USFWS-approved conservation bank, or (2) transplanting the individual shrubs that are not avoided to a suitable mitigation site in a manner consistent with the USFWS' 1999 Conservation Guidelines for the VELB. The mitigation shall be overseen by a qualified biologist, approved by the City of Davis Department of Community Development and Sustainability and USFWS.

Mace Triangle – none

4.4-3 Impacts to Giant garter snake (GGS). Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

MRIC

GGS were not observed during biological surveys of the MRIC site, or any portion of the Study Area. The closest potentially occupied GGS habitat appears to coincide with the closest known populations of GGS, which occur in the Yolo Bypass and in the Willow Slough Bypass. The MRIC site does not occur in an area of rice production. Agricultural fields in the area are upland row crops. Based on aerial photographs, rice production does not occur along the MDC or in the fields between the MRIC site and either the Willow Slough Bypass or the Yolo Bypass.

As noted previously, the MDC is a manmade storm drain that transports urban runoff from the Mace Ranch Drainage Basin in the City of Davis, east through the center of MRIC site to the Yolo Bypass, approximately 2.5 air miles east of the MRIC site. The hydrology for the portion of MDC in the MRIC site is provided by urban irrigation runoff and precipitation runoff from within the City of Davis. Upstream (west) of the MRIC Site, the MDC is culverted underground for at least 1,000 feet. The Channel enters the MRIC site through two culverts that pass underneath Mace Boulevard. The upland row crop agriculture in the MRIC site uses drip irrigation. Irrigation does not contribute substantially to the hydrology of the MDC.

From the Study Area, the MDC drains to the Yolo Bypass approximately 2.5 air miles to the east. Water from the channel drains into the Bypass through an approximately 8-foot wide, one-way metal flap gate that rests in the closed position. Water does not flow into the channel from the Bypass. Water was not present in the channel at the Yolo Bypass outlet during fieldwork. Insufficient water exists in the MDC during the GGS active season to support a GGS population, or to facilitate dispersal. To enter the MDC, GGS would have to travel across the Yolo Bypass levee, which is mostly barren and approximately 170 feet wide. GGS populations are known to occur in the Willow Slough Bypass and in the Yolo Bypass, but not on the land side of (west of) the 150- to 200-foot-wide Yolo Bypass levee on the north side of I-80 (CDFW 2015).

Vegetation within the portion of the MDC located in the MRIC site consists of freshwater marsh species such as bulrush (*Schoenoplectus acutus* var. *occidentalis*), and cattail

(*Typha* sp.). Downstream of the MRIC site, in the eastern portion of the MRIC site, and in all portions of the MDC visible from CR 105, the MDC is dominated by low growing ruderal species such as perennial pepperweed (*Lepidium latifolium*) and non-native annual grasses that do not provide cover or habitat for GGS. Vegetation in the MDC is periodically removed by the City of Davis. Between the MRIC site and the Yolo Bypass, vegetation in the channel is dominated by ruderal weeds such as perennial pepperweed, curly dock (*Rumex crispus*), and yellow star-thistle (*Centaurea solstitialis*). The portion of the channel adjacent to the Yolo Bypass is dominated by bulrush, cattail and willows (*Salix* spp.). The MDC lacks the emergent aquatic vegetation that is an essential component of GGS habitat for most of its length. Vegetation in most of the MDC does not indicate perennially, or near-perennially inundated conditions. Regular removal of vegetation in the MDC also reduces the amount of emergent aquatic vegetation present in the channel.

Urban influence, artificial hydrology, vegetation maintenance, culverts, and lack of water and suitable prey items during the active season make it unlikely that GGS would be able to travel to the site. Suitable GGS habitat is not present in the MDC within the MRIC site.

Mace Triangle

GGS habitat does not occur in the Mace Triangle site. The Mace Triangle site is disturbed (i.e., either via existing development or agricultural operations) and does not contain any agricultural ditches or drainage channels through which GGS could disperse. Therefore, any future development on the Mace Triangle site would not impact GGS or their habitat.

Conclusion

While suitable habitat for GGS within the MDC is currently lacking, according to the City's Wildlife Resource Specialist,¹⁶ suitable habitat has been present in the past. The existing conditions within the MDC are likely the result of the on-going drought conditions in the region. The possibility exists that more favorable habitat conditions may return during average rainfall years, or with a change in crop type and associated irrigation runoff on adjacent fields, which may occur over the long-term buildout of the proposed project. In addition, a significant GGS source population exists within the Yolo Bypass and Willow Slough Bypass, which increases the possibility of the snake being present, whether resident or vagrant, in the MDC. With respect to the potential off-site volume storage pond improvement area, north of the Railroad Channel and west of the Yolo Bypass (see Figure 4.4-3), some areas within these survey boundaries are within 200 feet of potential GGS aquatic habitat and are thus within the snake's upland dispersal range, although these areas consist of farm roads and tilled agricultural fields that are unlikely to be occupied by GGS during the GGS active season. During the winter

¹⁶ Personal email communication with Nick Pappani, Vice President of Raney Planning & Management, Inc. and John T. McNerney, Wildlife Resource Specialist, City of Davis, February 27, 2015.

inactive season, GGS could seek refuge in burrows and cracks in the upland habitat. If an off-site volume storage pond is constructed within the southern portion of the area shown in Figure 4.4-3, near the Railroad Channel, the possibility exists for GGS to be adversely impacted should GGS occur in this upland habitat.

