Appendix BR-2

Biological Resources Survey Report for the Hood Septic Conversion Project (PLER2021-00127) Sacramento County, California

Sacramento County

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Acronyms and Abbreviations

AMMs	Avoidance and minimization measures
amsl	Above mean sea level
BMPs	Best management practices
BSA	Biological study area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California State Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVFPP	Central Valley Flood Protection Plan
CVRMP	Central Valley Riparian Mapping Project
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Funds
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
ft	feet
GGS	giant garter snake
GPS	global positioning system
HDD	Horizontal directional drilling
Hood	Community of Hood
I-5	Interstate-5
LID	low impact development
MBTA	Federal Migratory Bird Treaty Act
MON	monarch butterfly
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
SSHCP	South Sacramento Habitat Conservation Plan
Plan	Frac-Out Contingency Plan
project	Hood Septic Conversion Project
SASD	Sacramento Area Sewer District
SSCHP	South Sacramento Habitat Conservation Plan
unnamed (Stone Lake) Channel	unnamed channel at Hood-Franklin Road
SWHA	Swainson’s hawk
SWRCB	State Water Resources Control Board
TCB	Tricolored blackbird
UPRR	Union Pacific Rail Road
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WPT	Western pond turtle

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Introduction and Project Description

On January 11, May 23, and July 7, 2022, AECOM staff members conducted biological site surveys for Sacramento County to evaluate sensitive biological resources that may be affected by the Hood Septic Conversion Project (project). The project has been proposed in an effort to retire private septic system usage for multiple residential properties in the Community of Hood (Hood), and would install approximately 5.5 miles of low-pressure, small-diameter sewer pipelines that would provide sanitary sewer services for approximately 141 property parcels. The total number of parcels under consideration for project inclusion is subject to decrease pending final decisions from the Sacramento Area Sewer District (SASD) to exclude agricultural properties. The majority of project construction is proposed to take place within the existing public roadway right-of-way (ROW). However, minor earthwork and construction activities will also take place at various private lots within the project area. The project area is defined as the direct work areas, the public road ROWs, proposed staging areas, temporary parking, portions of the parcels where septic abandonment and/or connections to sewer laterals may occur, and equipment/materials storage areas. To facilitate connections to the new sewage system, two easement locations have been selected for the Delta Crossing Mobile Home Park and the 10780 3rd Street property parcels.

Activities proposed along Hood-Franklin Road are expected to take place within the existing roadway right-of-way. Tree removal or trimming is not anticipated as part of this project. The proposed project would require the crossing of two waterways: an unnamed channel at Hood-Franklin Road (designated by AECOM as “unnamed (Stone Lake) Channel” for identification purposes), and the Sacramento Drainage Canal, both waterways located east of the Community of Hood and west of Interstate-5 (I-5). The unnamed (Stone Lake) channel crossing at Hood-Franklin Road would require a 500-foot, perpendicular, horizontal directional drilling effort; and the Sacramento Drainage Canal Crossing at Hood-Franklin Road would involve a 200-foot perpendicular crossing via bore-and-jack installation. The expected maximum depth of excavation is 10 feet.

Two system alternatives are being considered to provide sewer services. The project area and property parcels remain the same for either alternative. Both alternatives are designed to direct sewage flow to a proposed tie-in connection at manhole 258-158-1001 on Willard Parkway, and both alternatives would require easements to support flow from the Delta Crossing Mobile Home Park and 10776 3rd Street parcels to a new sewer. Additionally, both alternatives require the installation of a new, 4-inch, low-pressure force main pipeline within or immediately adjacent to Hood-Franklin Road. Alternative 1 would utilize a gravity collection system with a central pump station. New, 8-inch sewer collector would be required on River Road, 3rd Street, 4th Street, 5th Street, 6th Street, Corky Lane, and Blair Street, and would carry flow to a pump station (to be) installed at the intersection of Hood-Franklin Road and 5th Street. Alternative 2 (the County-preferred alternative), would utilize a low-pressure system with individual grinder pumps located at each parcel. This would require 3-inch, low-pressure force main be installed along River Road, 3rd Street, 4th Street, 5th Street, 6th Street, Corky Lane, and Blair Street.

The preferred alternative at this time for the Hood community is small diameter force main to be installed via horizontal directional drilling (HDD) throughout the project area except at the unnamed (Stone Lake) channel crossing and the Union Pacific Rail Road (UPRR) crossing which are proposed to utilize bore and jack. I-5 would also be crossed via HDD. Because HDD is proposed, open cut trenching along Hood-Franklin Road from Hood to I-5 would be unnecessary. Instead, there would be staging areas proposed where access pits for the HDD setup locations and bore and jack setup could take place. These pits, along with the force main itself, would be located within the roadway and not within the steep shoulders.

This report describes the methods and results of AECOM’s desktop analysis and on-site biological resources surveys and provides recommendations to avoid or minimize impacts to sensitive biological resources during project construction. Although complete parcels have been evaluated, direct impacts for this project will be focused within public road ROWs, and only minimal earthwork will be necessary to connect newly installed lines to the residential properties. The findings detailed in this report are intended to support SASD’s application for Clean Water State Revolving Funds (CWSRF) and demonstrate compliance with applicable federal and state environmental laws and regulations regarding the protection of sensitive biological resources.

Project Location and Environmental Setting

The unincorporated Community of Hood is in southwestern Sacramento County, near the intersection of River Road and Hood-Franklin Road along the Sacramento River, west of the Stone Lakes National Wildlife Refuge (Exhibit 1). The project area boundary encompasses privately-owned residential and commercial properties, the Courtland Fire Department, Hood Community Park, and Sacramento County ROWs (Exhibit 2). There are a total of 141 parcels under consideration for septic-to-sewer conversion; however, many of the parcels are vacant or currently support only agricultural uses. Therefore, the total number of parcels to be included in the project area is subject to change. Three proposed staging areas, each less than 3.5 acres in size, have been selected at locations along Hood-Franklin Road (Exhibit 2).

The project is generally bounded by Willard Parkway to the west, and the Sacramento River to the east, agricultural pastures to the south, and the Stone Lakes National Wildlife Refuge to the north. Residential property parcels are situated north and south of Hood-Franklin Road. Commercial sites are concentrated in the Hood and Franklin communities. Businesses within the project area include the Hood Ranch Kitchen restaurant, an antique shop, Hood Market, a computer repair shop, Agape Aloha Spa, Solution Ink, Hay Tone's Hangout, Centenario Ranch, and Sun's Strawberry Market. The biological study area (BSA) includes the project area as defined above, and a 100-foot buffer which extends beyond the limits of the project area in a near-uniform fashion, except in those locations where project work is restricted and unauthorized.

The project lies within the South Sacramento Habitat Conservation Plan (SSCHP) coverage area, but is not within the Urban Development Area identified by SSHCP (Exhibit 3). The SSHCP encompasses the Sacramento County Urban Services Boundary, the incorporated Cities of Rancho Cordova and Galt, and Galt's Sphere of Influence (County of Sacramento, et al. 2018). The purpose of the SSHCP ('Plan') is to ensure the long-term survival of the species covered in the Plan by preserving and establishing/re-establishing the habitats, natural communities, and ecosystem functions that they rely on, while allowing appropriate and compatible urban growth and developments. The Plan also requires measures that will avoid, minimize, and mitigate impacts to the species, thereby addressing the permitting requirements relevant to these species for activities conducted by or under the jurisdiction of the Plan Permittees. These activities (i.e., the SSHCP Covered Activities) include Wastewater (Sewer) Facilities, and work activities that support the provision of wastewater services such as construction, installation, operation, and maintenance of new wastewater facilities, as well as extension, removal, replacement, abandonment, operation, and maintenance of existing wastewater facilities. The SSHCP covers 28 species that have potential to occur in the SSCHP plan area that are currently listed as threatened or endangered under the federal Endangered Species Act (ESA) or California state ESA (CESA), or that have potential to become listed during the 50-year life of the SSHCP. The SSCHP allows Plan Permittees (i.e., County of Sacramento, City of Galt, City of Rancho Cordova, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority) to receive incidental take permits under the ESA and CESA for activities and projects they conduct and those under their jurisdiction.

Land Use and Topography

The project area is mostly flat, with elevations ranging from approximately 40 feet above mean sea level (amsl) near the top of the Sacramento River levee, to 0 feet amsl along Hood-Franklin Road. Surrounding land uses include agricultural, rural residential, and wildlife conservation (Stone Lakes National Wildlife Refuge). However, the project activities are primarily proposed in urban and developed parcels within a highly disturbed and managed surrounding landscape. Little native vegetation is present within the BSA.

Soils

Soils at the project area are composed of the following: Clear Lake clay, hardpan substratum, drained, 0 to 1 percent slopes, Dierssen sandy clay loam, drained, 0 to 2 percent slopes, Dierssen clay loam, deep, drained, 0 to 2 percent slopes, Egbert clay, partially drained, 0 to 2 percent slopes, Galt clay, leveled, 0 to 1 percent slopes, Galt clay, 0 to 1 percent slopes, San Joaquin silt loam, leveled, 0 to 1 percent slopes, San Joaquin silt loam, 0 to 3 percent slopes, San Joaquin-Urban land complex, 0 to 2 percent slopes, Scribner clay loam, partially drained, 0 to 2 percent slopes, Tinnin loamy sand, 0 to 2 percent slopes, and Valpac loam, partially drained, 0 to 2 percent slopes (NRCS 2022).

Source: Sacramento County 2022, USFWS 2022

Exhibit 1. Project Location Map

Methods

Prior to the biological resources field survey, AECOM biologists queried the California Native Plant Society Rare Plant Inventory (CNPS 2022) and California Natural Diversity Database (CDFW 2022) for records of special-status species occurring within a nine-quadrangle area containing and surrounding the project area, including Courtland, Thornton, Isleton, Rio Vista, Liberty Island, Florin, Bruceville, Clarksburg, and Saxon U.S. Geological Survey (USGS) 7.5 minute quadrangles (USGS 2018a–i). Biologists also reviewed publicly available data provided by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation project planning tool (USFWS 2022), the USGS National Hydrography Dataset (NHD), the USFWS Critical Habitat Mapper, and the South Sacramento Habitat Conservation Plan (SSHCP) (County of Sacramento, et al. 2018). A Hydrology and National Wetlands Inventory (NWI) wetland map has been provided as Exhibit 4.

AECOM biologist staff members conducted reconnaissance-level biological surveys on January 11, May 25, and July 7, 2022 within the BSA. The BSA includes the project area (as defined in the introduction above), and a nearly-uniform 100-foot buffer which extends beyond the limits of the project area except in those locations where construction access / activities will be completely avoided due to restricted property access. Surveys were conducted primarily from within the public roadway ROWs and sensitive resource locations and habitat boundaries have been digitized using a combination of aerial imagery, field measurements and observations, and mobile handheld global positioning system (GPS) units. The field survey efforts included mapping and verification of land cover types and vegetation, assessment of habitat conditions for potential to support special-status species, and field-assessing potential project impacts to sensitive biological resources, including trees that may be protected by local ordinances. Weather conditions were sunny and clear during all survey dates, with a high temperature of 58° Fahrenheit in January, a high temperature of 103° Fahrenheit in May, and 92° Fahrenheit in July. Vegetation communities within the BSA were characterized and evaluated for their potential to support special-status species. Botanical species observed within the BSA were identified to the taxonomic levels necessary determine regulatory status or protection. Wildlife observations were recorded. A detailed flora and fauna observation list is included in Appendix A.

Results

Land Cover Types

Vegetation classifications are based upon definitions estabilshed by the Central Valley Riparian Mapping Project (CVRMP) and the U.S. National Vegetation Classification Standard (NVCS). Extensive mapping of habitats was completed for the Central Valley Flood Protection Plan (CVFPP), including habitats within the study area, as part of the CVRMP. Habitat classifications in this memorandum contain aspects of the definitions established for the CVRMP, but also incorporate aspects of definitions established by the South Sacramento County Habitat Conservation Plan. The definitions discussed below are intended to provide information that can be used to inform both project planning and environmental analysis efforts.

The BSA consists of 8 land cover types, five of which are characterized by upland vegetation, and three that are associated with aquatic features or habitats. All land cover types and mapped habitats are summarized in Table 1 and are visually represented by Exhibit 5. General descriptions of the land uses of and vegetation in each land cover type are included in the discussion below. Representative site photos are provided as Appendix B.

