HELIX
Environmental Planning

Winding Ranch Project

Biological Resources Assessment

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ACRONYMS AND ABBREVIATIONS

2012 Staff Report	CDFW Staff Report on Burrowing Owl Mitigation
BRA	Biological Resources Assessment
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSA	California Special Animals
CWA	Clean Water Act
DBH	diameter at breast height
FESA	Federal Endangered Species Act
FS	Forest Service
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
IPaC	Information for Planning and Consultation
ISA	International Society of Arboriculture
MBTA	Migratory Bird Treaty Act
MSL	mean sea level
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
OHWM	ordinary high water mark
PER	Planning and Environmental Review
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SSC	Species of Special Concern
SWRCB	State Water Resources Control Board
TPZ	tree protection zone

ACRONYMS AND ABBREVIATIONS (cont.)

USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

This report presents the updated biological assessment conducted on June 1, 2022 by HELIX Environmental Planning, Inc. (HELIX) biologists In response to the expansion of the Winding Ranch Project, located within the unincorporated community of Carmichael in Sacramento County, California. For the purposes of this report, the Winding Ranch Project will hereafter be referred to as Project. The Project is bounded by two major roads on the north and west, Winding Way and Manzanita Avenue, respectively, and by residential development on the east and south.

The purpose of this document is to describe baseline conditions on the parcel and to summarize the general biological resources occurring or potentially occurring on the site, to assess the suitability of the site to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required prior to development activities occurring on the site.

The 24.80-acre parcel (Study Area) is comprised of ruderal herbaceous habitat that has been historically altered, including canals and ditches to convey water, developed and disturbed areas including a parking and gravel lot, and mixed oak woodland. The Study Area contains 20.033 acres of ruderal herbaceous habitat, 3.407 acres of developed/disturbed areas, 1.164 acres of mixed oak woodland, 0.165 acre of seasonal wetland ditches with intermittent surface flow and an ordinary highwater mark, and 0.035 acre of ditches and canals. Surrounding land uses include a defunct bowling alley, high-density apartment buildings, and single-family homes.

Known or potential biological constraints in the Study Area include:

- Potential habitat for special-status plants: Sanford's arrowhead (*Sagittaria sanfordii*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), and stinkbells (*Fritillaria agrestis*);
- Potential roosting and foraging habitat for special-status bats including pallid bat (*Antrozous pallidus*);
- Potential foraging habitat for tricolored blackbird (*Agelaius tricolor*);
- Potential habitat for western burrowing owl (*Athene cunicularia*);
- Potential nesting habitat for Swainson's hawk (*Buteo swainsoni*);
- Potential foraging and/or nesting habitat for special-status birds including Cooper's hawk (*Accipiter cooperi*), merlin (*Falco columbarius*), purple martin (*Progne subis*), song sparrow ("Modesto" population) (*Melospiza melodia*), and white-tailed kite (*Elanus leucurus*);
- Potential habitat for special-status invertebrates including andrenid bee (*Andrena subapasta*) and Crotch bumble bee (*Bombus crotchii*);
- Potential habitat for other migratory birds and other birds of prey protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Codes; and
- Sensitive habitats including jurisdictional aquatic resources and oak woodland habitat.

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1.0 INTRODUCTION

This report summarizes the findings of a Biological Resources Assessment (BRA) completed by HELIX for the 24.80-acre Winding Ranch Project Study Area located within the unincorporated community of Carmichael in Sacramento County, California. This document addresses the onsite physical features, plant communities present, and the common plant and wildlife species occurring or potentially occurring in the Study Area. Furthermore, the suitability of habitats in the Study Area to support special-status species and sensitive habitats is analyzed, and recommendations are provided for any regulatory permitting or further analysis required prior to development activities occurring on the site.

1.1 PROJECT DESCRIPTION

The project proponent is proposing development of a new retail and multi-family residential development that will necessitate mass grading of the site and the fill of all on-site aquatic resources to accommodate a commercial/retail center with the required parking, infrastructure, and other local requirements for this type of development.

2.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. Applicable CEQA significance criteria are also addressed in this section.

2.1 FEDERAL REGULATIONS

2.1.1 Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3) (19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

In the context of the proposed Project, FESA consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) would be initiated if development resulted in the potential for take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

2.1.2 Migratory Bird Treaty Act

Raptors, migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

2.1.3 The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "*take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof.*" Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "*to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.*"

2.2 STATE JURISDICTION

2.2.1 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species. It also directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

As with FESA, for covered projects that may impact state-listed species under CESA that are also covered species under the PCCP, direct consultation with CDFW for state-listed take authorization is not required as long as the covered project complies with PCCP requirements. For projects that may result in take of state-listed species that are not PCCP covered species, CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

2.2.2 California Department of Fish and Game Codes

A number of species have been designated as "Fully Protected" species under Sections 5515, 5050, 3511, and 4700 of the Fish and Game Code (FGC) but are not listed as endangered (Section 2062) or threatened (Section 2067) species under CESA. Except for take related to scientific research, all take of fully protected species is prohibited. The California Fish and Game Code defines take as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*" Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests.

2.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate plants as rare or endangered. The NPPA prohibits take of endangered or rare native plants, with some exceptions for agricultural and nursery operations and emergencies. Vegetation removal from canals, roads, and other sites, changes in land use, and certain other situations require proper advance notification to CDFW.

2.3 JURISDICTIONAL WATER

2.3.1 Federal Jurisdiction

Unless considered an exempt activity under Section 404(f) of the Federal Clean Water Act, any person, firm, or agency planning to alter or work in "waters of the U.S.," including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403). Activities exempted under Section 404(f) are not exempted within navigable waters under Section 10.

"Waters of the U.S." are defined as: "All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; the territorial sea; or wetlands adjacent to these waters (33 Code of Federal Regulations [CFR] Part 328)."

Within non-tidal waters that meet the definition cited above and, in the absence of adjacent wetlands, the indicator used by the USACE to determine the lateral extent of its jurisdiction is the ordinary high water mark (OHWM) – the line on the shore established by fluctuations of water and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, and/or the presence of litter and debris.

Wetlands are defined under the CFR Part 328.3 as those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The USACE has determined that not all features which meet the wetland definition are, in fact, considered to be waters of the U.S. Normally, features not considered as waters of the U.S. include (a) non-tidal drainage and irrigation ditches excavated on dry land; (b) artificially irrigated areas which would revert to upland if the irrigation ceased; (c) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing, (d) artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons, and (e) waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (see 33 CFR 328.3(a)). Other features may be excluded based on Supreme Court decisions (e.g., SWANCC and Rapanos) or by regulation.

Federal and state regulations pertaining to waters of the U.S., including wetlands, are discussed below.

The Clean Water Act (33 United States Code (USC) 1251-1376) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. obtain a state certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California and may require State Water Quality Certification before other permits are issued.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there were no practicable alternative that would have less adverse impacts.

2.3.2 State Jurisdiction

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by Section 401 of the Federal CWA. Although the CWA is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE permits for fill and dredge discharges within Waters of the United States, and now also implements the State's wetland protection and hydromodification regulation program under the Porter Cologne Water Quality Control Act.

On May 28, 2020, the SWRCB implemented the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) for inclusion in the forthcoming Water

Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California (SWRCB 2019). The Procedures consist of four major elements:

I. A wetland definition;
II. A framework for determining if a feature that meets the wetland definition is a water of the state;
III. Wetland delineation procedures; and
IV. Procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

Under the Procedures and the State Water Code (Water Code §13050(e)), "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the State" includes all "Waters of the U.S."

More specifically, a wetland is defined as: "*An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation*." The wetland definition encompasses the full range of wetland types commonly recognized in California, including some features not protected under federal law, and reflects current scientific understanding of the formation and functioning of wetlands (SWRCB 2019).

Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to Waters of the State, which includes Waters of the U.S. and non-federal Waters of the State, requires filing of an application under the Procedures.

2.3.2.1 California Department of Fish and Wildlife

CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over four inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends applying for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

2.4 CEQA SIGNIFICANCE

Section 15064.7 of the State CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study Checklist included in Appendix G of the State CEQA Guidelines. Appendix G provides

examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

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

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;

- Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish or result in the loss of an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

The PCCP has conducted an analysis under CEQA of the impacts to covered species that will result from implementation of the PCCP and determined that covered projects that comply with PCCP requirements and mitigation measures will have a less than significant impact on PCCP covered species.

2.4.1 California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS Rare Plant Ranking System:

Rank 1A: Plants presumed Extinct in California and either rare or extinct elsewhere

Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

Rank 2A: Plants presumed extirpated in California but common elsewhere

Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – A Review List

Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA. Furthermore, the CNPS Rare Plant Rankings include levels of threat for each species. These threat ranks include the following:

0.1 - Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat);

0.2 - Moderately threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); and

0.3 - Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

Threat ranks do not designate a change of environmental protections, so that each species (i.e., CRPR 1B.1, CRPR 1B.2, CRPR 1B.3, etc.), be fully considered during preparation of environmental documents under CEQA.

2.4.2 California Department of Fish and Wildlife Species of Concern

Additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA and CESA or listed as fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to "Species of Special Concern" (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB) but warrant no legal protection. These species are identified as "California Special Animals" (CSA).

2.5 SACRAMENTO COUNTY POLICIES AND REGULATIONS

In addition to federal and state regulations, the *County of Sacramento General Plan* (General Plan) (County of Sacramento 2017) includes goals and policies regarding biological resources including, Vegetation and Wildlife, Aquatic Resources, and Terrestrial Resources. Complete descriptions of applicable sections of these goals and policies are provided in Appendix A.

2.5.1 Sacramento County Tree Preservation and Protection Policies

Sacramento County regulates removal and impacts of protected trees under the Tree Preservation Ordinance (Tree Ordinance), Chapter 19.12 of the County Code. Under the Ordinance, all native oak trees, defined as valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus morehus*), with at least one trunk of six inches or more in diameter at breast height or an aggregate diameter of ten inches or more for multi-trunk trees, are protected. The Ordinance also gives special consideration to Landmark Trees, which are prominent or stately trees of

any species that are in good health and structural condition, and Heritage Trees, which are any native oak with a trunk diameter of 19 inches or larger.

In addition, as part of the environmental review process, the Sacramento County Community Development Department, Planning and Environmental Review considers both the removal of certain native and non-native trees and the encroachment of construction activities into the protected zones of these trees. Native trees are defined as native oaks, Northern California black walnut (*Juglans hindsii*), California sycamore (*Platanus racemosa*), Oregon ash (*Fraxinus latifolia*), Goodding's black willow (*Salix gooddingii*), California box elder (*Acer negundo* var*. californicum*), California buckeye (*Aesculus californica*), and white alder (*Alnus rhombifolia*) with a trunk diameter of four inches or greater.

The *Sacramento County General Plan* establishes a goal of protecting both oaks and other non-oak native species. Policy CO-139 provides that non-oak native trees which cannot be protected through preservation should be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. For impacts to non-native trees, Policy CO-145 requires that removal of non-native tree canopy shall be mitigated by creating equivalent canopy on-site (Sacramento County 2018a).

2.5.2 Swainson's Hawk Impact Mitigation Program

During the environmental review process, the Sacramento County Office of Planning and Environmental Review (PER) determines if the project will impact Swainson's Hawk foraging habitat. Impacts to foraging habitat may result from (1) parcel size reduction of lands designated as agricultural; (2) zoning changes from agriculturally-designated lands to urban land use or entitlements for non-agricultural uses; (3) public projects; or (4) development on large undeveloped commercial and industrial lands. If an impact to foraging habitat is determined, then mitigation under The Sacramento County Swainson's Hawk Mitigation Program designates the following mitigation options based on the total impacted acreage (Sacramento County 2018b).

<u>Projects with impacts to less than 40 acres</u>

- Have the option to pay an impact fee or provide title or easement to suitable Swainson's Hawk mitigation lands on a per-acre basis.
- The total impact fee is currently $12,925 per acre of impact. Of that fee, $10,550 is for land/easement acquisition and $2,375 is for establishing an endowment to cover operations, monitoring, and management of land purchased by the County.
- All projects pay a $500 one-time administrative fee.

<u>Projects with impacts of 40 acres and greater</u>

- Must provide title or easement to suitable Swainson's Hawk mitigation lands on a per-acre basis.
- An endowment fee is due; however, this fee is variable based on parcel-specific data. A set fee of $2,375 per acre impacted is required for projects using the fee option and a variable fee, no greater than $3,500 per acre impacted, is required for projects delivering title or easement (actual fee calculated based on parcel-specific data).