With implementation of the following mitigation measure, development of the MRIC site near the MDC, would have a ***less-than-significant*** impact to GGS.

Mitigation Measure(s)

MRIC

4.4-3(a) *To ensure avoidance and minimization of impacts to GGS, the project applicant for the MRIC shall implement the following measures:*

Mace Drainage Channel – Preconstruction Surveys

- *Within 15 days prior to conducting any work in the Mace Drainage Channel or existing on-site detention basin, the project applicant shall retain a qualified biologist to conduct a preconstruction survey to verify that no water is present in the channel within the project limits. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.*
- *The qualified biologist shall document whether aquatic habitat is present in the Mace Drainage Channel downstream of the MRIC site. If aquatic habitat is not present in the Channel between the MRIC site and CR 105 (a distance of 0.5 miles), then aquatic habitat connectivity is not present in the Mace Drainage Channel and further preconstruction surveys or construction monitoring is not required.*
- *If water is present within the on- and off-site project limits, the Mace Drainage Channel shall be dewatered for a minimum of two weeks prior to construction activities in the Channel.*
- *If the first preconstruction survey reveals that aquatic habitat is present in the Channel between the project site and CR 105, a second preconstruction survey shall be conducted within 24 hours prior to construction. The second preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review. The second preconstruction survey shall cover the portion of the Mace Drainage Channel located on the MRIC site, and areas within 200 feet of the channel. If, based on the preconstruction surveys, it is determined that potentially occupied GGS aquatic habitat occurs*

within 200 feet of the MRIC site, MM 4.4-3(b) shall be implemented.

If GGS are encountered during preconstruction surveys, USFWS and CDFW shall be notified and construction shall not commence until the following avoidance measures approved by USFWS and CDFW are implemented.

- o Unless authorized by USFWS, site disturbance or construction activity within 200 feet of suitable aquatic habitat for the GGS shall not commence before May 1, with initial ground disturbance expected to correspond with the snake's active season. Initial ground disturbance should be completed by October 1.*
- o To the extent possible, site disturbance or construction activity shall be avoided within 200 feet from the banks of GGS aquatic habitat for any phase of development. Movement of heavy equipment in these areas shall be confined to existing roadways, where feasible, to minimize habitat disturbance.*
- o Construction personnel shall receive USFWS-approved worker environmental awareness training to instruct workers to recognize giant garter snake and their habitats.*
- o Within 24 hours before site disturbance or construction activity, the project area shall be surveyed for GGS. The survey shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a GGS is encountered during construction, activities shall 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 GGS will not be harmed. Any sightings or incidental take shall be reported to USFWS and CDFW immediately.*
- o Any aquatic habitat for the snake that is dewatered shall 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) shall be removed so that snakes and other wildlife are not attracted to the construction area.*
- o GGS habitat to be avoided within or adjacent to construction areas shall be fenced and designated as environmentally sensitive areas. These areas shall be avoided by all construction personnel throughout construction for any phase of development.*

Off-Site Volume Storage Pond (if approved)

- *During the inactive season (October 2 to April 30), no work shall be conducted in areas within 200 feet of potential aquatic habitat for GGS, unless authorized by USFWS.*
- *Temporary stockpiling of soil shall not occur within 200 feet of potential aquatic habitat for GGS.*
- *During the active season (May 1 to October 1), the construction monitoring provision of MM 4.4-3(b) shall be implemented and a biological monitor shall be present during work within 200 feet of aquatic habitat for GGS.*

4.4-3(b) *Construction Monitoring*

- *If any work is to occur within 200 feet of GGS aquatic habitat, then a biological monitor trained in GGS identification shall be on-site during any work within or immediately adjacent to the Mace Drainage Channel. The monitor shall provide environmental training to construction personnel working in or near the Mace Drainage Channel, subject to inspection by the City of Davis Department of Community Development and Sustainability. The training shall include instruction on GGS identification, behavior, and habitat. Work shall be stopped and USFWS and CDFW contacted should any GGS be encountered.*

Mace Triangle – none

4.4-4 Impacts to Burrowing owl. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

Two CNDDB records exist for burrowing owl within close proximity to both the MRIC site and the Mace Triangle site.

MRIC

Based on CNDDB records, burrowing owl was observed near the intersection of Mace Boulevard and CR 104 adjacent west to the MRIC site. Burrowing owls were not observed during biological surveys of the MRIC site and larger Study Area. Nonetheless, burrowing owls may be present or become established within the MRIC site or associated off-site improvement areas prior to development of the project.

Mace Triangle

Based on CNDDB records, burrowing owl was observed in or near the Mace Triangle site, near Ikedas Market. Burrowing owls were not observed during biological surveys of

the Mace Triangle site. Nonetheless, burrowing owls may be present or become established within the Mace Triangle site prior to any future development.

Conclusion

As a result, with the implementation of the following avoidance measures, if warranted, the proposed project would have a ***less-than-significant*** impact to burrowing owl.