Source: Sacramento County 2022

Exhibit 2. Project Area Map

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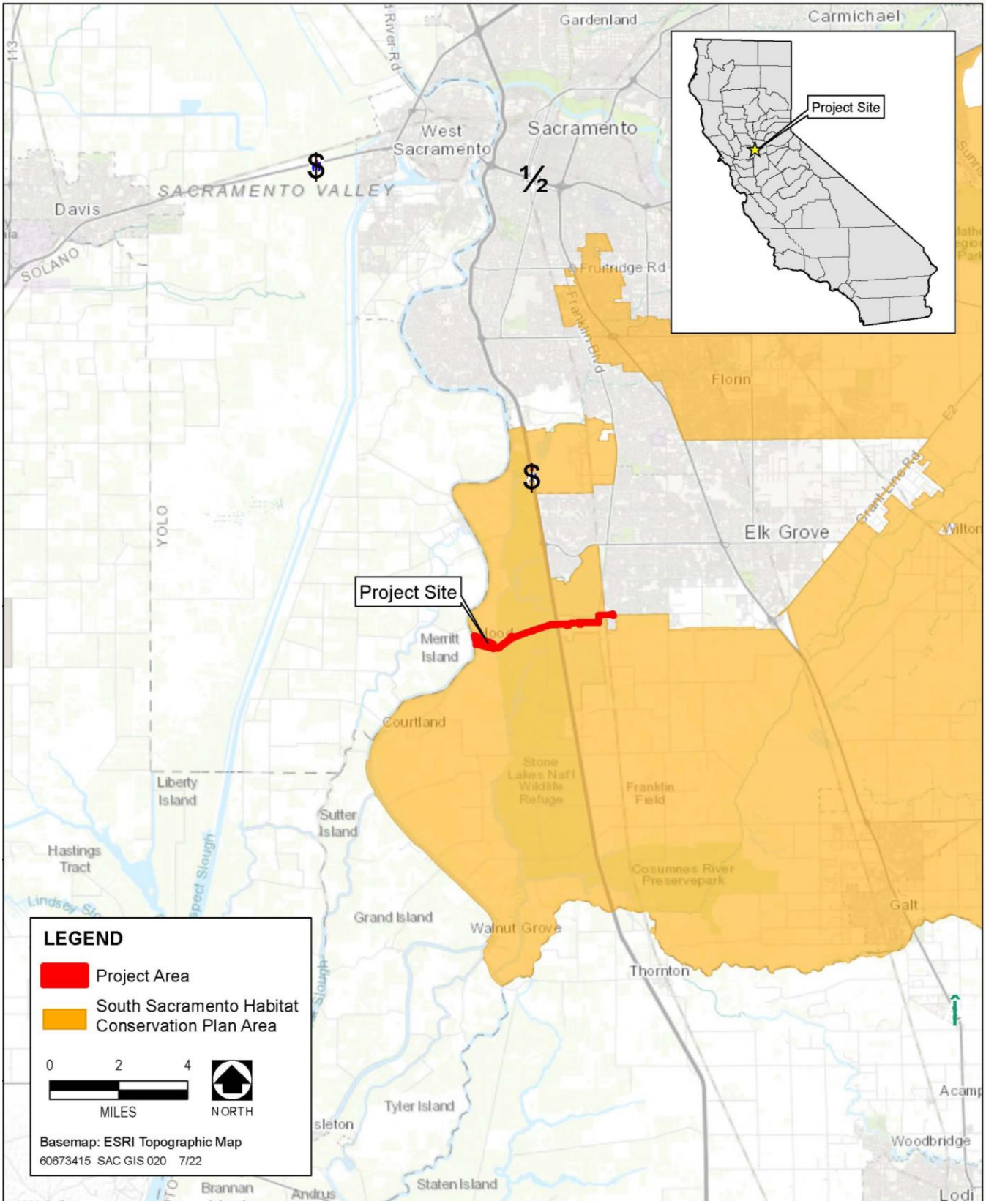
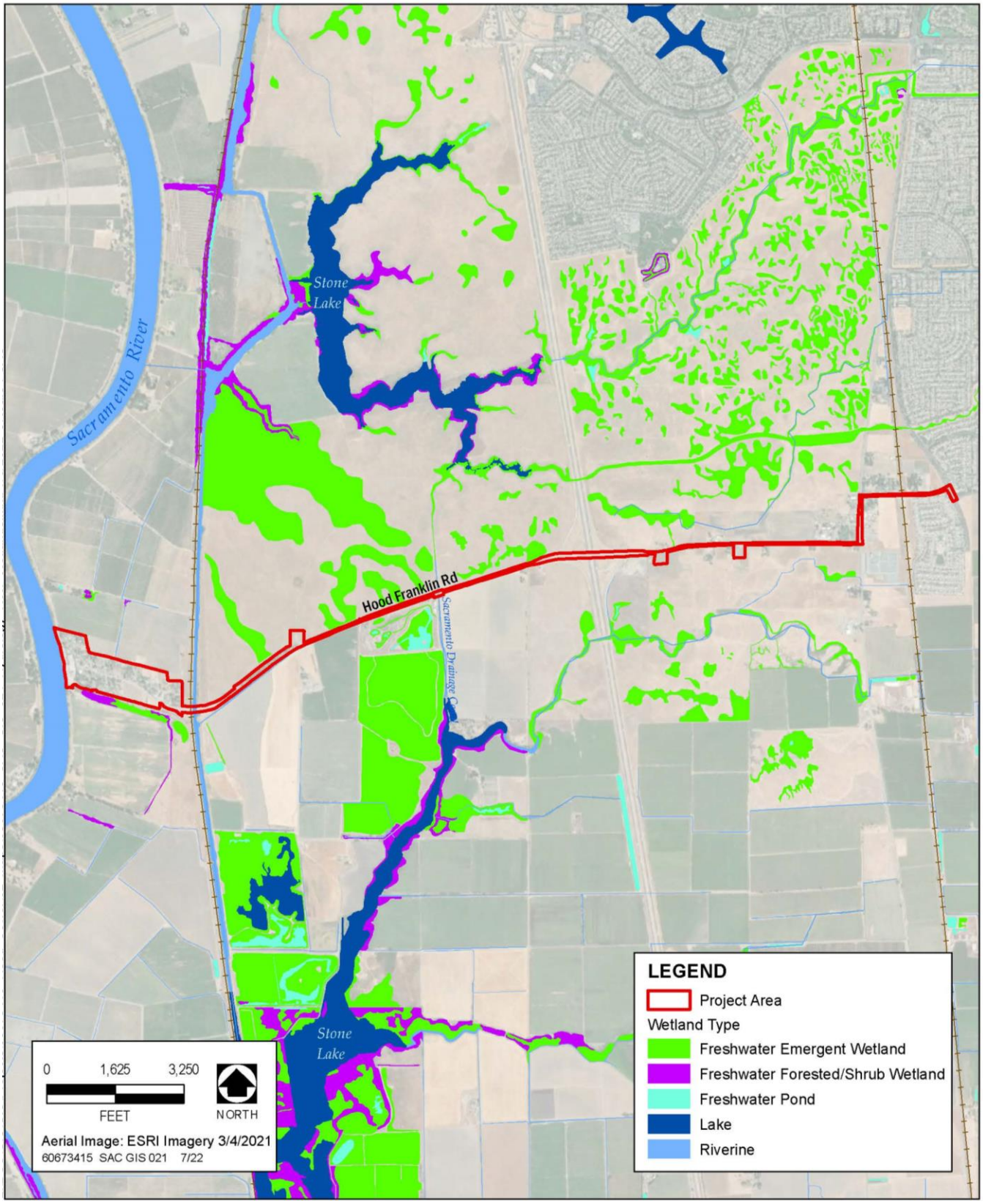


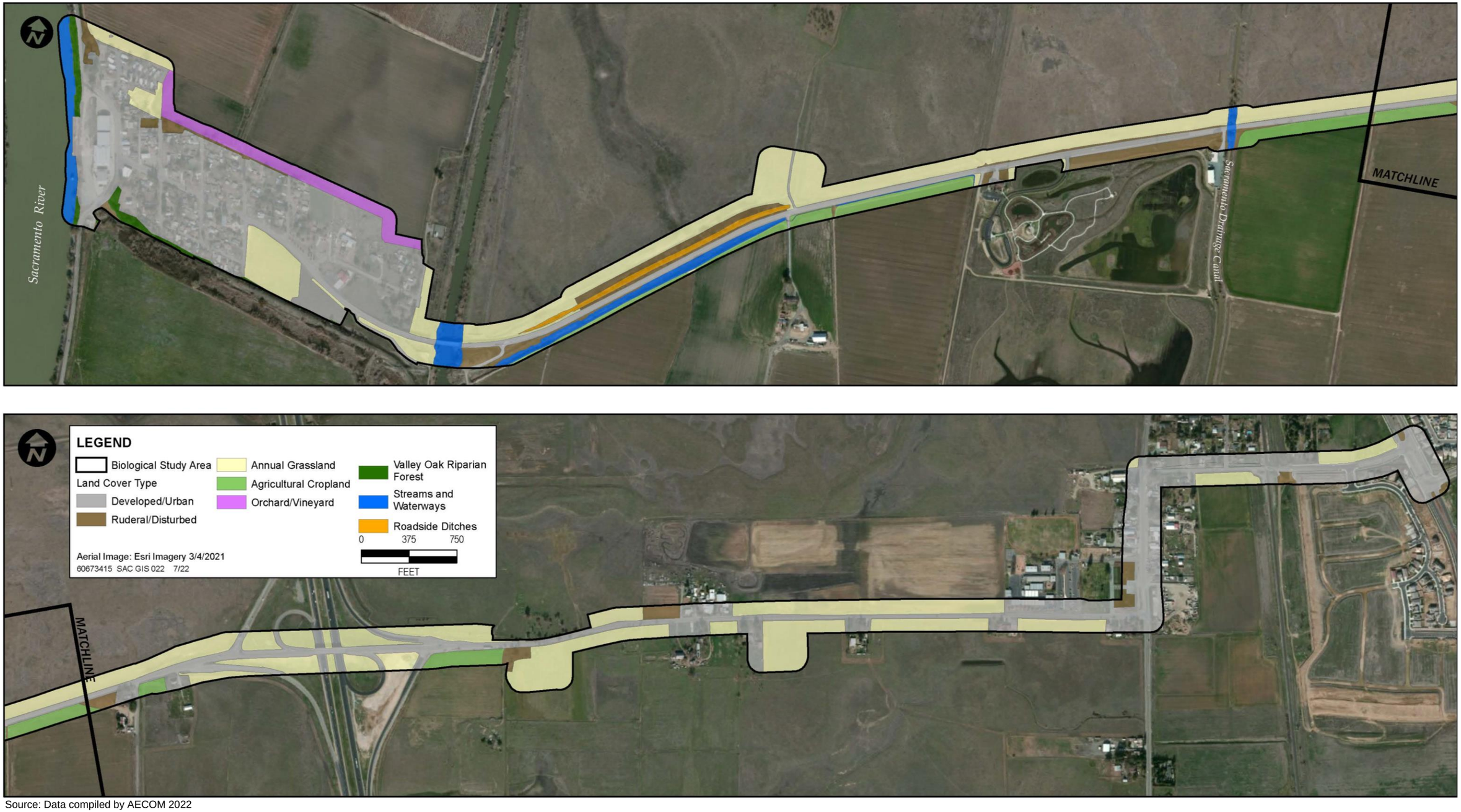
Source: Data compiled by AECOM 2022

Exhibit 3. South Sacramento Habitat Conservation Plan Area



Source: USGS 2022

Exhibit 4. NHD Hydrology and Wetland Map



Source: Data compiled by AECOM 2022

Exhibit 5. Land Cover and Habitat Mapping

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Table 1. Land Cover Types in the Biological Study Area

	Land Cover Type	Acres
Upland Vegetation	Developed / Urban	106.5
	Ruderal / Disturbed	12.9
	Annual Grassland	67.9
	Agricultural Cropland	10.6
	Orchard / Vineyard	5.3
Aquatic / Wetland	Valley Oak Riparian Forest	2.2
	Streams and Waterways	8.3
	Roadside Ditches	2.0
	Grand Total	215.7

Developed / Urban
This habitat type includes residential homes and turf lawns, paved roadways, landscaped or managed urban lots, concrete sidewalks, parking lots, the Hood Community Park, the Courtland Fire Department, commercial buildings, and equipment/storage lots. The project area is dominated by developed land cover. Roadways account for 29.8-acres of the BSA. Rural residences, characterized by 0.1-acre to 0.5-acre parcels, usually containing one main structure and outbuildings account for 79.4-acres of the total BSA. Vegetation is primarily non-native, with pockets of ornamental shrubs and trees present around many structures and along parcel boundaries.

A variety of non-native trees have been planted within the residential yards, commercial parking lots, and along roadways within the BSA. Tree species observed during the surveys in developed areas included Southern magnolia (*Magnolia grandiflora*), Italian cypress (*Cupressus sempervirens*), eucalyptus (*Eucalyptus* sp.), London plane (*Platanus x acerifolia*), privet (*Ligustrum* sp.), coast redwood (*Sequoia sempervirens*), sweetgum (*Liquidambar styracifolia*), tree of heaven (*Ailanthus altissima*), and Valley oak (*Quercus lobata*).

Wildlife observed in developed areas during the survey included one white-tailed kite (*Elanus leucurus*) perched in the top of a large London plane tree, and one red-shouldered hawk (*Buteo lineatus*) perched in a Coast redwood tree. Flocks of house sparrow (*Passer domesticus*), American crow (*Corvus brachyrhynchos*), and European starling (*Sturnus vulgaris*) were observed foraging in parking lots. Other species observed in developed areas included the California scrub jay (*Aphelocoma californica*), Nuttall's woodpecker (*Picoides nuttallii*), and Eurasian collared dove (*Streptopelia decaocto*) which were observed foraging and calling from urban trees and shrubs.

Ruderal / Disturbed
Ruderal / disturbed land cover is similar to disturbed / urban land coverage areas in that these areas are often dominated by introduced, non-native vegetation characteristic of historic or frequent anthropologic disturbance. Ruderal vegetation is common throughout locations that previously have been filled or graded, such as roadside edges, ROWs, dirt or gravel footpaths or access roads, vacant lots, and portions of rural residential properties.

Within the BSA, ruderal areas that supported vegetation were dominated by weedy forbs, including field mustard (*Hirschfeldia incana*), fennel (*Foeniculum vulgare*), cheeseweed (*Malva parviflora*), white horehound (*Marrubium vulgare*), woolly mullein (*Verbascum thapsis*), filaree (*Erodium* sp.), milk thistle (*Silybum marianum*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), and Russian thistle (*Salsola tragus*), intermixed with other non-native annual grasses.

For this assessment, this land cover type also includes a section of scrub-shrub habitat along Hood-Franklin Road domiated by Himalayan blackberry (*Rubus armeniacus*) and Osage-orange (*Maclura pomifera*), which is a planted upland species. Scrub-shrub habitats are commonly characterized by low, multi-stemmed woody vegetation in young or stunted stages of growth. Such habitats commonly result after vegetation clearing for farming, or ROW maintenance activities. The species composition can be somewhat variable, depending on the location and length of time since disturbance, abandonment, or management. Scrub-shrub habitats may be associated with forests, grasslands, wetlands, and riparian areas, as well as in human-altered systems (ROWs and old fields). Scrub-shrub habitats can support a wide assortment of species from songbirds to hawks and owls, to waterfowl and other common game birds, and a variety of small terrestrial mammals which rely on the low-hanging branches and dense vegetation for cover and protection.