- All projects pay a $500 one-time administrative fee.

PER assumes that parcels zoned as AG-40 (Agriculture) or larger are considered to have 100 percent habitat value and the value decreases as the minimum parcel size drops. Properties zoned AR-5 and smaller, parcels zoned as RD-1 thru 40, and commercial and industrial zonings retain no foraging habitat value. Parcels within the Study Area are zoned SC (Shopping Center), LC (Light commercial), and RD-40 (Multiple Family Residential) (Sacramento County 2016). Therefore, no mitigation for loss of Swainson's hawk foraging is required for the project under the County's Swainson's Hawk Impact Mitigation Program.

3.0 METHODS

Available information pertaining to the natural resources of the region was reviewed and the references reviewed for this assessment are listed in the References section. The following site-specific published information was reviewed for this BRA:

- California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database (CNDDB); For: *Carmichael, Citrus Heights, Pleasant Grove, Roseville, Rocklin, Rio Linda, Folsom, Sacramento East,* and *Buffalo Cree*k U.S. Geological Survey (USGS) 7.5-minute series quadrangles, Sacramento, CA. Accessed [June 10, 2022];

- The California Native Plant Society (CNPS). 2022 Inventory of Rare and Endangered Plants (CNPS): For: *Carmichael, Citrus Heights, Pleasant Grove, Roseville, Rocklin, Rio Linda, Folsom, Sacramento East,* and *Buffalo Creek* U.S. Geological Survey (USGS) 7.5-minute series quadrangles, Sacramento, CA. Accessed [June 10, 2022];

- USDA, NRCS. 2022. *Web Soil Survey*. Available at: http://websoilsurvey.sc.egov.usda.gov. Accessed [June 10, 2022];

- U.S. Fish and Wildlife Service (USFWS). 2022. *Information for Planning and Consultation* (IPaC) *Winding Ranch, Sacramento County, California.* Accessed [June 10, 2022]; and

- USGS. 2022 *Carmichael, California*. 7.5-minute series topographic quadrangle. United States Department of Interior.

Prior to conducting the field survey, existing information was reviewed concerning known habitats and special-status species that may occur in the Study Area. The results of the records search and five-mile radius CNDDB query for the Study Area are summarized in Appendix B. The field surveys were conducted on November 20, 2019, by HELIX biologists Marisa Brilts and Charlotte Marks, and on June 1, and 8, 2022 by HELIX biologists Marias Brilts and Greg Davis in response to the expansion of the Project footprint. The Study Area was systematically surveyed on foot to ensure total search coverage, with special attention given to portions of the Study Area with the potential to support special-status species and sensitive habitats. Binoculars were used to further extend site coverage and identify species observed. All plant and animal species observed were recorded (Appendix C), and all biological communities previously mapped in the Study Area were verified using a handheld Trimble GeoXT GPS unit with sub-meter accuracy or Collector app. on an Android phone.

Following the field survey, the potential for each species identified in the records search to occur within the Study Area was determined based on the site survey, soils, habitats present within the survey area, and species-specific information, as shown in Appendix B.

4.0 RESULTS

4.1 SITE LOCATION AND DESCRIPTION

The approximate 24.80-acre Study Area is in Sacramento County and located approximately 1.75 miles southeast of Interstate 80 in the unincorporated community of Carmichael. The Study Area is located in a developed suburban area. It is bound by Winding Way to the north and Manzanita Avenue to the west, both high-traffic streets, to the east by Rampart Drive, Mary Lynn Lane, and high-density apartment complexes, and on the south by Jan Drive and the now defunct Crestview Lanes Bowling Alley (Figure 1). An aerial of the Study Area is provided in Figure 2 (*Aerial Map*).

4.2 PHYSICAL FEATURES

4.2.1 Topography and Drainage

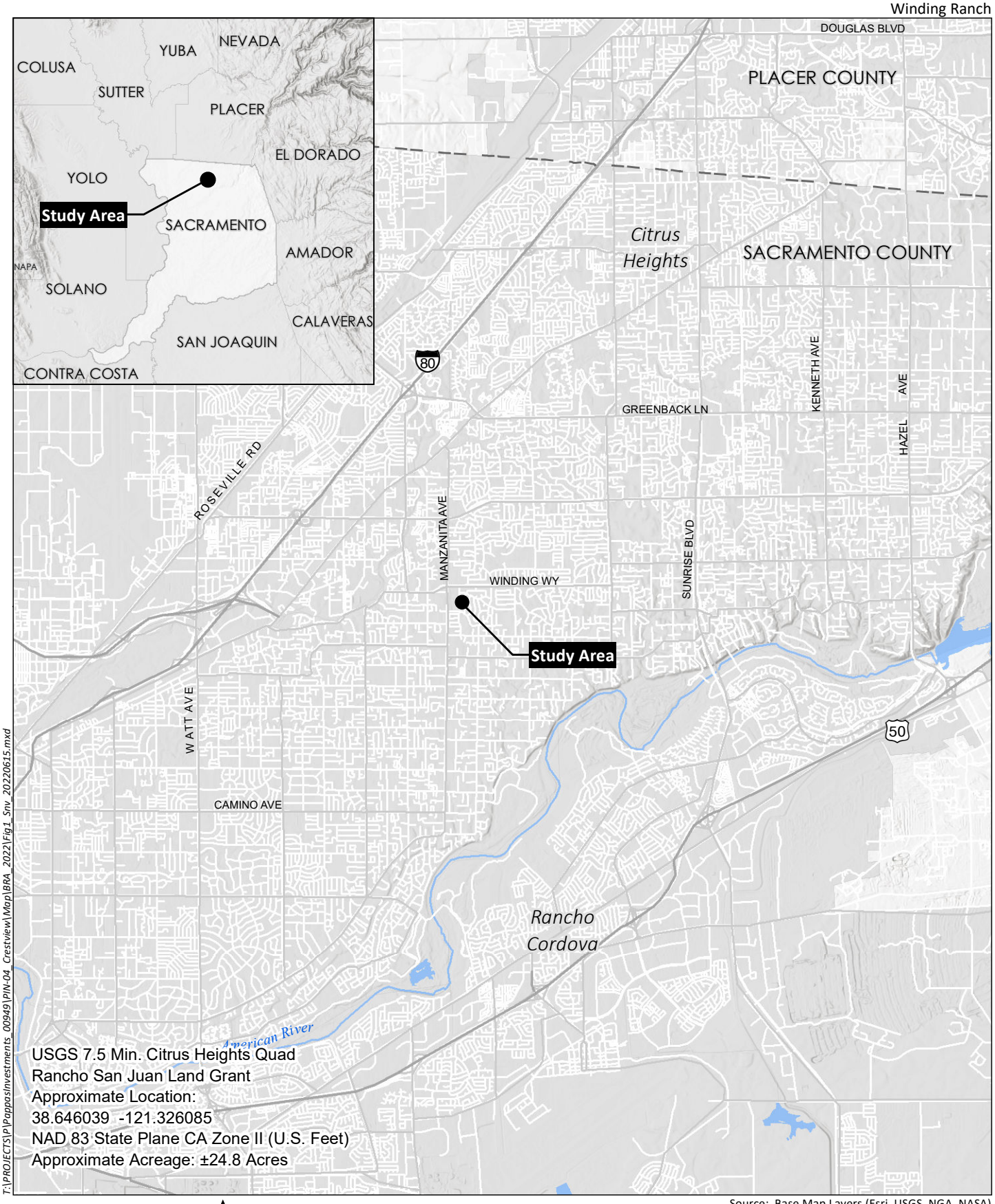
The general topography of the Study Area is level to gently rolling, with elevations that range from approximately 110 to 140 feet (35 to 42 meters) above mean sea level (MSL). It is evident that the Study Area has been disturbed in the past. Signs of previous disturbance include excavated ditches intended to promote surface drainage, a gravel lot, and leveled areas suggestive of past grading.

The Study Area is located in the Lower American Watershed Hydrologic Unit Code (HUC) 8-18020111. The Study Area receives drainage flows primarily from a large culvert under Jan Drive. The drainage runs approximately 300 feet through the undeveloped half of the site before entering another large culvert under the Crestview Lanes parking lot. A small drainage ditch was excavated along the northern boundary of the Study Area, directing runoff into the drainage, and along the north boundary of the Crestview Lanes parking lot directing water into a storm drain inlet. Drainage from the parking lot and building is directed into a storm drain system, which, presumably, joins the subsurface culvert. The culvert opens into a drainage to the north and re-enters a culvert under Winding Way. The hydrologic regime on the site consists of seasonal storm water runoff and precipitation, primarily between November and March. Annual average precipitation is less than 20 inches.

4.2.2 Soils

The Natural Resources Conservation Service has mapped two urban soil types within the Study Area (Figure 3): Urban Land and Urban Land-Xerarents-Fiddyment Complex, 0-8 percent slopes. The general characteristics and properties associated with these soil types are described below (USDA, NRCS 1980 and 2022).

(227) Urban Land: The urban land map unit includes developed areas, the majority of which are covered by impervious surfaces such as buildings, roads, and parking lots. The underlying soils have typically been altered in the development process.



USGS 7.5 Min. Citrus Heights Quad
Rancho San Juan Land Grant
Approximate Location:
38.646039 -121.326085
NAD 83 State Plane CA Zone II (U.S. Feet)
Approximate Acreage: ±24.8 Acres

T:\PROJECTS\P\PappasInvestments_00949\PIN-04_Crestview\Map\BRA_2022\Fig1_Snv_20220615.mxd

0 1.5 Miles

Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

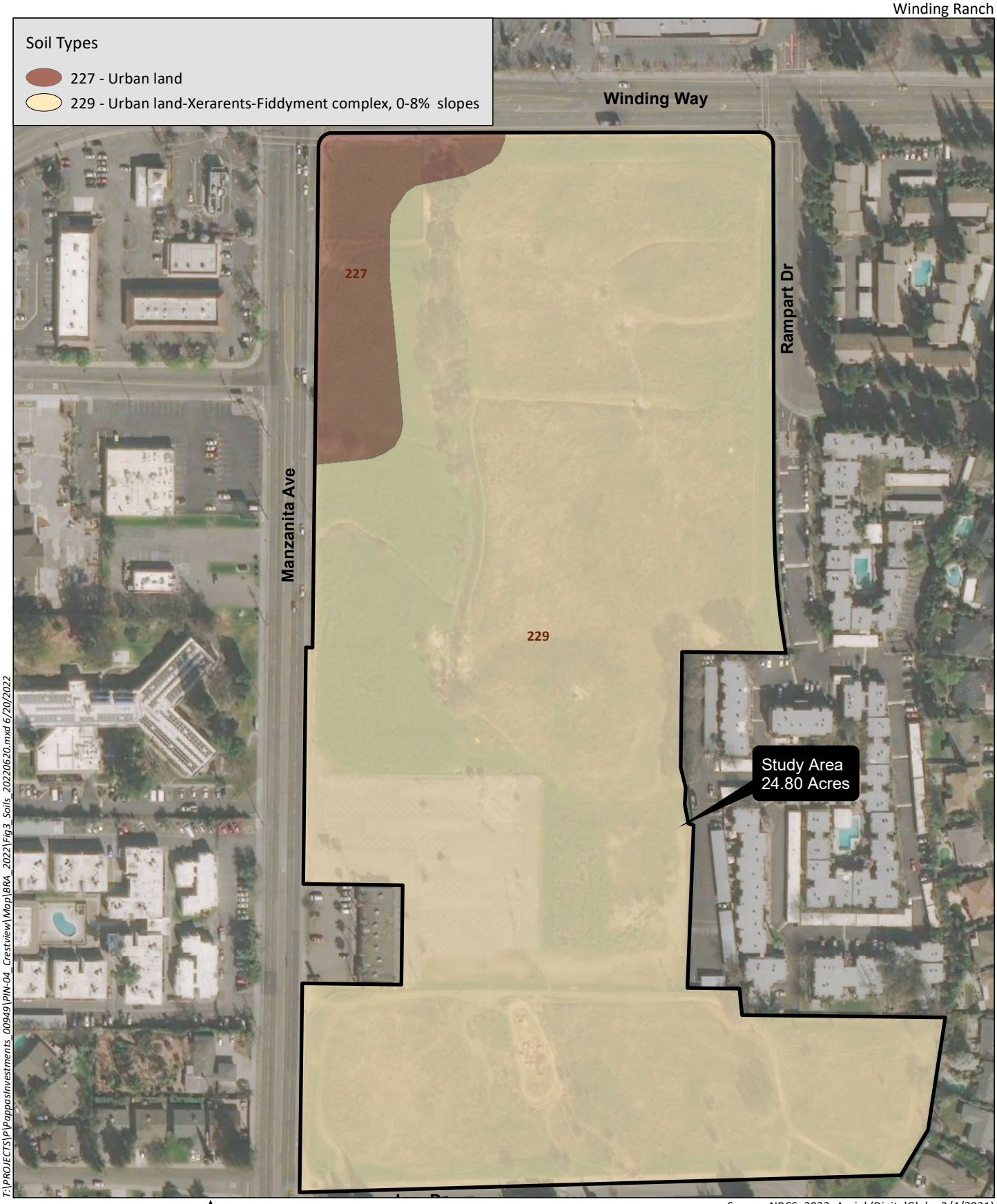
Vicinity Map

Figure 1

HELIX Environmental Planning

Aerial Map

Figure 2



Source: NRCS, 2022; Aerial (DigitalGlobe 3/4/2021)

HELIX Environmental Planning

Soils Map

Figure 3

(229) Urban Land-Xerarents-Fiddyment Complex, 0-8 percent slopes: This soil type is found in fill areas and on hills. Typically, the well-drained Xerarent or Fiddyment soils are moderately deep fill over a cemented siltstone or claypan impervious surface. These soils have typically been altered by construction and support primarily ornamental plants, oaks, grasses and forbs.