Mitigation Measure(s)

MRIC

4.4-4(a) *Preconstruction Surveys:* The project applicant proposing development on the MRIC Site shall implement the following measure to avoid or minimize impacts to western burrowing owl:

- No less than 14 days prior to any ground disturbing activities for any phase of development at the MRIC site, the project applicant shall retain a qualified biologist to conduct a preconstruction survey of the MRIC site, any off-site improvement areas, and all publically accessible potential burrowing owl habitat within 500 feet of the project construction footprint. The survey shall be performed in accordance with the applicable sections of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If the survey does not identify any nesting burrowing owls on the MRIC site, further mitigation is not required. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review. The survey periods and number of surveys are identified below:
 - If construction related activities commence during the non-breeding season (1 September to 31 January), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.
 - If construction related activities commence during the early breeding season (1 February to 15 April), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.
 - If construction related activities commence during the breeding season (16 April to 30 August), a minimum of three preconstruction surveys shall be conducted of that

phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase. If construction related activities commence after 15 June, at least one of the three surveys shall be completed after 15 June.

- Because the owls are known to occur nearby and may take up occupancy on a site under construction, the preconstruction survey will be conducted annually.
- If active burrowing owl dens are found within the survey area in an area where disturbance would occur, the project applicant shall implement measures consistent with the applicable portions of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If needed, as determined by the biologist, the formulation of avoidance and minimization approaches would be developed in coordination with the CDFW. The avoidance and minimization approaches would likely include burrow avoidance buffers during the nesting season (February to August). For burrowing owls present on-site, outside of the nesting season, passive exclusion of owls from the burrows could be utilized with the approval of CDFW. Advance planning with CDFW would be necessary prior to the initiation of the take avoidance survey to plan for contingencies in the event that owls are present on-site.

4.4-4(b) Compensatory Mitigation, if Active Owl Dens are Present: If active burrowing owl dens are present and the project would impact active dens, the project applicant shall implement the following:

- If active owl burrows are present and the project would impact active burrows, the project applicant shall provide compensatory mitigation for the permanent loss of burrowing owl habitat consistent with the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation. Such mitigation may include the permanent protection of land, which is deemed to be suitable burrowing owl habitat through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, or the purchase of burrowing owl conservation bank credits from a CDFW-approved burrowing owl conservation bank.

If the same mitigation acreage would be utilized for multiple species (i.e. burrowing owl habitat and Swainson's hawk foraging habitat), the appropriate wildlife agency, in this case CDFW, must approve the mitigation lands and long-term management practices for the mitigation lands as suitable and compatible for all species for which the lands are to provide

compensatory mitigation. Proof of CDFW's approval habitat "stacking" shall be provided to the City of Davis Department of Community Development and Sustainability.

Mace Triangle

4.4-4(c) Preconstruction Surveys: The project applicant proposing development on the Mace Triangle site shall implement the following measures to avoid or minimize impacts to western burrowing owl:

- No less than 14 days prior to any ground disturbing activities for any phase of development at the Mace Triangle site, the project applicant shall retain a qualified biologist to conduct a preconstruction survey of the Mace Triangle site, any off-site improvement areas, and all publicly accessible potential burrowing owl habitat within 500 feet of the project construction footprint. The survey shall be performed in accordance with the applicable sections of the March 7, 2012, CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If the survey does not identify any nesting burrowing owls on the Mace Triangle Site, further mitigation is not required. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review. The survey periods and number of surveys are identified below:
 - If construction related activities commence during the non-breeding season (1 September to 31 January), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.
 - If construction related activities commence during the early breeding season (1 February to 15 April), a minimum of one preconstruction survey shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase.
 - If construction related activities commence during the breeding season (16 April to 30 August), a minimum of three preconstruction surveys shall be conducted of that phase and all publicly accessible potential burrowing owl habitat within 500 feet of the construction footprint of that phase. If construction related activities commence after 15 June, at least one of the three surveys shall be completed after 15 June.

- If active burrowing owl dens are found within the survey area in an area where disturbance would occur, the project applicant shall implement measures consistent with the applicable portions of the March 7, 2012 CDFW's Staff Report on Burrowing Owl Mitigation guidelines. If needed, as determined by the biologist, the formulation of avoidance and minimization approaches would be developed in coordination with the CDFW. The avoidance and minimization approaches would likely include burrow avoidance buffers during the nesting season (February to August). For burrowing owls present on-site, outside of the nesting season, passive exclusion of owls from the burrows could be utilized with the approval of CDFW. Advance planning with CDFW would be necessary prior to the initiation of the take avoidance survey to plan for contingencies in the event that owls are present on-site.

4.4-4(d) Compensatory Mitigation, if Active Owl Dens are Present: If active burrowing owl dens are present and the project would impact active dens, the project applicant shall implement the following:

- If active owl burrows are present and the project would impact active burrows, the project applicant shall provide compensatory mitigation for the permanent loss of burrowing owl habitat consistent with the March 7, 2012 CDFW's Staff Report on Burrowing Owl Mitigation. Such mitigation may include the permanent protection of land that is deemed to be suitable burrowing owl habitat through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, or the purchase of burrowing owl conservation bank credits from a CDFW-approved burrowing owl conservation bank. If the same mitigation acreage would be utilized for multiple species (i.e. burrowing owl habitat and Swainson's hawk foraging habitat), the appropriate wildlife agency, in this case CDFW, must approve the mitigation lands and long-term management practices for the mitigation lands as suitable and compatible for all species for which the lands are to provide compensatory mitigation. Proof of CDFW's approval habitat "stacking" shall be provided to the City of Davis Department of Community Development and Sustainability.

4.4-5 Impacts to Swainson's hawk. Based on the analysis below, even with mitigation, the impact is significant and unavoidable.

