3.4 BIOLOGICAL RESOURCES

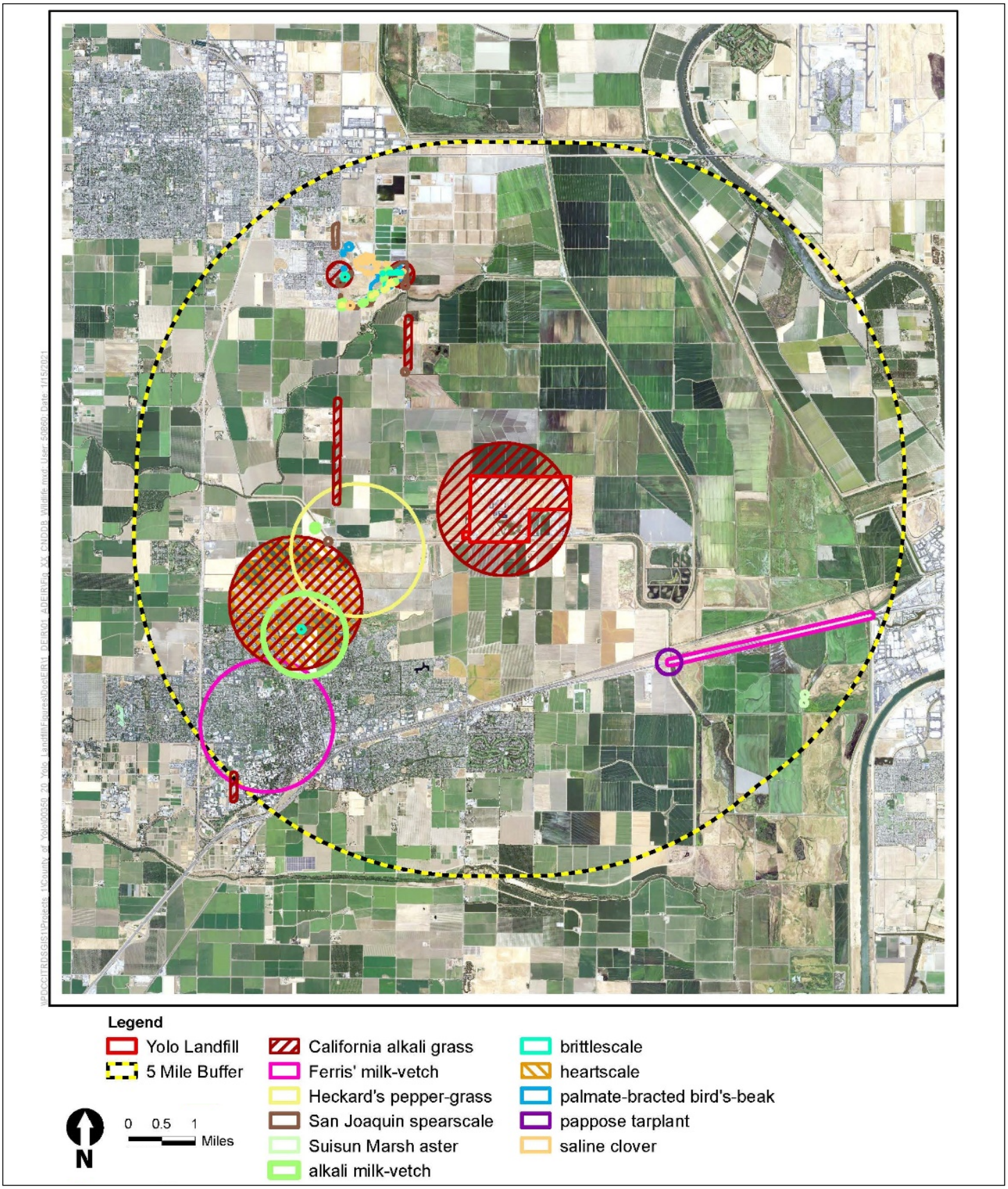
This section describes the environmental conditions of the Project area, analyzes potential impacts to biological resources, and provides mitigation measures to reduce potential biological impacts to a less-than-significant level.

3.4.1 METHODS

For this analysis, the biological project area (Project area) includes the eight proposed facility locations at the Yolo County Central Landfill (YCCL).

To assess the environmental conditions and biological resources, ICF biologists conducted a literature review, database inquiries, and reconnaissance field surveys. The reconnaissance surveys were conducted by ICF wildlife biologists Steve Avery and Stephen Barlow on November 23, 2020, and ICF botanist/wetland ecologist Devin Jokerst on December 4 and December 16, 2020. Mr. Jokerst returned to the property on February 16, 2021 for further assessment. The purpose of these surveys was to document existing conditions to support the CEQA analysis, specifically to describe the vegetation/land use cover types, assess habitat suitability for special-status wildlife and plants, determine whether potential aquatic resources (wetlands and non-wetland waters) are present in the Project area. The literature review and database review included the following sources:

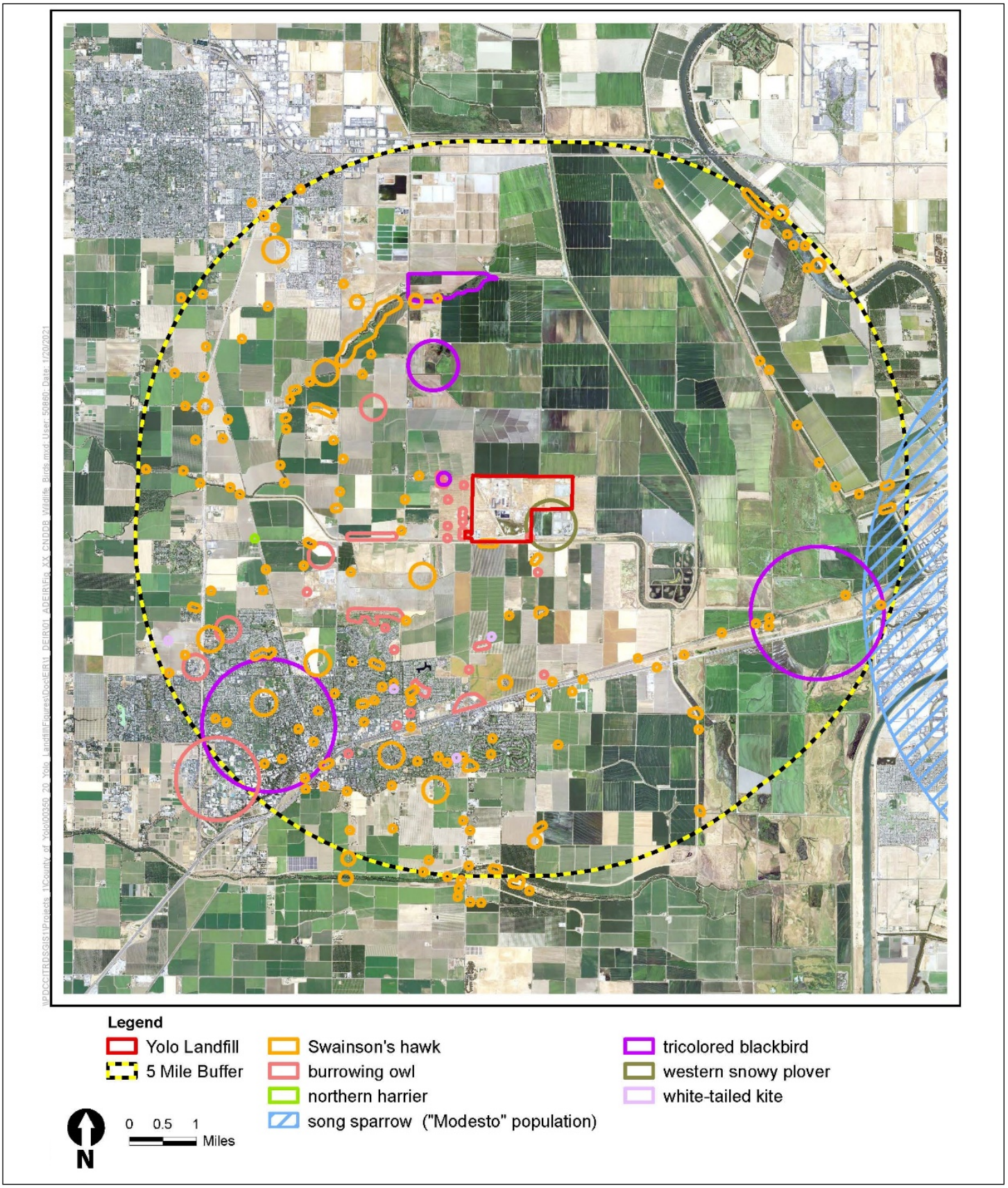
- The California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) records search of occurrences within 5 miles of the Project area (CDFW 2020a; **Figures 3.4-1a-d**).
- California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California for Davis and 8 surrounding USGS 7.5-minute quadrangles (CNPS 2020; Appendix D).
- The U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource report species list for Yolo County (U.S. Fish and Wildlife Service 2020a; Appendix D).
- The Natural Resources Conservation Service's Web Soil Survey Custom Soil Resource Report for the Project area (Natural Resources Conservation Service 2020; Appendix D).
- Google Earth's Current and Historic Aerial Maps (Google Earth 2020).
- Final designated critical habitat as mapped by the USFWS Environmental Conservation Online System (ECOS) (U.S. Fish and Wildlife Service 2020).
- *Yolo County Central Landfill Permit Revision EIR*, SCH No. 1991073040 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004).
- 2030 County Wide General Plan (County of Yolo 2009).
- Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) (Yolo Habitat Conservancy 2018).



Source: ICF, 2020

Figure 3.4-1a
CNDDB Plant Records for the Yolo County
Central Landfill Expansion Project

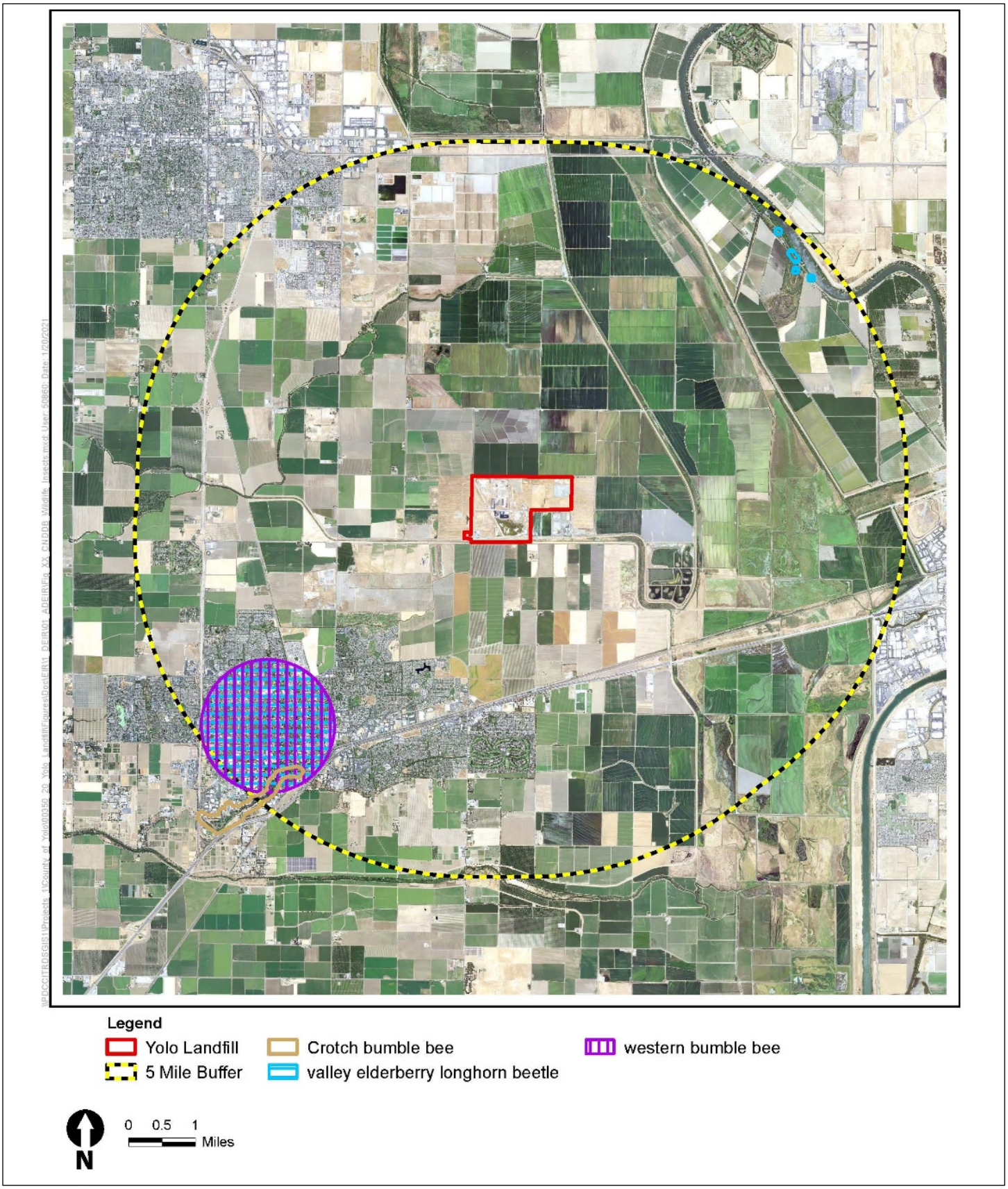
RCH GROUP
planning & environmental consulting



Source: ICF, 2020

Figure 3.4-1b
CNDDB Bird Records for the Yolo County
Central Landfill Expansion Project