Wildlife species observed in ruderal habitats included the California scrub jay and American crow.

Annual Grassland
The annual grassland land cover type in the BSA can be best desribed as an *Avena* sp.- *Bromus* sp. Herbaceous Semi-Natural Alliance according to the Manual of California Vegetation (CNPS 2020a). This vegetation alliance typically is co-dominated by wild oats (*Avena barbata* and/or *Avena fatua*) and brome grasses (*Bromus diandrus, B. hordeaceous*) and is present throughout the Central Valley of California. Annual grassland vegetation is present within the BSA in large vacant lots, and in irrigated agricultural pasture fields including those primarily used for cattle grazing.

Wildlife species common for this habitat include small mammals such as the western harvest mouse (*Reithrodontomys megalotis*) and California vole (*Microtus californicus*), as well as common reptiles like the western fence lizard (*Sceloporus occidentalis*). Grassland habitats often provide important foraging habitat for raptors, including special-status species like white-tailed kite and Swainson's hawk (SWHA) (*Buteo swainsonii*).

Agricultural Cropland
This habitat type is characterized by regular vegetation and soil disturbances associated with planting, harvesting, and preparing an area for crops. Narrow bands of agricultural croplands occur in patches along the southern border of the BSA which abuts Hood-Franklin Road, these included corn crops and recently tilled lots which were barren during the July 2022 survey. These habitats are often irrigated during the dry summer months to support crop production. Drier croplands often provide suitable foraging habitat for raptors, as these habitats support a variety of small mammals and common reptiles similar to the aforementioned annual grassland habitats.

Orchard / Vineyard
A narrow bank of almond orchard is present in the westernmost portion of the BSA. This managed habitat provides marginal value for wildlife with relatively few opportunities for foraging, nesting and roosting. Many commercial orchards, are heavily managed with high levels of herbicide use and nearly barren understories that provide limited habitat and cover for terrestrial wildlife. Species such as California scrub jay and American crow are likely to occur in orchard.

Valley Oak Riparian Woodland
A narrow band of valley oak forest occurs at the westernmost portion of the project area, near the Sacramento River. Because it is within the riparian zone of the river, it has been also designated as "riparian woodland," hence the nomenclature "Valley Oak Riparian Woodland." This habitat is composed of forest-like stands with partially closed canopies, comprised mostly of winter-deciduous, broad-leaved tree species. Western sycamore (*Platanus racemosa*), Hinds black walnut (*juglas hindsii*), interior live oak (*quercus wislizeni*), boxelder (*acer negundo*), and blue oak (*quercus douglasii*) trees typically dominate the canopy. Shrubby understories in non-grazed areas typically consist of poison-oak (*Toxicodendron diversilobum*), blue elder (*sambucus cerulea*), California wild grape (*vitus californica*), toyon (*heteromeles arbutifolia*), California coffeeberry (*Rhamnus californica*), and Himalayan blackberry (*rubus armeniacus*). Various species of wild oat, brome, barley, ryegrass, and needlegrass often dominate the ground cover within this habitat type. Denser stands typically grow in valley soils along natural drainages, rivers, streams, or other water features, such as the stands observed within the BSA.

These woodlands provide food and cover for many species of wildlife. Oak species provide shady micro-habitats, and produce acorns, which are a critical food source for a variety of wildlife species. Their branches and canopies provide cover and protection from the elements, and adequate nesting and foraging habitat for multiple bird species. In Sacramento County, breeding raptor species are frequently recorded in these habitats. The red-shouldered hawk (*Buteo lineatus*), and the red-tailed hawk (*buteo jamaicen*sis) were observed within the BSA. Other common species observed within this woodland habitat during the field surveys were the European starling, California towhee, cottontail rabbit, scrub jay, Nuttall's woodpecker, ground squirrels, fox squirrels, and common voles, which were using the valley oak understories for food and shelter.

Streams and Waterways
The following waterways are present within the BSA:

- **Sacramento Drainage Canal**

  The project area intersects the Sacramento Drainage Canal (identified by the USGS national hydrology map, Exhibit 4, at approximately 38.3729, -121.4894 (latitude / longitude coordinates). The Sacramento Drainage

Canal flows underneath Hood-Franklin Road a nearly perpendicular angle by way of an approximately 62-foot-wide concrete bridge structure. The canal supports flow from North Stone Lake southward, crosses the project area, and ultimately flows into Stone Lake approximately 1.5 miles downstream, south of the project area. AECOM biologists predict that during peak summer months the channel is likely dry, or supports very little flow. This is attributed to drought conditions and little to no rainfall during the summer season.

Vegetation within the channel at the project area intersection appears to be dominated by *Salix* sp. and Himalayan blackberry.

- **Unnamed (Stone Lake) Channel**

  The project area intersects this large watercourse channel at approximately 38.3655, -121.5097 (latitude / longitude coordinates). This channel is unnamed according to the USGS national hydrology map, Exhibit 4, but has been designated by AECOM staff as “unnamed (Stone Lake) channel” for the purposes of this analysis due to its connectivity between both North Stone Lake and Stone Lake (south of the project area). This large waterway supports flow from north to south and ultimately flows into Stone Lake. This channel is significantly wider than the Sacramento Drainage Canal and flows underneath Hood-Franklin Road by way of an approximately 180-foot-wide concrete and steel bridge structure. This channel supports year-round flow, significant hydrology, and annual wetland vegetation within the established top-of-banks of the channel. Indicators of high-flow and seasonal flooding are observed in the form of high-water marks and woody debris racking which has been deposited at the bases of shrubs significantly above the observed water level.

  Annual grasses and fennel dominate the channel banks along with intermittent *Salix* and *Quercus* individuals. Common water hyacinth (*Pontederia crassipes*) dominates the channel bed by more than 90%.

- Roadside Drainage Ditches

  On April 21, 2020, the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) promulgated a definition of the term “ditch,” to mean “a constructed or excavated channel used to convey water.” Per the July 2020 USACE and EPA joint guidance memorandum, the term “ditch” specifically refers to irrigation and drainage ditches which convey irrigation or agricultural run-off, roadway or railway drainage, or stormwater drainage (USACE and EPA 2020). Therefore, roadside drainage ditches, which often support a variety of wetland vegetation are not subject to regulation under Section 404 of the Clean Water Act (CWA) so long as they are man-made, and are isolated (not demonstrating hydrologic connectivity) from otherwise jurisdictional wetlands or waters. It has been the agencies’ longstanding practice that most roadside ditches are generally are not considered Waters of the United States.

  The vegetation community found within irrigation channels and roadside ditches in the study area is dominated by cattails (*Typha* spp. *angustifolia, domingensis, latifolia*), redtop (*Agrostis stolonifera*), sedges (*Cyperus* spp.), saltgrass (*Distichlis spicata*), and rushes (*Juncus* spp.) (CNPS 2020b).These ditches may also lack vegetation entirely or contain only ruderal species.

  Roadside ditches which meet the agency definitions described above are present within the project area (Table 1, Exhibit 4). Those ditches identified did appear to receive hydrology primarily from agricultural irrigation and exhibited some wetland vegetation, including tall flatsedge (*Cyperus eragrostis*) and dallis grass (*Paspalum dilatatum*).

- **Seasonal Wetlands**

  No vernal pool habitats or seasonal wetland habitats were identified within the BSA. However, scattered vernal pools and seasonal wetland habitats do occur within 250 feet of BSA boundary north and south of Hood-Franklin Road within the Stone Lakes National Wildlife Refuge and mesic habitat was observed during the field investigation (see site photographs, Appendix B). However, disked fire breaks have been tilled bordering Hood-Franklin Road within the edges of the Stone Lakes National Wildlife Refuge property parcels along their property fence line. These are intended to protect the refuge from any roadside debris which might ignite a wildfire, however these breaks also significantly disrupt the vegetation and soils. Hydrologic connectivity between the more natural and undisturbed vernal pool features within the refuge and the ephemeral roadside ditch identified bordering the northern edge of Hood-Franklin Road is similarly disrupted by the fire break.

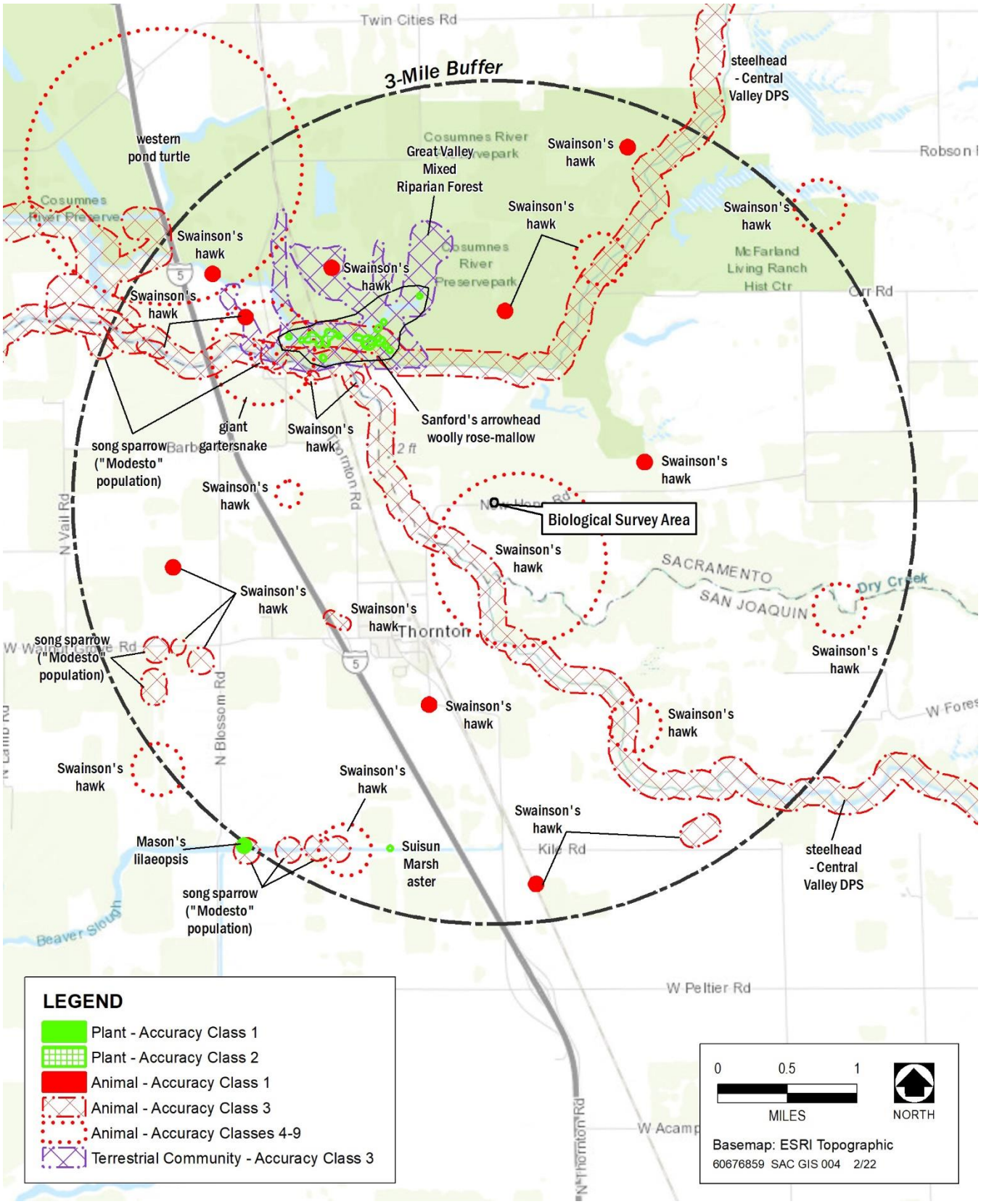
Special-Status Species

For the purpose of this analysis, plants and animals are considered to be "special-status species," if they are:

- Species that are listed under the ESA and/or California Endangered Species Act as rare, threatened, or endangered;
- Species considered to be "candidates" that have been proposed for federal or state listing as threatened or endangered;
- Wildlife designated by California Department of Fish and Wildlife (CDFW) as fully protected and/or species of special concern;
- Bird species that qualify for federal protection under the Migratory Bird Treaty Act of 1918;
- Species covered under the South Sacramento Habitat Conservation Plan; and/or
- Plants considered by CDFW to be "rare, threatened, or endangered in California" and have been assigned a California Rare Plant Rank (CRPR) of 1A, 1B, or 2B, defined as follows:
    - CRPR 1A—plant species presumed to be extinct in California.
    - CRPR 1B—plant species considered to be rare, threatened, or endangered in California and elsewhere.
    - CRPR 2B—plant species considered to be rare, threatened, or endangered in California but more common elsewhere.
- Each CRPR category may include an extension indicating the level of endangerment in California, as follows:
    - 0.1—Seriously endangered in California (more than 80 percent of occurrences are threatened and/or high degree and immediacy of threat).
    - 0.2—Fairly endangered in California (20–80 percent of occurrences are threatened).
    - 0.3—Not very endangered in California.