MRIC

Swainson's hawks were not observed on the MRIC site, or within any portions of the overall Study Area, during biological surveys. The MRIC site contains eight trees along the MDC, along Mace Boulevard, and near the on-site detention basin. Swainson's hawks are unlikely to utilize the young trees in the MRIC site for nesting. Agricultural and ruderal areas in the MRIC site provide foraging habitat. Large trees in the eucalyptus groves located east and north (i.e., along the northerly sewer pipe alignment) of the MRIC site occur within 500 feet and could be used for nesting. In addition, the sparse willow trees located at the southeast corner of the off-site volume storage pond survey area (see Figure 4.4-3), provide potential nesting habitat.

Development of the MRIC would result in the permanent conversion of up to approximately 210 acres of Swainson's hawk foraging habitat, and possibly more if the off-site volume storage pond is constructed as part of the proposed project. According to the Yolo Habitat JPA, approximately 1,905 acres of Swainson's hawk foraging habitat are located within a 1 mile radius of the MRIC site.¹⁷ The amount of foraging habitat disrupted as a result of the project would require compensation pursuant to Yolo Habitat JPA's Swainson's Hawk Interim Mitigation Fee program. The mitigation fees are to be sufficient to fund the acquisition, enhancement, and long-term management of one acre of Swainson's hawk foraging habitat for every one acre of foraging habitat that is lost to urban development.

If any phase of the project is constructed after adoption of the YNHP, the project proponent shall satisfy this requirement through participation in the YNHP (see Mitigation Measure 4.4-11).

Mace Triangle

Swainson's hawks were not observed on the Mace Triangle site during biological surveys. In addition, the largely developed and/or disturbed habitats do not serve as Swainson's hawk foraging habitat, as verified by the Yolo Habitat JPA.¹⁸ However, when viewed in the context of the adjacent Swainson's hawk foraging habitats, the Mace Triangle site contributes value to the hawk's overall foraging area. Therefore, any future development on the Mace Triangle site could result in impacts to Swainson's hawk foraging habitat.

¹⁷ Yolo County Habitat/Natural Community Conservation Plan Joint Powers Agency. *Potential Modeled Habitat Impact – Mace Ranch Innovation Center*. March 9, 2015.

¹⁸ Yolo County Habitat/Natural Community Conservation Plan Joint Powers Agency. *Potential Modeled Habitat Impact – MRIC*, March 9, 2015.

Conclusion

Development of the 212-acre MRIC site and off-site storage pond, if constructed, would result in a **significant** impact to Swainson's hawk foraging habitat. In addition, if Swainson's hawk are nesting in the eucalyptus trees east of the MRIC site or within the off-site storage pond construction area, construction activities could disturb nesting birds.

Mitigation Measure(s)

With implementation of Mitigation Measure 4.4-5(a) below, the project's potential impacts to nesting Swainson's hawk would be reduced to a less-than-significant level. Implementation of Mitigation Measures 4.4-5(b) and (c) below would reduce impacts to Swainson's hawk foraging habitat through the preservation of compensatory Swainson's hawk foraging habitat. However, because the 229-acre project site is currently outside of the existing City limits, and the loss of foraging habitat associated with urbanization of the project site has not heretofore been anticipated in any City environmental documents, the permanent loss of Swainson's hawk foraging habitat as a result of development on the project site would remain *significant and unavoidable*.

MRIC

4.4-5(a) Preconstruction Nesting Surveys: To ensure avoidance and minimization of impacts to Swainson's hawk nesting, the project applicant shall implement the following measures:

- If site disturbance or construction activity for any phase of development is proposed during the nesting season for Swainson's hawk (March 1 through September 15), a qualified biologist shall conduct a preconstruction survey for Swainson's hawk in accordance with the May 2000 Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley prepared by the Swainson's Hawk Technical Advisory Committee (TAC) as applicable. In accordance with the TAC guidelines, to meet the minimum level of protection for Swainson's hawk, three surveys shall be completed in each of the two survey periods immediately prior to project initiation (with the exception that surveys shall not be initiated in period IV). The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.
- The preconstruction survey shall include the project construction footprint and publicly accessible areas within 0.25-mile. Inaccessible areas shall be surveyed with binoculars from publicly accessible areas. If active Swainson's hawk nests are not found, further action is not necessary.
- If an active Swainson's hawk nest is found within 0.25-mile of the MRIC site but is effectively shielded from view of the site by

structures and/ or vegetation, then with approval from CDFW, construction may commence.

- If an active nest located within 0.25-mile of the MRIC site is within line-of-sight of the MRIC site, then in consultation with CDFW, a biologist experienced with raptor behavior shall monitor the nest for signs of disturbance. Work may be allowed to proceed if the Swainson's hawks are not exhibiting agitated behavior. The biologist shall be on-site daily while construction related activities are taking place and shall have the authority to stop work if the Swainson's hawks are exhibiting agitated behavior. In coordination with CDFW, monitoring may be reduced if the on-site biologist determines that construction is not disturbing the Swainson's hawks or determines that they have become acclimated to construction activities.
- If the Swainson's hawk is showing agitated behavior, then construction shall cease or be reduced to a point that does not disturb the hawks. Construction may resume after the nesting season, or in coordination with CDFW, later in the nesting season when Swainson's hawks are less prone to disturbance.

