

## 3.4 BIOLOGICAL RESOURCES

This section evaluates the potential biological resources impacts associated with the adoption and implementation of the proposed Project. This section describes the regulatory framework and existing conditions; identifies criteria used to determine impact significance; provides an analysis of the potential biological resources impacts; and identifies proposed General Plan 2045 goals and policies that would minimize potentially significant impacts.

This section is based in part on the Livermore General Plan Update Existing Conditions Report prepared in March 2022 (City of Livermore 2022). Where more recent data is available at the time of preparation of this Draft EIR, the analysis provided herein reflects such updated information.

As detailed in Chapter 3, *Environmental Analysis*, no concerns related to biological resources were received during the EIR scoping period.

### 3.4.1 Regulatory Framework

#### FEDERAL

##### Federal Endangered Species Act

The United States Fish and Wildlife Services (USFWS) has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (FESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10 of the FESA. FESA defines “take” as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Title 50, Part 17, Section 17.3, *Definitions*, of the Code of Federal Regulations (CFR), defines the term “harass” as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering. Furthermore, Section 17.3 defines “harm” as an act that either kills or injures a listed species. By definition, “harm” includes habitat modification or degradation that kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering. Section 10(a) of the FESA establishes a process for obtaining an incidental take permit that authorizes nonfederal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by FESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Preparation of a habitat conservation plan (HCP) is required for all Section 10(a) permit applications. USFWS and the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service have joint authority under the FESA for administering the incidental take program. The Fisheries

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Service has jurisdiction over anadromous fish species, and USFWS has jurisdiction over all other fish and wildlife species. Section 7 of the FESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the FESA, or result in the destruction or adverse modification of its habitat. Federal agencies are also required to minimize impacts to all listed species resulting from their actions, including issuance of permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (FESA requires that USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a biological opinion prepared by USFWS stating whether implementation of the HCP will result in jeopardy to any HCP covered species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species. Although federally listed animals are legally protected from harm no matter where they occur, Section 9 of the FESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other take that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act (CESA).

### **Clean Water Act**

The United States Army Corps of Engineers (USACE) is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the United States (U.S.). These waters and their lateral limit include streams that are tributaries to navigable waters and their adjacent wetlands (Title 33 CFR Section 328.3). The lateral limits of jurisdiction for a nontidal stream are measured at the line of the ordinary high-water mark or the limit of adjacent wetlands. Any permanent extension of the limits of an existing water of the U.S., whether natural or human-made, results in a similar extension of USACE jurisdiction.

Waters of the U.S. fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses generally lacking plant cover such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands are aquatic habitats that support hydrophytic wetland plants and include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated water bodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the U.S.

Waters and wetlands that cannot trace a continuous hydrologic connection to a navigable water of the U.S. are not tributary to waters of the U.S. These are termed “isolated wetlands.” Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce (33 CFR 328.3). USACE may or may not take jurisdiction over isolated wetlands depending on the specific circumstances.

In general, a project proponent must obtain a Section 404 permit from USACE before placing fill or grading in wetlands or other waters of the U.S. Prior to issuing the permit, USACE is required to consult with USFWS under Section 7 of the FESA if the project may affect federally listed species.

All USACE permits require water quality certification under Section 401 of the Clean Water Act. In the EIR Study Area, this regulatory program is administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Project proponents who propose to fill wetlands or other waters of the U.S. must apply for water quality certification from the San Francisco Bay RWQCB.

### **Migratory Bird Treaty Act**

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term “take” is defined as “to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires.” Most bird species native to North America are covered by this act. The MBTA prohibits the intentional or incidental killing of birds or destruction of their nests when in active use.

## **STATE**

### **California Endangered Species Act**

The California Department of Fish and Wildlife (CDFW) has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under CESA (California Fish and Game Code [CFG] Section 2050 et seq.). CESA is similar to FESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

### **California Environmental Quality Act**

The California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.) applies to projects proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of the CEQA Guidelines (California Code of Regulations Sections 15000 et seq.), a species not included on any formal list “shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria” for listing. With sufficient documentation, a species could be shown to meet the

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definition of rare or endangered under CEQA and be considered a “de facto” rare or endangered species.