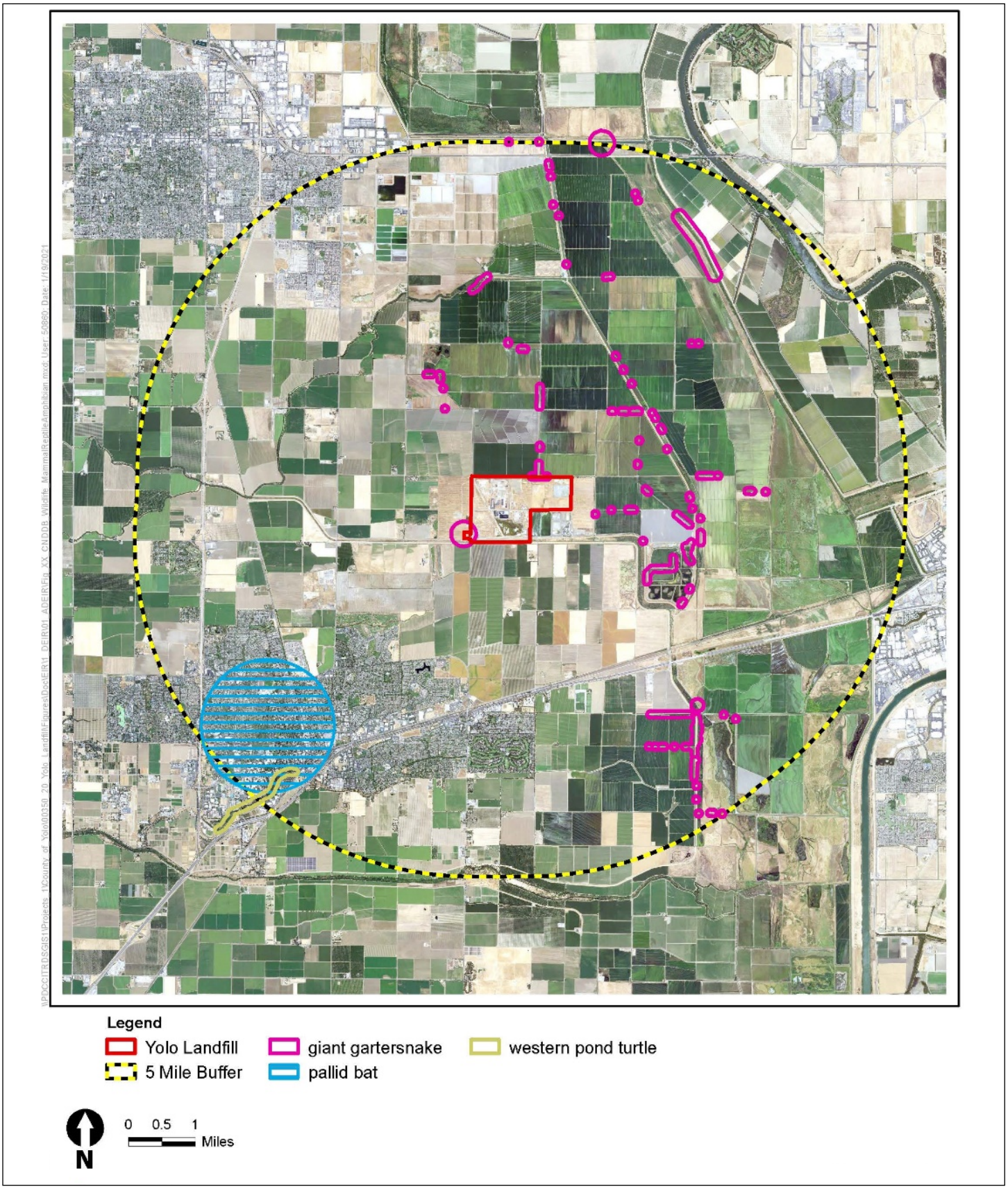
RCH GROUP
planning & environmental consulting



Source: ICF, 2020

Figure 3.4-1c
CNDDB Insect Records for the Yolo County
Central Landfill Expansion Project

RCH GROUP
planning & environmental consulting



Source: ICF, 2020

Figure 3.4-1d
CNDDB Mammal and Reptile Records for the Yolo County
Central Landfill Expansion Project

Figures 3.4-1a-d contain the CNDDB records for the Project. Appendix D contains database inquires identified in the list above. Appendix E contains representative photographs. Appendix F contains a list of species observed during the reconnaissance surveys.

3.4.2 SETTING

Biological components discussed in the setting below include land cover types and associated wildlife habitats, special-status species, sensitive natural communities, and wetland and non-wetland waters.

Land Cover Types and Associated Wildlife Habitats

Prior to agriculture and urbanization, the Project region supported a mosaic of grasslands, seasonal wetlands, marshes, oak woodlands, streams, and riparian corridors. Presently, the remaining natural areas are restricted to isolated remnant patches intermixed between agricultural and urban landscapes. Land cover types in the Project area consist of non-native annual grassland, seasonal wetland, drainage ditch, detention basin, ruderal, disturbed/bare, and facilities.

The YCCL is surrounded by agricultural land to the north, east and west, with County Road 28H bordering to the south. Willow Slough Bypass occurs south of County Road 28H and flows eastward.

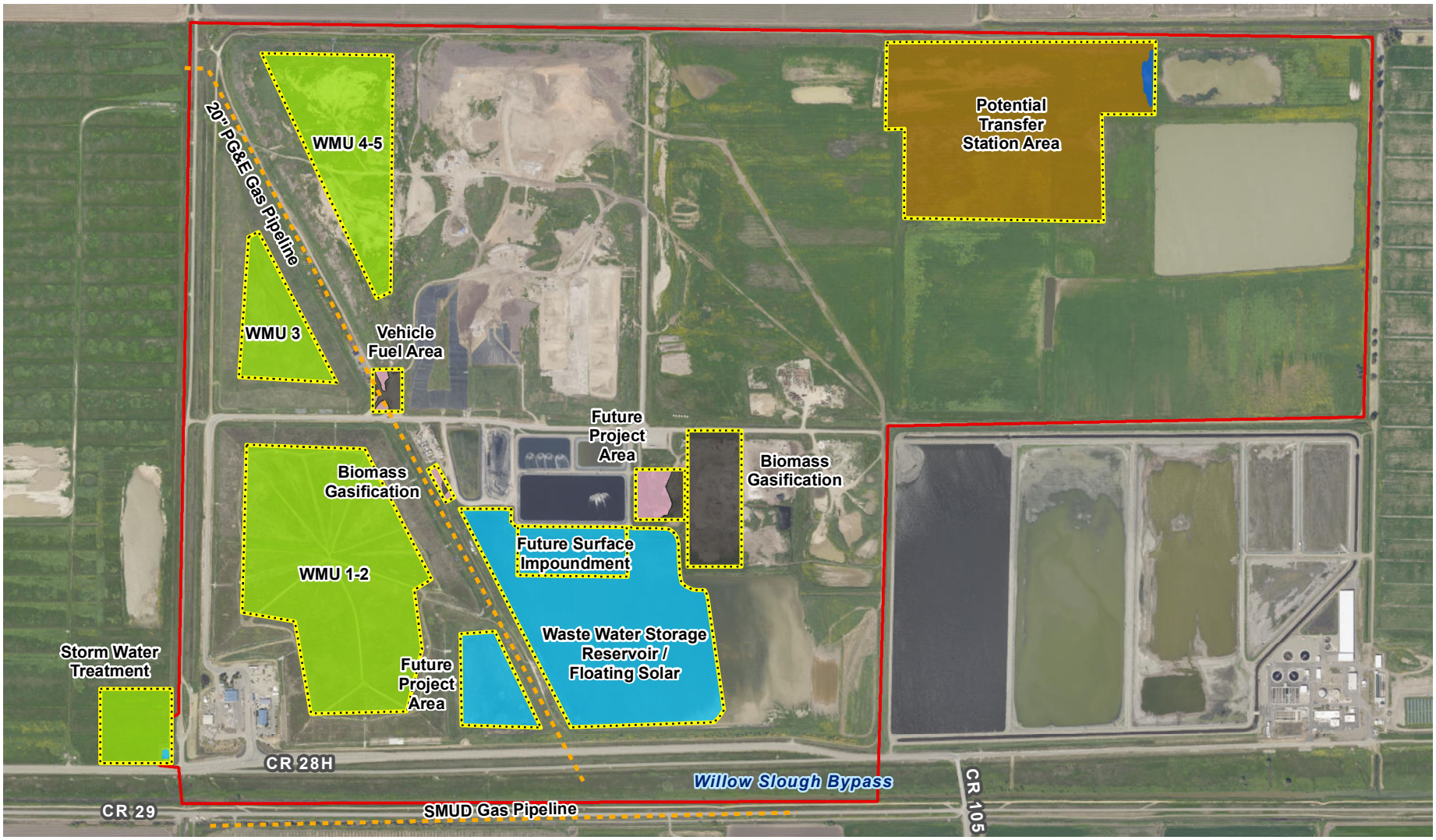
Non-Native Annual Grassland

Non-native annual grassland occurs in the areas identified for the proposed placement of the solar panels and in the southeastern corner of Project area proposed for Storm Water Treatment (**Figure 3.4-2**, and **Appendix E**, Photo 11). The non-native annual grassland has been intermittently disturbed by YCCL operations in previous years (Google Earth 2020). The non-native annual grassland is dominated by Harding grass (*Phalaris aquatica*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum ssp. leporinum*), yellow star thistle (*Centaurea solstitialis*), Italian rye grass (*Festuca perennis*), and sour clover (*Melilotus indicus*).

Wildlife species typical of non-native annual grasslands include coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), lesser goldfinch (*Spinus psaltria*), red-shouldered hawk (*Buteo lineatus*).

Artificial Seasonal Wetland

An artificial seasonal wetland occurs in the northeastern corner of the Project area, which is proposed for the Transfer Station, and other Project elements (**Appendix E**, Photo 12). Borrow activities started in 1993 and are evident on a 2018 aerial map (Google Earth 2020). The artificial seasonal wetland is lined with tule (*Schoenoplectus acutus* var. *occidentalis*) and cattails (*Typha* sp.) and the bed is dominated by swamp pickle grass (*Crypsis schoenoides*), with Italian rye grass and Parry's rough tarplant *(Centromadia parryi ssp. rudis*) primarily along the western margin. Wetland hydrology indicators observed in the artificial seasonal wetland included soil cracks and salt crusts. The disturbed/bare area adjacent to the artificial seasonal wetland contained wetlands delineated in 2004 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004). Since then, the topsoil has been scraped, and this area may develop wetland conditions if left undisturbed. The seasonal wetland appears to be



Legend

- Yolo Landfill
- Project Area
- Pipelines

Land Cover Types

- Artificial Detention Basin
- Disturbed/bare
- Facilities
- Non-native annual grassland
- Ruderal
- Artificial Seasonal wetland**
- Artificial Drainage Ditch

N

0 500 1,000 Feet

1:12,000

Notes:

*Aquatic resources mapped in the field and with aerial map interpretation. The disturbed/bare area contains depressions discernable on aerial maps in previous years (Google Earth 2020)

**Aquatic resources in Project Area are isolated, artificial, and not presumed waters of the U.S.

ICF

Figure 3.4-2
Land Cover Map Yolo County Central Landfill

artificial and isolated; as a result, they would not likely fall under jurisdiction of the U.S. Army Corps of Engineers (USACE). However, given the artificial seasonal wetland has become a relatively permanent part of the landscape, the Central Valley Regional Water Quality Control Board (RWQCB) could take jurisdiction over the resource. The jurisdiction would need to be confirmed in the future as part of a formal aquatic resource delineation.

Wildlife species that may typically occupy seasonal wetlands include, Sierran treefrog (*Pseudacris sierra*), water flea (*daphnia sp.*), and water beetle (*Datacidae sp.*).

Drainage Ditch

Three drainage ditches also occur in the area proposed for the Stormwater Treatment area (**Figure 3.4-2**). Two of the ditches run parallel east to west and converge with an additional ditch orientated north to south. The two parallel ditches were dominated upland non-native annual grasses. The ditch orientated north to south contained cobble bed with cocklebur growing in between. These artificial ditches are used for the YCCL's existing water treatment operations. Therefore, these features are not likely regulated by the USACE or RWQCB.

Wildlife species that would typically use drainage ditches include mallard (*Anas platyrhynchos*), mountain garter snake (*Thamnophis elegans elegans*), savannah sparrow (*Passerculus sandwichensis*), and racoon (*Procyon lotor*).

Detention Basin

The Project area includes three detention basins. The eastern detention basin would contain the proposed Floating Solar and Future Surface Impoundment Facilities (**Appendix E**, Photographs 7-9) (**Figure 3.4-2**). The eastern detention basin was inundated at the time of the survey and contained extensive salt flats; both perennial and annual herbaceous hydrophytic vegetation lined the marshy northern shore with dominant species including: broadleaf cattail (*Typha latifolia*), saltmarsh bulrush (*Bolboschoenus maritimus subsp. paludosus*), smartweed (*Persicaria* sp.) and cocklebur. The central detention basin contains a proposed Future Project area. The topsoil in the central detention basin was recently scraped and most the basin was bare; some stump remains of cattails were observed in the detention basin and several arroyo willows (*Salix lasiolepis*) were present along the southern bank. The western detention basin occurs in the proposed Storm Water Treatment area and was fenced off preventing a close assessment. Wetland hydrology indicators observed in the detention basins consist of salt crusts, water lines, and inundation observed on aerial imagery. The detention basins would not likely be regulated by USACE or RWQCB because they are actively used for wastewater treatment.

Detention basins typically provide habitat for the same species associated with drainage ditches. In addition, detention basins provide habitat for bullfrog (*Lithobates catesbeianus*), common yellowthroat (*geothlypis trichas*), red-winged blackbird (*Agelaius phoeniceus*), and killdeer (*Charadrius vociferus*).

Ruderal

Ruderal vegetation is dominated by non-native annual forbs that grow in frequently disturbed areas. In the Project area, ruderal vegetation occurs in the Vehicle Fuel Area, Biomass

Gasification, and Future Project area (**Figure 3.4-2**). Dominant species observed in the ruderal land cover type include yellow star thistle, bristly ox-tongue (*Helminthotheca echioides*), and field bindweed (*Convolvulus arvensis*).

Ruderal areas provide habitat for the same species associated with non-native annual grasslands.

Disturbed/Bare

The disturbed/bare land cover type occurs in the northeastern portion of the Project area. This area contains previously delineated wetland features. Additional wetlands may reestablish in this area if the area is left undisturbed.