4.3 BIOLOGICAL COMMUNITIES

Three biological communities, ruderal herbaceous, developed/disturbed, and mixed oak woodland occur within the Study Area (Figure 4). These communities are described in more detail below. Seasonal wetland ditches with intermittent surface flow and an ordinary high-water mark and ditches occur within these habitats. A comprehensive list of all plant species observed within the Study Area is provided in Appendix C. Representative site photographs are included in Appendix D.

4.3.1 Ruderal Herbaceous

Ruderal herbaceous habitat is characterized by plant species that are among the first to colonize disturbed areas (either naturally disturbed as by fire or artificially disturbed as by construction, grading, etc.). Abandoned agricultural fields, construction sites, vacant lots, and road shoulders are just a few of the settings that can create favorable conditions for ruderal plant species. Ruderal habitat is typically associated with invasive and noxious weeds. Approximately 20.033 acres of ruderal herbaceous habitat occur within the Study Area (Figure 4).

The dominant plants within the Study Area and within this community type include ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), chicory (*Cichorium intybus*), and vetch (*Vicia* sp.). Yellow star-thistle (*Centaurea solstitialis*), medusa head (*Elymus caput-medusae*), stinkwort (*Dittrichia graveolens*), Italian thistle (*Carduus pycnocephalus*), and common groundsel (*Senecio vulgaris*) are present as well.

4.3.2 Developed/Disturbed

Developed/disturbed habitat differs from ruderal habitat by generally having little to no vegetation and containing built structures or maintained surfaces. Vegetation that does occur within this community type is often ornamental, rather than composed of invasive or noxious weeds such as in ruderal habitat. Approximately 3.407 acres of developed/disturbed habitat occur within the Study Area (Figure 4).

Plant species that do occur in the Study Area within this community type are similar to the dominant species previously described in the ruderal herbaceous habitat. However, in large part, this biological community is devoid of vegetation and largely consists of a paved parking lot associated with the adjacent abandoned bowling alley along Manzanita Avenue, dirt foot paths parallel to the seasonal wetland ditch in the north, and along oaks in the south. Cottonwoods (*Populus fremontii*), willows (*Salix* sp.) and palms (*Washingtonia robusta*) are present within this community primarily located in tree wells within the paved parking lot.

4.3.3 Mixed Oak Woodland

A total of 1.164 acres of mixed oak woodland occur within the Study Area (Figure 4). The Study Area was surveyed by an International Society Arboriculture (ISA) certified arborist (WE-0510A) on December 17 and 18, 2019 (Sierra Nevada Arborists 2020). A total of 108 trees consisting of 1 almond (*Prunus dulcis*),

9 blue oaks (*Quercus douglasii)*, 1 black walnut (*Juglans nigra*), 1 California fan palm (*Washingtonia filifera*), 3 Chinese pistache (*Pistacia chinensis*), 2 Chinese zelkovas (*Ulmus parvifolia*), 28 cork oaks (*Quercus suber*), 1 deodar cedar (*Cedrus deodara*), 4 Fremont cottonwoods (*Populus fremontii*), 1 fruitless mulberry (*Morus alba*), 2 gum trees (*Eucalyptus sp*.), 1 Modesto ash (*Fraxinus velutina*), 3 pecans (*Carya illinoinensis*), 1 sweetgum (*Eucalyptus cladocalyx*), and 50 valley oaks were inventoried on the project site during these surveys.

4.4 SPECIAL-STATUS SPECIES

Special-status species are plant and wildlife species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under CESA or FESA;
- Protected under other regulations (e.g., Migratory Bird Treaty Act);
- Included on the CDFW Special Animals List;
- Identified as Rare Plants Rank 1 to 4 by CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on queries of the CNDDB, the USFWS, and CNPS ranked species (online versions) for the *Citrus Heights* USGS quadrangle and eight surrounding quadrangles. Appendix B includes the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence within the Study Area. The following set of criteria has been used to determine each species' potential for occurrence within the Study Area:

- **Will Not Occur:** Species is either sessile (i.e., plants) or so limited to a particular habitat that it cannot disperse on its own and/or habitat suitable for its establishment and survival does not occur on the project site.

- **Not Expected:** Species moves freely and might disperse through or across the project site, but suitable habitat for residence or breeding does not occur on the project site, potential for an individual of the species to disperse through or forage in the site cannot be excluded with 100% certainty.

- **Presumed Absent:** Habitat suitable for residence and breeding occurs on the project site; however, focused surveys conducted for the current project were negative.

- **May Occur:** Species was not observed on the site and breeding habitat is not present but the species has the potential to utilize the site for dispersal, High: Habitat suitable for residence and breeding occurs on the project site and the species has been recorded recently on or near the project site, but was not observed during surveys for the current project.

- **Present:** The species was observed during biological surveys for the current project and is assumed to occupy the project site or utilize the project site during some portion of its life cycle.

HELIX Environmental Planning

Biological Communities

Figure 4

4.4.1 Listed and Special-Status Plants

According to the records search, 15 listed and special-status plants have the potential to occur onsite or in the vicinity of the Study Area (CDFW 2022). Based on field observations, published information, and literature review, however, three special-status plant species have the potential to occur within the Study Area. Sanford's arrowhead has a high potential of occurrence, and Ahart's dwarf rush, and stinkbells have some potential to occur within the Study Area.

4.4.1.1 Special-Status Plants with Potential for Occurrence

Sanford's Arrowhead – CNPS 1B

Sanford's arrowhead is ranked as a CNPS 1B (Plants Rare or Endangered in California and elsewhere) species. It is a perennial rhizomatous herb found in marshes and swamps in assorted shallow freshwater areas from 0 to 1,076 feet (0 to 650 meters) above MSL. The identification period for this species is from May through October. There are four documented CNDDB records of this species occurring within five miles of the Study Area (CDFW 2022).

The seasonal wetland ditches provide potential habitat for this species. Although this species was not observed during the 2019 biological survey, the survey was not floristic in nature, and it was not conducted during the typical identification period for this species. The follow-up survey, conducted on June 1, 2022, was conducted on additional onsite areas not looked at previously, was floristic in nature, and was conducted during the typical identification period for this species. Although the species was not observed in 2022 within the additional onsite areas, based on suitable habitat for this species being present within the Study Area and documented occurrences in the vicinity, this species has a *high* potential to occur within the Study Area.

Ahart's Dwarf Rush

Ahart's dwarf rush is ranked as a CNPS 1B species. It is an annual herb found in mesic areas within valley and foothill grassland from 98 to 751 feet (30 to 229 meters) above MSL. The identification period for this species is from April through August. There are no documented CNDDB records of this species occurring within five miles of the Site (CDFW 2022).

The ruderal herbaceous habitat within the Study Area provides marginal habitat for this species... Although this species was not observed during the 2019 biological survey, the survey was not floristic in nature, and it was not conducted during the typical identification period for this species. The follow-up survey, conducted on June 1, 2022, was conducted on additional onsite areas not looked at previously, was floristic in nature, and was conducted during the typical identification period for this species. Although the species was not observed in 2022 within the additional onsite areas, based on the marginal habitat documented in 2019 within the Study Area and the lack of documented occurrences in the vicinity, there is a *low* potential for this species to occur within the ruderal herbaceous habitat.

Stinkbells

Stinkbells are ranked as a CNPS 4.2 (limited distribution) species. It is a perennial bulbiferous herb found in clay soils and sometimes serpentinite, chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 30 to 5,100 feet (10 to 1,555 meters). The identification period for this species is from March through June. There is one documented CNDDB

record of this species within five miles of the Study Area (CDFW 2022). However, the degree of disturbance within the Study Area and soil types present make it unlikely that the site will support this species. Given the marginal habitat within the Study Area, there is a *low* potential for this species to occur

4.4.2 Listed and Special-Status Wildlife

According to the records search, 38 listed and special-status wildlife species have the potential to occur onsite or in the vicinity of the Study Area (CDFW 2022). Based on field observations, published information, and literature review, eleven special-status wildlife species have the potential to occur within the Study Area: Cooper's hawk, purple martin, white-tailed kite, andrenid bee, Crotch bumble bee, Swainson's hawk, tricolored blackbird, burrowing owl, merlin, song sparrow (Modesto population), and pallid bat. These species are discussed in more detail below. In addition to these special-status wildlife species, nesting birds and raptors protected under federal, State, and local laws/policies also have potential to occur within the Study Area.

4.4.2.1 Special-Status Wildlife Potential for Occurrence

Purple Martin

The purple martin is a California Species of Special Concern. It is an uncommon, local summer resident that occurs in a variety of woodland communities. Purple martins can be seen in the Central Valley during spring and fall migration and as an uncommon and local summer breeder. Nests in wide variety of open and partly open habitats that are often near water or around towns. Nests in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans. Summer (breeding). There is one record in the CNDDB for this species within five miles of the Study Area (CDFW 2022). The Study Area provides potential nesting and foraging habitat for this species. Therefore, this species has a *high* potential to occur within the Study Area.

White-Tailed Kite

White-tailed kite is a California Fully Protected species. It is a year-long resident in coastal and valley lowlands in California. White-tailed kites breed from February to October, with the breeding season peaking from May to August (Zeiner et al. 1990). They inhabit savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. This species nests in trees, often near a marsh in a savanna, open woodland, partially cleared lands, or cultivated fields. Foraging occurs within ungrazed or lightly grazed fields and pastures.

There are nine CNDDB record for this species within five miles of the Study Area (CDFW 2022). The trees within the Study Area provide suitable nesting habitat for this species. The ruderal herbaceous habitat within the Study Area provides suitable foraging habitat. Therefore, this species has a *high* potential to occur within the Study Area.

Nesting Birds

In addition to the purple martin and white-tailed kite discussed above, the nests of most birds are protected under the MBTA and California Fish and Game Codes. Additionally, the USFWS and CDFW have identified several avian species of conservation concerns such as Cooper's hawk, merlin, and song sparrow that do not have specific statutory protection that may occur within habitats such as those

found within the Study Area. The trees within the mixed oak woodland in the Study Area provide potential nesting habitat for a variety of avian species protected by the MBTA and Fish and Game Codes and ruderal herbaceous habitat in thin the Study Area provides suitable nesting and foraging habitat for nesting birds protected by federal and state laws.

Andrenid Bee

The andrenid bee is on the California Special Animals List as designated by CDFW. This species is found in grassland habitats within El Dorado, Placer, Sacramento, and San Joaquin counties. Andrenid bees are ground nesters, and will typically stay underground from summer, fall and winter and emerge in spring to forage on blooming flowers. They are the earliest bee species to emerge in the spring and will often pollinate willows, maples, violets and other early blooming wildflowers (USDA FS 2011).

There is one documented CNDDB record for this species within five miles of the Study Area (CDFW 2022). The ruderal herbaceous habitat within the Study Area provides suitable habitat for the species. Given the known occurrences in the vicinity of the Study Area and suitable habitat present within the Study Area, this species has a *high* potential to occur within the Study Area.