4.4-5(b) Foraging Habitat: The project applicant shall permanently protect an equivalent amount of acres of Swainson's hawk foraging habitat converted by the proposed project by either (1) purchasing a DFW-approved conservation easement of like acreage or (2) paying the requisite mitigation fee to the Yolo Habitat JPA pursuant to the Swainson's Hawk Interim Mitigation Fee Program or purchasing mitigation credits from an approved mitigation credit holder. Purchase of a conservation easement of like acreage or payment of the mitigation fee shall be made to the Yolo Habitat JPA and shall be confirmed by the City prior to the initiation of ground disturbing activities.

Mace Triangle

4.4-5(c) Foraging Habitat: The project applicant shall permanently protect an equivalent amount of acres of Swainson's hawk foraging habitat converted by the proposed project by either (1) purchasing a DFW-approved conservation easement of like acreage or (2) paying the requisite mitigation fee to the Yolo Habitat JPA pursuant to the Swainson's Hawk Interim Mitigation Fee Program or purchasing mitigation credits from an approved mitigation credit holder. Purchase of a conservation easement of like acreage or payment of the mitigation fee shall be made to the Yolo Habitat JPA and shall be confirmed by the City prior to the initiation of ground disturbing activities.

4.4-6 Impacts to raptors, nesting birds, or other birds protected under the MBTA. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

Birds and their nests are protected under California Fish and Wildlife Code (Sections 3503, 3503.5, 3513), and the MBTA. Due to the fact that most birds can fly out of harm's way, development of the project site would not be expected to harm adult birds. However, nesting birds are susceptible to take through disturbance that harms eggs or young. The potential exists for four CDFW Fully Protected species to occur within the Study Area. These include tricolored blackbird, mountain plover, white-tailed kite, and song sparrow ("Modesto" population), which are discussed in detail below.

MRIC

Limited available nesting habitat exists within the 212-acre MRIC site area and both of the sewer pipe alignment alternatives. Suitable nesting habitat is concentrated mainly along the MDC and existing detention basin wherein trees are located. Migratory birds could also nest within the limited vegetation along the off-site sewer alignments. The potential for suitable foraging or nesting habitat for tricolored blackbird, mountain plover, white-tailed kite, and song sparrow within the MRIC site is discussed below.

Tricolored Blackbird

Nesting colonies of tricolored blackbird are of concern to CDFW. Tricolored blackbirds were not observed during biological surveys of the Study Area. While nesting within the Study Area is unlikely, the Railroad Channel, south of the potential off-site volume storage area (see Figure 4.4-3), contains undisturbed vegetation that could provide suitable nesting habitat. If this off-site improvement is constructed as part of the proposed project, adverse impacts to this species could potentially occur. The MDC is regularly cleared of emergent wetland vegetation and may not be wide enough to support a nesting colony.

Mountain Plover

Non-breeding/wintering sites of mountain plover are of concern to CDFW. Mountain plover was not observed during biological surveys of the project site. The species does not nest in California. Ample foraging and wintering habitat similar to that in the Study Area occurs in the agricultural areas surrounding the City of Davis.

White-Tailed Kite

Nesting sites of white-tailed kite are of concern to CDFW. White-tailed kites were observed perched in the cottonwoods in the detention basin on the MRIC site, or flying over the MRIC site, on both October 7 and December 10, 2014. White-tailed kites could nest in the Fremont cottonwood trees, in the trees in eucalyptus groves located east and north (along the northerly sewer alignment) of the site, or in the willow trees at the

southeast portion of the off-site pond survey area. Trees in the MRIC site are unlikely to be used for nesting because the trees are young and isolated.

Song Sparrow (“Modesto” Population)

Modesto song sparrow was not observed during biological surveys of the project site. Nesting is not expected in the Study Area because the only potential nesting habitat, the MDC, is regularly cleared of emergent wetland vegetation and may not provide sufficient cover for nesting.

Mace Triangle

Nesting migratory bird habitat is not present within the Mace Triangle site. Tricolored blackbird, mountain plover, white-tailed kite, and song sparrow were not observed on the Mace Triangle site during site reconnaissance.

Conclusion

The Study Area contains limited habitat that could support nesting raptors, Fully Protected birds, and other birds protected under the MBTA. However, the possibility exists that nesting birds could be impacted during construction; therefore, with implementation of the following mitigation, the proposed project would result in a ***less-than-significant*** impact to raptors, nesting birds, or other birds protected under the MBTA.

Mitigation Measure(s)

MRIC

4.4-6 *The project applicant for the MRIC shall implement the following measures to avoid or minimize impacts to Migratory Birds and other protected bird species:*

- *If any site disturbance or construction activity for any phase of development begins outside the February 1 to August 31 breeding season, a preconstruction survey for active nests shall not be needed.*
- *If any site disturbance or construction activity for any phase of development is scheduled to begin between February 1 and August 31, a qualified biologist shall conduct a preconstruction survey for active nests from publicly accessible areas within 14 days prior site disturbance or construction activity for any phase of development. The survey area shall cover the construction site and the area surrounding the construction site, including a 100-foot radius for MBTA birds, and a 250-foot radius for birds of prey. If an active nest of a bird of prey, MBTA bird, or other CDFW-protected bird is not found, then no further mitigation measures*

are necessary. The preconstruction survey shall be submitted to the City of Davis Department of Community Development and Sustainability for review.