Special-Status Species

Special-status species refers to plant, animal, and fish species that are legally protected under the federal ESA, CESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species include species, subspecies, or varieties that meet one or more of the following criteria.

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants]; 50 CFR 17.11 [listed animals]; various notices in the Federal Register (FR) [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (81 FR 87246 December 2, 2016).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380[b], [c], and [d]). Plants that may meet this definition consist of the following:
  - Plants considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern:
    - CRPR 1A – Plants presumed to be extinct in California,
    - CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere,
    - CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere,
    - CRPR 2B – Plants that are rare, threatened, or endangered in California but more common elsewhere, and
    - Plants that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines 15380[d]), which may include plants

rated CRPR 3 (Review List; plants about which more information is needed to determine their status) and CRPR 4 (Watch List: plants of limited distribution).

- Animal species that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines 15380[d])
- Species that are considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context such as within a county or region (State CEQA Guidelines Section 15125 [c]) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G).
- Animal species of special concern to CDFW, as identified and defined in the CNDDB.
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

Wildlife

Based on a review of the CNDDB search results; the USFWS list of endangered, threatened, and proposed species within the Project region; and species' distribution and habitat data, 27 special-status wildlife species were determined to have the potential to occur in the Project area and surrounding region (**Table 3.4-1**). After completion of the field survey and habitat assessment, the biologist determined that 12 of the 27 species would not occur in the Project area because the Project area lacks suitable habitat or is outside the species' current range. Another five species of amphibians, birds, and bats, including spade-foot toad, mountain plover, American peregrine falcon, bald eagle, and western red bat, have potential to forage in the Project area or nest in habitats adjacent to the Project area; however, suitable nesting or roosting habitat is not present in the Project area. An explanation for the absence of each of these species from the Project area is provided in Table 3.4-1. The location of CNDDB records for special-status wildlife within a 5-mile radius of the Project area are presented in **Figures 3.4-1a-d**.

The Project area has suitable habitat and CNDDB record occurrences within 5 miles for the 10 remaining species listed below that could be affected by Project activities. These species are discussed in further detail below.

- Giant garter snake (*Thamnophis gigas*).
- Western pond turtle (*Actinemys marmorata*).
- Western burrowing owl (*Athene cunicularia hypugea*).
- Swainson's hawk (*Buteo swainsoni*).
- White-tailed kite (*Elanus leucurus*).
- Northern harrier (*Circus cyaneus*).
- Song Sparrow "Modesto" population (*Melospiza melodia mailliardi*).
- Western snowy plover (*Charadrius nivosus nivosus*).
- Tricolored blackbird (*Agelaius tricolor*).
- Pallid bat *(Antrozous pallidus*).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION

Common and Scientific Names	Status[a] Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
INVERTEBRATES				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–	Streamside habitats below 3,000 feet throughout the Central Valley.	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	None—no elderberry shrubs within the Project area.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None—no suitable seasonal aquatic habitat that ponds deep enough for this species.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	None—no suitable seasonal aquatic habitat that ponds deep enough for this species.
Crotch bumble bee *Bombus crotchii*	–/CE	Historically common in the California Central Valley.	Open grassland and scrub; nests underground. Food plants include *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia*.	None – The nearest detection from Bumble Bee Watch (Bee 863) is more than 4.5 miles from the Project area.
Western bumble bee *Bombus occidentalis*	–/CE	Historically this species ranged from the Pacific coast to the Colorado Rocky Mountains; severe population decline west of Sierra-Cascade Crest, population now largely restricted to high elevations in the Sierra Nevada and northern California coast	Nests underground in squirrel burrows, in mouse nests, and in open west-southwest facing slopes bordered by trees. Visits a wide variety of wildflowers. Plant genera it is most commonly associated with are *Cirsium, Erigonum, Solidago, "Aster", Ceonothus, Centaurea*, and *Penstemon*.	None– No nearby detections from Bumble Bee Watch. The nearest CNDDB occurrence is detected approximately 4.5 miles from the Project area.
AMPHIBIANS				
California red-legged frog *Rana draytonii*	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County.	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	None—considered extirpated from the valley floor (U.S. Fish and Wildlife Service 2002).
California tiger salamander *Ambystoma californiense*	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	None—Limited marginal habitat occurs in the seasonal ponds associated with the Project area. No known CNDDB occurrences of this species within 10 miles of the Project area.
Western spadefoot *Spea hammondii*	–/SSC	Endemic to California. Ranges from Redding south throughout the Great Valley.	Shallow streams with riffles and seasonal wetlands, such as vernal and seasonal pools in annual grasslands and oak woodlands.	Low to none — Some marginal quality seasonal wetlands are present in the northern expansion area. Ground squirrel burrows are also present within the Project area, however, no CNDDB records occur within a 10-mile radius of the Project area (California Department of Fish and Wildlife 2020).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status[a] Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
REPTILES				
Western pond turtle *Actinemys marmorata*	–/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada.	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	Moderate quality habitat is present in Willow Slough Bypass. Marginal quality habitat is present within canals and various open water storage ponds within the expansion areas of the landfill
Giant garter snake *Thamnophis gigas*	T/T	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	High quality aquatic habitat is present in Willow Slough Bypass. Marginal quality aquatic and upland habitat is present within the expansion areas at the landfill. There are also CNDDB records of detections within canals associated with rice fields adjacent to the Project area. (California Department of Fish and Wildlife 2020).
BIRDS				
Mountain plover *Charadrius montanus*	–/SSC	Does not breed in California. Winter range spans the western Central Valley, including areas of the Delta east of Suisun Marsh, and portions of southern California.	Forages in short grasslands and plowed agricultural fields where vegetation is sparse, and trees are absent.	Low—suitable winter foraging habitat in and adjacent to the Project area. The nearest CNDDB record is over 10 miles from the Project area (California Department of Fish and Wildlife 2020).
Western snowy plover *Charadrius nivosus*	T/SSC	Breeds in coastal California and near alkali lakes in eastern California and remnant alkali playas in the southern San Joaquin Valley	Nests and forages on sandy and gravelly beaches along the coast and the shores of inland alkali lakes.	High—suitable foraging and nesting habitat present within the Project area; a nesting population of this species occurs within the City of Davis Wastewater Treatment Ponds (California Department of Fish and Wildlife 2020).
Swainson's hawk *Buteo swainsoni*	–/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High—suitable nesting habitat is lacking in the expansion areas. Suitable foraging habitat is present in and adjacent to the Project area, several documented nesting structures present adjacent to the Project area (California Department of Fish and Wildlife 2020).
White-tailed kite *Elanus leucurus*	–/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	High—suitable nesting habitat is marginal at the Project area. Suitable foraging habitat is present within and adjacent to the Project area, suitable nesting habitat is present bordering the Project area; the closest documented nest site in CNDDB is approximately 1.6 miles South of the Project area (California Department of Fish and Wildlife 2020).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status[a] Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
BIRDS (continued)				
American peregrine falcon *(Falco peregrinus anatum)*	–/SFP	Found throughout California.	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations; habitats vary from wetlands, woodlands, other forested habitats, and coastal habitats.	Low—no suitable nesting habitat within or adjacent to the Project area.
Bald eagle *Haliaeetus leucocephalus*	D/E	Most breeding territories are in northern California, but scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.	Nests and roosts in mountain and foothill coniferous forests within 1 mile of large bodies of water (lake, reservoir, river, or the ocean).	Low—low quality forging habitat present; no nesting habitat within or adjacent to the Project area.
Northern harrier *Circus cyaneus*	–/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations.	Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands.	High—suitable nesting and foraging habitat is present adjacent to and within the Project area within fallow fields and within dense vegetation along canals.
Western yellow-billed cuckoo *Coccyzus americanus*	C/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers.	Wide, dense riparian forests with a thick understory of willows for nesting; a with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant.	None—no suitable riparian nesting habitat is located within or adjacent to the Project area.
Western burrowing owl *Athene cunicularia hypugea*	–/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast.	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	High—suitable nesting habitat in and adjacent to the Project area based on presence of tall, dense grasses and suitable burrows created by California ground squirrel; disturbed areas and fields with sparse or short vegetation along the proposed work areas provide wintering and breeding habitat for burrowing owls; multiple burrowing owls observed in the fallow fields used as borrow sites during a survey conducted in 2020.
Bank swallow *Riparia*	–/T	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County.	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	None—no suitable bank nesting habitat is present within the Project area.

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status[a] Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
BIRDS (continued)				
Least Bell's vireo *Vireo bellii pusillus*	E/E	California to northern Baja. Rare, local, summer resident below about 600m (2000ft), mostly in San Benito and Monterey counties. Present in coastal southern CA from Santa Barbara County south.	Inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically associated with willow, cottonwood, coyote bush, wild blackberry, or mesquite in desert localities.	None—no suitable nesting habitat is present within the Project area
California black rail *Laterallus jamaicensis coturniculus*	–/T	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; northern Sierra foothills of Butte, Nevada, and Placer Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Resident of saltwater, brackish, and freshwater marshes with a vegetation structure characterized by high stem density and canopy cover. Typically use wetland zones with shallow water (generally less than 1.2 inches).	None— suitable habitat not present in the Project area Potential habitat present within Willow Slough Bypass; closest CNDDB nesting record is from a created wetland adjacent to the Deep Water Ship Channel located about 6 miles South East of the Project area (California Department of Fish and Wildlife 2020).
Song sparrow "Modesto" population *Melospiza melodia mailliardi*	–/SSC	Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees.	High—the riparian scrub habitat present within or adjacent to the Project area can sustain habitat suitable for foraging and nesting; the closest CNDDB record located approximately 6 miles southeast along the Yolo bypass (California Department of Fish and Wildlife 2020).
Tricolored blackbird *Agelaius tricolor*	–/T	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	High—there is suitable foraging and nesting habitat within the Project area. CNDDB record of a nesting colony within the North West corner of the Western borrow site (California Department of Fish and Wildlife 2020).
MAMMALS				
Western red bat *Lasiurus blossevillii*	–/SSC	Scattered throughout much of California at lower elevations.	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees in the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley.	Low—could forage over the Project area; however no suitable roosting habitat is present within the Project area; closest potential roost habitat are large trees bordering the Project area.
Townsend's big-eared bat *Corynorhinus townsendii*	–/T	Occurs in inland deserts, moist cool redwood forests, oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and lower to mid-elevation mixed coniferous forests.	The species is not known to occur on the floor of the Sacramento Valley. Roosts in caves, tunnels, mines, and dark attics of abandoned buildings	None— Species is not known to occur on the floor of the Sacramento Valley.

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status[a] Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
MAMMALS (continued)				
Pallid bat *Antrozous pallidus*	–/SSC	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, mixed conifer, redwood, and giant sequoia habitats in northern California.	Day and night roosts include crevices is rocky outcrops and cliffs, caves, mines, basal hollows and exfoliating bark of trees, bridges, barns, and even occupied homes.	Low—could forage over the Project area; suitable roosting trees are outside of the Project area, some existing buildings within the Project area could provide suitable roosting habitat.

[a] Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.
T = listed as threatened under the Federal Endangered Species Act.
C = candidate species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
– = no listing.

Other

WBWG = Western Bat Working Group 2007. Available: <http://www.wbwg.org/spp_matrix.html>.

Medium priority = species status is unclear because of a lack of data; this designation indicates a level of concern that should warrant (1) closer evaluation and more research of the species and possible threats and (2) conservation actions benefiting the species.

High priority = species are imperiled or at high risk of imperilment.

Giant Garter Snake

Giant garter snake is state and federally listed as threatened. A Revised Recovery Plan for giant garter snake was completed in 2017, but no critical habitat has been designated for this species (U.S. Fish and Wildlife Service 2017). Giant garter snake historically occupied wetlands throughout the Sacramento and San Joaquin Valleys, as far north as Chico, and as far south as Buena Vista Lake, near Bakersfield (Hansen and Brode 1980). The current known distribution of giant garter snakes is patchy, extending from near Chico, Butte County, south to Mendota Wildlife Area, Fresno County. Giant garter snakes are not known from the northern portion of the San Joaquin Valley north to the eastern fringe of the Sacramento-San Joaquin River Delta, where the floodplain of the San Joaquin River is limited to a relatively narrow trough (Hansen and Brode 1980, Federal Register 58:54053–-54066).

Giant garter snakes typically breed in March and April and live young are born from late July to early September. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, agricultural wetlands (including irrigation canals and rice fields), and adjacent uplands. Essential habitat components consist of 1) freshwater aquatic habitat with protective emergent vegetation cover where snakes can forage; 2) upland habitat near the aquatic habitat that can be used for thermoregulation and summer shelter (i.e., burrows), and 3) upland refugia outside flood waters that can serve as winter hibernacula (U.S. Fish and Wildlife Service 2017).

Ideal giant garter snake aquatic habitat exhibits the following characteristics.

- Water present from March through November.
- Slow moving or static water flow with mud substrate.
- Presence of emergent and bankside vegetation that provides cover from predators and may serve in thermoregulation.
- Absence of a continuous canopy of riparian vegetation.
- Available prey in the form of small amphibians and small fish.
- Thermoregulation (basking) sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover.
- Absence of large predatory fish.
- Absence of recurrent flooding, or, where flooding is probable, the presence of upland refugia.

Another key requirement of the giant garter snake includes maintenance of connectivity between habitats. Giant garter snakes rely on canals and ditches as movement corridors. These corridors provide important habitat and are used during daily movement within a home range. Recent work by the U.S. Geological Survey (USGS) (Halstead et al. 2010) suggests that giant garter snakes primarily occur in areas with dense networks of canals among rice agriculture and wetlands.

Giant garter snake typically forages and shelter within cattail, bulrush, or other emergent herbaceous wetland vegetation, using grassy banks and openings at the water's edge for basking.