Table 2 and Table 3 below identify plant and wildlife species, that have been identified as having potential to occur within the biological study area. These tables were compiled based on the results of the desktop review and public database searches in the general project vicinity and the habitat types present within the project area, as described above. Exhibit 6 represents the California Natural Diversity Database (CNDDB) records of special-status species within a 3-mile radius of the project area. The following criteria were used for Table 2 and Table 3 (below) to assess the potential for species' occurrence within the BSA:

- **May Occur**: The BSA is within the species' range, suitable habitat for the species is present, and recorded occurrences of the species are also present in the general vicinity (i.e., within 3 miles).
- **Unlikely to Occur**: No occurrences of the species have been recorded within 3 miles of the BSA, and AND habitat for the species within the BSA is sub-optimal OR potentially suitable habitat is present within the BSA, but the project is located outside of the species' known range.
- **Highly Unlikely to Occur**: The BSA is outside the species' known range, AND/OR suitable habitat for the species is completely absent.



Source: CDFW 2022

Exhibit 6. CNDDB Map

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
Amsinckia grandiflora	Large-flowered Fiddleneck	FE	SE	1B.1	Grassy slopes, foothill woodlands, valley grasslands	885–1805	Mar–May	**Highly unlikely to occur;** Project area is significantly below this species' preferred habitat range.
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	-	-	1B.1	Vernally mesic meadows and seeps, subalkaline flats in valley and foothill grasslands, often prefers heavy clay or adobe soils	5–245	Apr–May	**Highly unlikely to occur;** Suitable clay / adobe soils are not present. Soils sampled within the BSA were silt loams.
Astragalus tener var. *tener*	Alkali milk-vetch	-	-	1B.2	Alkaline and saline soils in valley and foothill grasslands (adobe clay), playas, vernal pools	5–195	Mar–June	**Highly unlikely to occur;** Suitable clay/saline soils are not present. Soils sampled within the BSA were silt loams.
Brasenia schreberi	Watershield	-	-	2B.3	Aquatic herb, widespread throughout North America; prefers freshwater marshes and swamps, particularly those with slow-moving flow	0–7,220	Jun–Sep	**May occur;** Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. One CNDDB occurrence within a 3-mile radius of the project area.
Carex comosa	Bristly sedge	-	-	2B.1	Coastal prairie, marshes and swamps (lake margins), seasonal wetlands in valley and foothill grasslands including ditches, waterbody margins, and seeps	0–2,050	May–Sep	**May occur;** Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. Five CNDDB records within a 3-mile radius of the project area, one of which within 0.5 miles of the project area. Ephemeral roadside ditches present throughout BSA. Species not observed during site surveys by AECOM biologists during the January or July 2022 surveys.
Centromadia parryi ssp. *parryi*	pappose tarplant	-	-	1B.2	Often prefers alkaline soils; chaparral habitats, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grasslands	0–1,380	May–Nov	**Unlikely to occur;** Habitat within the BSA is limited. One CNDDB occurrence within a 3-mile radius of the project area but is located west of the Sacramento River.
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	-	-	2B.1	Brackish, coastal, and freshwater marshes and swamps	0–655	Jul–Sep	**Highly unlikely to occur;** Species is most closely associated with coastal wetlands (CNPS 2022). Nearest CNDDB record is more than 7 miles south of the project area.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	-	-	2B.2	Parasitic annual vine; prefers freshwater marshes and swamps, on host plants such as *Alternanthera, Dalea, Lythrum, Polygonum,* and *Xanthium*	50–920	Jul–Oct	**May occur;** Suitable habitat present within the BSA waterways. One CNDDB record identified within a 3-mile radius of the project area. Plant observation reports documented in Sacramento County have not yet been verified (CNPS 2022).
Downingia pusilla	dwarf downingia	-	-	2B.2	Vernally mesic valley and foothill grasslands, vernal pools, riparian wetlands	5–1,460	Mar–May	**Unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. One CNDDB record within a 3-mile radius of the project area.
Eryngium jepsonii	Jepson's coyote-thistle	-	-	1B.2	Clay soils; vernal pools and wetland habitats in the Central Valley and foothill grasslands	10–985	Apr–Aug	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Atriplex joaquiniana	San Joaquin spearscale	-	-	1B.2	Alkaline soils, clay soils; playas, meadows and seeps, chenopod scrub, valley and foothill grasslands	5–2,740	Apr–Oct	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	-	-	1B.2	Moist soils, freshwater; marshes and swamps, riverbanks including rip-rap levee slopes	0–395	Jun–Sep	**May occur;** Suitable habitat (moist banks and levees) is present along the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. Five CNDDB records have been documented within 3 miles of the project area. Species was not observed during the July 2022 field survey.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
Lasthenia chrysantha	alkali-sink goldfields	-	-	1B.1	Alkaline soils; vernal pools	0–655	Feb–April	**May occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. One CNDDB record within a 3-mile radius of the project area located approximately 0.25 miles north of Hood-Franklin Road.
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	-	-	1B.2	Usually grows along the edges of freshwater and brackish marshes and swamps	0–15	May–Jul (Aug–Sept)	**Unlikely to occur;** Species is most closely associated with coastal, brackish, and estuarine marshes (CNPS 2022), but has been observed approximately 20 miles south of the Natomas Basin in Walnut Grove.
*Legenere limosa**	Legenere	-	-	1B.1	Vernal pools and seasonal wetlands	0–2,885	Apr–Jun	**May occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. There are three records of this species within a 3-mile radius of the project area, one of which is from a roadside ditch along Hood-Franklin Road (CDFW 2022). Species was not observed during the January or July 2022 surveys.
Lepidium latipes var. *heckardii*	Heckard's pepper grass	-	-	1B.2	Alkaline flats in valley and foothill grasslands	5–655	Mar–May	**Unlikely to occur;** No suitable alkaline flats present within the project area. Two CNDDB records within a 3-mile radius of the project area. The nearest CNDDB record is approximately 0.5 miles north of Hood-Franklin Road.
Lilaeopsis masonii	Mason's lilaeopsis	-	SR	1B.1	Riparian scrub habitats, brackish and freshwater marshes and swamps	0–35	Apr–Nov	**May occur;** Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. CNDDB records are present along the boundary of the project area.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
Limosella australis	Delta mudwort	-	-	2B.1	Muddy watercourse banks and flats; brackish and freshwater marshes and swamps	0–10	May–Aug	**Unlikely to occur;** Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. However, nearest CNDDB record is more than 5 miles south of the project area.
Navarretia lucocephala ssp. *Bakeri*	Baker's navarretia	-	-	1B.1	Mesic habitats; Vernal pools, meadows and seeps, cismontane woodland, lower montane coniferous forest, valley and foothill grasslands	15–5,710	Apr–July	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Neostapfia colusana	Colusa grass	FT	SE	1B.1	Vernal pools (adobe clay)	15–655	May–Aug	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Plagiobothrys hystriculus	bearded popcornflower	-	-	1B.1	Vernal swales; Mesic valley and foothill grasslands, vernal pool margins	0–900	Apr–May	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Puccinellia simplex	California alkali grass	-	-	1B.2	Alkaline flats, lake margins, and vernally mesic habitats within chenopod scrub, vernal pools, meadows and seeps, and valley and foothill grasslands	5–3,050	Mar–May	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
*Sagittaria sanfordii**	Sanford's arrowhead	-	-	1B.2	Shallow freshwater marshes and swamps, and slow-moving waterbodies	0–2,135	May–Oct (Nov)	**May occur;** Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. One CNDDB record within 0.25-mile of the project area in the vicinity of the Sacramento Drainage Canal.
Scutellaria galericulata	marsh skullcap	-	-	2B.2	Mesic meadows and seeps, marshes and swamps, and lower montane coniferous forest	0–6,890	Jun–Sep	**Unlikely to occur;** Occurrences from the delta region need further verification (CNPS 2022). Habitat within the BSA is limited due to disturbance. No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. No CNDDB occurrences within a 3-mile radius of the project area.
Scutellaria lateriflora	side-flowering skullcap	-	-	2B.2	Mesic meadows and seeps, marshes and swamps	0–1,640	Jul–Sep	**Highly unlikely to occur;** Suitable habitat is not present within the BSA. The unnamed (Stone Lake) channel was dominated by common water hyacinth, the Sacramento Drainage Canal is ephemeral and was dry during the July 2022 survey. Himalayan blackberry dominated the Sacramento Drainage Canal.
Sidalcea keckii	Keck's checkerbloom	FE	-	1B.1	Clay and serpentine soils; Cismontane woodlands, valley and foothill grasslands	245–2,135	Apr–May (June)	**Highly unlikely to occur;** Soils sampled within the BSA (in seasonal wetlands) were sandy loams. BSA is well below species preferred elevation range.
Symphyotrichum lentum	Suisun Marsh aster	-	-	1B.2	Marshes and swamps (brackish and freshwater)	0–10	(Apr) May–Nov	**Highly unlikely to occur;** Suitable habitat is not present within the BSA. The unnamed (Stone Lake) channel was dominated by common water hyacinth, the Sacramento Drainage Canal is ephemeral and was dry during the July 2022 survey. Himalayan blackberry dominated the Sacramento Drainage Canal.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
Trifolium hydrophilum	saline clover	-	-	1B.2	Mesic, alkaline soils; marshes and swamps, valley and foothill grasslands, vernal pools	0–985	Apr–Jun	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Tuctoria mucronata	Crampton's tuctoria [Solano grass]	FE	SE	1B.1	Vernal pools, mesic valley and foothill grassland habitats	15–35	Apr–Aug	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.

[1] Regulatory Status Definitions:
Federal Status Categories
FE = Listed as endangered under the Federal Endangered Species Act
FT = Listed as threatened under Federal Endangered Species Act
California State Status Categories
SE = Listed as endangered under California Endangered Species Act
SR = Listed as Rare
ST = Listed as threatened under California Endangered Species Act
California Rare Plant Rank (CRPR) Categories:
1B = Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2B = Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
CRPR Threat Rank Extensions:
.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)
.2 Fairly endangered in California (20 to 80% of occurrences are threatened)
.3 Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

[2] AMSL = above mean sea level

*Covered Species under the South Sacramento Habitat Conservation Plan (SSHCP) AND the BSA is within SSHCP modeled habitat for the identified species (County of Sacramento, et al. 2018).

- = not applicable
ft = feet
CEQA = California Environmental Quality Act
ESA = federal Endangered Species Act
CESA = California state Endangered Species Act
Sources: CDFW 2020; CNPS 2022; County of Sacramento, et al. 2018