- If an active nest of a bird of prey, MBTA bird, or other CDFW-protected bird is discovered that may be adversely affected by any site disturbance or construction or an injured or killed bird is found, the project applicant shall immediately:
 - o Stop all work within a 100-foot radius of the discovery.
 - o Notify the City of Davis Department of Community Development and Sustainability.
 - o Do not resume work within the 100-foot radius until authorized by the biologist.
 - o The biologist shall establish a minimum 250-foot Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey, and a minimum 100-foot ESA around the nest if the nest is of an MBTA bird other than a bird of prey. The ESA may be reduced if the biologist determines that a smaller ESA would still adequately protect the active nest. No work may occur within the ESA until the biologist determines that the nest is no longer active.

Mace Triangle – none

- 4.4-7 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.**

MRIC

The only feature within the MRIC site that contains sensitive natural habitats, albeit limited in nature, is the MDC. Vegetation in the MDC is dominated by cattail, bulrush, annual saltmarsh aster, nutsedge, and smartweed. The existing MDC, which transverses the center of the MRIC site, would predominantly remain in place and continue to serve drainage flows from the MRIC site. However, approximately the westernmost 700 feet would be placed within a storm drainage pipe under the proposed Oval park. Other improvements to the MDC may be implemented east of the Oval park to enhance the channel's aesthetic appeal.

The City of Davis currently has an agreement with CDFW that specifies conditions for channel maintenance within potential GGS habitat. The conditions require that, among other items, a biological monitor be on-site during any work within or immediately adjacent to the channel, and that work within GGS habitat be restricted to between May 1 and October 1. These conditions apply to the reach of the MDC through the project site.

Mace Triangle

Roadside ditches, roughly one to two feet wide, occur along the Davis Park-and-Ride driveway and along a dirt road between the Park-and-Ride lot and Ikedas Market. The roadside and irrigation ditches are manmade features excavated in uplands and draining only uplands. Vegetation in the roadside and irrigation ditches is ruderal. Riparian habitat or other sensitive natural communities do not exist on the Mace Triangle site.

Conclusion

The City of Davis has a memorandum of understanding with CDFW for on-going routine maintenance in the MDC. The project includes limited improvements to the MDC, which could affect existing in-channel vegetation that may support protected species. Implementation of the following mitigation measure would ensure that the project would have a ***less-than-significant*** impact to riparian habitat.

Mitigation Measure(s)

In preparing the biological mitigation measure, Sycamore considered the MDC improvements proposed as part of the project, such as piping the channel under the Oval park.

MRIC

4.4-7 *The project applicant for the MRIC shall implement the following measure to avoid or minimize impacts to the Mace Drainage Channel:*

- *Prior to conducting work within the bed and banks in the Mace Drainage Channel for any phase of development, as applicable, the project applicant for the MRIC shall notify CDFW pursuant to Section 1602 of the Fish and Wildlife Code. If CDFW determines that a Streambed Alteration Agreement (SAA) is necessary, the applicant shall obtain a SAA and comply with all conditions of that Agreement. Compliance with the SAA shall be ensured by the City of Davis Department of Community Development and Sustainability. This does not apply to City maintenance work within the Mace Drainage Channel, for which the City already has an agreement with CDFW.*

Mace Triangle – none

- 4.4-8 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Based on the analysis below, the impact is *less than significant*.**

Fieldwork for a wetland delineation was conducted by Sycamore Environmental Consultants on December, 10 2014; and a wetland delineation report has been prepared.

Based on the wetland delineation report, Sycamore determined that the Mace Drainage Channel is a non-navigable, man-made storm water drainage ditch maintained by the City of Davis. The MDC is excavated in uplands and drains only uplands. It is not a realigned natural channel, nor does the MDC contain relatively permanent flow of water. For these reasons, the MDC is not jurisdictional.

Sycamore also verified that the roadside drainage ditches and irrigation ditches in the Study Area are non-navigable, man-made ditches excavated in uplands and draining only uplands. These features have no OHWM, nor do they carry a relatively permanent flow of water. Therefore, these features are not jurisdictional.

Similar to the MRIC site, the Mace Triangle site does not support any federally protected wetlands. The Mace Triangle site contains either developed or disturbed habitats, including the Park-and-Ride lot and water storage tank, Ikedas market, and a ruderal field, historically used for agricultural purposes.

As a result of the above determinations, the proposed project would result in a ***less-than-significant*** impact with respect to having a substantial adverse effect on a federally protected wetland, as defined by Section 404 of the CWA.

Mitigation Measure(s)

None required.

4.4-9 Interfere substantially with the movement of native, resident, or migratory fish or wildlife species or established native resident or migratory wildlife corridors. Based on the analysis below, the impact is *less than significant*.

Movement of wildlife on the existing project site in the east-to-west direction is limited by the existing Mace Boulevard roadway on the western boundary of the site. In addition, movement of wildlife on the project site in the north-to-south direction is limited by the existing I-80 roadway on the southern boundary of the site.

MRIC

The MDC and other drainage ditches traverse the MRIC site. The MDC would not be filled and would be retained as a drainage feature upon development of the MRIC. Although a portion of the MDC would be piped below ground near the proposed Oval park, the MDC could still be used for wildlife movement after development.

The agricultural buffer along the boundary of the site and the green spaces within the site have been designed to allow the movement of wildlife throughout the site. For example, approximately 64.6 acres of green space would be maintained with the proposed project. The Mace 391 permanent agricultural easement and Howat Ranch property, totaling 718 acres, are adjacent to the north, northeast, and east of the site. Wildlife movement in the vicinity of the MRIC site would take place on the adjacent agricultural land, which would be preserved in perpetuity.