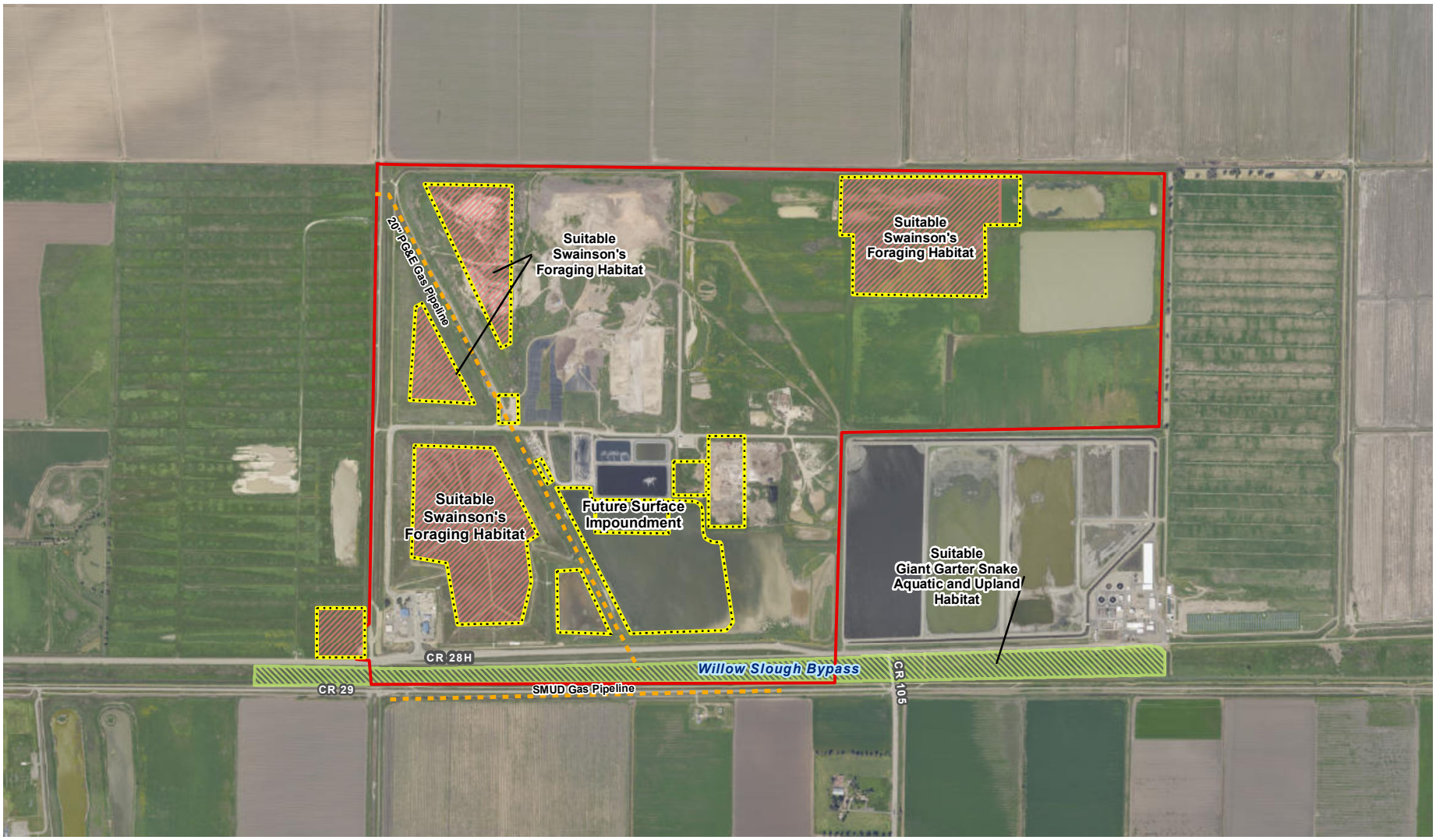
Rice fields may be important nursery and feeding habitat, providing prey that are absent from other permanent aquatic areas (U.S. Fish and Wildlife Service 2017). Wintering habitat consists of higher elevation upland areas with vegetation, burrows or other underground refugia (Hansen 1988). During the winter months, when the snakes are inactive, small mammal burrows and other soil or rock crevices may be used for hibernation, and also provide refuge from hot conditions during the snake's active season (Hansen and Brode 1993; U.S. Fish and Wildlife Service 2017). Giant garter snakes have been documented using burrows as much as 165 feet from marsh edges to shelter from heat during the active season, and up to 820 feet away during the winter (Wylie et al. 2000).

Many observations of giant garter snake have been documented within the agriculture areas and Willow Slough Bypass that surround the Project area (**Figure 3.4-1d** and **Figure 3.4-3**). Because of the Project areas' proximity to higher quality agricultural rice aquatic habitat and canals that support that agriculture, Project area features such as water runoff canals, storm water basins and other infrastructure, provide marginal aquatic habitat for this species. The Project area habitat is considered marginal quality due to the disturbance from heavy truck traffic at the Project area, the disturbed nature of the storm water basins, and general lack of dense stands of emergent vegetation. Portions of Willow Slough Bypass adjacent to the Project area and the location of the SMUD pipeline would be considered suitable habitat. Giant garter snakes may also disperse across or bask on dirt and gravel roads along the access routes, in the Project area, that are adjacent to suitable Willow Slough Bypass habitat.

Western Pond Turtle

Western pond turtle is a California species of special concern. The western pond turtle occurs from Baja California north into the State of Washington. Historically, this turtle once inhabited the vast permanent and seasonal wetlands throughout much of California except for east of the Sierra-Cascade crest and desert regions (with the exception of the Mojave River and its tributaries). Elevation range extends from near sea level to approximately 4,690 feet (Jennings and Hayes 1994). Aquatic habitats used by pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas (Stebbins 2003). Pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris (Jennings et al. 1992). They move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). Western pond turtles may spend the winter buried in mud bottoms of their aquatic habitats or under soil and duff in nearby uplands (Rosenburg et al. 2009). Throughout their range, the furthest distance that pond turtles have been reported to travel from water is between approximately 500 and 1,500 feet (Pilliod et al. 2013). Where permanent water is available and winter temperatures are mild, for example in the southern portion of the range and along the central coast, this pond turtles can be active year-round. In colder regions and where permanent water is not reliable or aquatic habitat is associated with streams and rivers, this pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992, Pilliod et al. 2013).

Suitable habitat for the turtle occurs in Willow Slough Bypass and the adjacent agricultural canals. Pond turtles could bask in or disperse through the Project area and potentially nest in Project area in grassland areas that are near suitable aquatic habitat (generally within 1,500 feet).



Legend

- Yolo Landfill
- Pipelines

Special Status Species Habitat Areas

- Suitable Giant Garter Snake and Western Pond Turtle Habitat
- Suitable Swainson's Hawk Habitat

N

0 1,000 2,000 Feet

1:18,000

Figure 3.4-3
Suitable Special-Status Species Habitat within the Yolo County Central Landfill

Western Burrowing Owl

Western burrowing owl is a state species of special concern and is protected under the MBTA and California Fish and Game Code Section 3503.5. Burrowing owls are a year-round resident and ground-nesting raptor that typically use the burrows of other species, such as ground squirrels for nesting, protection, and shelter (Trulio 1997). In urban and agricultural areas, burrowing owls often use artificial burrows, such as culverts, cement, asphalt, wood debris piles or openings beneath cement or asphalt pavement, particularly pipes (Rosenburg et al. 1998). The primary habitat requirement of the burrowing owl are burrows appropriate for roosting and nesting and are found in variety of grasslands, as well as in scrublands with a low density of trees, shrubs, and low-growing vegetation. Burrowing owls always need access to burrows for survival (Green and Anthony 1989, Haug et al. 1993). Burrowing owls that nest in the Central Valley may winter elsewhere (Catlin 2004, Rosier et al. 2006). This owl generally breeds from March through August and is most active while hunting during dawn and dusk.

There are several CNDDB recorded occurrence of wintering burrowing owls within 5-miles of the Project area (**Figure 3.4-1b**). Burrowing owls have also been observed in the western borrow site at the YCCL (observed in October 2020). Annual grassland and unvegetated/graded areas throughout the Project area provide suitable breeding and wintering habitat for burrowing owls. Owls could also use existing ground squirrel burrows or culverts present within or adjacent to the Project area.

Swainson's Hawk

Swainson's hawk is state listed as a threatened species. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (California Department of Fish and Game 1992). The majority of Swainson's hawks winter in Mexico and South America, although some winter in the United States. Swainson's hawks arrive in California in early March to establish nesting territories and breed (California Department of Fish and Game 1994). They usually nest in large, mature trees. Most nest sites (87 percent) in the Central Valley are found in riparian habitats (Estep 1989), where the abundance of trees is more prevalent than other habitats. Swainson's hawks also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August (Estep 1989).

There are numerous historic nest locations for Swainson's hawk documented by CNDDB surrounding the Project area (**Figure 3.4-1b**). Historic nests have also been documented within 1,600 - 2,600 feet of the Project area. These nests are located within trees associated with agriculture areas along County Road 103. One historic nest has been recorded on Willow Slough Bypass, along County Road 28H and is approximately 450 feet from the Project area. These nests experience regular noise and potential disturbance from farm equipment and vehicles. Other trees along the perimeter of the Project area could be used for nesting habitat. Grasslands in the Project area provide suitable foraging habitat for this species.

White-Tailed Kite

White-tailed kite is a state species of special concern and is designated as fully protected under California Fish and Game Code Section 3511. White-tailed kites occur in coastal and valley lowlands in California. They generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands.

Within the Project area, potential nesting habitat for white-tailed kite is limited to a few small trees along the southern portion of the Project area that borders County Road 28H. Annual and ruderal grassland in the Project area provides suitable foraging habitat for white-tailed kite.

Northern Harrier

Northern harrier is a California species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Northern harrier is a year-round resident throughout the Central Valley and often is associated with marshes, meadows, open grassland habitats, and agricultural fields. Nests are found on the ground in tall, dense herbaceous vegetation (MacWhirter and Bildstein 1996). Northern harrier nests from April to September, with peak activity in June and July. The breeding population has been reduced, particularly along the southern coast, because of the destruction of wetland habitat, native grassland, and moist meadows and from burning and plowing of nesting areas during early stages of breeding.

Suitable nesting habitat for northern harriers is present within the proposed transfer station, waste gasification, fertilizer facility, and pellet facility. They may also forage along margins of suitable habitat found along vegetated water storage berms. Agricultural areas adjacent to the Project area provide suitable foraging and nesting habitat for northern harriers.

Song sparrow ("Modesto" population)

The Modesto population of song sparrows are a state species of special concern. They are endemic to the north-central portion of the Central Valley and the Bay-Delta regions of California. These sparrows breed in emergent marsh and riparian scrub, and in valley oak riparian forests with dense blackberry understory, vegetated irrigation canals, and levees. Their habitat requires moderately dense vegetation to supply cover for nesting sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging (Grinnell and Miller 1994).

Suitable habitat for the song sparrow is present along vegetation growing along Willow Slough Bypass, the eastern detention basin, and borders along neighboring agriculture that surround the Project area.

Western Snowy Plover

The western snowy plover is federally listed as threatened. The current known breeding range of the Pacific coast population of the Western snowy plover extends from Damon Point, Washington to Bahia Magdalena in Baja California, Mexico (U.S. Fish and Wildlife Service 2016c).

The western snowy plover breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries; less commonly, they breed on bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (U.S. Fish and Wildlife Service 2016c).

Breeding occurs from early March through late September but may be variable depending on latitude. Breeding may take place up to 2 to 4 weeks earlier in southern California than in Oregon or Washington. The two or three eggs are incubated by both parents for 26-33 days. Chicks are fully mobile within hours of hatching but are tended to by the male for approximately one month. Once the chicks are hatched, the female departs to begin a new nest with a new male. Females often produce two broods per year, and up to three broods where the breeding season is longer (National Parks Service 2020a). Fledging can take place as late as September (U.S. Fish and Wildlife Service 2016c).

Adult snowy plovers do not feed their young, instead they lead young to food within hours of hatching. They are primarily visual foragers, feeding on terrestrial and aquatic invertebrates (U.S. Fish and Wildlife Service 2007c). Adults will try to distract predators and humans from young by presenting a broken-wing or tail-drag display (U.S. Fish and Wildlife Service 2016c). Nests may be natural or scrapped shallow depressions lined with pebbles, shell fragments, vegetation fragments, or mud chips (U.S. Fish and Wildlife Service 2007c). Western snowy plovers generally return to the same area each year for breeding (U.S. Fish and Wildlife Service 2016c).

An extant population is known to occur along the City of Davis former wastewater treatment plant lagoons which are approximately 1,200 feet southeast from the Project area. The eastern detention basin contained extensive salt flats that would be suitable nesting and foraging habitat for this species.

Tricolored Blackbird

Tricolored blackbirds can be found throughout California's central valley in addition to a few peripheral sites. Breeding occurs from mid-March through mid-July (Hamilton 1998). This species is known to show annual site fidelity (Beedy and Hamilton 1997). Colonies that finish nesting within Sacramento county and San Joaquin valley settle in Sacramento Valley during late May through early June (Beedy and Hamilton 1999). In November large foraging flocks frequent the Sacramento- San Joaquin Delta region.

Tricolored blackbirds are opportunistic foragers of any abundant insect resource and have been known to travel up to 13 km for food (Orians 1961a, p.299; Beedy and Hamilton 1997, p.5).

Tricolored blackbirds have been known to nest in the north west portion of the western borrow site (CDFW 2020a), however any emergent marsh vegetation, such as tules and cattails found bordering detention basins within the Project area, or upland areas with blackberries, nettles, thistles would be considered suitable habitat.

Other Protected Birds and Raptors

Other non-special-status migratory birds and raptors could nest in and adjacent to the Project area, based on the presence of suitable nesting habitat (annual grassland, agricultural areas, trees and shrubs). In addition to individual bird nests, the large trees adjacent to the Project area have the potential to support heron rookeries, including great egret, snowy egrets, great blue herons, black-capped night herons, and green herons. The breeding season for most birds is generally from March 1 to August 30. The occupied nests and eggs of these birds are protected by federal and state laws, including the MBTA and California Fish and Game Code Sections 3503 and 3503.5. CDFW is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

Pallid Bat

Pallid bat is designated as a California species of special concern. Pallid bat occurs at low elevations throughout California (Zeiner et al. 1990:70). They occur in a variety of habitat, including grasslands, shrublands, and woodlands, and are most common in open, dry habitats with rocky areas for roosting (Zeiner et al. 1990:70). Pallid bats roost alone, in small groups, or gregariously in crevices in rocky outcrops and cliffs, caves, mines, trees hollows, exfoliating tree bark, and various human structures such as bridges and buildings (Western Bat Working Group 2005a).