Projects that undergo independent CEQA review would be required to determine whether there is potential habitat on-site for special-status species. If potential habitat were found on-site, focused surveys for those special-status species potentially present would be required. If special-status species were found, the project proponent would be required to consult with the CDFW regarding impacts to special-status species and ensuing mitigation. Mitigation for impacts to special-status species is often in the form of acquisition or restoration of habitat, on-site or off-site, at a ratio to the area of impacted land that would be determined by the CDFW or USFWS. For projects sited in critical habitat for a listed species and are proposed by federal agencies or involve federal permits or funding, the project proponent would be required under the FESA to consult with the USFWS regarding impacts and mitigation. As part of the permitting process with the USACE, projects affecting federally regulated waters must demonstrate that they would not have an adverse effect on federally listed species or would be required to provide adequate compensatory mitigation where avoidance is infeasible.

### **California Fish and Game Code**

CDFW is responsible for enforcing the CFGC, which contains several protections from take for a variety of species. CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Sections 1601 to 1606 of the CFGC. The CFGC stipulates that it is “unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake” without notifying CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW’s jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

The CFGC also lists animal species designated as fully protected or protected, which may not be taken or possessed at any time. The CDFW does not issue licenses or permits for take of these species except for necessary scientific research, habitat restoration/species recovery actions, or live capture and relocation pursuant to a permit for the protection of livestock. Fully protected species are listed in CFGC Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish), while protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42, respectively.

Several provisions in the CFGC provide for the protection of birds and bird nests in active use. Unless the CFGC or its implementing regulations provide otherwise, the following is unlawful under California law:

- Take a bird, mammal, fish, reptile, or amphibian.
- Take, possess, or needlessly destroy the nest or eggs of any bird.
- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks, and eagles) or the nests or eggs of such bird.
- Take or possess any of the 13 fully protected bird species listed in CFGC Section 3511.
- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird).
- Take or possess any migratory non-game bird as designated in the MBTA or any part of such bird, except as provided by rules or regulations adopted by the Department of the Interior under the MBTA.
- Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the CESA unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW.

Non-native species, including European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock pigeon (*Columba livia*), are not afforded any protection under the MBTA or CFGC.

### **Porter-Cologne Water Quality Control Act**

Under the Porter-Cologne Water Quality Control Act (California Water Code Sections 13000 through 14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by USACE. Therefore, even if a project does not require a federal permit, it still requires review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction best management practices (BMPs).

### **California Native Plant Protection Act**

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the California Native Plant Protection Act, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under the CESA but rather under CEQA.

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The California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species (CNPS 2025):

- **Rank 1A.** Plants presumed extirpated 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 more information is needed; a review list
- **Rank 4.** Plants of limited distribution; a watch list

### **California Natural Communities**

Sensitive natural communities are natural community types considered to be rare or of a “high inventory priority” by the CDFW. Although sensitive natural communities have no legal protective status under FESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project’s impact on any sensitive natural community will depend on that natural community’s relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, and/or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type.

### **California Migratory Bird Protection Act**

Passed in 2025, the California Migratory Bird Protection Act (Assembly Bill 454) made permanent California’s protections for migratory birds by tying State law to the federal MBTA. The act prohibits the taking or possession of migratory birds, their nests, or eggs, except as allowed under federal MBTA.

## **REGIONAL**

### **East Alameda County Conservation Strategy**

The East Alameda County Conservation Strategy (EACCS) provides a framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects (ICF 2010). The EACCS focuses on biological resources such as endangered and other special-status species, as well as sensitive habitat types (e.g., wetlands, riparian corridors, rare upland communities). The EACCS does not include incidental take permits for threatened or endangered species, similar to that provided by an HCP. Participating in the EACCS is voluntary. The City of Livermore (City) is a partner in the EACCS and uses the document for guidance and input on managing biological resources and conservation priorities during project-level planning.

### **East Bay Regional Conservation Investment Strategy**

The East Bay Regional Conservation Investment Strategy (RCIS) covers Alameda and Contra Costa counties and was approved by CDFW in January 2021 (ICF 2021). The RCIS is a voluntary, non-regulatory, and non-binding conservation assessment that includes information and analyses relating to the conservation of focal species, their associated habitats, and the conservation status of the RCIS land base. RCIS establishes biological goals and objectives at the species level and describes conservation actions and habitat enhancement actions that, if implemented, will contribute to those goals and objectives. Those actions will benefit the conservation of focal species, habitats, and other natural resources, and they may be used as a basis to provide advance mitigation or inform other conservation investments. The development of RCISs does not create, modify, or impose regulatory requirements or standards, regulate land use, establish land use designations, or affect the land use authority of a public agency.