Mace Triangle

The movement of wildlife on the existing Mace Triangle site is limited by existing development associated with the aforementioned urban uses, as well as the presence of I-80 to the south, Mace Boulevard to the west, and CR 104 to the north of the Mace Triangle site. The existing roadways enclosing the Mace Triangle site currently provide barriers to wildlife movement. Future development of the agricultural parcel would not severely limit the movement of wildlife throughout the site as the area to the east of the Mace Triangle site would be preserved under a permanent agricultural easement.

Conclusion

The easement and Howat Ranch property would provide space for the movement of wildlife after project development. In addition, the project would maintain open space areas within the site, which would provide potential movement corridors for wildlife. Therefore, a *less-than-significant* impact related to the movement of wildlife would occur.

Mitigation Measure(s)

None required.

4.4-10 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

MRIC

The eight trees in the MRIC site are located along the MDC, near the detention basin, and along Mace Boulevard. The trees consist of two London planes (*Platanus x acerifolia*), one Chinese elm (*Ulmus parvifolia*), four Fremont cottonwoods (*Populus fremontii* ssp. *fremontii*), and one Goodding's black willow (*Salix gooddingii*). Landmark trees are not located on the MRIC site.

As noted previously, seven of the eight trees on the property qualify for protection under the City of Davis Municipal Code, having a DBH of five or more inches and being one of the species listed for protection. The seven protected trees include one London plane, one Chinese elm, four Fremont cottonwoods, and one Goodding's black willow. It should be noted that some of the protected on-site trees may be preserved due to the proposed building layout. For example, some of the trees are located along MDC, which would be preserved as green space per the proposed site plan (see Figure 3-12, MRIC Green Space Areas, in Chapter 3, Project Description).

The only trees in the off-site survey area are a few willow trees (*Salix* sp.) in a dry ditch at the southeast corner of the survey quadrants for the storage pond, on APN 033-300-015. Depending upon whether this pond is approved and constructed for the proposed project, and depending upon its final design, these willow trees could be impacted.

Mace Triangle

As discussed previously, a survey of trees has not been done for the Mace Triangle site. Various trees are located on the Mace Triangle site, though they are concentrated along the Mace Boulevard frontage and within the Park-and-Ride lot. Therefore, any future development on the Ikedas property or the easternmost parcel would not be expected to result in adverse impacts to trees. In the event that existing landscaping trees are damaged during construction, the City would require replacement in accordance with Section 37.03 of the Davis Municipal Code.

Compliance with Existing Law

According to Section 37.03.070 of the Davis Municipal Code, prior to any site disturbance or construction activity for any phase wherein trees are located, the project applicant shall submit an arborist survey of all trees on the project site and trees within the limits of off-site improvements to the City of Davis Department of Community Development and Sustainability. The arborist report shall be accompanied by a Tree Protection Plan, the components of which shall be complied with during construction. Prior to removal of any protected trees, the applicant shall obtain a tree removal permit from the City of Davis in accordance with the City's tree preservation ordinance.

Conclusion

Because the City's tree protection ordinance would be complied with, the proposed project would result in a ***less-than-significant*** impact to the various protected trees located on-site.

Mitigation Measure(s)

None required.

4.4-11 Conflict with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

As noted previously, the YNHP is not yet an adopted Plan. The Second Administrative Draft YNHP was released on March 31, 2015, and the public comment period for the Second Administrative Draft ended May 29, 2015.¹⁹ The plan is anticipated to be adopted by May 2017. The YNHP would only apply to species covered within the Plan; and it is noted that mitigation requirements in the YNHP for covered species may differ from the mitigation requirements required in this EIR.

¹⁹ Yolo County Habitat/Natural Community Conservation Plan Joint Powers Agency. *Staff Report*. February 23, 2015.

MRIC

The MRIC is anticipated to build out in four phases. Phase 1 is anticipated to consist of approximately 48 acres in the southern portion of the MRIC site. Future phasing is anticipated to move out to the central core and then north and east, although phasing will be driven by user demand. Although the YNHP is not yet an adopted plan, the possibility exists that the YNHP will be adopted prior to development of the first phase of the MRIC, or sometime thereafter.

Mace Triangle

The Mace Triangle has been included in the overall project boundary for annexation purposes (i.e., to avoid the creation of a County island property). This EIR has assumed that the Mace Triangle, with the exception of the Park-and-Ride lot, could be developed at a later date, subject to approval of additional discretionary entitlements. Therefore, the undeveloped portion of the Mace Triangle site is proposed for development, but not as a part of the MRIC. The potential for impacts associated with development of 71,056 square feet at the Mace Triangle site is considered in this EIR. Additional urban development within the Mace Triangle site in the future would be subject to further City review in connection with discretionary entitlements. Although the YNHP is not yet an adopted plan, the possibility exists that the YNHP will be adopted prior to future development of the Mace Triangle site, or sometime thereafter.