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Crustaceans							
Branchinecta conservatio	Conservancy fairy shrimp	FE	-	-	Large, turbid vernal pools in valley and foothill grassland habitat; prefers pools that are inundated until June.	Endemic to the grasslands of the northern two-thirds of the Central Valley	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
*Branchinecta lynchi**	vernal pool fairy shrimp	FT	-	-	Occurs primarily in small, clear-water sandstone-depression vernal pools and grassland swales or basalt-flow depression vernal pools.	Endemic to California's Central Valley and coastal ranges from Shasta County in the north to Tulare County in the south. A population in Jackson County, Oregon was discovered in 1998.	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
*Lepidurus packardi**	vernal pool tadpole shrimp	FE	-	-	Vernal pools in valley and foothill grassland; pools commonly found in grass-bottomed swales of unplowed grasslands. Has been identified in pools that are mud-bottomed and highly turbid. Has also been identified in seasonal pools in unplowed grasslands with historic alluvial soils underlain by hardpan or in sandstone depressions.	Occurs in California's Central Valley and the San Francisco Bay and southern Oregon; however, most individuals are found in the Sacramento Valley.	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Insects							
Danaus plexippus	monarch butterfly	FC	-	-	Adult monarch butterflies during breeding and migration (spring through fall) require a diversity of blooming nectar resources. Also need milkweed (for both oviposition and larval feeding) within nectaring habitat. In western North America, nectar and milkweed resources are often associated with riparian corridors.	Globally distributed; there are two North American populations, east and west of the Rocky Mountains. Migratory monarchs in the western population primarily overwinter in groves along the coast of California and Baja California.	**May occur;** Milkweed species are present along the Sacramento Drainage Canal, the unnamed (Stone Lake) channel, and the roadside edges along Hood-Franklin Road (AECOM field surveys January and July 2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
*Desmocerus californicus dimorphus**	valley elderberry longhorn beetle	FT	-	-	Host plant is the elderberry shrub (*Sambucus nigra*). Prefers to lay eggs in elderberry stems 2–8 inches in diameter; some preference shown for "stressed" elderberries. Elderberry bushes in western North America are associated with riparian forests along rivers and streams but can also occur as isolated shrubs distant from rivers or streams.	Occurs throughout the Central Valley.	**Highly unlikely to occur;** No suitable habitat (elderberry shrubs) present in the project area. There are no CNDDB records of the species within 3 miles of the project area.
Elaphrus viridus	Delta green ground beetle	FT	-	-	Inhabits vernal pool grassland habitats; adults are usually found along the margins of vernal pools and bare areas where they hide in mud cracks and low-growing vegetation. Most observations of the delta green ground beetle have been along the margins of playa pools formed on Pescadero clay soils. Dense / high invasive plant cover may disrupt the beetle's feeding regime.	Solano County, California; near Olcott Lake and along the west side of Cook Lane within the Jepson Prairie area. Monitoring efforts continue, however, past and present surveys do not provide adequate information to reveal trends in the distribution of the beetle.	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Fish							
Oncorhynchus mykiss irideus pop. 11	Steelhead – Cental Valley DPS	FT	-	-	Aquatic; Sacramento/San Joaquin Rivers. Cool streams with suitable spawning habitat and conditions allowing migration, as well as marine habitats. Slow-flowing and standing waters.	Populations documented in the Sacramento and San Joaquin rivers, their tributaries, and associated slough channels.	**May occur;** Straying individuals may occur in Sacramento Drainage Canal and unnamed (Stone Lake) channel but no spawning would occur in these waterways. The channels may provide suitable habitat for juvenile rearing or foraging due to connectivity to the Sacramento River via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat - Pacific Coast Salmon FMP (2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Acipenser medirostris	Green sturgeon – southern DPS	FT	-	-	Aquatic, anadromous fish; Can live in both fresh and saltwater. Spawning and juvenile rearing activity takes place in rivers followed by a migration to saltwater to feed, grow, and mature before returning to freshwater to spawn. They are a long-lived, slow-growing fish. Spends majority of life in nearshore oceanic waters, bay, and estuaries; spawns in fresh water rivers.	First described in San Francisco Bay in 1857. Can be found from Alaska to Mexico but most commonly encountered north of Point Conception, California.	**May occur;** Known to spawn in Sacramento River. Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrolgic connectivity via tributaries, sloughs, floodplains, and irrigation channels.
Pogonichthys macrolepidotus	Sacramento Splittail	-	-	SSC	Aquatic; estuary, freshwater marsh, Sacramento/San Joaquin flowing waters. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes.	**May occur;** Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrolgic connectivity via tributaries, sloughs, floodplains, and irrigation channels.
Spirinchus thaleichthys	Longfin Smelt	FC	ST	-	Aquatic; found in open waters of estuaries, mostly in the middle or bottom of a water column. Prefers salinities of 15–30 ppt, but can be found in completely freshwater to almost pure seawater	Found along the Pacific Coast, from Alaska to California.	**May occur;** Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrolgic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Species is more commonly found in coastal regions.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Hypomesus transpacificus	Delta Smelt	FT	SE	-	Aquatic; inhabits estuarine areas in the Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	Endemic to California; only occurs in the San Francisco Estuary.	**May occur;** Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrolgic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within USFWS designated Final Critical Habitat (2022).
Oncorhynchus tshawytscha	Sacramento River Winter-Run Chinook Salmon ESU	FE	SE	-	Aquatic; Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Found along the Pacific Coast and inland rivers and tributaries from Alaska to California.	**May occur;** Straying individuals may occur in Sacramento Drainage Canal and unnamed Stone Lake channel but no spawning would occur in these waterways. The channels may provide suitable habitat for juvenile rearing or foraging. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat.
Oncorhynchus tshawytscha	Central Valley Spring-Run Chinook Salmon ESU	FT	ST	-	Aquatic; Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Found along the Pacific Coast and inland rivers and tributaries from Alaska to California.	**May occur;** Unnamed (Stone Lake) channel may provide suitable habitat for migration, foraging, and rearing/foraging due to proximity to the Sacramento River and hydrolgic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat.).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Amphibians							
*Spea hammondii**	Western spadefoot	-	-	SSC	Occurs primarily in grassland habitats, but can be found in valley–foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Throughout the Central Valley and adjacent foothills.	**May occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge.
Rana draytonii	California red-legged frog	FT	-	SSC	Requires dense, shrubby riparian vegetation associated with deep (>2.3 feet), still or slow-moving water in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergency riparian vegetation. Requires 11-20 weeks of permanent water for larval development and must have access to aestivation habitat.	Currently known only from isolated localities in the Sierra Nevada, northern Coast, and northern Transverse Ranges. It is believed to be nearly extirpated from the southern Transverse and Peninsular ranges. This species is still common in the San Francisco Bay area, along the central coast, and potions of Baja Mexico.	**Highly unlikely to occur;** The project area is outside of the species' currently known range. Suitable habitat within the project area is limited to the slow-moving unnamed (Stone Lake) channel within the BSA. It is widely accepted that Valley populations have been nearly extirpated.
Ambystoma californiense	California tiger salamander	FT	ST	WL	Vernal pools and other seasonal wetlands, including stock ponds, with adequate inundation period and adjacent uplands, primarily grasslands, with burrows and other belowground refugia. Tiger salamanders have been documented travelling up to 1 mile between upland refugia and wetland habitats.	Endemic to California. Occurs from near Petaluma and Sonoma Counties, east through the Central Valley in Yolo and Sacramento Counties and south to Tulare County, and from the vicinity of San Francisco Bay south to Santa Barbara County.	**Highly unlikely to occur;** No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools occur within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. The nearest extant population is approximately 10 miles east of the project area in vernal pool grasslands in eastern Sacramento County (CDFW 2022). Multiple roadways are a barrier to this species and inhibit movement to the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Reptiles							
*Emys marmorata**	western pond turtle	-	-	SSC	Aquatic; ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Needs basking sites and suitable (i.e., sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	West of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Below 6,000 feet elevation.	**May occur;** Suitable habitat for the species is present in the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. There are two records of the species within 3 miles of the project area.
*Thamnophis gigas**	giant garter snake	FT	ST	-	Occurs in marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways or agricultural wetlands. The habitat must have enough water during breeding season (early spring–mid fall), emergent wetland vegetation, and openings in wetland vegetation for basking, and high elevation uplands to provide cover and refuge during winter seasons.	Historical range was in the Sacramento and San Joaquin valleys but its current range is much reduced, and it apparently is extirpated south of Fresno County, except for western Kern County.	**May occur;** Suitable habitat for the species is present in the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. There are multiple CNDDB observation records within a 3-mile radius of the project area, one of which is within 0.5-mile.
Birds							
*Accipiter cooperii** (nesting)	Cooper's hawk	-	-	WL	Variety of woodland habitats; nests mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Breeding resident throughout most of the wooded portion of the state.	**May occur;** Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys.
*Agelaius tricolor** (nesting colony)	tricolored blackbird	-	SE	SSC	Highly colonial. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Most numerous in the Central Valley and vicinity. Generally endemic to California.	**May occur;** There are five records of the species within 3 miles of the project area, four of which are nesting colonies in blackberry thickets (CDFW 2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Ammodramus savannarum	Grasshopper sparrow	-	-	SSC	Occurs in grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground. Can tolerate some brushy habitat but avoid areas that are too overgrown. Winters primarily in grass-dominated fields. During the summer, preys on grasshoppers and other insects. Eats mostly seeds in winter, which they glean exclusively from the ground. Exposed bare ground is critical for effective foraging. Nests on the ground, often at the base of a clump of grass within extensive patches of tall grasses or sedges.	Known breeding range for western species along the coast of California and throughout the Central Valley.	**May occur;** Open pastures and fields provide suitable foraging habitat and tall sedges / grasses in the vicinty of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel may provide suitable nesting habitat.
*Athene cunicularia** (burrow sites and some wintering sites)	Burrowing owl	-	-	SSC	Open, dry, annual or perennial grasslands, deserts, and scrublands, characterized by low-growing vegetation. Dependent on burrowing mammals, most notably, the California ground squirrel, for underground nests.	Resident throughout California in suitable habitat.	**Highly unlikley to occur;** Habitat within the BSA is marginal due to proximity to Sacramento River and large waterways that experience seasonal flooding. No berms, hillocks, or mounds observed beyond BSA boundaries. Ground squirrels only observed within Valley Oak Riparian Habitat. No CNDDB records have been identified within 0.5-mile of the project area. No burrows were observed during field surveys.
*Buteo swainsoni** (nesting)	Swainson's hawk	-	ST	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa or grain fields supporting rodent populations.	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert.	**May occur;** Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys. There are five CNDDB observations recorded within 0.5-mile of the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Coccyzus americanus occidentalis (nesting)	Western yellow-billed cuckoo	FT	SE	-	Found in riparian forest along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape. Prefers patches of riparian habitat greater than 81 hectares (0.81 square kilometer) in size and at least 328 feet (100 meters) in width; combined with a canopy height 16-99 feet (5–30 meters) and understory height 3-20 feet (1–6 meters) (Hughes 2020).	In California, breeding restricted to isolated sites in South Fork Kern River, lower Colorado River, and Sacramento River valleys, with current breeding populations in California estimated to be about 40–50 pairs.	**Highly unlikely to occur;** Riparian forest within the BSA is patchy and limited. Last CNDDB observation in Sacramento County was in 2010. Nearest CNDDB record is an 1896 record located approximately 2.5 miles north of Hood, CA in the vicinty of Clarksburg, CA.
*Elanus leucurus** (nesting)	White-tailed kite	-	-	FP	Open grasslands, meadows, or marshes for foraging, close to dense-topped trees for nesting and perching. Nest trees may be growing in isolation, or at the edge of or within a forest.	Coastal and valley lowlands, and cismontane regions of California.	**May occur;** Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys. One white-tailed kite was observed roosting in the project area during the January 2022 survey.
Falco peregrinus anatum	American peregrine falcon	FD	SD	FP	Found near wetlands, rivers, lakes, or tother water; nests on cliffs, banks, dunes, mounds, tall buildings and bridges. Riparian habitats and inland wetlands are important habitats yearlong, especially during the nonbreeding season.	Active nesting sites are known along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. In winter, found inland throughout the Central Valley.	**May occur;** No suitable nest sites or foraging habitat within the BSA, however flyovers may occur.
*Lanius ludovicianus** (nesting)	loggerhead shrike	-	-	SSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover. Prefers habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Nests in trees or shrubs, often in thorny vegetation.	Lowlands and foothills throughout California.	**May occur;** Suitable habitat is present in the BSA including open areas with scattered trees, agricultural fences, posts, and rural residential shrubs. Western fence lizards (prey species) present.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Laterallus jamaicensis coturniculus (year-round)	California black rail	-	ST	FP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	San Francisco Bay area, the Delta, coastal southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area.	**Highly unlikely to occur;** No suitable perennial marsh or wet meadow habitat is present within the BSA, however, one CNDDB record is present within 0.5-mile of the project area.
Melospiza melodia (year-round)	song sparrow – "Modesto" population	-	-	SSC	Moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Seems to prefer emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets.	Restricted to California, where it is locally numerous in the Sacramento Valley, the Delta, and northern San Joaquin Valley.	**Highly unlikely to occur;** No suitable marsh or riparian willow habitat in the project area. No CNDDB records within 0.5-mile of the project area.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	-	-	SSC	Breeds in wetlands in prairies, mountain meadows, quaking aspen parklands, and shallow areas of marshes, ponds, and rivers. Nests in cattails, bulrushes, or reeds, often alongside nesting Red-winged Blackbird colonies. Forages in surrounding grasslands, croplands, or savanna. During winter, large flocks forage together in crop fields, ranchlands, and farmyards from Arizona, New Mexico, and Texas through much of Mexico.	Nationwide distribution; Migrates through the Central Valley	**Highly unlikely to occur;** No suitable marsh expanses or riparian willow habitat in the BSA. Last CNDDB observation in Sacramento County was in 1899.
Mammals							
*Taxidea taxus**	American badger	-	-	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Throughout most of the state, except in the northern North Coast region	**May occur;** Habitat within the BSA is limited due to agricultural disturbance and urban activity, however, one CNDDB observation was recorded within 0.5-mile of the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status[1]			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Sylvilagus bachmani ssp. *riparius*	Riparian Brush Rabbit	FE	SE	-	Riparian forests with a dense understory shrub. If the forest canopy is closed, there is rarely adequate brush to support a population. There must be small clearings for the rabbits to bask in the sun and feed on a variety of herbaceous vegetation. They live in tunnels that run through vines and shrubs of low growing mats of California wild rose and Pacific blackberry. Associated species include wild grape, Douglas' coyote bush, and grasses.	Limited to San Joaquin County and northern Stanislaus County. Only two populations occurred at the time of listing, one at Caswell State Park and one at the Faith Ranch. Brushy riparian areas along the Old, Stanislaus, Tuolumne, and San Joaquin rivers, and brushy vegetation along Paradise Cut and Tom Paine Slough. Two rabbit carcasses were collected along the Middle River during March of 2017 .	**Highly unlikely to occur;** Valley oak riparian woodland documented within the BSA is limited. The project area is outside of the species' known range.
*Lasiurus blossevillii**	Western red bat	-	-	SSC	Roosts almost exclusively in trees, where their coloring helps them blend in among the leaves and branches. They prefer riparian habitats near water, and roost in sycamore, cottonwood, velvet ash, and elder trees. Can also be found in fruit and nut orchards, particularly in California's Central Valley.	Across western North America, ranging from southern Canada, through the western United States, down to Central America.	**May occur;** Valley oak riparian woodland adjacent to the project area provides adequate roosting locations while the nearby Sacramento River provides adequate foraging habitat and a large, open, slow-moving water source.

[1] Regulatory Status Definitions:

Federal Status Categories

FC = Listed as candidate under Federal Endangered Species Act
FE = Listed as endangered under the Federal Endangered Species Act
FT = Listed as threatened under Federal Endangered Species Act

California State Status Categories

SCE = Listed as candidate endangered under California Endangered Species Act
SE = Listed as endangered under California Endangered Species Act
ST = Listed as threatened under California Endangered Species Act

California Department of Fish and Wildlife (CDFW) Categories

FP = Fully Protected
SSC = Species of Special Concern
WL = Watch List

* Covered Species under the South Sacramento Habitat Conservation Plan (SSHCP) AND the BSA is within SSHCP modeled habitat for the identified species (County of Sacramento, et al. 2018).