Swainson's Hawk

Swainson's hawk is a long-distance migrant with nesting grounds in western North America. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America (Bradbury et al. in prep.). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner et al. 1990). In the Central Valley, Swainson's hawks' nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and Van De Water 1994). There is one CNDDB record of this species within five miles of the Study Area (CDFW 2022). There are several suitable nesting trees for this species within and adjacent to the Study Area. However, the area surrounding the Study Area is highly developed thereby significantly limiting or negating foraging opportunities for this species. Therefore, this species has a *low* potential to occur within the Study Area.

Tricolored Blackbird

Tricolored blackbird was listed as a state-threatened species on March 18, 2019. Tricolored blackbird is a colonial species that breeds in freshwater marshes of cattail (*Typha* sp.), bulrush (*Schoenoplectus* sp. and *Isolepis* sp.), sedge (*Carex* sp.), and non-native vegetation including Himalayan blackberry (*Rubus armeniacus*). Nests occur in large colonies of up to thousands of individuals (Nature Serve 2019). Nesting locations typically must be large enough to support a minimum colony of approximately fifty pairs (Zeiner et al. 1990). This species forages in grasslands and agricultural fields with low-growing vegetation (Shuford and Garbaldi 2008).

There are three CNDDB records for this species within five miles of the Study Area (CDFW 2022). While the ruderal herbaceous habitat within the Study Area provides marginally suitable foraging habitat for

this species, no suitable nesting habitat for this species exists. Therefore, this species has a *low* potential to occur within the Study Area and is not expected to nest in the Study Area.

Burrowing Owl

Burrowing owl is a California Species of Special Concern. This species is a small ground-dwelling owl that occurs in western North America from Canada to Mexico and east to Texas and Louisiana. Although in certain areas of their range, burrowing owls are migratory, these owls are predominantly non-migratory in California. Burrowing owls generally inhabit gently sloping areas, characterized by low, sparse vegetation (Poulin et al. 2011). The breeding season for burrowing owls is typically from February 1 to August 31 (Haug et al. 1993; Thomsen 1971). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owls are also known to use artificial burrows including pipes, culverts, and nest boxes.

There is one CNDDB record for this species within five miles of the Study Area (CDFW 2022). The small mammal burrows and ruderal herbaceous habitat within the Study Area provide marginally suitable burrowing and foraging habitat for this species. This species was not observed within the Study Area during the biological survey. Therefore, this species has a *low* potential to occur within the Study Area.

Pallid Bat

Pallid bat, designated as a Species of Special Concern by CDFW. The Western Bat Working Group (WBWG) has classified the pallid bat in California as "imperiled or are at high risk of imperilment" (WBWG 2022). The pallid bat is a sizeable buff-colored bat, with large ears and broad wings (Orr 1954). The pallid bat occurs throughout the southwestern U.S., south into Mexico, and along the Pacific states of California, Oregon, and Washington (Hermanson and O'Shea 1983). This species is found in a variety of habitats, including grasslands and oak woodlands. This species typically roosts in rock crevices, caves, tree hollows, or various human-made structures such as attics, barns, and bridges (Orr 1954). Pallid bats are primarily insectivores and feed by gleaning prey items from the ground or off vegetation (Bell 1982). The dormancy period ends in late March or early April. Pallid bats are gregarious in the spring and summer months, forming colonies of approximately 30-100 individuals. Females typically give birth in May and June to twins (mean of 1.8 young per female). Colony size decreases during the fall, and by October, the bats move to winter locations (Orr 1954).

The Study Area provides suitable roosting habitat for this species within the existing trees onsite. Although some potential roost sites are present, the current level of adjacent human disturbance including roads, buildings, and may limit the likelihood of roosting occurring within the Study Area. No signs of roosting (guano, stains, noise) were observed during the field survey. Therefore, pallid bat has a *low* potential to occur within the Study Area.

Crotch's Bumblebee

The Crotch's bumblebee is on the California Special Animals List as designated by CDFW. Crotch's bumblebee inhabits grasslands and shrublands and requires a hotter and drier environment than other bumblebee species. It is characterized as a short-tongued species and therefore prefers certain plant species as a food source including milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats. The Crotch's bumblebees are social insects that live in annual colonies composed of a queen, workers, and reproductives. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Only

mated queens overwinter and conduct all the foraging and care for the colony in early spring until the first workers emerge and assist with these duties. This species was not observed within the Study Area during the biological survey. Therefore, this species has a *low* potential to occur within the Study Area.

4.5 SENSITIVE HABITATS

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA. Riparian areas are regulated under Section 1600 of the California Fish and Game Code, wetlands and other waters of the U.S. are regulated under Sections 401 and 404 of the Clean Water Act and potentially Sections 1600-1602 of the California Fish and Game Code, and protected trees are regulated under the Tree Ordinance for Sacramento County.

4.5.1 Potential Jurisdictional Waters of the U.S. and State

Seasonal wetland ditches are present within the Study Area and these features have been formally delineated. The USACE issued a preliminary jurisdictional determination on June 2, 2011 concurring with 0.16 acre of seasonal marsh present within the 14-acre Crestview Shopping Center site. This 14-acre site corresponds with the northernmost 14 acres of the Winding Ranch site. On August 11, 2011, the USACE issued a NWP 39 authorization, pending 401 Water Quality Certification, for the proposed fill of 0.164 acre of seasonal marsh within the 14-acre Crestview Site (SPK-2011-00364). The August 11, 2011 NWP 39 Authorization was not implemented and the authorization expired March 18, 2012. The NWP 39 Authorization was re-verified on March 23, 2012 but was never implemented. On July 8, 2015, the USACE issued a preliminary jurisdictional determination concurring with 0.164 acre of seasonal wetland ditch mapped within an expanded 23.24-acre Study Area which includes the majority of the current Study Area. In response to the recent expansion of the Project footprint, HELIX assessed an additional 0.5-acre parcel (Sacramento County APN 245-0011-018) for aquatic resources, as well as expanded areas from the previous 23.24-acre Study Area boundary to encompass the current 24.80-acre Study Area contains 0.165 acre of seasonal wetland ditches with intermittent surface flow and an ordinary high water mark, and 0.035 acre of ditches and canals. In addition to delineating aquatic resources on the 0.5-acre parcel, Pappas Investments (Client) requested that an updated aquatic resources map be prepared to update the 2015 delineation that was conducted by ECORP Consulting, Inc. (ECORP), which was issued a preliminary jurisdictional determination by the USACE in June 2015 (SPK-2011-00364).

4.5.2 Protected Trees

Several oak trees occur within the Study Area. A formal arborist survey was not conducted during the November 20, 2019 biological survey. However, the Study Area was surveyed by an ISA Certified Arborist (WE- 0510A) on December 17 and 18, 2019 (Sierra Nevada Arborists 2020). A total of 108 trees measuring 4 inches in diameter and larger at breast height and/or overhanging the Study Area were inventoried during the December 2020 survey. The 111-tress inventoried consist of 1 almond, 9 blue oaks, 1 California black walnut, 1 California fan palm, 3 Chinese Pistache, 2 Chines zelkova, 28 cork oak, 1 deodar cedar, 4 Fremont cottonwoods, 1 fruitless mulberry, 2 gum tress, 1 Modesto ash, 3 norther California walnuts, 3 pecan, 1 sweetgum, and 50 valley oaks. Of these 61 trees consisting of 1 almond, 8 blue oaks, 2 Chines zelkova, 6 cork oak, 1 deodar cedar, 2 gum, 1 Modesto ash, 1 Norther California walnut, 1 sweetgum, and 38 valley oak trees are county protected species.

Section 2.5, Sacramento County evaluates any impacts to protected trees under the Tree Preservation and Protection Ordinance. The project will result in impacts to or removal of protected trees, the County

will likely require an updated formal tree survey to inventory protected trees onsite, evaluate impacts to the protected trees as a result of the proposed project, and evaluate applicable mitigation.

4.5.3 Wildlife Corridors

Wildlife corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by development creates isolated "islands" of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat; for instance, when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

Although some wildlife species may utilize portions of the Study Area for foraging, breeding, or other functions, the Study Area itself does not link two significant natural areas and it is not considered a wildlife migration corridor.

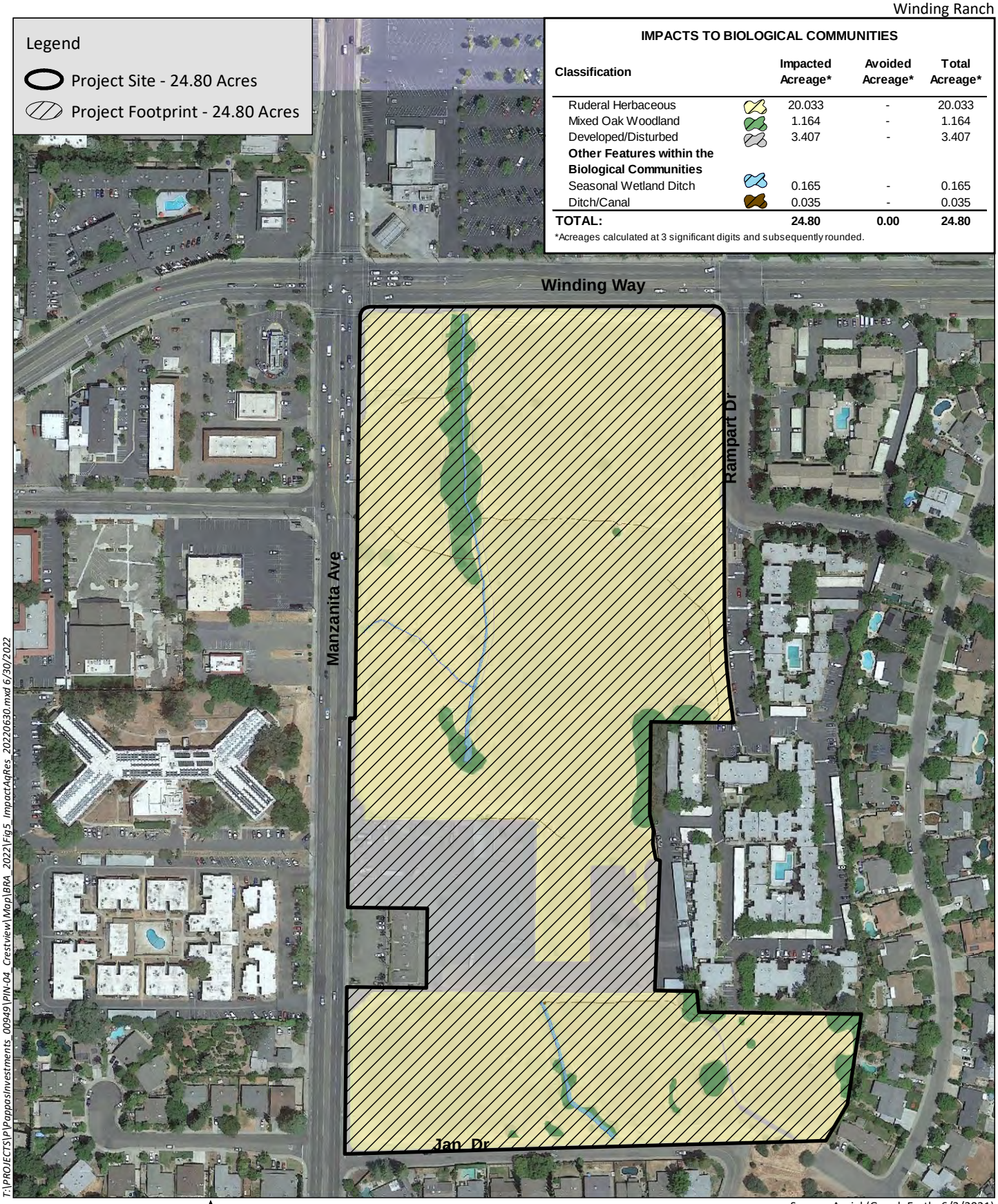
5.0 CONCLUSIONS AND RECOMMENDATIONS

The 24.80-acre Study Area is comprised of approximately 20.033 acres of ruderal herbaceous habitat, 3.407 acres developed/disturbed areas, and 1.164 acres of mixed oak woodland. Approximately 0.165 acre of seasonal wetland ditches and approximately 0.035 acre of ditch/canals occur within the ruderal herbaceous habitat. Sensitive resources that will be impacted by the development of the proposed project include wetland ditches and protected trees (Figure 5).