Conclusion

The possibility exists that the YNHP will be adopted prior to development of the first phase of the MRIC. Should the YNHP be in place prior to development of any phase of the project, a ***less than significant*** impact would result with the implementation of the following mitigation measure:

Mitigation Measure(s)

MRIC and Mace Triangle

- 4.4-11 *Should the Yolo Natural Heritage Program (YNHP) be adopted prior to initiation of any ground disturbing activities for any phase of development associated with the MRIC or Mace Triangle, the project applicant shall comply with the mitigation/conservation requirements of the YNHP, as applicable. The project applicant, the City of Davis Department of Community Development and Sustainability, and a representative from the YNHP JPA shall ensure that all mitigation/conservation requirements of the YNHP are adhered to prior to and during construction. To the extent there is duplication in mitigation for a given species, the requirements of the HCP/NCCP shall supersede.*

4.4-12 Conflict, or create an inconsistency, with any applicable biological resources plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Based on the analysis below and implementation of mitigation, the impact is *less than significant*.

In order to further demonstrate the project's consistency with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to biological resources, Table 4.4-5 includes a list of the relevant policies and a corresponding discussion of how the project is consistent with each policy.

MRIC

As demonstrated in the table, the MRIC is generally consistent with the applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to biological resources.

Mace Triangle

Development of the Mace Triangle is not proposed as part of the MRIC. The Mace Triangle site has been included in the overall project boundary for annexation purposes (i.e., to avoid the creation of a County island property). This EIR has assumed that the Mace Triangle site, with the exception of the Park-and-Ride lot, could be developed at a later date, subject to approval of additional discretionary entitlements. The potential for impacts associated with development of 71,056 sf at the Mace Triangle is considered in this EIR. The discussion in Table 4.4-5 pertains to the MRIC only. Additional urban development within the Mace Triangle in the future would be subject to further City review in connection with discretionary entitlements. Consistency with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to biological resources would be ensured during the future City review process for the Mace Triangle.

Conclusion

As demonstrated in the table and with implementation of the following mitigation measure, the proposed project is generally consistent with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to biological resources. Therefore, the project would have a ***less-than-significant*** impact regarding policy consistency.

Mitigation Measure(s)

MRIC

- 4.4-12 *At or prior to final planned development, or tentative map submittal, whichever occurs first, the applicant shall submit a design plan for the proposed on-site buffer/drainage features to the Department of*

Community Development and Sustainability for review and approval. The design plan shall demonstrate how the buffer/drainage features will be wildlife friendly natural spaces, with respect to details such as plant types, detention slopes, etc. In addition, should staff determine that in order to meet the City's stated objectives for urban agricultural transition areas (UATA), as well as drainage and safety, the proposed buffer design shall be modified to concentrate the proposed buffer and drainage areas to the northern and eastern boundaries of the project site, in order to establish wider UATA segments.

Mace Triangle – none

**Table 4.4-5
Biological Resources Policy Discussion**

Policy	Project Consistency
Chapter 14, Habitat, Wildlife, and Natural Areas, of the Davis General Plan	
HAB 1.1 Protect existing natural habitat areas, including designated Natural Habitat Areas.	As shown on Figure 3-12, MRIC Green Space Areas, of the Project Description Chapter, the proposed project has been designed to include green space (a total of 64.6 acres) in order to protect natural habitat areas. The 150-foot agricultural buffer along the north and east perimeters of the project site would provide a transition from the proposed urban land uses to the adjacent agricultural areas to the north and east. Furthermore, Mitigation Measure 4.4-5(b) requires compensatory off-site 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.
HAB 1.2 Enhance and restore natural areas and create new wildlife habitat areas. Standard HAB 1.2a Native plants should be used wherever possible in public and private landscaping. Standard HAB 1.2b Storm-retention ponds, drainage ponds, groundwater recharge areas, channels, and other similar areas should be designated and managed as wildlife habitats when appropriate and environmentally sound. Standard HAB 1.2c Landscaping should provide wildlife habitat where appropriate. Standard HAB 1.2d Hedgerows and other features to provide habitat for beneficial insects and wildlife are encouraged within the Urban Agricultural Transition Area and other agricultural areas. Standard HAB 1.2e As a means to promote safety of habitat areas from toxic materials, new habitat areas should be designated on non-agricultural lands or on	As noted above, the proposed project includes a total of 64.6 acres of green space throughout the project site and along the project site boundary. Existing habitat on the project site includes agriculture, the MDC, and ruderal vegetation. In addition, upon development of the project site, trees would be planted to increase existing tree cover. With Mitigation Measure 4.4-12 requiring the on-site buffer/habitat to be wildlife friendly, the maintained green spaces and the landscaping trees may provide opportunities for wildlife. Furthermore, as noted above, Mitigation Measure 4.4-5(b) requires compensatory off-site mitigation for the permanent loss of Swainson's hawk foraging habitat to the Yolo County HCP/NCCP JPA. The aforementioned mitigation lands, as well as the agricultural buffer surrounding the MRIC site, would serve several functions, one of which would be to provide habitat value. As such, with implementation of Mitigation Measures 4.4-5(b) and 4.4-12, a finding of substantial compliance with this policy could be made.

(Continued on next page)

Table 4.4-5 Biological Resources Policy Discussion	
Policy	Project Consistency
agricultural lands that are in organic production.	
Article 37.05, Protection of Trees During New Construction, of the Davis Municipal Code	
37.05.010 Protection while trenching, grading, performing construction, or other related site work.	In accordance with the City's tree preservation ordinance, a Tree Protection Plan would be required for the project. The Tree Protection Plan will illustrate the grading/improvement plans, with the on-site trees along the MDC, to be removed or preserved as plotted on the plans. Compliance with the Tree Protection Plan will be required before and during any site disturbance and construction activity and prior to issuance of grading permits.