CDFW = California Department of Fish and Wildlife
DPS = Distinct Population Segment
ppt = parts per thousand

Sources: CDFW 2020; CDFW 2022; County of Sacramento, et al. 2018;-Western Monarch and Milkweed Occurrence Database 2022

Critical Habitats

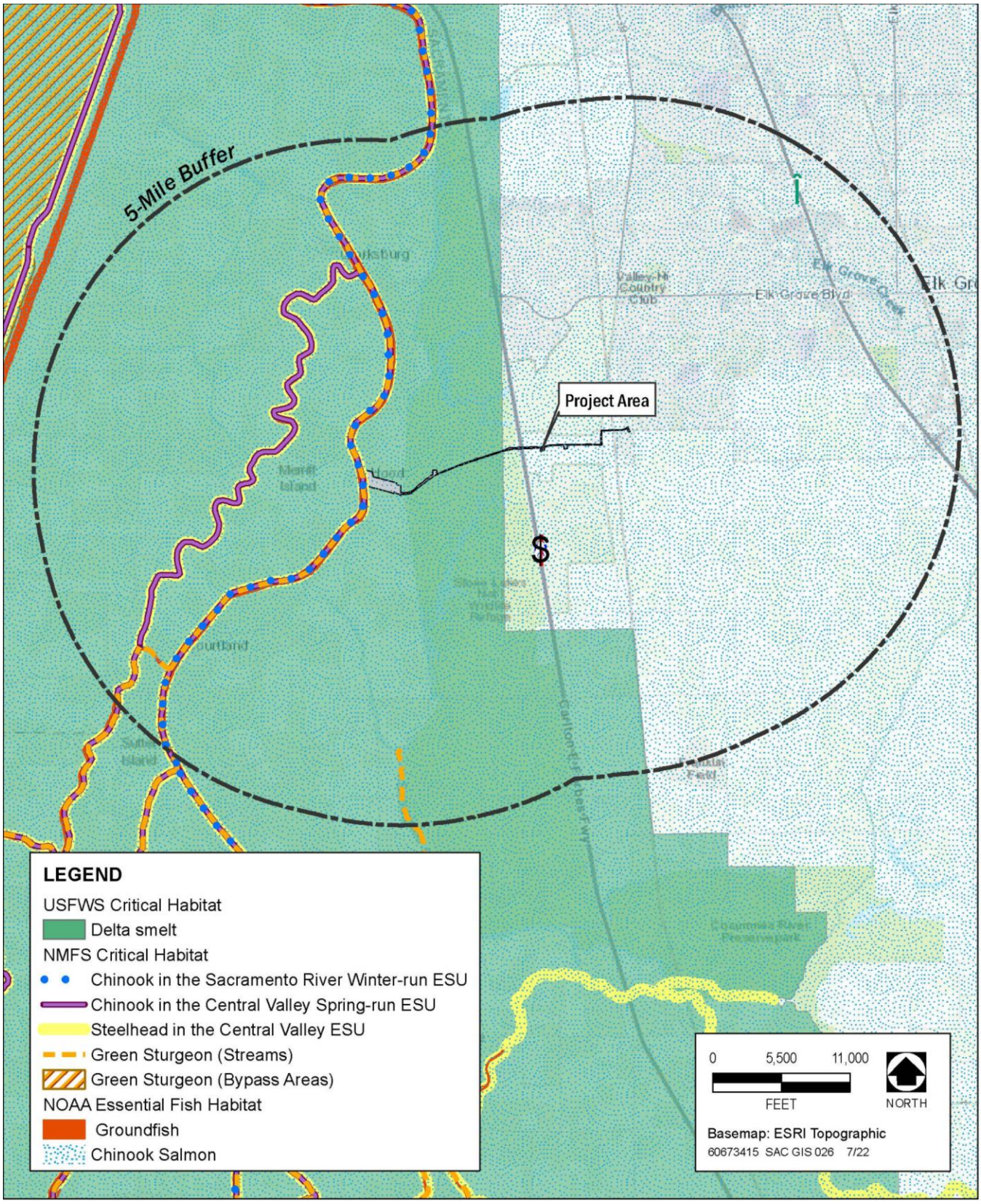
The USFWS designates critical habitats for species listed as threatened or endangered under the ESA. These habitats include specific geographic areas that contain features essential for the conservation of a threatened or endangered species and may include an area that will be needed for a species' recovery. Critical habitat for the Delta smelt (*Hypomesus transpacificus*) is designated in the Sacramento-San Joaquin Delta (USFWS 2020; NOAA 2009) (Exhibit 6). The project area is also located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat (EFH). Under the Magnuson-Stevens Act, EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." This aquatic habitat has been deemed as critical for the Chinook Salmon and Steelhead species survival.

Special-Status Plant Species

Public database searches resulted in 29 special-status plant species which required evaluation for their potential to occur within the project area or immediate vicinity (Table 2). Based on the results of the biological surveys and database searches, no special status plant species occur within BSA. Most special-status plant species evaluated depended upon alkaline soils, vernal pools, or perennial wetland habitats. While vernal pools and a variety of wetland habitats are present beyond the boundaries of the BSA, no vernal pools or alkali wetlands occur within the BSA. Roadway development, local roadway maintenance activities such as mowing, ditch clearing and fire prevention disking, residential development, and agricultural disturbances in the immediate vicinity of the BSA have contributed to poor quality habitat within the BSA that is unlikely to support special status species, however, a pre-construction species-specific plant survey would be necessary to determine presence / absence of those species denoted as "may occur" in Table 2 above. A special-status plants query of those species eligible for protection under the South Sacramento Habitat Conservation Plan (SSHCP), determined that the BSA is located within modeled habitat for both Sanford's arrowhead and legenere, both of which may occur in the vicinty of the waterway crossings, or the roadside ditches identified within the BSA.

Special-Status Fish and Wildlife Species

Public database searches resulted in 33 special-status wildlife species which required evaluation for their potential to occur within the project area or immediate vicinity (Table 3). Thirteen of these species are highly unlikely to occur in the BSA because either the project area is out of range of the species and/or habitat is absent due to roadway development and maintenance activiites such as ditch clearing, fire prevention disking, residential development, and agricultural distrubances. Giant garter snake and western pond turtles could occur in the Sacramento Drainage Canal and the unnamed Stone Lake channel, as could seven special-status fish species (steelhead, green sturgeon, Sacramento splittail, longfin smelt, Delta smelt, Sacramento River winter-run Chinook salmon and Central Valley spring-run chinook salmon). The BSA provides only marginal foraging and nesting habitat for special-status bird species, and the only special status wildlife species observed during the surveys were Swainson's hawk and white-tailed kite flyovers and were located in the vicinty of the Valley Oak Riparian Habitat. Other special-status wildlife species that may occur within the BSA include Monarch butterfly, American badger, and western red bat. Based on a query of those special-status wildlife species that may be eligible for coverage under the SSHCP, the BSA is located within modeled habitat for 16 species, which are indicated by an asterik in Table 3 (above). Of those which were returned by the query, only 4 are terestrial (western pond turtle, giant gartersnake, American badger, and western padefoot toad) and do have potential to cross the project area during construction activities. Many of the other species returned by the query are avian or bat species which may only occur as incidental landings or flyovers.



Source: USFWS 2020; NOAA 2009

Exhibit 7. Critical Habitat Map

Sensitive Habitats

Sensitive habitats are those that are of special concern to resource agencies or are afforded specific consideration through the State California Environmental Quality Act (CEQA) Guidelines, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, and the State's Porter-Cologne Act. Sensitive habitats may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species.

State or Federally Protected Wetlands and Waters
From a regulatory perspective, surface waters and their drainage or groundwater, including saline waters, streams (ephemeral, intermittent, and perennial), and many wetland features are all considered "Waters of the State" (WOTS) and are regulated under the Porter Cologne Act and Section 401 of the CWA. Man-made aquatic features, channels, ponds, and waterbodies that retain surface water are often considered WOTS. On the federal side, aquatic areas that also meet the regulatory definition of "Waters of the United States" are regulated further under Section 404 of the CWA. Project activities have been proposed within waterbodies / watercourses at two separate locations within the project area. Prior to the biological survey, AECOM biologists reviewed USGS quadrangle maps, the National Hydrogeography Dataset (USGS 2022), and current and historic Google Earth satellite imagery of the project area. Based on data review and the site reconnaissance surveys, jurisdictional wetland and water features do exist within the project area. Several man-made drainage ditches are present parallel to roadways within the project area, and the Sacramento Drainage Canal and the unnamed (Stone Lake) channel are considered waters of the United States, as well as waters of the state. A jurisdictional wetland and waterway delineation survey was conducted and the results have been detailed within a separate report.

Riparian Habitat
Riparian habitat is defined in the context of Section 1600 of the California Fish and Game Code. According to guidance provided in *A Field Guide to Lake and Streambed Alteration Agreements: Section 1600 Fish and Game Code*, the outer edge of riparian vegetation is a reasonable and identifiable boundary for the lateral extent of a stream, the protection of which results in preserving the fish and wildlife within a stream or drainage, and therefore may constitute the limits of CDFW jurisdiction along waterways. CDFW takes jurisdiction over riparian habitat pursuant to Section 1600 of the California Fish and Game Code.

The Sacramento Drainage Canal and the unnamed (Stone Lake) channel are not listed in the SSHCP as requiring minimum stream setbacks, since they are not within the Urban Development areas of the SSHCP (County of Sacramento, et al. 2018).

Sensitive Natural Communities
California natural communities are organized by CDFW and partner organizations, such as CNPS, based on vegetation-type classification and are ranked using the same system to assign global and state rarity ranks for plant and animal species in the CNDDB (CDFW 2019). CDFW considers natural communities ranked S1–S3 to be sensitive natural communities, to be addressed in the environmental review processes. No sensitive natural vegetation communities have been identified within the project area (CDFW 2022).

Impacts

The preferred construction plan for this project is proposed to take place entirely within the existing roadway or adjacent roadway ROWs. No riparian habitat or seasonal wetlands will be directly affected by construction activities because none occur within the project area. The selected staging locations occur within upland land cover habitats (i.e., developed, ruderal, and annual grassland) and these areas will be restored to their original topography and conditions after construction. In order to ensure that no special-status plant species may be present within the project area, a focused, species-specific pre-construction survey should be conducted within the appropriate blooming periods to identify and protect sensitive individuals (PLANT 1-2).

Construction activities may affect water resources and aquatic species which depend on them. The Sacramento Drainage Canal and the unnamed Stone Lake channel may support special-status fish species such as: adult and juvenile salmonids, Delta smelt, longfin smelt, green sturgeon and Sacramento splittail (see Table 3 above). The

identified Waters of the US are proposed to be crossed via HDD or bore and jack to avoid direct impacts to water quality and sensitive aquatic resources. HDD and bore and jack procedures bring the risk of a frac-out (the inadvertent return of drilling lubricant) which could adversely affect water quality and special-status fish species. Avoidance and minimization measures (AMM) HDD-1 refers to the preparation of a Frac-out Contingency Plan to avoid and minimize potential impacts relating to a frac-out.

All of the identified waterways within the BSA also provide suitable aquatic habitat for western pond turtle and giant garter snake, and the BSA overlaps with SSHCP modeled habitat for both of these species. No habitat for the western spadefoot toad is present within the BSA, however, vernal pools within the Stone Lakes National Wildlife Refuge north and south of the project area, may provide suitable habitat, and the project is located within modeled habitat for this species as well. Permanent impacts to these modeled habitats are highly unlikely due to the proposed project work activities occurring primarily within existing roadways. However, individuals of these species could potentially move through the work area and across roadways during construction activities and may be killed or injured by construction equipment, become trapped by steep-walled holes, trenches, or silt fencing, or become entangled in erosion control materials. The implementation of SSHCP AMMs, general best management practices, and AECOM provided AMMS such as (BMP)-6, BMP-7, BMP-8, and BMP-11; Western pond turtle (WPT)-1–3, WPT 5–9, western spadefoot toad (WS) 1-3 and giant garter snake (GGS) 1–10 would minimize or avoid these potential impacts.

Aquatic habitats both within and beyond the boundaries of the BSA may be impacted by construction dust, sedimentation, or erosion. These impacts can be minimized using only existing access roads to accommodate delivery of project components, implementation of BMPs and erosion control measures, and by appropriately stabilizing and minimizing any temporary stockpiles of construction materials or other construction wastes within the laydown and work areas. In addition, runoff of contaminants (e.g., fuel, lubricants) from construction vehicles and equipment could adversely affect aquatic habitats should an accidental spill or incident occur. Changes in hydrology due to construction-related changes in topography, soil infiltration capacity (i.e., compaction) or other hydrologic characteristics could also adversely affect adjacent seasonal wetlands and vernal pools, or the waterways within the BSA and those special-status species which depend on them. The project area is located within SSHCP modeled habitat for vernal pool species (see table 3, above), and while no wetlands or vernal pools were identified within the BSA, in rare cases, ephemeral roadside ditches may contain these sensitive individuals. Because project work is proposed within the existing roadway, these habitats are highly unlikely to be disturbed, however, erosion control measures are necessary to ensure their protection. Wildlife and plant species are also vulnerable to the spread of non-native invasive weeds, compaction of soils, disturbance (from noise and lighting, ground vibration, foot traffic, and construction equipment), and an increased risk of roadkill. Implementation of BMPs 1 – 10 and low impact development (LID) 1-2 from the SSCHP (County of Sacramento, et al. 2018) would avoid / minimize these potential impacts.

No construction impacts are proposed to nests of migratory birds and raptors (e.g., Swainson’s hawk, white-tailed kite, Cooper’s hawk, tricolored blackbird, loggerhead shrike, burrowing owl) because no trees, shrubs or wetland habitat is proposed for removal, and the work activities are proposed to occur primarily within the roadway edge and in developed / residential parcels. However, if construction activities were to occur in the vicinity of nests located near but not within the work area such activities could disturb and disrupt nesting activities and potentially result in nest abandonment. Implementation of SSHCP AMMs RAPTOR 1–3; SWHA 1–4; TCB 1–3 described below would avoid / minimize potential impacts to special-status bird species and other nesting migratory birds, including those for which modeled habitat has been identified by the SSHCP within the BSA (see table 3, above).

No tree removal or trimming is anticipated as part of this project and therefore, no habitat for bats will be affected including those bat species for which the SSHCP has identified modeled habitat within the BSA (western red bat, Yuma myotis). The SSHCP also identified modeled habitat for the American badger within the BSA, however no dens were identified within the BSA during the surveys. Due to the nature of the project’s proposed work area consisting of primarily existing roadway, no den habitat is likely to be impacted. However, individuals have been observed in the vicinity of the project area (CDFW 2022) and are therefore at risk for potential roadkill. BMP-10 addresses a construction area speed limit which will significantly reduce the possibility of this impact. Milkweed, the host plant for Monarch butterflies, was detected within the BSA during the surveys. To avoid impacts to this species a milkweed plant species a preconstruction survey will be performed prior to the start of construction and if necessary non-disturbance buffers will be established (MON-1).