Suitable roosting habitat occurs within the YCCL manmade structures in the Project area. Foraging habitat occurs within the grasslands of the borrow sites and along vegetated margins between work areas. Suitable foraging and roosting habitat also occur in habitat adjacent to the Project area. No directed surveys for bats were conducted.

Plants

Based on the results of the database inquiries and the reconnaissance surveys/habitat assessment, there is low quality potential habitat for all 11 special-status plant species known to occur within 5 miles of the Project area, listed in **Table 3.4-2** below (CDFW 2020a and CNPS 2020) and identified in **Figures 3.4-1a**. The only state or federally listed species with potential to occur in the Project area is the federally and state endangered palmate-bracted bird's beak (*Chloropyron palmatum*). The remaining species with potential to occur include CRPR 1B.1 Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*) and nine other CRPR 1B.2 species. The artificial seasonal wetland occurs on alkaline soils and provides low quality potential habitat for all but one of the special-status species listed in Table 3.4-2; the eastern detention basin contains low quality potential habitat for Ferris' milk-vetch, Suisun Marsh aster (*Symphyotrichum lentum*), California alkali grass (*Puccinellia simplex*), and saline clover (*Trifolium hydrophilum*) along the northern marshy margin.

TABLE 3.4-2. SPECIAL-STATUS PLANT SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION

Common and Scientific Names	Status[a] Federal/ State/CNPS	Geographic Distribution	Habitat Requirements	Blooming/ Identifiable Period	Potential to Occur in Project area
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	–/–/1B.1	Sacramento Valley	Subalkaline flats and flood lands, usually on alkaline soils	April–May	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and eastern detention basin on alkaline soils.
Alkali milk-vetch *Astragalus tener var. tener*	–/–/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area	Grassy flats and vernal pool margins, on alkali soils; below 197 feet	March–June	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland.
Heartscale *Atriplex cordulata var. cordulata*	–/–/1B.2	Central Valley from Colusa County to Kern County	Alkali grassland, alkali meadow, alkali scrub	May–October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland on alkaline soils.
Brittlescale *Atriplex depressa*	–/–/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkali grassland, alkali meadow, and alkali scrub	June-October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Pappose spikeweed *Centromadia parryi subsp. parryi*	–/–/1B.2	Northern San Francisco Bay Area, North Coast Ranges, Sacramento Valley	Coastal prairie, meadows, seeps, coastal salt marsh, annual grassland, below 1,380 ft.	July–October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Palmate bird's-beak *Chloropyron palmatum*	E/E/1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa to Fresno County	Alkaline grasslands, chenopod scrub	May–October	Low–Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland.
San Joaquin spearscale *Extriplex joaquinana*	–/–/1B.2	Eastern San Francisco Bay Area, west edge of Central Valley from Glenn County to Fresno County	Alkali meadow, alkali grassland, saltbush scrub	April–September	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Heckard's pepper-grass *Lepidium latipes var. heckardii*	–/–/1B.2	Yolo and Solano Counties	Alkaline soils, vernal pool margins, salt marsh edges	April–May	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland on alkaline soils.
California alkali grass *Puccinellia simplex*	–/–/1B.2	Scattered locations in the San Francisco Bay Area, Great Valley, Tehachapi Mountains, western Mojave Desert;	Seasonal alkali wetlands, sinks, flats, vernal pools, and lake margins; 5–3,050 feet	March-May	Low–Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland on alkaline soils.

TABLE 3.4-2. SPECIAL-STATUS PLANT SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status[a] Federal/ State/CNPS	Geographic Distribution	Habitat Requirements	Blooming/ Identifiable Period	Potential to Occur in Project area
Suisun Marsh aster *Symphyotrichum lentum*	–/–/1B.2	Sacramento-San Joaquin delta, Suisun Marsh, Suisun Bay	Brackish and freshwater marsh	August–November	Low–the marshy margins of the eastern detention basin support low quality habitat. Management practices and habitat fragmentation further reduce potential.
Saline clover *Trifolium hydrophilum*	–/–/1B.2	Sacramento Valley, central western California	Salt marsh, mesic alkaline areas in grasslands, vernal pools, below 990 feet	April–June	Low–Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland and eastern detention basin containing alkaline soils.

[a] Status explanations:

Federal

E = Listed as endangered under the federal ESA.
— = No listing status.

State

E = Listed as endangered under CESA.
— = No listing status.

CRPR

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

.1 = Seriously threatened in California (over 80% of occurrences threatened—high degree and immediacy of threat).
.2 = moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat).
.3 = not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

SOURCES: California Native Plant Society 2020; California Department of Fish and Wildlife 2020a.

Ferris' milk-vetch (*Astragalus tener var. ferrisiae*) is a CRPR 1B.1 species. Two occurrences were mapped within 5 miles of the Project area (CNDDB Occurrences #17 and 18, CDFW 2020a), but the variety wasn't observed in follow up visits. Suitable habitat for Ferris' milk-vetch includes subalkaline flats and flood lands, usually on alkaline soils. As a result, the Project area contains low quality potential habitat in the alkaline soils of the artificial seasonal wetland and margins the eastern detention basin.

Alkali milk-vetch (*Astragalus tener var. tener*) is a CRPR 1B.2 species. Alkali milk-vetch grows in grassy flats and vernal pool margins, on alkali soils. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland on alkaline soils. The two closest alkali milk-vetch occurrences occur within 2.2 miles of the Project area (CNDDB Occurrences #35 and 36); they are both considered possibly extirpated because suitable habitat no longer exists at the locations and alkali milk-vetch has not been observed in recent surveys of both locations (CDFW 2020a). The closest extant occurrence (CNDDB Occurrence #38) is approximately 3.4 miles northwest of the Project area.

Heartscale (*Atriplex cordulata var. cordulata*) is CRPR 1B.2 species. Suitable habitat for heartscale includes alkali grassland, alkali meadow, and alkali scrub. As a result, the Project area contains low quality suitable habitat in the artificial seasonal wetland and non-native annual grasslands on alkaline soils. There is a single occurrence mapped within 5 miles of the Project area; the occurrence is extirpated and is located approximately 1.68 miles southwest of the Project area (CNDDB Occurrence #4, CDFW 2020a).

Brittlescale (*Atriplex depressa*) is a CRPR 1B.2 species. Suitable habitat for brittlescale includes alkali grassland, alkali meadow, and alkali scrub. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland and non-native annual grassland on alkaline soils. There are three extant occurrences mapped within 5 miles of the Project area. The closest occurrence is 2.7 miles southwest of the Project area (CNDDB Occurrence # 57, CDFW 2020a).

Pappose spikeweed (*Centromadia parryi ssp. parryi*) is a CRPR 1B.2 species. Suitable habitat for pappose tar plant includes coastal prairie, meadows, seeps, coastal salt marsh, and annual grassland. As result, the Project area contains low quality suitable habitat in the artificial seasonal wetland and non-native annual grassland. The closest occurrence is 2.8 miles southeast of the Project area from a 2011 collection (CNDDB Occurrence # 37, CDFW 2020a).

Parry's rough tarplant (*Centromadia parryi ssp. rudis*) is a CRPR 4.2 species observed in the Project area. Parry's rough tarplants were observed in the artificial seasonal wetland; the artificial seasonal wetland generally contained lower vegetation cover and was dominated by swamp pickle grass, with Parry's rough tar plant and Italian rye grass growing along the margins. The closest Parry's rough tar plant's occurrence is from 1985 and is approximately 1.8 miles southeast of the Project area on the west edge of the Yolo Causeway between Interstate 80 and the Davis-Sacramento railroad tracks; an additional occurrence from 1999 is approximately 2.9 miles southeast of the Project area in a low area between Frontage Road and Interstate 80 (Consortium of California Herbaria 2021).

Palmate-bracted bird's beak (*Chloropyron palmatum*) is federally and state listed as endangered with a CRPR of 1B.1. Suitable habitat for palmate-bracted bird's beak includes alkaline grasslands and chenopod scrub. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland and non-native annual grassland on alkaline soils. There are two extant occurrences within 5 miles of the Project area. The closest occurrence is 3.4 miles northwest of the Project area close to the north side of Willow Slough (CNDDB Occurrence #1, CDFW 2020a).

San Joaquin spearscale (*Extriplex joaquinana*) is a CRPR 1B.2 species. Suitable habitat for San Joaquin spearscale includes alkali meadow, alkali grassland, and saltbush scrub. As a result, the Project area contains low quality suitable habitat in alkaline soils of the artificial seasonal wetland and non-native annual grassland. There are 5 extant occurrences mapped within 5 miles of the Project area (CDFW 2020a). The closest occurrence is 1.9 miles west of the Project area (CNDDB Occurrence #39).

Heckard's pepper-grass (*Lepidium latipes var. heckardii*) is a CRPR 1B.2 species. Suitable habitat for Heckard's pepper-grass includes alkaline soils, vernal pool margins, salt marsh edges, and pastures. As a result, the Project area contains low quality suitable habitat in the alkaline soils of the artificial seasonal wetland and non-native annual grassland. There are three CNDDB occurrences mapped within 5 miles of the Project area. The closest occurrence is the type specimen mapped 0.6 miles west of the Project area, but the collected specimen is historic, and the exact location is unknown (CNDDB Occurrence #2, CDFW 2020a). The next closest occurrence is approximately 3.3 miles northwest of the Project area (CNDDB Occurrence #1), which occurs in the same wetland complex as the palmate-bracted bird's beak occurrence referenced above.

California alkali grass (*Puccinellia simplex*) is a CRPR 1B.2 species. Suitable habitat for California alkali grass includes seasonal alkali wetlands, sinks, flats, vernal pools, and lake margins. As a result, there is low quality potential habitat in the alkali soils of the artificial seasonal wetland and eastern detention basin. There are seven occurrences mapped within 5 miles of the Project area (CDFW 2020a). The Project area occurs in a possibly extirpated occurrence that is based on a 1949 record with an unknown exact location (CNDDB Occurrence #53). The closest extant occurrence is 2.2 miles northeast of the Project area (CNDDB Occurrence #57).

Suisun Marsh aster (*Symphyotrichum lentum*) is a CRPR 1B.2 species. Suitable habitat for Suisun Marsh aster included brackish and freshwater marshes. As a result, the Project area contains low quality potential habitat along the northern marshy border of the detention basin. There is a single extant occurrence mapped within 5 miles of the Project area, which is located in the Yolo Bypass approximately 5 miles to the southeast (CNDDB Occurrence #195, CDFW 2020a).

Saline clover (*Trifolium hydrophilum*) is a CRPR 1B.2 species. Suitable habitat for saline clover includes salt marshes and mesic alkaline areas in grasslands. As a result, there is low quality potential habitat in the artificial seasonal grassland and marshy margin of the eastern detention basin. There are two occurrences mapped within 5 miles of the Project area. The closest occurrence is 3.5 miles northwest of the Project area (CNDDB Occurrence #43, CDFW 2020a) in the same wetland complex as the previously referenced palmate-bracted bird's beak occurrence.

Sensitive Natural Communities

The Project area is regularly disturbed from routine landfill operations. Most vegetation types/natural communities in the Project area are dominated by non-native plants. While salt marsh bulrush marshes (*Bolboschoenus maritimus* Herbaceous—Alliance) are a sensitive natural community (CDFW 2020b) and the species is present in the eastern detention basin, the detention basin is not a sensitive natural community due to its artificial origin and routine disturbance. Of note, Willow Slough Bypass, close to the SMUD gas pipeline, would be considered a sensitive natural community.

Wetlands and Non-Wetland Waters

Aquatic resources in the Project area consist of an artificial seasonal wetland, drainage ditches, and detention basins. The artificial seasonal wetland is dominated by hydrophytic vegetation and contained observable wetland hydrology (soils cracks and salt crusts). Soil pits were not excavated to examine the soil profile, but the occurrence of the other two wetland indicators suggests hydric soils are present. In addition, seasonal wetlands at the landfill contained hydric soils during a wetland delineation conducted in 2004 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004). Wetland hydrology in the drainage ditches consists of inundation observed on aerial imagery (Google Earth 2020). Wetland hydrology observed in the detention basins consist of salt crusts, water lines, and inundation observed on aerial imagery. The wetland delineation conducted for the *Yolo County Central Landfill Permit Revision EIR*, SCH No. 1991073040 delineated four ditches in their stormwater drainage system that ultimately flow to the Willow Slough Bypass; the Willow Slough Bypass discharges into the Yolo Basin and ultimately the Sacramento River (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004).

According to the *Navigable Waters Protection Rule* (85 FR 22250), the aquatic resources in the Project area are not likely under jurisdiction of the U.S. Army Corps of Engineers (USACE) because the features are artificial and are not traditional navigable waters, tributaries to traditional navigable waters, or lakes, ponds, and/or impoundments of jurisdictional waters, and the wetlands are not adjacent to the jurisdictional waters (i.e., they are isolated). According to the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019), the detention basins and drainage ditches in the Project area would not likely fall under jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB) because they are artificial and are used for ongoing operations and maintenance, including municipal wastewater treatment operations. Given the artificial seasonal wetland is not currently used for wastewater treatment and have become a relatively permanent part of the land scape, RWQCB could take jurisdiction over the features. The artificial seasonal wetland and detention basins likely meet the State's official wetland definition (recurrent saturation, anaerobic conditions in upper substrate, and a dominance of hydrophytes or lacking vegetation). If this area is developed the applicant must demonstrate the features are not a water of the state. However, only USACE and RWQCB can determine their jurisdiction status and a protocol aquatic resources delineation would be submitted to the agencies to confirm the features' jurisdiction.

3.4.3 REGULATORY SETTING

Regulatory Considerations

This section summarizes the federal and state regulations that may pertain to the proposed Project. This section also discusses pertinent local general plan policies and ordinances related to the protection and preservation of biological resources.