No special-status plants or special-status wildlife were observed within the Study Area during the November 20, 2019 biological survey or during the follow-up survey conducted on June 1, 2022 on additional areas not looked at previously; however, special-status plant and wildlife species may occur within the Study Area. Recommendations, including avoidance and minimization measures to limit or avoid impacts to special-status plant and wildlife species that may occur within the Study Area, are included in Section 5.1.

Known or potential biological constraints in the Study Area include:

- Potential habitat for special-status plants: Sanford's arrowhead, Ahart’s dwarf rush, and stinkbells;
- Potential roosting and foraging habitat for special-status bats including pallid bat;
- Potential foraging habitat for tricolored blackbird;
- Potential habitat for western burrowing owl;
- Potential nesting habitat for Swainson’s hawk;



IMPACTS TO BIOLOGICAL COMMUNITIES

Classification	Impacted Acreage*	Avoided Acreage*	Total Acreage*
Ruderal Herbaceous	20.033	-	20.033
Mixed Oak Woodland	1.164	-	1.164
Developed/Disturbed	3.407	-	3.407
Other Features within the Biological Communities			
Seasonal Wetland Ditch	0.165	-	0.165
Ditch/Canal	0.035	-	0.035
TOTAL:	**24.80**	**0.00**	**24.80**

*Acreages calculated at 3 significant digits and subsequently rounded.

Source: Aerial (GoogleEarth, 6/3/2021)

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Impacts to Biological Communities

Figure 5

- Potential foraging and/or nesting habitat for special-status birds including Cooper's hawk, merlin, purple martin, song sparrow ("Modesto" population), and white-tailed kite;
- Potential habitat for special-status invertebrates including andrenid bee and Crotch bumble bee;
- Potential habitat for other migratory birds and other birds of prey protected by the MBTA and California Fish and Game Codes; and
- Sensitive habitats including jurisdictional aquatic resources and oak woodland habitat.

5.1 RECOMMENDATIONS

5.1.1 Special-Status Plant Species

As discussed previously, the seasonal wetland ditches provide potentially suitable habitat for special-status plant species including Ahart's dwarf rush and Sanford's arrowhead and the ruderal herbaceous habitat provides potential habitat for stinkbells that are known to occur in the vicinity of the Study Area.

Since a focused plant survey was not conducted during the site visits, prior to the initiation of construction, a qualified botanist should conduct one botanical survey in May within the Study Area which will overlap with the typical identification period of all three potentially occurring special-status plant species. It should be noted that weather conditions during any given survey year may require surveys to be conducted earlier or later in the typical blooming period in order to conduct the survey during the appropriate weather conditions. This timing may result in the need to conduct more than one round of plant surveys to adequately survey for all potentially occurring special-status plant species. The results of these surveys should be documented in a letter report to Sacramento County. If no special-status plants are observed during the botanical survey, no additional measures for special-status plants are recommended.

If any of the non-listed special-status plants are identified within areas of potential construction disturbance, the plants and/or the seedbank should be transplanted to suitable habitat within the Study Area outside of the project footprint or offsite if suitable habitat is not available within the Study Area. A qualified biologist should prepare an avoidance and mitigation plan detailing protection and avoidance measures, transplanting procedures, success criteria, and long-term monitoring protocols. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for special-status plants in the vicinity of the work area.

5.1.2 Andrenid Bee and Crotch's Bumblebee

Andrenid bee and Crotch's bumblebee have the potential to occur within the ruderal herbaceous habitat and mixed oak woodland communities within the Study Area. The vegetation within these communities provides nesting, breeding, and foraging habitat for andrenid bee and Crotch's bumblebee. Vegetation clearing and ground-disturbing activities within these vegetation communities could impact these species during construction if present. However, since andrenid bee and Crotch's bumblebee establishes new nests annually, the potential loss of individual nests is not expected to have a significant impact on this species. Therefore, no species-specific mitigation measures are recommended for this species.

However, measures can be taken to restore, create, or preserve bee habitats to include suitable forage, nesting, and overwintering sites. These include restricting pesticide use on or near suitable habitat, particularly while treated plants are in flower and promote landscaping that increase pollinator friendly plants.

Pallid Bat Pallid bat has the potential to occur within the Study Area. The ruderal herbaceous habitat and mixed oak woodland communities within the Study Area provide suitable roosting habitat for these bat species.

A qualified biologist should conduct a pre-construction survey for special-status bat species within 14 days prior to development or ground disturbing activities including grading, vegetation clearing, tree removal, or construction. If no bats are observed, a letter report should be prepared to document the survey and provided to project proponent, and no additional measures are recommended. If development does not commence within 14 days of the pre-construction survey, or halts for more than seven days, an additional survey is required prior to resuming or starting work.

If special-status bats are present and roosting in the Study Area or the surrounding 100 feet of the Study Area, the qualified biologist should establish an appropriate no disturbance buffer around the roost site prior to the commencement of ground disturbing activities or development. No trees should be removed until the biologist has determined that a roost site is no longer active, and no bats are present. If avoidance is not feasible, then the CDFW should be consulted for additional avoidance measures and additional mitigation measures, such as installation of bat boxes or alternate roost structures.

A qualified biologist should conduct an environmental awareness training for all construction personnel prior to the initiation of work.

5.1.3 Swainson's Hawk

Swainson's hawk has a *low* potential to occur within the Study Area. The Study Area provides suitable nesting habitat within the isolated trees on site, and there are 3 known nesting occurrences within 5 miles of the Study Area. However, the extent of development surrounding the Study Area reduces the likelihood that this species would nest within the Study Area. No Swainson's hawks were observed during the site survey, however, most of the Study Area was surveyed when this species is not expected to be present within the Sacramento Valley. Vegetation clearing and ground disturbance during construction activities would destroy potential nesting habitat for this species if present during construction.

- As outlined in Section 2.5.2, based on current zoning of the Study Area and the extent of surrounding development, the Study Area is not expected to provide foraging habitat value for Swainson's hawks and mitigation for impacts to foraging habitat would not be required by Sacramento County. However, there is some limited potential for Swainson's hawks to nest within the Study Area due to suitable nest trees occurring within the Study Area. Therefore, a pre-construction nesting survey for this species should be conducted as outlined in Section 5.1.6.

In addition, a pre-construction worker awareness training session should be conducted prior to the start of construction alerting workers to the potential presence of nesting birds, including Swainson's hawk, during construction.

5.1.4 Tricolored Blackbird

The Study Area is currently within five miles of three known occurrences of this species (CDFW 2022). While the ruderal herbaceous habitat within the Study Area provides marginally suitable foraging habitat for this species, the Study Area provides no suitable nesting habitat. Therefore, the proposed project is not expected to impact suitable nesting habitat for tricolored blackbird. Impacts to tricolored blackbird foraging habitat is not regulated under CESA. Therefore, the project is not expected to result in take of tricolored blackbird as defined by CESA and an incidental take permit would not be required. No additional measures are suggested for this species.

5.1.5 Burrowing Owl

Although burrowing owls were not observed during the biological assessment, the Study Area contains ruderal herbaceous habitat and some small mammal burrows that are potentially suitable habitat for burrowing owl. It is recommended that a take avoidance survey for burrowing owls be conducted no more than 14 days prior to the initiation of construction as prescribed by CDFW guidelines (CDFW 2012). The Study Area should be surveyed by a qualified biologist to determine or rule out the presence of burrowing owl onsite. This survey may be conducted in conjunction with a nesting bird survey if construction were to be initiated within the nesting season.

If burrowing owls are observed on or within 500 feet of proposed development activities that will result in ground disturbance, then an impact assessment should be prepared and submitted to the CDFW, in accordance with the 2012 Staff Report. If it is determined that project activities may result in impacts to occupied western burrowing owl habitat, then the project proponent should consult with CDFW and develop a detailed mitigation plan establishing avoidance and mitigation measures based on the requirements set forth in Appendix A of the 2012 Staff Report (CDFW 2012).

5.1.6 Migratory Birds

Several special-status species of migratory birds have the potential to nest in the Study Area including Cooper's hawk, white-tailed kite, purple martin, and Swainson's hawk. Active nests are protected by the California Fish and Game Code Section 3503.5 and the MBTA. Ground-disturbing activities including vegetation clearing and tree removal could impact nesting birds if these activities occur during the nesting season (generally February 1 to August 31). All vegetation clearing including removal of trees and shrubs should be completed between September 1 and January 31, if feasible.

If construction activities within the Study Area begin during the nesting season, a qualified biologist should conduct a pre-construction survey of the project footprint, where accessible, for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests where accessible. The pre-construction survey should be conducted within 14 days prior to commencement of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If nests are found and considered to be active, the project biologist should establish buffer zones to prohibit construction activities and minimize nest disturbance until the young have successfully fledged or the biologist determines that the nest is no longer active. The designated buffer size will depend on

the species in question, surrounding existing disturbances, and specific site characteristics, but may range from 50 feet for some songbirds to 250 to 500 feet for most raptors. If active nests are found within any trees slated for removal, then an appropriate buffer should be established around the trees and the trees should not be removed until a biologist determines that the nestlings have successfully fledged or the nest is confirmed to no longer be active. In addition, the pre-construction worker awareness training should include information on the location of active nests and protections in place for the active avian nests.

If construction activities begin during the non-breeding season (September 1 through January 31), a survey is not required, and no further studies are necessary.

5.1.7 Aquatic Resources

A total of approximately 0.165 acre of seasonal wetland ditches with intermittent surface flow and an ordinary highwater mark, and 0.035 acre of ditches and canals were mapped within the Study Area. As currently designed, the proposed project would result in impacts (i.e., discharge of dredged or fill material) to features that were previously determined to be waters of the U.S. and waters of the State, and a Section 404 Clean Water Act Permit would be required by the Corps and a Section 401 Water Quality Certification would be required by the RWQCB prior to the issuance of a grading permit. Any waters of the U.S. or jurisdictional wetlands that would be lost or impacted would need to be replaced or rehabilitated on a "no-net-loss" basis in accordance with the Corps mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods agreeable to the Corps and RWQCB.

5.1.8 Oak Trees

As previously discussed, protected oak trees and oak woodland exist within the Study Area. The proposed project will result in removal or significant impacts to protected oak trees.

The following measures should be adopted for protected trees slated for removal within the project footprint:

- A tree removal permit shall be obtained;
- It shall be the responsibility of the person trenching, grading or filling within a tree dripline or cutting, destroying or removing any tree under this chapter to have the tree permit or a copy of the conditions of approval imposed by the approving body at the tree removal site; and
- The permit, or the conditions of approval granted by the approving body, shall entitle the applicant to remove only the tree or trees approved for removal. (SCC 480 § 1, 1981.)

The following tree protection measures should be adopted for protected trees slated for preservation onsite adjacent to the project footprint:

- Tree Protection Fencing, consisting of four-foot tall, brightly colored, high-visibility plastic fencing, shall be placed around the perimeter of the tree protection zone (TPZ) (dripline radius + one foot) on the project side of existing oak trees;

- Tree protection fencing shall not be moved without prior authorization from the Project Arborist or the City of Sacramento;

- No parking, portable toilets, dumping or storage of any construction materials, grading, excavation, trenching, or other infringement by workers or domesticated animals is allowed in the TPZ;

- No signs, ropes, cables, or any other item shall be attached to a protected tree, unless recommended by an ISA-Certified Arborist;

- Underground utilities should be avoided in the TPZ; and

- Cut or fill within the dripline of existing native oak trees should be avoided.

5.2 SUMMARY OF AVOIDANCE AND MINIMIZATION MEASURES

- Conduct a special-status plant survey;

- Conduct one pre-construction survey for burrowing owl, nesting birds, and pallid bat, (as applicable) within 14 days prior to the start of construction within the limits of the Study Area;

- Obtain necessary permits for fill of the seasonal wetland ditches (Section 404 Clean Water Act permit and Section 401 Water Quality Certification);

- Conduct worker awareness training to discuss biological constraints during project construction including wetland avoidance (if applicable) potential for special-status plants (if applicable), and nesting birds (if applicable);

- Obtain a tree permit to perform construction activities within the canopy of protected trees on site that will result in significant impacts to protected trees or to remove protected trees;

- Conduct clearing and tree and shrub removal operations between September 1 and January 31 to avoid potential impacts to nesting birds, including Swainson's hawk if feasible; and

- Implement tree protection measures for protected trees onsite to be avoided.