State or Federally Protected Wetlands and Waters

The project area contains aquatic resources (Exhibit 8). These features may meet the USACE definition of a "Water of the United States" (Section 404 of the Clean Water Act) and therefore are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for impacts to waters of the United States. An aquatic resources survey and wetland delineation has been conducted by AECOM wetland scientists to determine the exact locations and extents of potential wetlands and other waterways. The results of this investigation have been provided within a separate report (. This survey and the associated report are intended to provide the information needed to avoid / minimize potential direct or indirect impacts on wetlands or other waters of the United States during project planning and construction. The project will be required to comply with all applicable SSHCP AMMs to avoid and minimize impacts to water quality (i.e., LID-1, and LID-3) and to implement construction BMP to control erosion and dust (i.e., BMP-1, BMP-2, BMP-3, BMP-4, BMP-5, BMP-9, BMP-10, and BMP-11) (Sacramento County, et al. 2018). Additional coordination with federal, state, and local regulatory agencies will likely be required for those activities which will take place within the extents of wetlands or waterbodies. A USACE permit would be required for any activity which could result in temporary fill or dredging within the waterways but is not likely to be required if the HDD and bore and jack crossing methods avoid all activities that could result in fill or dredging. A CDFW Lake and Streambed Alteration Agreement is likely to be necessary for the proposed waterway crossings.

Recommended Avoidance and Minimization Measures

BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads).

BMP-2 (Erosion Control): Sacramento County or its contractor will install temporary control measures for sediment, stormwater, and pollutant runoff. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any activity that disturbs soils with support stakes installed in such a way as to provide wildlife with a means of eggress out of the project area.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed and will be of appropriate design and materials that will not entrap wildlife (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

BMP-3 (Equipment Storage and Fueling): Sacramento County will ensure that equipment storage and staging will occur in the development footprint only. Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

If project activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway.

BMP-4 (Erodible Materials): Erodible materials will not be deposited into waterways, and vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

BMP-5 (Dust Control): Sacramento County will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

BMP-6 (Construction Lighting): Sacramento County will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas.

Exhibit 8. Aquatic Features

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BMP-7 (Training of Construction Staff): A mandatory Worker Environmental Awareness Program will be conducted by a qualifed biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training will include how to identify special-status species that might enter the construction site, relevant life history information and habitats, the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a special-status species is encountered. Supporting materials containing training information will be prepared and distributed by the biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures.

BMP-8 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

BMP-9 (Revegetation): Any cut-and-fill slopes will be revegeated with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions.

BMP-10 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

HDD-1 (Frac-out Contingency Plan). Sacramento County will prepare a Frac-Out Contingency Plan (Plan) with measures designed to minimize the potential for a frac-out associated with horizontal directional drilling. The Plan will also describe measures for timely detection of frac-outs, protect areas that are considered environmentally sensitive (streams, wetlands, other ecological resources, cultural resources), and ensure an organised, timely, and “minimum-impact” response in the event a frac-out and release of drilling mud occurs.

LID-1 (Stormwater Quality): If the size of project construction activity exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include natural site features (LID-3).

LID-2 (Natural Site Features): Sacramento County will incorporate preservation of a site’s natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain wildlife habitat values.

PLANT-1 (Rare Plant Surveys): An approved biologist will conduct surveys for Sanford’s arrowhead, Mason’s lileopsis and legenere limosa following CDFW protocol, *Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) or the most recent CDFW rare plant survey protocols.

PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by construction or is detected within 250 feet of the area proposed to be disturbed by a construction, Sacramento County will establish an appropriate non-disturbance buffer to protect the rare plant occurrence during construction.

MON-1 (Monarch Butterfly Milkweed Survey): A pre construction survey will be conducted to identifiy milkweed (*Asclepias* sp.) plants within the project area which may support the Monarch Butterfly or larvae. These indiviuals or areas of multiple individtuals will be flagged for protection within the project area and an appropriate exclusion zone will be enforced to prevent accidental vegetation damage or removal.

WS-1 (Avoid Western Spadefoot Entrapment): All excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever

occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-3, below.

WS-2 (Erosion Control Materials in Western Spadefoot Habitat): Non-entangling erosion control material will be used to reduce the potential for entrapment of western spadefoot. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WS-3 (Western Spadefoot Encounter Protocol): If construction activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the CDFW and USFWS immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to CDFW and USFWS. The biologist will report any take of listed species to the USFWS and CDFW immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist

WPT-1 (Western Pond Turtle Surveys): If ground-disturbing construction activities are proposed within 300 feet of delineated aquatic habitat, a qualified biologist will conduct a field investigation to assess the potential for western pond turtle presence. Locations of delineated western pond turtle habitat, and individual observations will be noted on plans and used to finalize project design.

WPT-2 (Western Pond Turtle Work Window): Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, Sacramento County will consult CDFW for guidance on any additional measures needed to minimize impacts on western pond turtles.

WPT-3 (Western Pond Turtle Monitoring): If construction activities will occur within 300 feet of potential WPT aquatic habitat, a qualified biologist experienced with western pond turtle identification and behavior will monitor the project area, including the integrity of any exclusion fencing. The biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project area daily for western pond turtle prior to construction activities. The biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone (i.e., outside the buffer zone).

WPT-5 (Avoid Western Pond Turtle Entrapment): If construction activities occur within 300 feet of potential WPT aquatic habitat, excavated steep-walled holes and trenches more than 6 inches deep in this area will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the qualified biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within 300 feet of Franklin Creek will be inspected for western pond turtle by the qualified prior to being moved.

WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat): If erosion control (BMP-2) is implemented 300 feet of potential WPT aquatic habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar

material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit): Construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within of 300 feet of all potential WPT aquatic habitat.

WPT-8 (Western Pond Turtle Encounter Protocol): If a western pond turtle is encountered during construction activities, the biologist will notify CDFW within 24 hours of detection. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project area on its own volition. If necessary, the qualified biologist will notify CDFW to determine the appropriate procedures related to relocation. Any worker who inadvertently injures, kills, or otherwise harasses a western pond turtle, or who finds one dead, injured, or entrapped must immediately report the incident to a qualified biologist.

WPT-9 (Western Pond Turtle Post-Construction Restoration): After completion of ground disturbing construction activities, Sacramento County will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands.

GGS-1 (Giant Gartersnake Surveys): An approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project area and adjacent areas within 300 feet of the project area. Sacramento County will use this information to finalize project design.

GGS-2 (Giant Gartersnake Work Window): Construction activities that do not fully avoid giant gartersnake modeled habitat will be conducted during the snake's active season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15.

GGS-3 (Giant Gartersnake Monitoring): An approved biologist experienced with giant gartersnake identification and behavior will monitor the project area, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project area daily for giant gartersnake prior to construction activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

GGS-5 (Avoid Giant Gartersnake Entrapment): If construction occurs in giant gartersnake modeled habitat all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps at an angle of no more than 30 degrees constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

GGS-6 (Erosion Control Materials in Giant Gartersnake Habitat): If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

GGS-7 (Giant Gartersnake Encounter Protocol): If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project area on its own volition. If necessary, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat

description, and any corrective measures taken to protect the giant gartersnake within 1 business day to CDFW and USFWS. The biologist will report any take of listed species to CDFW and USFWS immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist. Any giant gartersnake observed during construction activities will be allowed to move away from danger on its own or be moved by the approved biologist with CDFW and USFWS approval to handle the snake.

GGS-8 (Giant Gartersnake Post-Construction Restoration): After completion of ground-disturbing activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with an appropriate native seed mix. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis.

GGS-10 (Giant Gartersnake Pre-construction Surveys): If construction activities will occur within 200 feet of modeled giant gartersnake aquatic habitat, the approved biologist(s) shall conduct one pre-construction survey within 24 hours prior to beginning ground disturbing activities. The approved biologist(s) shall investigate all small mammal burrows within suitable upland habitat. The project area will be resurveyed whenever there is a lapse in construction activity of two weeks or more.

RAPTOR-1 (Raptor Pre-Construction Surveys): Pre-construction surveys will be required to determine if active raptor nests are present with a project area or within 500 feet of the project area if construction activities will occur during the raptor breeding season. A qualified biologist will conduct pre-construction surveys within 30 days and 3 days of grounddisturbing activities within the proposed project area and within 500 feet of the proposed project areato determine presence of nesting raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-2 and RAPTOR-3 will be implemented.

RAPTOR-2 (Raptor Nest/Roost Buffer): If active nests are found within the project area or within 500 feet of any project-related construction activity, Sacramento County will establish a temporary nest disturbance buffer around the active nest until the young have fledged. A 500-foot exclusion zone shall be established around the nest in which no work will be allowed until the young have successfully fledged or nesting activity has ceased. The determination of fledging or cessation of nesting will be made by a qualified biologist with experience in nest searching and monitoring for raptors. In consultation with CDFW, the size of the exclusion zone may be modified depending on the species and the type of construction activity and associated disturbance anticipated near the nest. Active nests will be monitored periodically throughout the nesting season to identify any sign of disturbance and to document nest status.

RAPTOR-3 (Raptor Nest/Roost Buffer Monitoring): If project-related constructon activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then Sacramento County will retain a qualified biologist experienced with raptor behavior to monitor the nest throughout the nesting season and to determine when the young have fledged. The biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, and Sacramento County, will consult with CDFW to determine the best course of action to avoid nest abandonment or take of individuals. The biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

SWHA-1 (Swainson's Hawk Surveys): A qualified biologist will conduct Swainson's hawk surveys in the project area and within 0.25 miles from the project area boundaries. Surveys will be conducted in accordance with the guidance described in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000), Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project area or within 0.25 mile of a project area if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). A qualified biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented.

SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project areaor within 0.25 mile of any project-related construction activity, Sacramento County will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged. The size of the exclusion zone may be modified in consultation with CDFW depending on the type of construction activity and associated disturbance anticipated near the nest.

SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project area or within 0.25 mile of any project-related activity, then qualified biologist experienced with Swainson's hawk behavior will be retained by Sacramento County to regularly monitor the nest and to determine when the young have fledged. The qualified biologist will be on site daily while construction-related activities are taking place within the buffer. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, and Sacramento County will consult with CDFW to determine the best course of action to avoid nest abandonment or take of individuals. The qualified biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

TCB-1 (Tricolored Blackbird Pre-Construction Surveys): If construction activities will occur within 500 feet of the seasonal marsh habitats in and surrounding the Franklin Creek channel during the breeding season (March 1 through September 15) a pre-construction survey will be conducted for tricolored blackbird nesting activity. A qualified biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, within the proposed project area and 500 feet of the proposed project area to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-2 and TCB-3 will be implemented.

TCB-2 (Tricolored Blackbird Nest Buffer): If active nests are found within the project area or within 500 feet of any project-related consruction activity, Sacramento County will establish a 500-foot temporary buffer around the active nest until the young have fledged.

TCB-3 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project area or within 500 feet of any project-related construction activity, then a qualified biologist experienced with tricolored blackbird behavior will monitor the nest throughout the nesting season and to determine when the young have fledged. The biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. If the biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with CDFW will be held to determine the best course of action to avoid nest abandonment or take of individuals. The biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone.

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Appendix A Plant and Animal Species Observed

Table A-1. Wildlife Species Observed in the Hood Septic Conversion Biological Study Area

Common Name	Scientific Name	Observation Notes
American Crow	*Corvus brachyrhynchos*	Flocks in large trees in the morning and foraging throughout site during the day
American Bull Frog	*Lithobates catesbeianus*	Auditory ID while standing under bridge at unnamed Stone Lake Channel (July 2022)
Barn Swallow	*Hirundo rustica*	Nesting under bridge at unnamed Stone Lake channel (July 2022)
Western Fence Lizard	*Sceloporus occidentalis*	Throughout BSA
Yellow-billed magpie	*Pica nutalli*	Valley oak riparian habitat
Muskrat	*Ondatra zibethicus*	Swimming with the channel parallel to Hood-Franklin Road that drains into the unnamed Stone Lake channel
Red-shouldered Hawk	*Buteo lineatus*	Roosting in sycamore tree next to Hood Ranch Kitchen parking lot in the morning
White-tailed Kite	*Elanus leucurus*	Roosting in crown of redwood tree in backyard of house in western portion of neighborhood in the morning (July 2022)
House Sparrow	*Passer domesticus*	Flocks in bushes and building eaves of antique store
European Starling	*Sturnus vulgaris*	Flocks in trees and along power lines in morning hours
Eurasian Collared Dove	*Streptopelia decaocto*	Auditory ID only
Northern Flicker	*Colaptes auratus*	Auditory ID only
California Towhee	*Melozone crissalis*	Auditory ID only
White-crowned Sparrow	*Zonothrichia leucophrys*	Flocks foraging throughout site
fox squirrel	*Sciurus niger*	Several observed in residential yards throughout site
Red-tailed Hawk	*Buteo jamaicensis*	Roosting in cottonwood tree in riparian habitat along Sacramento River levee
Bushtit	*Psaltriparus minimus*	Flocks foraging throughout site
Anna’s Hummingbird	*Calypte anna*	Auditory ID only
California Scrub Jay	*Aphelocoma californica*	Flocks foraging throughout site
American Robin	*Turdus migratorius*	Foraging along orchard edges
Nuttall’s woodpecker	*Picoides nuttallii*	Foraging in oaks along northern project boundary
Brewer’s Blackbird	*Euphagus cyanocephalus*	Large flock in trees along northeastern project area
Turkey Vulture	*Cathartes aura*	Flyover