Federal Regulations

Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973, and subsequent amendments, provide regulations for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS), which has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish and marine fish and mammals, oversee the ESA. Section 7 of the ESA mandates all federal agencies to consult with USFWS and NMFS if they determine that a Project may affect a listed species or destroy or adversely modify designated critical habitat. Under Section 7, the federal lead agency must obtain incidental take authorization or a letter of concurrence stating that the Project is not likely to adversely affect federally listed species. Section 7 requirements do not apply to nonfederal actions. For projects that do not involve a federal action, ESA compliance is obtained through Section 10 for projects that will adversely affect (result in take) of a federally listed species. Section 10 compliance requires preparation of a habitat conservation plan by the project proponent and results in the issuance of an Incidental Take Permit from USFWS and/or NMFS. Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as any action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed for or under petition for listing receive no protection under Section 9.

Three federally listed species (vernal pool fairy shrimp, western snowy plover, giant garter snake,), have the potential to occur in the Project area and may be affected by the Project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. Under the MBTA, "take" is defined as to (or attempt to) pursue, hunt, shoot, capture, collect, or kill (50 Code of Federal Regulations [CFR] 10.12). The definition differentiates between intentional take (take that is the purpose of the activity in question) and unintentional take (take that results from, but is not the purpose of, the activity in question). Executive Order 13186, signed January 10, 2001,

directs each federal agency taking actions that would, or likely would, negatively affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Migratory birds could nest in the Project area and could be directly or indirectly impacted by the Project.

Clean Water Act

The Clean Water Act (CWA) was passed by Congress in 1972 with a broad mandate "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The chief purpose of the CWA is to establish the basic structure for regulating discharges of pollutants into waters of the United States. The CWA authorizes the EPA to set national water quality standards and effluent limitations, and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into waters of the United States are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. Aquatic resources present in the Project area would not likely be regulated under CWA Section 404 (described below).

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the state. Therefore, all projects with a federal component that may affect state water quality (including projects that require federal agency approval, such as a Section 404 permit) must comply with CWA Section 401. Aquatic resources that appear to qualify as waters of the State are present in the Project area.

It is anticipated that construction associated with the Project could result in discharge of pollutants into aquatic resources outside of the Project area that flow into waters of the United States. It is also anticipated that the project would result in fill into potential waters of the state (artificial seasonal wetland). Therefore, a Section 401 water quality certification from the Central Valley Water Board would be required for the project.

However, only the RWQCB can verify their jurisdiction. Therefore, a delineation of aquatic resources would be submitted to the RWQCB. If the RWQCB confirms the Project area contains waters of the State, a Section 401 permit application would be submitted as a part of the project.

Section 402: Permits for Stormwater Discharge

CWA Section 402 regulates construction-related storm water discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the regional water boards.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge storm water and to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources.

Because the Project would disturb more than 1 acre of land, preparation of a SWPPP and compliance with an NPDES permit would likely be required.

Section 404: Permits for Fill Placement in Waters of the United States (Including Wetlands)

Waters of the United States (including wetlands) are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). "Waters of the United States" is defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria and are adjacent to navigable waters. Wetlands are defined under Section 404 as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland criteria.

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil).
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions).
- They have wetland hydrology.

It is not anticipated that USACE would take jurisdiction over aquatic resources into the Project area because they are isolated from waters of the U.S. However, only USACE can verify their jurisdiction. Therefore, a delineation of aquatic resources would be submitted to USACE. If USACE verifies the Project area contains waters of the U.S., a section 404 permit application would be submitted as a part of the project.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species on the federal and state lists, compliance with ESA satisfies CESA if CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only state listed, the project proponent must apply for a take permit under Section 2081(b).

Three state-listed species (giant garter snake, Swainson's hawk, and tricolored blackbird) have potential to occur in the Project area and may be impacted by the project. If "take" of these species cannot be avoided, a Section 2081 permit from CDFW would be required for the project.

California Fish and Game Code

Several sections of the California Fish and Game Code apply to the Project, as described below.

Lake or Streambed Alteration (Section 1602)

CDFW regulates activities that would interfere with the natural flow of—or substantially alter the channel, bed, or bank of—a lake, river, or stream, including disturbance of riparian vegetation, under California Fish and Game Code Sections 1600–1616. CDFW requires a Lake or Streambed Alteration Agreement (LSAA) permit for these activities. Requirements to protect the integrity of biological resources and water quality often are conditions of LSAAs. CDFW may establish conditions that include avoiding or minimizing vegetation removal, using standard erosion control measures, limiting the use of heavy equipment, limiting work periods to avoid impacts on fisheries and wildlife resources, and restoring degraded sites or compensating for permanent habitat losses. Waters of the state that would be regulated by CDFW are present adjacent to the Project area (i.e. Willow Slough Bypass). Because the project could result in modification of the bed, bank, or channel of a canal, an LSAA would be required.

Protection of Birds and Raptors (Sections 3503 and 3503.5)

Section 3503 of the California Fish and Game Code prohibits killing of birds and destruction of bird nests. Section 3503.5 prohibits killing of raptor species and destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal, and failure of nesting attempts (loss of eggs or young) as a result of disturbance of nesting pairs caused by nearby human activity. YCCL will avoid violation of California Fish and Game Code Sections 3503 and 3503.5 by implementing measures described in this report to avoid take of protected birds and raptors.

Fully Protected Species (Sections 3511, 3513, 4700, and 5050)

California Fish and Game Code Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or the adoption of a Natural Community Conservation Plan (NCCP). Specifically, Section 3513 prohibits any take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations pursuant to the MBTA.

One fully protected bird species, white-tailed kite, has the potential to nest adjacent to the Project area and could be impacted by the Project.

Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state and includes Division 7, known as the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Sections 13000–16104). Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements [WDRs])" with the appropriate regional water board. Under this act, each of the nine regional water boards must prepare and periodically update Water Quality Control Basin Plans (Basin Plans). Each Basin Plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Projects that affect waters of the state must meet the WDRs of the regional water board.

Section 13050 of the Porter-Cologne Act authorizes the State Water Board and the relevant regional water board to regulate biological pollutants. Pursuant to CWA Section 401, an applicant for a Section 404 permit to conduct any activity that may result in discharge into navigable waters must provide a certification from the regional water board that such discharge will comply with state water quality standards. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA. As part of the aquatic resources permitting process under Section 404, YCCL may be required to apply for water quality certification from the Central Valley Water Board.

Local Regulations

Yolo County Habitat Conservation Plan

The Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) is a comprehensive, county-wide plan to provide for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Yolo HCP/NCCP details existing land use conditions and land use plans in Yolo County to help identify projects and activities that will have direct or indirect effects on covered species and natural communities. These activities and projects are the covered activities for which incidental take authorization from USFWS and CDFW will be obtained. The Yolo HCP/NCCP moves compliance with state and federal endangered species laws for public and private activities

from state and federal agencies to the local level. The Yolo Habitat Conservancy, a joint powers agency comprised of the County of Yolo and the cities of Davis, West Sacramento, Winters, and Woodland, will administer permits with oversight from USFS and CDFW to streamline the existing process while still providing comprehensive regulatory coverage for currently listed species and those that may be listed in the future. The HCP/NCCP includes avoidance and minimization measures to minimize impacts on habitat, as well as mitigation for the adverse effects of these activities and projects on covered species and natural communities.

Covered activities under the Yolo HCP/NCCP include public and private operations and maintenance activities. This category covers activities that are necessary for the ongoing operation and maintenance (O&M) of existing and planned land uses, facilities, and services in both urban and rural planning units throughout the Yolo HCP/NCCP plan area. The covered O&M activities include those necessary for general rural and urban development; public services, infrastructure and utilities; roads, bridges, bike lanes, and multi-use pathways; flood control facilities; solar energy facilities; and utilities.

Covered species identified in or near the YCCL project include palmated-bracted bird's beak, white-tailed kite, western burrowing owl, western pond turtle, giant garter snake, Swaison's hawk, and tricolored blackbird.

3.4.4 IMPACTS AND MITIGATION MEASURES

This section describes the CEQA impact analysis relating to biological resources for the proposed project. This section contains the methods used to determine the project's potential impacts and lists the criteria thresholds used to conclude whether an impact would be significant. Measures to mitigate (avoid, minimize, or compensate for) significant impacts accompany each impact discussion where applicable.

Methods for Analysis

The impact analysis for biological resources was conducted by evaluating the potential changes to existing biological communities based on the anticipated project construction activities listed below that could cause direct and indirect impacts of varying degrees on sensitive biological resources present in the Project area:

- Vegetation removal.
- Grading, excavating, compacting, and fill placement during construction.
- Discharge to off-site streams during construction.
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes.
- Runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction and maintenance into sensitive biological resource areas.

The following assumptions were used in assessing the magnitude of possible impacts on biological resources:

- No protected riparian habitat or protected trees that would be removed as part of the proposed project.
- Impacts on land cover types and associated wildlife habitat were determined by overlaying preliminary footprints for permanent project features onto an aerial photograph base map with mapped habitats.
- Activities to connect to the SMUD pipeline would be temporary and occur over one season.
- Disturbance to suitable upland and aquatic giant garter snake habitat would be temporary and restored within one season.
- Loss of annual grassland vegetation in the Project area is not considered a significant impact from a botanical standpoint because this habitat is common and is not considered a sensitive natural community. Annual grassland vegetation also reestablishes more easily after disturbance than do riparian or wetland communities. However, the loss of annual grassland habitat could result in impacts on special-status wildlife species habitat, and these habitat impacts are discussed in this analysis.
- Construction best management practices (BMPs) would be implemented to ensure that indirect effects on habitats are avoided or minimized.
- The proposed project would not result in impacts on special-status fish because none occur in the Project area. Therefore, a discussion of these species is not included in this section.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, 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, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Impact 3.4.1: Temporary disturbance of potential giant garter snake habitat. (Significant)

The Project area could result in temporary disturbance of aquatic and upland habitat for the federal and state threatened giant garter snake. Project construction could also potentially cause injury or mortality of giant garter snakes.

Giant garter snakes require aquatic habitat during their active phase, extending from spring until fall. During the winter months, giant garter snakes are dormant and occupy burrows in upland habitats that do not typically flood. Giant garter snakes also use upland habitats during the active season for basking and refuge from hot weather. Suitable aquatic and upland giant garter snake habitat are present within open water and grassland habitat in the Project area and giant garter snakes are known to occupy similar habitats throughout the agriculture areas around the Project area in addition to Willow Slough Bypass. Giant garter snakes could also bask on or disperse across unvegetated/graded areas within the Project area including gravel staging areas and access roads that are located adjacent to suitable aquatic habitat. Giant garter snakes have the potential to be affected by the proposed future projects during construction if these activities would occur within suitable habitat during the snake's active season. Construction activities that involve ground disturbance could result in mortality, injury, or decreased fitness of giant garter snakes that are occupying aquatic or upland habit in the Project area. Giant garter snakes could also be run over by vehicles and heavy equipment if they are actively moving through the work area or across access roads. Individuals could fall into trenches, pits, or other excavations and be directly killed, unable to escape, or be killed by desiccation, entombment, or starvation. This impact would be significant.

Mitigation Measures

Mitigation Measure 3.4.1a: Install and Maintain Exclusion and Construction Barrier Fencing between the Construction Area and Suitable Giant Garter Snake Habitat

The construction specifications shall require that YCCL retain an agency-approved biologist to identify the suitable giant garter snake aquatic and upland habitat that are to be avoided during construction. To reduce the likelihood of giant garter snakes entering the construction area, YCCL shall install exclusion fencing to the extent practicable along the boundary of the Project area and around the proposed staging area. The exclusion fencing shall be installed during the active period for giant garter snakes (May 1–October 1) to reduce the potential for injury and mortality during construction activities. Where access is required into and out of the Project area and staging areas the fencing shall be opened to allow traffic in and out but shall be closed at the end of each workday. The exclusion fencing shall be installed the maximum distance practicable from the aquatic habitat areas and shall be in place before construction activities (including any vegetation removal or equipment staging) are initiated.

The exclusion fencing shall consist of 3-foot-tall silt fencing buried 4–6 inches below ground level. The exclusion fencing shall ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout

construction. In addition to the exclusion fencing, orange construction barrier fencing shall also be installed that is commercial-quality, 4-foot-high, woven polypropylene (Tensor Polygrid or equivalent) or signs indicating a sensitive resource area placed approximately every 10 feet along exclusion fencing. The construction barrier fencing shall be tightly strung on posts with a maximum of 10-foot spacing. The orange construction barrier fencing can be attached to the exclusion fencing or the exclusion fencing can double as construction barrier fencing if it is orange in color and at least 4 feet tall.

The fencing requirements shall be included in the construction specifications, and an agency-approved biological monitor shall be onsite to direct and monitor exclusion fence installation.

The biological monitor shall be responsible for ensuring that the contractor maintains the protective fencing around giant garter snake habitat throughout construction. Weekly monitoring summary reports shall be provided to YCCL and applicable wildlife agencies, as necessary.

Mitigation Measure 3.4.1b: Conduct Environmental Awareness Training for Construction Employees

YCCL shall retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training shall be provided to all construction personnel and shall brief personnel on the need to avoid effects on sensitive biological resources (i.e., non-wetland waters, giant garter snake and other special-status species habitats in and adjacent to the construction area, and active bird nests). The education program shall include a brief review of the special-status species with the potential to occur in the Project area (including their life history, habitat requirements, and photographs of the species). The training shall identify the portions of the Project area in which the species may occur, as well as their legal status and protection. The program also shall cover the relevant permit conditions and mitigation measures that must be followed by all construction personnel to reduce or avoid effects on these resources during project implementation through completion. The training shall emphasize the role that the construction crew plays in identifying and reporting any special-status species observations to the onsite biologist. Training shall identify the steps to be taken if a special-status species is found within the construction area (i.e., notifying the crew foreman, who would call the designated biologist).

An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each crew member. The crew foreman shall be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs shall be conducted for appropriate new personnel as they are brought on the job.

Mitigation Measure 3.4.1c: Minimize Potential Impacts of Dewatering on Giant Garter Snake

YCCL shall implement the following measures to minimize potential impacts from dewatering aquatic giant garter snake habitat.