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Appendix A

Applicable Sections of the Sacramento County General Plan

Habitat Protection and Management

GOAL: Preserve and manage natural habitats and their ecological functions throughout Sacramento County.

Habitat Mitigation

Objective: Mitigate and restore for natural habitat and special-status species loss.

Policies:

CO-58: Endure no-net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59: Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function (vernal pools, wetlands, riparian, native vegetative habitat, and special-status species).

CO-60: Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps.

CO-61: Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62: Permanently protect land required as mitigation.

Habitat Protection and Project Review

Objective: Review development plans and projects to ensure a balance between essential growth needs and the protection and preservation of natural habitat and special-status species.

Policies:

CO-70: Community Plans, Specific Plans, Master Plans and development projects shall:

- include the location, extent, proximity and diversity of existing natural habitats and special status species in order to determine potential impacts, necessary mitigation and opportunities for preservation and restoration.
- be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks and restore natural habitats, including those for special status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat.
- be reviewed for applicability of protection zones identified in this Element, including the Floodplain Protection Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone and the Laguna Creek Combining Zone.

CO-71: Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain.
- Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.
- Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, which will serve as benefits to the community and ecological function.
- Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation.

- Development adjacent to steam corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas.

CO-72: If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.
CO-73: Secure easement or fee title to open space lands within stream corridors as a condition of development approval.
CO-74: Evaluate feasible on-site alternatives early on in the planning process and prior to the environmental review process that reduce impacts on wetland and riparian habitat and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria.

Special-Status Species and Their Respective Habitats

GOAL: Preserve, enhance and restore special status species habitat in Sacramento County to aid in the recovery of these species.

Protection of Special-Status Species Habitat

Objective: Protect and maintain habitat for special-status species.

Policies:

CO-75: Maintain viable populations of special status species through the protection of habitat in preserves and linked with natural wildlife corridors.
CO-76: Habitat conservation plans shall be adopted by the County to provide a comprehensive strategy to protect and aid in the recovery of special status species.
CO-77: Development of open space acquisition programs within natural areas shall consider whether the area is occupied by special status species.
CO-78: Plans for urban development and flood control shall incorporate habitat corridors linking habitat sites for special status species.

Rivers and Streams

GOAL: Preserve, protect, and enhance natural open space functions of riparian, stream and river corridors.

Riparian Habitat

Objective: Manage riparian corridors to protect natural, recreational, economic, agricultural and cultural resources as well as water quality, supply and conveyance.

Policies:

CO-87: Encourage private landowners to protect, enhance and restore riparian habitat.
CO-88: Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated so as to minimize unavoidable impacts upon biological resources.
CO-89: Protect, enhance and maintain riparian habitat in Sacramento County.
CO-90: Increase riparian woodland, valley oak riparian woodland and riparian scrub habitat along select waterways within Sacramento County.

CO-91: Discourage introductions of invasive non-native aquatic plants and animals.
CO-92: Enhance and protect shaded riverine aquatic habitat along rivers and streams.

Limitation of Fill in Floodplains

Objective: Maintain the natural character of the 100-year floodplain by limiting fill and excavation.

Policies:

CO-93: Discourage fill in the 100-year floodplain (reference CO-117).
CO-94: Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:

- Consistent with policies to protect wetlands and riparian areas; and
- Limited to land uses that can support seasonal inundation.

CO-95: Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone.

Bank Stabilization

Objective: Maintain levee protection, riparian vegetation, function and topographic diversity by stream channel and bank stabilization projects; and stabilize riverbanks to protect levees, water conveyance and riparian functions.

Policies:

CO-96: Reduce dependence on traditional levee protection methods where those methods conflict with habitat preservation efforts and where alternate methods exist which are compatible with preservation efforts and offer an acceptable level of bank stabilization.
CO-97: Work with appropriate regulatory agencies to reduce bank and levee erosion by minimizing erosive wake activity generated by recreational and commercial boating.
CO-98: Coordinate with federal, state and local agencies overseeing levee and bank stabilization to investigate and, whenever possible, utilize biotechnical or nonstructural alternatives to other conventional stabilization methods.
CO-99: Encourage habitat restoration and recreational opportunities as an integral part of bank and levee stabilization efforts.
CO-100: Encourage construction of structures for flood control and stormwater quality purposes using currently approved scientific methods to prevent erosion and stabilize the banks.
CO-101: Stabilize the banks of rivers and streams in a manner that increases flood protection and increases riparian habitat functions.

Protection of Rivers

Objective: Conserve and protect the Sacramento, Cosumnes, Mokelumne and American Rivers to preserve natural habitat and recreational opportunities.

Policies:

CO-102: Coordinate with federal, state and local agencies overseeing levee and bank stabilization to investigate and, whenever possible, utilize biotechnical or nonstructural alternatives to other conventional stabilization methods.

CO-103: Protect the Cosumnes River Corridor by promoting the preservation of agriculture, natural habitat and limited recreational uses adjacent to the river channel, and when feasible by acquiring appropriate lands or easements adjacent to the river.
CO-104: Promote the preservation of the Mokelumne River.

Channel Modifications

Objective: Protect and restore natural stream functions.

Policies:

CO-105: Channel modification projects shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits.
CO-105a: Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity. (Added 2016)
CO-106: Realigned or modified channels should retain topographic diversity including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation.
CO-107: Maintain and protect natural function of channels in developed, newly developing, and rural areas.
CO-108: Channel lowering should occur after consideration of alternatives and only when it is necessary to accommodate the gravity drainage of storm runoff and/or accommodate floodflows under existing bridge structures.
CO-109: Channel modifications should not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or ground water recharge.
CO-110: Improvements in watercourses will be designed for low maintenance. Appropriate Manning's "n" 13 values will be used in design of the watercourses to reflect future vegetative growth (including mitigation plantings) associated with the low maintenance concept.
CO-111: Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.
CO-112: The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.
CO-113: Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.

Land Use Adjacent to Rivers and Streams

Objective: Land uses within and development adjacent to stream corridors are to be consistent with natural values.

Policies:

CO-114: Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities.
CO-115: Provide setbacks along stream corridors and stream channels to protect riparian habitat functions

- A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each side of a stream corridor that prohibits

development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminates that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation.

- A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate microclimate, maintain channel complexity and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife.
- An extended setback of at least 50 feet in width beyond the transitional setback should be retained along all stream corridors. This setback will allow for recreational uses such as bike, pedestrian and/or equestrian trails and will allow for the placement of infrastructure such as water and sewer lines.
- Stormwater discharge ponds or other features used for improving stormwater quality may be located within the extended or transitional setback area. However, in order to protect stream habitat and floodplain value, the width of the setback shall not be based upon the width of the pollutant discharge pond. The ponds shall be landscaped and maintained with vegetation native to the surrounding area. Detention ponds or other features implementing pollutant discharge requirements, other than approved regional stormwater quality practices that are designed and operated to complement the corridor functionally and aesthetically, are prohibited.
- Setback averaging within individual development projects or as otherwise specified in a County-adopted master plan will be permitted except when riparian woodland will be lost. The minimum width of setbacks cannot fall below 50 feet.
- Master drainage plans may provide for other standards that meet the intent of this policy.

CO-116: Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.

CO-117: Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.

CO-118: Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

CO-119: Preserve and enhance Laguna Creek Parkway by:

- Supporting efforts by the Upper Laguna Creek Collaborative planning process to develop an Upper Laguna Creek Master Plan and associated environmental permits to guide future development and conservation along Laguna Creek upstream of Bond Road;
- Preserving, enhancing and restoring water quality and the ecological functions and values of Laguna Creek and the natural hydrologic and geomorphic characteristics of the creek, upstream of Bond Road; and
- Managing development of the watershed of Upper Laguna Creek (upstream of Waterman Road) consistent with the Upper Laguna Creek Master Plan.

Terrestrial Resources

GOAL: Sacramento County vegetative habitats preserved, protected, and enhanced.

Native Vegetation Protection, Restoration and Enhancement

Objective: Tree and native vegetation management practices to promote regeneration in designated resource conservation areas.

Policies:

CO-131: Fuel wood production cut for sale shall occur only on a sustainable yield basis.
CO-132: Protect native vegetative habitats from improper grazing regimes on public lands and inform private land operators of how they may minimize impacts to these habitats.
CO-133: Prohibit native vegetative habitat mitigation and/or other public plantings onto incompatible substrates i.e., tree planting in vernal pool hardpan.
CO-134: Maintain and establish a diversity of native vegetative species in Sacramento County.
CO-135: Protect the ecological integrity of California Prairie habitat.
CO-136: Prohibit the loss of mitigated resource areas.
CO-137: Mitigate for the loss of native trees for road expansion and development consistent with General Plan policies and/or the County Tree Preservation Ordinance.

Landmark and Heritage Tree Protection

Objective: Heritage and landmark tree resources preserved and protected for their historic, economic, and environmental functions.

Policies:

CO-138: Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.
CO-139: Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.
CO-140: For projects involving native oak woodlands, oak savannah or mixed riparian areas, ensure mitigation through either of the following methods:

- An adopted habitat conservation plan.
- Ensure no net loss of canopy area through a combination of the following: (1) preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and (2) provide an area on-site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on-site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration.
- Removal of native oaks shall be compensated with native oak species with a minimum of a one to one dbh replacement.
- A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary.

- If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to the County's Tree Preservation Fund or another appropriate tree preservation fund.
- If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all of the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations.
    - Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;
    - Adjacent to protected stream corridor or other preserved natural areas;
    - Supports a significant number of native broadleaf trees; and
    - Offers good potential for continued regeneration of an integrated woodland community.

CO-141: In 15 years the native oak canopy within on-site mitigation areas shall be 50 percent canopy coverage for valley oak and 30 percent canopy coverage for blue oak and other native oaks.

Urban Forest Management

Objective: A coordinated, funded Urban Tree Management Plan and program sufficient to achieve a doubling of the County's tree canopy by 2050 and promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.

Policies:

CO-142: Provide funds for education, programs, and materials emphasizing the value and importance of trees.

CO-143: Work cooperatively with local utilities to assure that new trees are planted in locations that will maximize energy conservation and air quality benefits.

CO-144: Support a regional approach consistent with the provisions of Greenprint for the protection, replacement, and mitigation of trees.

CO-145: Removal of non-native tree canopy for development shall be mitigated by creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New tree canopy acreage shall be calculated using the 15-year shade cover values for tree species.

CO-146: If new tree canopy cannot be created onsite to mitigate for the non-native tree canopy removed for new development, project proponents (including public agencies) shall contribute to the Greenprint funding in an amount proportional to the tree canopy of the specific project.

New Urban Trees

Objective: One million new trees planted within the urban area between now and 2030.

Policies:

CO-147: Increase the number of trees planted within residential lots and within new and existing parking lots.

CO-148: Support private foundations with local funds for their tree planting efforts.

CO-149: Trees planted within new or existing parking lots should utilize pervious cement and structured soils in a radius from the base of the tree necessary to maximize water infiltration sufficient to sustain the tree at full growth.