ID = identification

Table A-2. Plant Species Observed in the Hood Septic Conversion Project Area

Vegetation Community	Plant List	
	Common Name	Scientific Name
Ruderal Edges of parking areas, ditches, and vacant lots	white horehound	*Marrubium vulgare*
	woolly mullein	*Verbascum Thapsus*
	California poppy	*Eschscholzia californica*
	johnsongrass	*Sorghum halepense*
	filaree	*Erodium* sp.
	milk thistle	*Silybum marianum*
	fennel	*Foeniculum vulgare*
	foxtail barley	*Hordeum murinum*
	black mustard	*Brassica nigra*
	scarlet pimpernel	*Lysimachia arvensis*
	cheeseweed	*Malva parviflora*
	artichoke thistle	*Cynara cardunculus*
	daffodil	*Narcissus pseudonarcissus*
Developed - Residential Single family residences; shops; restaurant; storage areas; fire station; streetscapes	coast redwood	*Sequoia sempervirens*
	mastic tree	*Pistacia atlantica*
	Lombardy poplar	*Populus nigra*
	palm	*Phoenix* sp.
	western sycamore	*Platanus racemose*
	valley oak	*Quercus lobata*
	sweetgum	*Liquidambar styraciflua*
	mulberry	*Morus alba*
	European white birch	*Betula pendula*
	orange tree	*Citrus* x *sinensis*
	lemon tree	*Citrus limon*
	southern magnolia	*Magnolia grandiflora*
	London plane	*Platanus* x *acerifolia*
	Italian stone pine	*Pinus pinea*
	Italian cypress	*Cupressus sempervirens*
	camphor	*Cinnamomum camphora*
	interior live oak	*Quercus wislizeni*
	eucalyptus	*Eucalyptus* sp.
	privet	*Ligustrum* sp.
	apple	*Malus* sp.
	tree of heaven	*Ailanthus altissima*
	pomegranate	*Punica granatum*
Valley Oak Riparian Woodland Southern BSA along waterway	valley oak	*Quercus lobata*
	Himalayan blackberry	*Rubus armeniacus*
	almond	*Prunus dulcis*
	red willow	*Salix laevigata*
	California wild rose	*Rosa californica*
	California grape	*Vitis californica*
	poison hemlock	*Conium maculatum*
Riparian Forest Along Sacramento River levee; very steep, narrow slopes, and very little understory vegetation	Fremont cottonwood	*Populus fremontii*
	valley oak	*Quercus lobata*
	black locust	*Robinia pseudoacacia*

Vegetation Community	Plant List	
	Common Name	Scientific Name
Aquatic Habitats and Roadside Drainages	Hemp dogbane	*Apocynum cannabinum*
	California damsonium	*Damasonium californicum*
	Spikerush	*Eleocharis macrostachya*
	Western Marsh Cudweed	*Gnaphalium palustre*
	Perennial pepper weed	*Lepidium latifolium*
	Water smartweed	*Persicaria amphibia*
	Curly dock	*Rumex crispus*
	Rough Cocklebur	*Xanthium strumarium*
	Mugwort	*Artemisia douglasiana*
	Tall cyperus	*Cyperus eragrostis*
	Water hyacinth	*Eichhornia crassipes*
	Common spikerush	*Eleocharis macrostachya*
	Fringed willowherb	*Epilobium ciliatum ssp. ciliatum*
	Pacific rush	*Juncus effusus*
	Tule	Schoenoplectus sp.
	Broad-leaved cattail	*Typha latifolia*
	Cocklebur	*Xanthium strumarium*
Annual Grassland – Pasture, Uplands North and South of BSA, adjacent to wetland habitats	Russian thistle	*Salsola tragus*
	field mustard	*Hirschfeldia incana*
	black mustard	*Brassica nigra*
	Wild oat	*Avena fatua*
	Ripgut brome	*Bromus diandrus*
	Soft chess	*Bromus hordeaceus*
	Italian thistle	*Carduus pycnocephalus*
	Yellow starthistle	*Centaurea solstitalis*
	Turkey-mullein	*Croton setigerus*
	Bermuda grass	*Cynodon dactylon*
	Flax-leaved horseweed	*Erigeron bonariensis*
	Italian rye grass	*Festuca perennis*
	Mustard	*Hirschfeldia incana*
	Prickly lettuce	*Lactuca serriola*
	Osage-orange	*Maclura pomifera*
	Wild radish	*Raphanus sativus*
	Curly dock	*Rumex crispus*
	Italian thistle	*Carduus pycnocephalus*
	Fennel	*Foeniculum vulgare*
	Wall barley	*Hordeum murinum*

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Appendix B Representative Site Photos

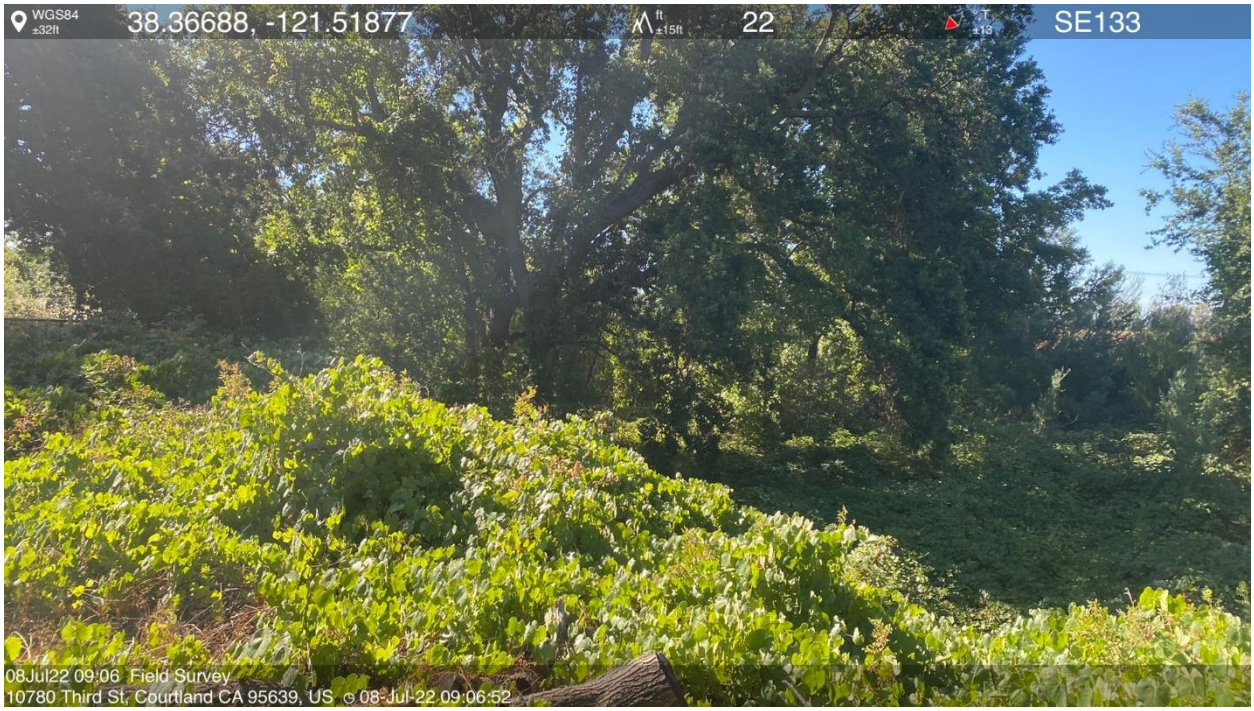

Photo 1. Valley Oak Riparian Habitat

Photo 2. Developed Lot

Photo 3. Highway 160

Photo 4. Ruderal and Pasture Habitat

Photo 5. Almond Orchard

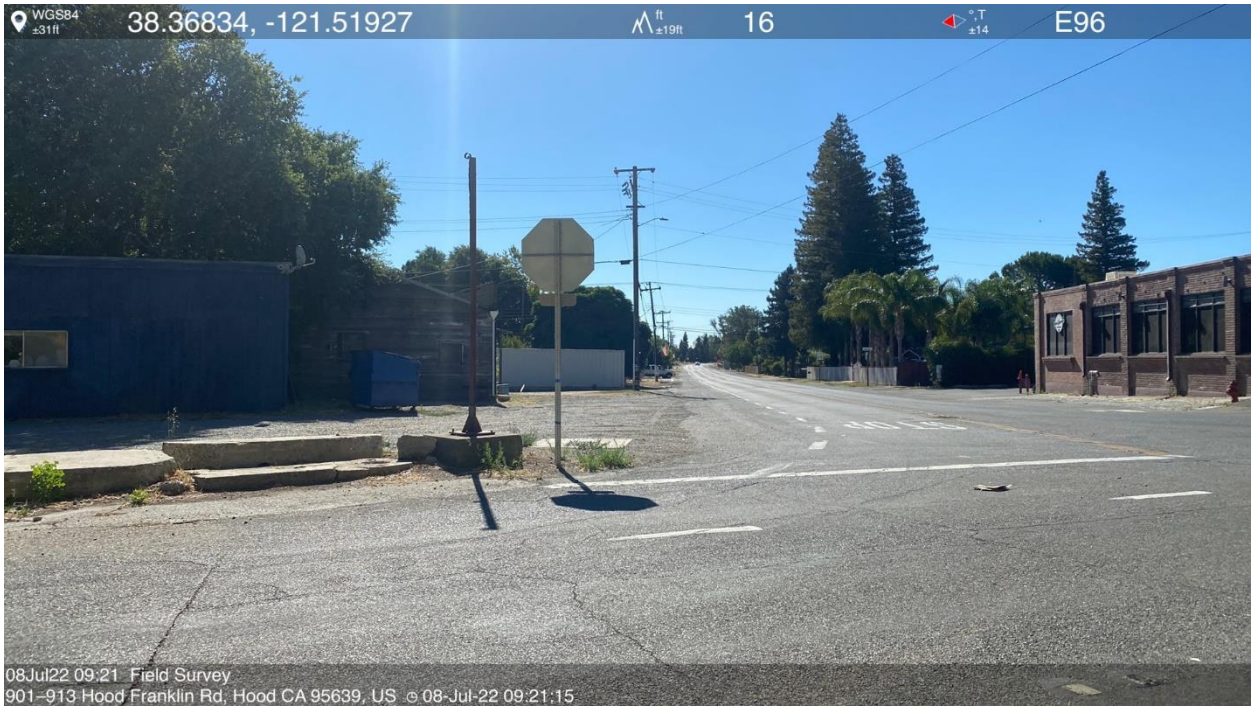

Photo 6. Hood-Franklin Road

Photo 7. Disked lot – Annual Grassland

Photo 8. Residential

Photo 9. Unnamed Stone Lake Channel, Hood-Franklin Road

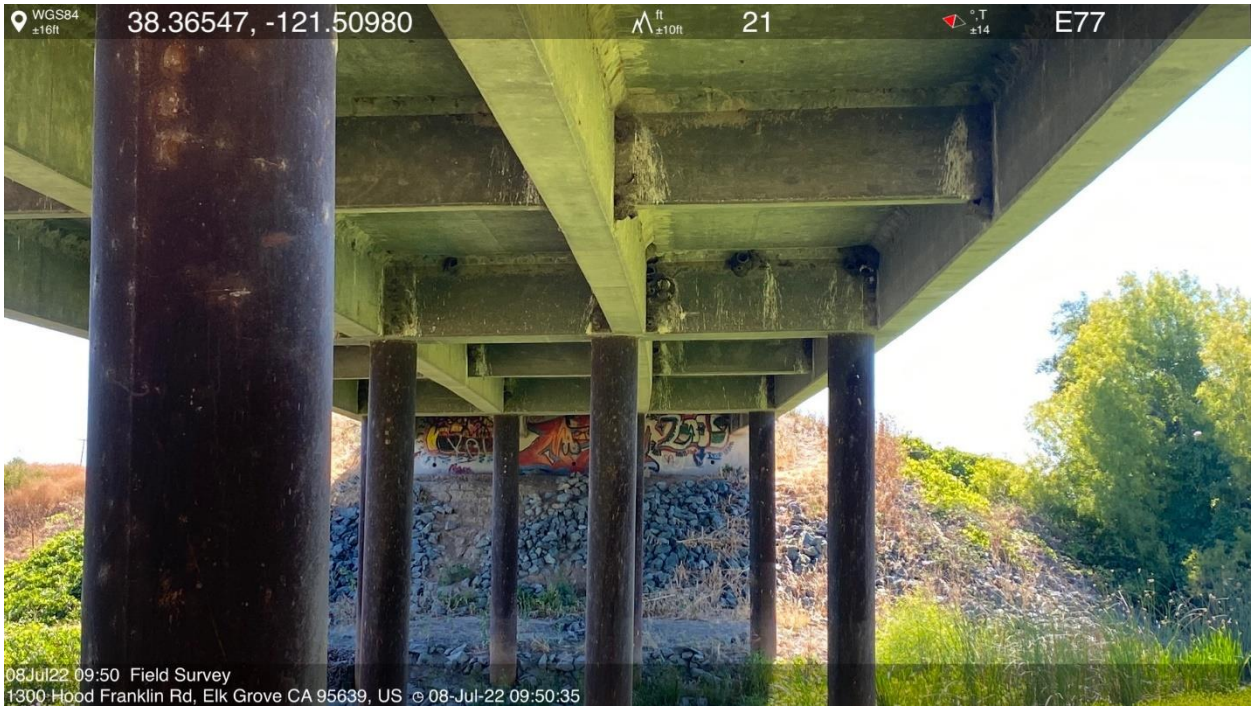

Photo 10. Unnamed Stone Lake Channel, Hood-Franklin Road Bridge (nesting swallows)

Photo 11. Annual Grassland

Photo 12. Roadside Ephemeral Drainage

Photo 13. Irrigation channel that is hydrologically connected to the unnamed Stone Lake channel

Photo 14. Annual grassland and mesic vernal habitat beyond BSA extents

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