- Areas with sufficient standing water shall be inspected for the presence of giant garter snakes by the agency-approved biologist immediately prior to dewatering. The approved biologist shall monitor the dewatering activity until the biologist determines that monitoring is no longer needed (e.g. once the work area is fully dewatered and once exclusion fencing has been installed).

- Work areas shall be sufficiently dry (no standing water) prior to excavating or filling of the dewatered habitat. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.

- If the work areas are not fully drained prior to construction due to existing site conditions (e.g., low water table that causes infiltration back into the work area), the approved biologist shall survey the work area for snakes each morning prior to construction activities in the channel.

Mitigation Measures 3.4.1d: Minimize Potential Impacts on Giant Garter Snakes and their Habitat

YCCL shall implement the following measures to minimize potential impacts on giant garter snakes and their habitat. These measures are consistent with the avoidance and minimization measures (AMMs) identified in the Yolo HCP/NCCP.

- All construction activities that involve disturbance within giant garter snake habitat shall be confined to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.

- Construction vehicles shall observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the Project area.

- Construction vehicles and equipment shall restrict off-road travel to the designated construction areas.

- Construction vehicles and equipment left onsite overnight shall be thoroughly inspected each day for snakes (both underneath the vehicles and in open cabs) before they are moved.

- All food-related trash shall be disposed of in closed containers and removed from the construction area daily during the construction period. Construction personnel shall not feed or otherwise attract fish or wildlife to the construction site.

- No pets or firearms shall be allowed in the construction area.

- To avoid entrapment of wildlife, all excavated steep-walled holes or trenches more than one foot deep shall either be properly covered or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If left open overnight, the hole or trench shall be inspected by the onsite biological monitor prior to it being backfilled.

- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel shall not service vehicles or construction equipment within 200 feet of wet canals. If servicing is required, the area shall be properly contained to prevent runoff of contaminants.

- Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic,

monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife shall be permitted.

Mitigation Measure 3.4.1e: Conduct Preconstruction Surveys and Monitoring for Giant Garter Snake

YCCL shall conduct preconstruction surveys and monitoring for giant garter snake and shall implement the following measures:

- Within 24 hours prior to ground-disturbing activities within suitable giant garter aquatic and upland habitat (undeveloped areas within 200 feet of suitable aquatic habitat), an agency-approved biologist shall conduct a preconstruction clearance survey for giant garter snake. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity.

- A USFWS-approved biologist shall be onsite during initial ground disturbing activities within suitable aquatic and upland habitat to monitor construction activities and ensure that giant garter snake protection measures are being implemented properly. Once the Project area has been graded and ground disturbance has been completed, monitoring shall continue on a weekly basis, unless otherwise specified by project permits.

- YCCL shall prepare a giant garter snake relocation plan which must be approved by the appropriate resource agencies prior to work in giant garter snake habitat. If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor and USFWS and CDFW. The monitor shall stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist shall relocate the snake consistent with the relocation plan described above.

- The biological monitor shall prepare daily monitoring logs that include a description of construction activities; areas surveyed and monitored; communication with construction personnel, YCCL, and wildlife agencies; noncompliance issues and resolutions; and a list of all wildlife species observed during monitoring activities. The biological monitor shall also record all observations of Federally and State-listed species on CNDDB field sheets and submit to CDFW.

Mitigation Measure 3.4.1f: Restore Temporarily Disturbed Aquatic and Upland Habitat to Pre-project Conditions

Upon completion of proposed project, YCCL shall restore temporarily disturbed habitat for giant garter snake to pre-project conditions. Habitat shall be restored within one construction season.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1a through 3.4.1f, consistent with the Yolo HCP/NCCP avoidance and minimization measures (AMMs) would reduce the potential impacts to giant garter snakes to a less than significant level.

Impact 3.4.2: Disturbance to special-status species and removal of their suitable habitat from development of a new off-site borrow site. (Significant)

The YCCL has identified a need to purchase an additional borrow site to meet the soil needs of the landfill operations. This site has not been identified. Impacts to special-status species from use of the off-site borrow area would be significant.

Mitigation Measures

Mitigation Measure 3.4.2: Conduct biological and wetland surveys of off-site borrow area and apply mitigation measures based on survey results.

YCCL County shall conduct a biological resource survey of any Project area to be disturbed and nearby areas (e.g., including a 250-foot. buffer surrounding proposed borrow site), and/or enlarged buffer sufficient to comply with survey protocols (0.5-mile buffer for Swainson's hawk) that may be affected by the construction. At a minimum, each survey shall include the following:

- A database search for occurrence of special status species within a 5-mile radius of the borrow site,
- A site reconnaissance by a qualified biologist to identify occurrence or potential occurrence of special-status species and habitats on and around the development site, and
- Consultation, as appropriate, with regulatory agencies regarding the results and incorporation of appropriate mitigation measures identified in this section for impacts to those sensitive resources.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.2 would ensure this impact is less than significant.

Impact 3.4.3: Loss of western pond turtle habitat. (Significant)

Project implementation could result in temporary disturbance of potential aquatic and upland habitat for western pond turtle. Project construction could also cause direct mortality to western pond turtles during construction vehicle traffic and placement of equipment and materials into suitable habitat. Areas of open water in the Project area provide potential aquatic habitat that could be impacted from dewatering as part of work requirements.

Construction activities, including noise and visual disturbance, could temporarily discourage pond turtles from foraging and basking near the work area. Pond turtles could also be run over by vehicles and heavy equipment if they are actively moving through the work area or across access roads. Loss of individuals and/or habitat of a state species of special concern would be significant.

Mitigation Measures

Mitigation Measure 3.4.3: Conduct Preconstruction Surveys for Western Pond Turtle and Allow Turtles to Leave Work Area Unharmed

To avoid potential injury to or mortality of western pond turtles, YCCL shall retain a qualified biologist to conduct a preconstruction survey for western pond turtles immediately prior to construction activities (including vegetation removal) along suitable habitat and adjacent uplands. The biologist shall survey the aquatic habitat, canal banks, and adjacent upland habitat within the construction area immediately prior to disturbance.

If a western pond turtle is found within the immediate work area during the preconstruction survey or during project activities, work shall cease in the area until the turtle is able to move out of the work area on its own. If the turtle does not move out of the area, the biologist shall coordinate with YCCL and CDFW to create and implement a live trapping plan and relocation effort. Information about the location of turtles seen during the preconstruction survey shall be included in the environmental awareness training (Mitigation Measure 3.4.1b) and provided directly to the construction crew working in that area to ensure that areas where turtles were observed are inspected each day prior to the start of work to ensure that no turtles are present.

If a western pond turtle nest is discovered during the preconstruction survey or during project construction, YCCL's biologist would coordinate with CDFW to determine whether additional avoidance measures (e.g., no-disturbance buffer or monitoring) is prudent.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1a through 3.4.1f (described above for giant garter snake) and 3.4.3 (consistent with the Yolo HCP/NCCP AMMs) would reduce potentially significant impacts on western pond turtle to a less than significant level.

Impact 3.4.4: Disturbance of nesting Swainson's hawks, white-tailed kite, tricolored blackbird, and other protected birds and raptors. (Significant)

Project implementation could disturb active nests of Swainson's hawk, white-tailed kite, tricolored blackbirds, and other nesting birds and raptors protected under CESA, the MBTA and California Fish and Game Code. Construction activity could disturb active nests in or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

Project implementation, including vegetation removal, associated with construction of future projects that occurs during the breeding season (generally February 1 through August 31) could remove or disturb active nests of Swainson's hawk, white-tailed kite, tricolored blackbird, or other nesting birds and raptors, if present in or near construction areas. There are currently no trees in the Project area that could be directly impacted or removed during project construction; however suitable habitat for ground nesting tricolored blackbird colonies is present in the Project area and large trees are located adjacent to the work area that could be affected by construction noise and visual disturbances. Noise and visual disturbances associated with project construction

during the nesting season may disrupt nesting behavior to the point of nest abandonment neglect or forced fledging that results in young mortality.

Although there is an existing level of noise from existing landfill operation, agricultural and roadway disturbance, activities within YCCL, noise levels and human presence in the Project area and along access roads could substantially increase during construction.

These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. These impacts could violate the MBTA and CFGC Section 3503, 3503.5, and 3511. Impacts on the state listed Swainson's hawk and tricolored blackbird could also violate CESA. These potential impacts would be significant. Implementation of Mitigation Measure 3.4.1b (described above) and 3.4.4 (described below) (consistent with the Yolo HCP/NCCP AMMs) would reduce potentially significant impacts on Swainson's hawks, white-tailed kite, and other tree and shrub-nesting protected birds and raptors to a less than significant level.

Mitigation Measures

Mitigation Measure 3.4.4: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors

Where vegetation removal is required to construct project features, YCCL shall conduct this activity during the non-breeding season for birds and raptors (generally between September 1 and February 28), to the extent feasible.

If construction activities are planned during the nesting season (March 1– August 31), prior to the start of construction activities (including equipment staging and site preparation), YCCL shall retain a qualified wildlife biologist with knowledge of the relevant bird species to conduct nesting bird surveys. The surveys shall include a minimum of two separate surveys to look for active bird and raptor nests. Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the Project area. In addition, nesting habitat within 1,320 feet from the Project area shall be surveyed for Swainson's hawk and a 500-foot radius around the Project area shall be surveyed for other nesting raptors, and a 100-foot radius around the Project area shall be surveyed for passerines. One survey should occur within 15 days prior to construction and the second survey should occur within 48 hours prior to the start of construction or vegetation removal (including grubbing). If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the Project area (this date varies by species). The extent of the nesting buffers shall be 1,300 feet for active tricolored blackbird colonies, 500-feet for Swainson's hawk, 300 feet for nesting raptors and 50-feet for passerine birds. The buffers may be adjusted based on environmental factors through coordination between the YCCL biologist and CDFW. Factors that may influence an adjusted buffer shall include the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of preexisting noise and other disturbances, and other topographical or artificial barriers.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.4 would reduce the Project impacts to a less than significant level.

Impact 3.4.5: Removal of suitable foraging habitat for Swainson's hawk. (Significant)

Implementation of Project elements at YCCL would remove up to 112.18 acres of suitable foraging habitat for Swainson's hawk within the landfill expansion areas (**Figure 3.4-3**). This impact would be significant.

Mitigation Measures

Mitigation Measure 3.4.5: Prior to commencing any phase involving ground disturbance for facilities developed in Swainson's hawk foraging habitat as shown on Figure 3.4-3, YCCL shall compensate for the loss of Swainson's hawk foraging habitat through the preservation of appropriate acreage of suitable Swainson's hawk foraging habitat for that phase by participating in the Yolo HCP/NCCP.

Solar panel development of the three sites may reduce the value of the areas for foraging potential by Swainson's hawk, however there would still be some habitat value to the sites for Swainson's hawks. The YCCL will work with CDFW and the administrator of the Yolo HCP/NCCP to identify the appropriate acreage based on the value of the grassland habitat after placement of the solar panels.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.5, consistent with the Yolo HCP/NCCP, would reduce the potentially significant impact on Swainson's hawks to a less than significant level.

Impact 3.4.6: Disturbance of nesting and wintering burrowing owls. (Significant)

Project implementation would result in loss of suitable nesting, wintering, and foraging habitat for burrowing owl. Project construction could disturb active nests on or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs, or displacement of wintering owls resulting in their mortality or loss of reproductive potential.

Project construction activities, such as grading access roads and pipeline work, during the breeding season (generally February 1-August 31) for burrowing owls could result in the excavation or collapse of occupied burrows containing adults, nestlings, or eggs. Additionally, construction-generated noise and increased human presence have the potential to disturb burrowing owls nesting near construction activities. Disturbance of active breeding owls could result in nest abandonment or direct loss of adults, fledglings, or eggs. Burrowing owls using burrows, culverts, or other cover habitat during the wintering season could also be directly affected by construction activities if those areas are disturbed. These activities could result in the incidental loss of burrowing owl fertile eggs or nestlings, or otherwise lead to nest abandonment.

These impacts could violate the MBTA and CFGC Section 3503, 3503.5, and 3511. These impacts would be significant.

Mitigation Measures

Mitigation Measure 3.4.6: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary

YCCL shall retain a qualified biologist to conduct two separate pre-construction surveys for burrowing owl: no more than 30 days prior to initiating ground-disturbing activities (including grubbing and grading) within grassland habitat and then again within 3 days prior to construction. The preconstruction burrowing owl surveys shall be conducted in conjunction with the nesting bird surveys described under Mitigation Measure-3.4-3a and shall encompass the designated work area and a 500-foot buffer around this area where access is permitted. Areas where access is not permitted or is not accessible shall be surveyed using binoculars or a spotting scope.

If burrowing owls are identified during the survey area, YCCL shall minimize activities that shall affect occupied habitat as follows. Occupied habitat is considered fully avoided if the project footprint does not impinge on a non-disturbance buffer around the suitable burrow. For occupied burrowing owl nest burrows, this non-disturbance buffer could range from 150 to 1,500 feet (**Table 3.4-3**, Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls), depending on the time of year and the level of disturbance, based on current guidelines (California Department of Fish and Game 2012).

TABLE 3.4-3. RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF DISTURBANCE FOR BURROWING OWLS

Time of Year	Level of Disturbance (feet) from Occupied Burrows		
	Low	Medium	High
April 1–August 15	600	1,500	1,500
August 16–October 15	600	600	1,500
October 16–March 31	150	300	1,500

SOURCE: Yolo Habitat Conservancy 2018

The Yolo HCP/NCCP generally defines low, medium, and high levels of disturbances of burrowing owls as follows.

- **Low:** Typically, 71-80 decibels, generally characterized by the presence of passenger vehicles, small gas-powered engines (e.g., lawn mowers, small chain saws, portable generators), and high-tension power lines. Includes electric hand tools (except circular saws, impact wrenches and similar). Management and enhancement activities would typically fall under this category. Human activity in the immediate vicinity of burrowing owls would also constitute a low level of disturbance, regardless of the noise levels.

- **Moderate:** Typically, 81-90 decibels, and would include medium- and large-sized construction equipment, such as backhoes, front end loaders, large pumps and generators, road graders, dozers, dump trucks, drill rigs, and other moderate to large diesel engines. Also includes power saws, large chainsaws, pneumatic drills and impact wrenches, and

large gasoline-powered tools. Construction activities would normally fall under this category.