Appendix B

Special-Status Species to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Plants			
Balsamorhiza macrolepis big-scale balsamroot	1B.2	Perennial herb found in chaparral, cismontane woodland, valley and foothill grasslands, and sometimes in serpentinite soils. Blooming period: March – June.	**Not expected:** This species may occur in the Study Area within grassy areas; however, because serpentine soilare absent from the Study Area, it is not expected to occur.
Brodiaea rosea ssp. *Vallicola* valley brodiaea	4.2	Perennial bulbiferous herb found in old alluvial terraces on silty, sandy, or gravelly loam soils within swales of valley and foothill grassland and vernal pools. Blooming period: April – May (June).	**Will Not Occur**: The Study Area does not contain suitable habitat to support this species.
Chloropyron molle ssp. hispidum hispid salty bird's-beak	1B.1	Annual hemiparasite herb found on alkaline soil in meadows and seeps, playas, valley and foothill grasslands, from 1-155 meters. Blooming period: June – September.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., alkaline soils) to support this species
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	4.2	Annual herb often found on roadcuts within chaparral, cismontane woodland, and lower montane coniferous forest from 75 to 915 meters. Known from approximately 89 occurrences in Butte, El Dorado, Nevada, Placer, Sacramento, Sierra, and Yuba counties. Blooming period: May – July.	**Will Not Occur**: The Study Area does not contain suitable habitat to support this species.
Downingia pusilla dwarf downingia	2B.2	An annual herb found in mesic areas within valley and foothill grassland and vernal pool habitats from 1 to 445 meters. Blooming period: March – May.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Fritillaria agrestis stinkbells	4.2	Perennial bulbiferous herb found in clay soils, sometimes in serpentinite, chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 10 to 1,555 meters. Blooming period: March – June.	**May Occur**: The Study Area provides marginally suitable habitat for this species. Past disturbance within the herbaceous habitat, makes it unlikely that the site will support this species. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Gratiola heterosepala Boggs Lake hedge-hyssop	SE, 1B.2	Annual herb found on clay soils in vernal pools and swamps, occasionally along the lake margins, from 10 to 2,375 meters. Blooming period: April – August	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools or swamps) to support this species.
Hesperevax caulescens hogwallow starfish	4.2	Annual herb found in moist valley and foothill grasslands with clay soils as well as shallow vernal pools from 0 to 505 meters. Blooming period: March – June.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Juncus leiospermus var. ahartii Ahart's dwarf rush	1B.2	Annual herb found in mesic areas in valley and foothill grasslands from 30 to 229 meters. Blooming period: March – May.	**May Occur**: The Study Area provides marginal habitat for this species within the seasonal wetland ditches located within the Study Area
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	1B.1	Annual herb in vernally moist chaparral, cismontane woodlands, meadows and seeps, valley and foothill grasslands, and vernal pools from 35-1,250 meters. Blooming period: March – June.	**Will Not Occur**: The Study Area does not contain suitable to support this species
Legenere limosa legenere	1B.1	Annual herb found in vernal pools from 1 to 880 meters. Blooming period: April – June.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Navarretia myersii ssp. myersii pincushion navarretia	1B.1	Annual herb often found in acidic soils within vernal pools from 20 to 330 meters. Blooming period: April – May.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species
Orcuttia tenuis slender Orcutt grass	FT, SE, 1B.1	Annual herb often on gravely soils in vernal pools from 35 to 1,760 meters. Blooming period: May -September (October).	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Orcuttia viscida Sacramento Orcutt grass	FE, SE, 1B.1	Annual herb found in deep vernal pools from 20 to 100 meters. Blooming period: April – July (September).	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Sagittaria sanfordii Sanford's arrowhead	1B.1	Perennial rhizomatous herb found in assorted shallow freshwater wetlands, marshes, and swamps from 0 to 650 meters. Blooming period: May – October.	**High**: The seasonal wetland ditches within the Study Area provide suitable habitat for this species. There are four CNDDB records for this species within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Animals			
Invertebrates			
Andrena subapasta An andrenid bee	CSA	Found in grassland habitats within El Dorado, Placer, Sacramento, and San Joaquin counties. Ground nesters that will be underground from summer, fall and winter and emerge in early spring to forage and pollinate early bloomers, such as willows, maples, violets and other early blooming wildflowers. Spring through fall.	**High:** The Study Area provides suitable habitat for this species within the ruderal habitat. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2020).
Bombus crotchii Crotch bumble bee	CE	Typically observed in coastal California east towards the Sierra-Cascade Crest; less common in western Nevada. Select food plant genera: Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, Eriogonum. Flight period: (Queen): March-May, Flight period: (Worker) April – August, Flight period: (Male):April – September.	**May Occur**: The vegetation within the upland habitat within the Study Area provides marginal habitat for this species.
Branchinecta lynchi vernal pool fairy shrimp	FT	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, Yolo, and Yuba counties. USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species. There are four CNDDB records for this species within five miles of the Study Area (CDFW 2022).
Branchinecta mesovallensis midvalley fairy shrimp	CSA	Vernal pools in the Central Valley in Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa counties. USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**Will Not Occur**: Although the Study Area contains seasonal ditches, the site does not support suitable habitat (i.e., vernal pools) to support this species.

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Danaus plexippus monarch butterfly	FC	In winter, western monarchs aggregate in clusters at forested groves scattered along 620 miles of the Pacific coast from Mendocino County to Baja California, Mexico. Small aggregations have also been reported in Inyo and Kern counties. In February and March, the surviving monarchs breed at the overwintering site before dispersing. Adult females lay eggs singly on milkweed species (primarily *Asclepias* spp., but occasionally on other closely related species as well, including *Gomphocarpus* spp. and *Calotropis* spp.) which are critical for successful development of the caterpillar into an adult butterfly.	
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	Associated with elderberry shrubs (Sambucus sp.) often within riparian habitats. Presence can be indicated by bore-holes in stems of elderberries. March – June (Adults) Year – round (Larvae).	**Will Not Occur**: Elderberry shrubs are absent from the Study Area. There are six CNDDB records for this species within five miles of the Study Area (CDFW 2022).
Dumontia oregonensis hairy water flea	CSA	Small aquatic crustacean that is found in shallow ephemeral vernal pools, native wet prairies, seasonally wet meadows, managed agricultural fields and desert pools that fill with water in early-winter and dry out by late-winter. Seasonally wet habitats are typically underlain with poorly drained soils, shallow soils above bedrock, or exposed bedrock and are fed mainly by direct precipitation or shallow groundwater inflows, generally with no surface inflow channels. Typically found in habitats that have greater than 60 percent vegetation; associated species in California, include tall flatsedge (Cyperus eragrostis), common spikerush (Eleocharis macrostachya), and western mannagrass (Glyceria	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
		occidentalis) Found in Sacramento and Solano counties in California and into southern Oregon. Wet-season.	
Gonidea angulata western ridged mussel	CSA	Freshwater mussel species of northwestern North America. Occurs in California, Oregon, Washington, Idaho, Nevada, and British Columbia. An individual is expected to live up to about 30 years and reach a size of about five inches long. Like other native northwestern freshwater mussels, it has a parasitic life stage specific to only certain fish species.	**Will Not Occur:** The Study Area does not contain adequate water sources for the species nor the specific species of fish that act as hosts in its parasitic life stage.
Hydrochara rickseckeri Ricksecker's water scavenger beetle	CSA	Found year-round. An endemic aquatic beetle known to occur in vernal pools that are inundated in winter and spring and dry during the summer months. Ideal habitat includes, neutral to slightly alkaline, clear, low dissolved salts, dominated with vernal pool plant species, and complex of vernal pool crustacean species. Known to occur in the Central Valley below 300 meters in elevation.	**Will Not Occur**: The Study Area does not contain suitable habitat (i.e., vernal pools) to support this species.
Lepidurus packardi vernal pool tadpole shrimp	FE	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Fresno, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties. USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**Will Not Occur**: Although the Study Area contains seasonal wetland ditches, due to the urbanization surrounding the site and the lack of vernal pools within the Study Area, the Study Area does not provide suitable habitat for this species. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Linderiella occidentalis California linderiella	CSA	Found in most landforms, geologic formations and soil types supporting vernal pools in California. They are typically found in deeper vernal pools throughout elevations ranging from 10 to 1,159 meters. USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**Will Not Occur**: Although the Study Area contains seasonal wetland ditches, the site does not support suitable habitat (i.e., vernal pools) to support this species. There are three documented occurrences within five miles of the Study Area (CDFW 2022).
Fishes			
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	FT	Found year-round in the ocean, rivers, creeks, and large inland lakes. This distinct population only occurs in the Sacramento and San Joaquin Rivers and their tributaries.	**Will Not Occur**: The Study Area does not contain suitable habitat to support this species. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2020).
Hypomesus transpacificus Delta smelt	FT	Found year-round in open waters of bays, tidal rivers, channels, and sloughs.	**Will Not Occur**: The Study Area does not contain suitable habitat to support this species.
Amphibians			
Ambystoma californiense California tiger salamander	FT	Breeds in vernal pools and seasonal ponds in grasslands and oak savannas. Adults spend summer in small mammal burrows. Drift fence studies during fall and winter for upland habitats. November – February (adults) March 15 – May 15 (larvae).	**Will Not Occur**: The Study Area does not contain suitable aquatic habitat for this species. The site does contain mammal burrows, but the Study Area is not within the known range of the species.
Spea hammondii western spadefoot	SSC	Found in a variety of upland habitats, including lowlands, foothills, grasslands, open chaparral, and pine-oak woodlands. Habitat preferences include shortgrass plains, and sandy or gravelly soils for burrowing (e.g., alkali flats, washes, alluvial fans). Hibernates/aestivates for most of the year underground. During the breeding season are found in temporary rain pools, and slow-moving streams (e.g., areas flooded by intermittent streams). Breeding:	**Will Not Occur**: The Study Area does not provide suitable breeding habitat for this species, there is no permanent water source nor pools within the seasonal wetland ditch. Additionally, the Study Area is surrounded by urban development, making access to the site difficult and restricted to underground culverts. Additionally, no suitable burrows

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
		January – May.	were observed during the 2019 biological survey.
Reptiles			
Emys marmorata western pond turtle	SSC	Found year round in or within 100 meters of permanent water in a wide variety of habitats up to 1450 meters. Nests in sandy banks and soil at least four inches deep.	**Will Not Occur**: Although the Study Area provides suitable upland habitat, there is no permanent water source in or adjacent to the Study Area. Additionally, the Study Area is surrounded by urban development, making access to the site difficult and restricted to underground culverts There are three CNDDB records for this species within five miles of the Study Area (CDFW 2022).
Thamnophis gigas giant garter snake	FT, ST	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands in Sacramento, Sutter, Butte, Colusa, and Glenn counties. Active outside of dormancy period November-mid March.	**Will Not Occur**: The Study Area does not provide suitable habitat for this species and the Study Area is outside of the current known range of the species.
Birds			
Accipiter cooperii Cooper's hawk	WL	Found year-round. Found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest	**High:** The Study Area provides suitable nesting habitat for this species within the mixed oak woodland.
Agelaius tricolor tricolored blackbird	ST, SSC	Found year-round. Nests in colonies near fresh water, usually within emergent wetland habitat with tall, dense cattails, tule, willow, blackberry, wild rose, and other marshy vegetation. Forages in open grassland, wetland, and agricultural habitats.	**May Occur**: No suitable nesting habitat exists within the Study Area. Marginally suitable foraging habitat exists for this species within the ruderal herbaceous habitat. There are three CNDDB records for this species within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Ammodramus savannarum grasshopper sparrow	SSC	Frequents dense, dry, or well drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California. Found April -July.	**Will Not Occur**: The Study Area does not provide suitable habitat for this species.
Aquila chrysaetos golden eagle	FP	Found year-round in open and semi-open areas in the mountains up to 12,000 feet in elevation. They are also found in canyon lands, rimrock, terrain, and riverside cliffs and bluffs. Nest are built on cliffs and steep escarpments in grassland, in trees, chaparral, shrubland, forests and man-made structures within vegetated areas.	**Will Not Occur**: The Study Area does not provide suitable habitat for this species.
Ardea alba great egret	CSA	Found year-round. Found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, ponds, fields and meadows. Nests primarily in tall trees, or in woods or thickets near water.	**Will Not Occur**: The Study Area does not provide suitable habitat for this species. No known or potential rookery habitat exists within the Study Area. There is one CNDDB record for this species/rookery site within five miles of the Study Area (CDFW 2022).
Ardea herodias great blue heron	CSA	Found year-round. Inhabits both freshwater and saltwater habitats and forages in grassland and agricultural field. Breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests.	**Will Not Occur**: The Study Area does not provide suitable habitat for this species. No known or potential rookery habitat exists within the Study Area. There are two CNDDB records for this species/rookery site within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Athene cunicularia burrowing owl	SSC	Found year round. Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	**May Occur:** Although there is a nearby occurrence, the ruderal herbaceous habitat that exists within the Study Area is marginal, the vegetation is relatively tall, and the Study Area has been historically disturbed. Additionally, only a few suitable small mammal burrows were observed during the 2019 biological survey. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2022).
Buteo regalis ferruginous hawk	WL	Frequents open habitats including grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Preys on rodents and other vertebrates. Winter (non-breeding).	**Will Not Occur**: The Study Area does not provide suitable habitat for this species.
Buteo swainsoni Swainson's hawk	ST	Nest peripherally in valley riparian systems, lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Breeding: March – October.	**May Occur:** The Study Area provides suitable nesting habitat within the isolated trees on site, few rodent burrows were observed during the November 2019 survey therefore this species is unlikely to utilize the Study Area as foraging habitat. The extent of development surrounding the Study Area reduces the potential for this species to occur. There is one CNDDB record for this species within five miles of the Study Area (CDFW 2022).