- **High:** Typically, 91-100 decibels, and is generally characterized by impacting devices, jackhammers, compression ("jake") brakes on large trucks, and trains. This category includes both vibratory and impact pile drivers (smaller steel or wood piles) such as used to install piles and guard rails, and large pneumatic tools such as chipping machines. It may also include large diesel and gasoline engines, especially if in concert with other impacting devices. Felling of large trees (defined as dominant or subdominant trees in mature forests), truck horns, yarding tower whistles, and muffled or underground explosives are also included. Very few covered activities are expected to fall under this category, but some construction activities may result in this level of disturbance.

The buffer size may be reduced based on existing vegetation, human development, and land use, as determined during coordination with CDFW.

If the biologist finds the site to be occupied by western burrowing owls during the breeding season (February 1 to August 31), the project proponent shall avoid all nest sites, based on the buffer distances described above, during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups that forage on or near the site following fledging). Construction may occur inside of the disturbance buffer during the breeding season if the nest is not disturbed and the YCCL develops an avoidance plan that is approved by all applicable resource agencies (i.e., Yolo Conservancy, CDFW) prior to project construction, based on the following criteria:

- The avoidance plan is approved by all applicable resource agencies (i.e., CDFW, Yolo Conservancy).

- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).

- The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

- If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist shall have the authority to stop all construction related activities within the non-disturbance buffers described above. The qualified biologist shall report this information to YCCL and the applicable resources agencies within 24 hours, and the Conservancy shall require that these activities immediately cease within the non-disturbance buffer. Construction cannot resume within the buffer until the adults and juveniles from the occupied burrows have moved out of the Project area.

- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, YCCL may remove the non-disturbance buffer, only with concurrence from applicable resource agencies. If the burrow cannot be avoided by construction activity, the biologist shall excavate and collapse the burrow in accordance with CDFW's 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies.

If evidence of western burrowing owl is detected outside the breeding season (September 1 to January 31), the project proponent shall establish a non-disturbance buffer around occupied burrows, consistent with Table 3.4-3, as determined by a qualified biologist. Construction activities within the disturbance buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites:

- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities shall cease within the buffer.
- If the owls are gone for at least one week, YCCL may request approval from the applicable resource agencies for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the burrow cannot be avoided by construction activities. The qualified biologist shall install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the buffer shall be removed, and construction may continue.

Monitoring must continue as described above for the nonbreeding season if the burrow remains active.

A qualified biologist shall monitor the site, consistent with the requirements described above, to ensure that buffers are enforced, and owls are not disturbed. Exclusion and burrow closure shall not be conducted during the breeding season for any occupied burrow. If YCCL determines that passive relocation is necessary, they shall develop a burrowing owl exclusion plan in consultation with CDFW and Yolo Conservancy, as applicable. The methods shall be designed as described in the species monitoring guidelines (California Department of Fish and Game 2012) and consistent with the most up-to-date checklist of passive relocation techniques. This may include the installation of one-way doors in burrow entrances by a qualified biologist during the nonbreeding season. These doors shall be in place for 48 hours and monitored twice daily to ensure that the owls have left the burrow, after which time the biologist shall collapse the burrow to prevent reoccupation. Burrows shall be excavated using hand tools. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure, such as piping, into the burrow to prevent collapsing until the entire burrow can be excavated and it can be determined that no owls are trapped inside the burrow. Other methods of passive or active relocation may be used, based on best available science, if approved by the applicable resource agencies.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.1b and 3.4.6, consistent with the Yolo HCP/NCCP AMMs, would reduce potentially significant impacts on burrowing owls to a less than significant level.

Impact 3.4.7: Disturbance of nesting northern harrier and other protected ground-nesting birds and raptors. (Significant)

Project implementation could disturb active nests of northern harrier and other ground-nesting common birds and raptors protected under the MBTA and California Fish and Game Code. Construction activity could disturb active nests in or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

Annual grassland in the Project area provides suitable nesting habitat for northern harrier, and other ground-nesting protected birds and raptors. Project implementation, including vegetation removal, associated with construction associated with Project area enhancement and maintenance that occurs during the breeding season (generally February 1 through August 31) could remove or disturb active nests of northern harrier and other protected birds and raptors, if present in or near construction areas. Removal of suitable nesting habitat associated with vegetation removal, including mowing, could result in the incidental loss of fertile eggs or nestlings, or lead to nest abandonment. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles.

These impacts could result in the loss of many active nests, particularly for colonial nesting birds, and would violate the MBTA and CFGC Section 3503 and 3503.5. These impacts would be significant.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1b and 3.4.4 (described above) would reduce the potential impacts to nesting northern harrier and other protected ground nesting birds and raptors to a less than significant level.

Impact 3.4.8: Potential adverse effects to special-status plants. (Significant)

All 11 special status plants with potential to occur in the Project area have low quality suitable habitat on alkaline soils of the artificial seasonal wetland, the non-native annual grassland, and the eastern detention basin. These species include federally and state endangered palmate-bracted bird's beak, CRPR 1B.1 Ferris' milk-vetch, and nine CRPR 1B.2 species (Table 3.4-2). The December reconnaissance survey was conducted outside of the blooming/identifiable period for the special-status species with potential to occur in the Project area. Therefore, the 11 special-status plants with potential to occur in the Project area could be damaged or removed by paving and development of the buildings and facilities for the Potential Transfer Station, Waste Gasification, Fertilizer Facility, Pellet Facility, and Wastewater Reservoir/Floating Solar areas.

Parry's rough tarplants (*Centromadia parryi ssp. rudis*), a CRPR 4.2 species, grows along the grassy margins of the artificial seasonal wetland in the northeastern portion of the Project area. Parry's rough tarplant was identified from the remains of some very-late blooming flowers. The CRPR 4.2 ranking of Parry's rough tarplant indicates the species is a "Watch List" species of

limited distribution that is moderately threatened (California Native Plant Society 2020). The CRPR 4.2 ranking can be attributed to the loss of the suitable alkali wetland habitat from agricultural development and urbanization. However, Parry's rough tarplant has many occurrences in the Central Valley and San Joaquin Valley. In fact, there is a 1985 occurrence reported approximately 1.8 miles southeast of the Project area on the west edge of the Yolo Causeway between Interstate 80 and the Davis-Sacramento railroad tracks; an additional occurrence from 1999 is approximately 2.9 miles southeast of the Project area in a low area between Frontage Road and Interstate 80 (Consortium of California Herbaria 2021). Therefore, given Parry's rough tarplant is not provided protection in the Yolo HCP/NCCP (Yolo Habitat Conservancy 2018) nor the Yolo County *2030 Countywide General Plan* (County of Yolo 2009), and there are multiple occurrences in Yolo County, the subspecies does not warrant local significance or impact assessment in this EIR.

If the project results in a substantial disturbance or loss of habitat or populations of special-status plants, it would be a significant impact.

Mitigation Measures

Mitigation Measure 3.4.8a: Conduct appropriately timed floristic surveys

A qualified botanist shall conduct protocol-level floristic surveys of the Project area. The floristic surveys shall be appropriately timed to coincide with the blooming/identifiable period of the special status plants with potential to occur in the Project area and follow methods described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2002).

Mitigation Measure 3.4.8b: Avoid special-status plant populations, minimize and/or compensate for substantial impacts

If special-status plants are detected in the Project area, the YCCL shall identify the populations with orange fencing for avoidance and notify CDFW and USFWS as appropriate. If the special-status plants cannot be avoided, addition minimization and mitigation measures shall be developed by the applicant and CDFW and USFWS prior to construction. These measures may include, but would not be limited to:

- Minimizing impacts to the population(s) by restricting impacts to a few individuals.
- Developing a transplantation plan that involves relocating plants to suitable habitat approved by CDFW and/or USFWS.
- Monitoring affected populations for a minimum of 3 years to document success of transplantation efforts.
- Restoring or enhancing the occupied habitat onsite or in the project region. The seasonal wetlands and non-native annual grassland have potential to be restored and/or enhanced. If mitigation is required, the applicant shall consult with CDFW and/or USFWS on constraints and opportunities for appropriate on-site habitat enhancement and/or creation for the affected species.

- Protecting occupied habitat at another location in the region.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.8a and 3.8.4b (if special-status plants are detected in the Project area) would reduce the potential impacts to less than significant level.

Impact 3.4.9: Potential inadvertent loss or disturbance of riparian habitat located near the Project area. (Significant)

The Project area does not contain sensitive natural communities because of ongoing landfill operations and associated disturbance. However, Willow Slough Bypass is close to the SMUD gas pipeline. Willow Slough Bypass flows into the Yolo Basin and ultimately the Sacramento River and is regulated by the Central Valley Flood Protection Board. Should the Expanded Biogas Utilization Options result in injection into the SMUD gas pipeline, the riparian habitat along Willow Slough Bypass could be impacted through equipment staging and excavation which could result in a significant impact.

Mitigation Measures

Mitigation Measure 3.4.9: Avoid Willow Slough Bypass and obtain permits as needed and comply with permit requirements

Project activities shall be designed to avoid surface activities within 300 feet of Willow Slough Bypass. If pipeline activities cannot be avoided within 300 feet of Willow Slough Bypass, the riparian corridor shall be delineated by a qualified biologist and orange construction fencing shall be installed along the outline of the corridor. Impacts to the Willow Slough Bypass shall be avoided through directional boring beneath the bypass. Should directional bores bore under Willow Slough Bypass, consultation with CDFW shall be required and if necessary, a Lake or Stream Bed Alteration Permit would be obtained. The levee along Willow Slough Bypass is regulated by the Central Valley Flood Protection Board and any work within 300 feet of the levee of designated floodways or regulated streams would require an Encroachment Permit.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.8a and 3.4.8b, would ensure the Willow Slough Bypass is fenced off for avoidance and appropriately permitted. Further, the future project design would accommodate directional boring to avoid impacting Willow Slough Bypass the gas pipe would be placed at a minimum of 5 feet under the bottom of the bypass. Implementation of Mitigation Measure 3.4.9 would further reduce the potential impacts to a less than significant level.

Impact 3.4.10: Placement of fill material into Waters of the U.S. or Waters of the State. (Significant)

Aquatic resources in the Project area not likely under the jurisdiction of USACE because the features are artificial and isolated from jurisdictional waters. Aquatic resources in the Project area are not likely under the jurisdiction of the RWQCB because they are artificial and used for ongoing operations and maintenance, including municipal wastewater treatment. However, only USACE and RWQCB can determine the jurisdictional status. The project's proposed stormwater discharge into Willow Slough Bypass is likely an action that would be regulated by both agencies. Therefore, jurisdictional aquatic resources could be impacted by fill and paving associated with the proposed project facilities and discharge into aquatic resources offsite, which would be a significant impact.

Mitigation Measures

Mitigation Measure 3.4.10: Conduct protocol aquatic resources delineation and compensate for substantial adverse effects on state or federally protected wetlands and non-wetland waters

Prior to construction, a delineation of aquatic resources shall be conducted and submitted to USACE along with a request for verification. The delineation shall follow routine methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2008), *A Field Guide to the Identification of the Ordinary High Water Mark* (OHWM) *in the Arid West Region of the Western United States* (Lichvar and McColley 2008), and the State Water Board's *Dredged and Fill Procedures* (State Water Resources Control Board 2019). The delineation shall be submitted to RWQCB if there are aquatic resources that are not waters of the United States, but still regulated by the State pursuant to the Porter Cologne Water Quality Control Act.

If waters of the United States are determined to be present in the Project area and would be filled by the proposed project, the applicant shall be required to obtain a Section 404 permit from USACE and a Section 401 permit from RWQCB. If the project would impact aquatic resources that are not regulated by USACE, the applicant shall be required to obtain Waste Discharge Requirements from the RWQCB. The USACE and/or RWQCB may require compensatory mitigation for impacts to jurisdictional aquatic resources. Should compensatory mitigation be required, it could be achieved by wetland enhancement or restoration in the Project area, which could be done in combination with the upland enhancement for special-status plant habitat discussed in Mitigation Measure 3.4.6b. If onsite mitigation is not available or feasible, the applicant shall purchase mitigation credits from a USACE/RWQCB-approved mitigation bank that services project's region.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1b and 3.4.10 would reduce project impacts to a less than significant level.

Impact 3.4.11: Potential interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impediment of the use of native wildlife nursery sites. (Less than Significant)

The project would not have a significant effect on the movement of native fish and wildlife in the area. Most of the areas that would be developed have reduced wildlife habitat value due to the proximity to the developed landfill and the current high level of disturbance generated by the daily activity of the landfill operations. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.4.12: Potential for conflicting with local policies or ordinances protecting biological resources. (Less than Significant)

Within the County of Yolo *2030 Countywide General Plan*, there are policies which encourage habitat restoration, land conservation, and species preservation including the policies listed in Section 3.4.1 *Existing Conditions*. Project impacts and mitigation measures would be in compliance with Yolo County policies under the *2030 Countywide General Plan.*

The project would not conflict with any local policies through implementation of the mitigation measures and associated permitting measures listed above. Tree removal is not proposed. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.4.13: Potential conflict with provisions of an adopted HCP/NCCP. (Less than Significant)

The Yolo HCP/NCCP includes biological objectives for the following covered species which have the potential to occur in the Project area: western pond turtle, giant garter snake, Swainson's hawk, white-tailed kite, western burrowing owl, tricolored blackbird, and palmate-bracted bird's beak (Yolo Habitat Conservancy 2018, Section 6.3.4. *Covered Species Biological Goals and Objectives*).

With the mitigation identified for the special-status species above, the project would not significantly impact any biological resources covered under the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan (Yolo Conservancy 2018)

Potential impacts on covered species that have the potential to occur in the Project area would not conflict with Yolo HCP/NCCP species objectives, nor would they preclude the projections for

species habitat protection, restoration, or management (Yolo Habitat Conservancy 2018). Mitigation for impacts on covered species for the Yolo HCP/NCCP would be purchased at an existing conservation bank or through onsite restoration and would, therefore, not conflict with conservation easement acquisition through the Yolo Habitat Conservancy. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

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