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT, SE	Found in woodlands, thickets, orchards, and streamside groves. Breeds mostly in dense deciduous stands, including forest edges, tall thickets, dense second growth, overgrown orchards, scrubby oak woods. Often found in willow groves around marshes. In the west, mostly in streamside trees, including cottonwood-willow groves in arid country. Late Spring – Early Fall.	**Will Not Occur**: The Study Area does not contain suitable habitat to support this species. Trees within the Study Area are not in dense groves.
Elanus leucurus white-tailed kite	FP Breeding	Found year-round. Inhabit savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. Nests in trees, often near a marsh in savanna, open woodland, partially cleared lands, and cultivated fields. Foraging occurs within ungrazed or lightly-grazed fields and pastures.	**High**: The Study Area provides suitable nesting habitat for this species within the existing trees in the woodland community and suitable foraging habitat within the ruderal herbaceous habitat. There are nine CNDDB occurrence for this species within five miles of the Study Area (CDFW 2022).
Falco columbarius merlin	WL	Non-breeding habitats include a wide variety, such as marshes, deserts, sea coasts, near coastal lakes and lagoons, open woodlands, fields, etc. During winter, may roost in conifer trees. Winter (non-breeding).	**May Occur**: The Study Area provides foraging habitat for this species within the ruderal herbaceous habitat and mixed oak woodland. This species would only be expected to occur in the region during the winter months.
Laterallus jamaicensis coturniculus California black rail	ST, FP	Found year-round. Saltwater, brackish, and freshwater marshes. Does not occur in wetland areas with annual fluctuations in water level and need a permanent water source of at least 1 inch in depth.	**Will Not Occur**: The Study Area does not provide suitable habitat (i.e., permanent water source) for this species.
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	SSC	Found year-round. Found in thickets, brush, marshes, roadsides, gardens. Habitat varies over its wide range. In most areas, found in brushy fields, streamsides, shrubby marsh edges, woodland edges, hedgerows, well-vegetated gardens. Some coastal populations	**May Occur**: The Study Area provides marginally suitable nesting and foraging habitat for this species

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
		live in salt marshes. Nests in dense streamside brush in southwestern deserts, and in any kind of dense low cover on Aleutian Islands, Alaska.	
Nannopterum auritum double-crested cormorant	WL	Found year-round. Found in a wide variety of aquatic habitats including coasts, bays, lakes, rivers, mangrove swamps, reservoirs and inland ponds. Nesting occurs in trees near or over water, on sea cliffs or on the ground on islands.	**Will Not Occur**: The Study Area does not provide suitable habitat (i.e., open water) for this species.
Pandion haliaetus osprey	WL	Rivers, lakes, coast. Found near water, either fresh or salt, where large numbers of fish are present. May be most common around major coastal estuaries and salt marshes, but also regular around large lakes, reservoirs, rivers. Migrating Ospreys are sometimes seen far from water, even over the desert. Breeding: Spring.	**Will Not Occur**: The Study Area does not contain suitable habitats (i.e., open water) to support this species.
Progne subis purple martin	SSC	Nests in wide variety of open and partly open habitats that are often near water or around towns. Nests in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans. Summer (breeding).	**High:** The Study Area provides suitable nesting and foraging habitat for this species within the mixed oak woodland and ruderal herbaceous habitat There is one CNDDB occurrence documented within five miles of the Study Area (CDFW 2022).
Riparia riparia bank swallow	ST Nesting	Colonial breeder found in open and partly open situations, frequently near flowing water. Nests on steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits or road embankments.	**Will Not Occur**: The Study Area does not contain suitable habitats to support this species. There are three CNDDB occurrences documented within five miles of the Study Area (CDFW 2022).
Mammals			
Antrozous pallidus pallid bat	SSC	Found year-round. Found in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest habitats.	**May Occur**: The Study Area provides suitable roosting habitat for this species within the mixed oak woodland. However, the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habitat, Ecology and Life History	Potential to Occur[3]
		Roosts in colonies usually in rock crevices, caves, mines, hollow trees, and buildings.	is fragmented by development on all sides.
Lasionycteris noctivagans silver-haired bat	SSC	This species occurs primarily in coniferous forested habitats which are adjacent to lakes, ponds, or streams, including areas altered by human disturbance.	**Will Not Occur**: The Study Area does not contain suitable habitats (i.e., conifers or lakes, ponds) to support this species.
Taxidea taxus American badger	SSC	Found year-round. Found in a variety of grassland, shrublands, and open woodlands throughout California. Prefers open areas, and may frequent brushlands, with minimal ground cover. Occurs from below sea level to 3,600 meters. Primarily nocturnal, but can be active at any time of day. Strong affinity to a home area (2 to 725 ha), especially in winter. Suitable burrowing habitat, to make dens and forage for prey, requires friable soils. The majority of their food is obtained by excavating burrows of fossorial rodents (ground squirrels, pocket gophers, kangaroo rats, prairie-dogs, and mice), but will also eat scorpions, insects, snakes, lizards, and birds.	**Will Not Occur**: Although the Study Area contains suitable habitat for this species, the site is fragmented on all sides by development. Therefore, it is highly unlikely that this species could utilize the small and fragmented habitat within the Study Area.

[1] Sensitive species reported in CNDDB or CNPS on the "Carmichael, Citrus Heights, Pleasant Grove, Roseville, Rocklin, Rio Linda, Folsom, Sacramento East, and Buffalo Creek" USGS quads, or in USFWS lists for the project site.

[2] Status is as follows: Federal (ESA) listing/State (CESA) listing/other CDFW status or CRPR. F = Federal; S = State of California; E = Endangered; T = Threatened; C = Candidate; FP=Fully Protected; SSC=Species of Special Concern; WL=Watch List.

[3] Status in the Project site is assessed as follows. **Will Not Occur**: Species is either sessile (i.e., plants) or so limited to a particular habitat that it cannot disperse on its own and/or habitat suitable for its establishment and survival does not occur on the project site; **Not Expected**: Species moves freely and might disperse through or across the project site, but suitable habitat for residence or breeding does not occur on the project site, potential for an individual of the species to disperse through or forage in the site cannot be excluded with 100% certainty; **Presumed Absent:** Habitat suitable for residence and breeding occurs on the project site; however, focused surveys conducted for the current project were negative; **May Occur**: Species was not observed on the site and breeding habitat is not present but the species has the potential to utilize the site for dispersal, **High**: Habitat suitable for residence and breeding occurs on the project site and the species has been recorded recently on or near the project site, but was not observed during surveys for the current project; **Present**: The species was observed during biological surveys for the current project and is assumed to occupy the project site or utilize the project site during some portion of its life cycle.

CRPR = California Rare Plant Rank: 1B – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere. Extension codes: .1 – seriously endangered; .2 – moderately endangered.

Appendix C

Plant and Wildlife Species Observed in the Study Area

Family	Scientific Name	Common Name	Native (N), Non-Native (NN), or Invasive (I) Habitat
Dicots			
Alismataceae	*Alisma triviale*	northern water plantain	N
Amaranthaceae	*Amaranthus albus*	tumbleweed	NN
Anacardiaceae	*Pistacia chinensis*	Chinese pistache	I
Araliaceae	*Hedera helix*	English ivy	I
Asteraceae	*Centaurea solstitialis*	yellow star thistle	I
Asteraceae	*Cichorium intybus*	chicory	NN
Asteraceae	*Dittrichia graveolens*	stinkwort	I
Asteraceae	*Grindelia camporum*	common gumplant	N
Asteraceae	*Leontodon saxatilis*	hawkbit	NN
Asteraceae	*Sonchus oleraceus*	common sow thistle	I
Brassicaceae	*Raphanus sativus*	cultivated radish	I
Convolvulaceae	*Convolvulus arvensis*	field bindweed	NN
Euphorbaceae	*Croton setiger*	turkey-mullein	N
Fabaceae	*Cytisus scoparius*	scotch broom	I
Fabaceae	*Vicia* sp.	vetch	I
Fagaceae	*Quercus suber*	cork oak	NN
Fagaceae	*Quercus wislizeni*	interior live oak	N
Fragaceae	*Quercus douglasii*	blue oak blue oak	N
Fragaceae	*Quercus lobata*	valley oak	N
Geraniaceae	*Erodium botrys*	big heron bill	NN
Geraniaceae	*Erodium* sp.	geranium	NN
Juglandaceae	*Juglans nigraJuglans sp.*	black walnut	NN
Juglandaceae	*Juglans hindsii*	Northern California black walnut	N
Juglandaceae	*Carya illinoinensis*	pecan	NN
Malvaceae	*Malva parviflora*	cheeseweed mallow	NN
Moraceae	*Morus alba*	Mulberry	NN
Myrtaceae	*Eucalyptus cladocalyxEucalyptus sp.*	sweetgumeucalyptus	NN
Oleaceae	*Fraxinus* sp. *Fraxinus velutina*	Modesto ash	N--
Onagraceae	*Epilobium brachycarpum*	annual fireweed	N
Papaveraceae	*Eschscholzia californica*	California poppy	N
Polygonaceae	*Rumex crispus*	curly dock	I
Polygonaceae	*Rumex palustris*	rumex palustris	NN
Polygonaceae	*Persicaria sp.*	smartweed	--
Rosaceae	*Prunus dulcis*	domestic almond	NN
Salicaceae	*Populus fremontii*	Fremont cottonwood	N
Salicaceae	*Salix* sp.	willow	N
Ulmaceae	*Ulmus parvifolia*	Chinese elm	NN
Verbenaceae	*Phyla nodiflora*	turkey tangle frogfruit	N
Monocots			
Arecaeae	*Washingtonia filifera*	California fan palm	N
Juncaceae	*Juncus sp.*	rush	N
Poaceae	*Avena fatua*	wild oat	I
Poaceae	*Bromus diandrus*	ripgut brome	I
Poaceae	*Cynodon dactylon*	Bermuda grass	I
Poaceae	*Phalaris aquatica*	bulbous canarygrass	I
Poaceae	*Briza minor*	little quaking grass	NN
Poaceae	*Agrostis stolonifera*	creeping bentgrass	I
Poaceae	*Cortaderia jubata*	pampas grass	I
Poaceae	*Hordeum murinum*	foxtail barley	I
Poaceae	*Bromus hordeaceus*	soft brome	I

Family	Scientific Name	Common Name	Native (N), Non-Native (NN), or Invasive (I) Habitat
Poaceae	*Sorghum halepense*	Johnsongrass	I
Poaceae	*Polypogon maritimus*	Mediterranean beard grass	I
Typhaceae	*Typha sp.*	cattails	--

Order	Family	Scientific Name	Common Name
Birds			
Passeriformes	Corvidae	*Corvus brachyrhynchos*	American crow
Passeriformes	Corvidae	*Aphelocoma californica*	California scrub-jay
Passeriformes	Fringillidae	*Haemorhous mexicanus*	House finch
Columbiformes	Columbidae	*Zenaida macroura*	Mourning dove
Passeriformes	Mimidae	*Mimus polyglottos*	Northern mockingbird
Mammals			
Lagomorphs	Leporidae	*Lepus californicus*	Black-tailed jackrabbit
Reptiles			
Squamata	Phrynosomatidae	*Sceloporus occidentalis*	Western fence lizard

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Appendix D

Representative Site Photos

Photo 1. Seasonal wetland ditch looking south towards Jan Drive. Photo taken November 20, 2019.

Photo 2. Seasonal wetland ditch looking north from Jan Drive. Photo taken November 20, 2019.

Photo 3. Example of ruderal herbaceous habitat within the southeast portion of the Study Area. Photo taken November 20, 2019.

Photo 4. Heritage oaks within the eastern portion of the Study Area. Photo taken November 20, 2019.

Photo 5. Parking lot located along Manzanita Avenue within the Study Area. Photo taken November 20, 2019.

Photo 6. Ditch that transects the Study Area in an east to west direction towards the northern portion of the Study Area.

Photo 7. Photo taken of the seasonal wetland ditch midway down, looking south. Photo taken November 20, 2019.

Photo 8. Mixed oak woodlands along the seasonal wetland ditch looking south from Winding Way. Photo taken November 20, 2019.

Photo 9. The photo was taken facing west located within the northwest corner of the Study Area. Photo was taken June 1, 2022.

Photo 10. Photo of Turkey tangle located within the northwest corner of the Study Area. Photo was taken June 1, 2022.

Photo 11. Example of ruderal herbaceous habitat within the northwest corner of the Study Area. Photo was taken June 1, 2022.

Photo 12. View facing north from the northwest corner of the Study Area. Photo was taken June 1, 2022.