## **LOCAL**

### **Livermore Municipal Code**

The Livermore Municipal Code (LMC) includes various directives to minimize adverse impacts to biological resources. The LMC is organized by title, chapter, section, and, in some cases, articles. Most provisions related to biological resources are in Title 12, *Streets, Sidewalks, and Public Places*. Chapter 12.30, *Street Trees and Tree Preservation*, defines “protected trees” based on trunk circumference at breast height (i.e., 4.5 feet above grade). The definition of a protected tree varies depending on several factors, including existing land use and property ownership status. This chapter requires that prior to the removal of a protected tree, all trees on site must be surveyed by a certified arborist. Following the arborist survey, a tree action permit, which

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must include an arborist's report, must be approved by the City. Furthermore, the City may require mitigation measures as conditions of approval for the removal of protected trees.

### Livermore Stream Maintenance Program

In 2015, the City developed a programmatic Stream Maintenance Program (SMP) for routine creek and channel maintenance in coordination with the RWQCB, CDFW, USACE, and USFWS (City of Livermore 2023). The SMP serves as a permitting framework for routine maintenance work in and around channels. It also defines BMPs to minimize the impacts of routine maintenance to listed species and sensitive habitat and to mitigate for these impacts.

## 3.4.2 Existing Conditions

### VEGETATION COMMUNITIES AND HABITAT TYPES

The EIR Study Area consists largely of urban developed areas surrounded by agriculture and grassland. Figure 3.4-1, *Vegetation Communities and Land Cover*, shows the extent of urbanization, agricultural areas, and vegetative communities.

In general, each cover type differs in its relative value as wildlife habitat and can be characterized by both vegetation community and associated animal species that are dependent on that habitat. Some wildlife species may use more than one habitat type. The characteristic plant and wildlife species typically associated with each of these habitat types are summarized herein (City of Livermore 2022).

#### Urban Developed Areas

Urban developed areas occupy most of the EIR Study Area, as shown on Figure 3.4-1. Urban developed areas include residential, commercial, industrial, transportation, landscaping, and recreational uses (e.g., sites with structures, paved surfaces, horticultural plantings, golf courses, and irrigated lawns). Most plant species used in landscaping are non-native ornamentals, consisting of a wide variety of trees, shrub, groundcover, and turf species. Ruderal species (non-native, invasive) tend to dominate locations where the ground surface has been disturbed. Native trees are scattered throughout the established residential and urbanized areas, including buckeye (*Aesculus californica*), london planetree (*Platanus x acerifolia*), and coast live oak (*Quercus agrifolia*).

Several wildlife species use urban areas for foraging, roosting, and/or nesting. These species include native animals that have adapted well to living near humans such as Pacific treefrog (*Hyla regilla*), western fence lizard (*Sceleroporus occidentalis*), barn swallow (*Hirundo rustico*), black phoebe (*Saynoris nigricans*), and other common but protected species of nesting birds, in addition to non-native species such as house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*). Urban-adapted mammal species, including raccoon (*Procyon lotor*) and

opossum (*Didelphis virginiana*), are also common in this setting. In addition, a few protected species live in urban developed areas such as burrowing owl (*Athene cunicularia*), northwestern and southwestern pond turtle (*Actinemys marmorata*), and some species of bats. Some artificial water bodies in urban areas, including stormwater conveyances or detention basins, may also support fish and amphibians when inundated.

## **Agricultural Areas**

The EIR Study Area includes cultivated agriculture and pastureland. Cultivated agriculture encompasses all areas where the native vegetation has been cleared for irrigated agriculture use or dryland farming (e.g., cropland, orchards, and vineyards). Pastureland is typically similar to grassland as it is not as intensively managed and less altered than cultivated agricultural land.

Wildlife that may use grazing land in the EIR Study Area and surrounding region include species that thrive in open environments with relatively little cover or edge habitats such as California ground squirrel (*Spermophilus beecheyi*), black-tailed deer (*Odocoileus hemionus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and San Joaquin kit fox (*Vulpes macrotis mutica*). Many bird species, including birds of prey such as red-tailed hawks (*Buteo jamaicensis*), may nest in trees adjacent to agricultural areas and often can be found foraging on small mammals or insects. Intensively farmed lands do not typically support native plant communities. However, wildlife species, particularly migrating waterfowl and raptors, use these fields for foraging and/or roosting. The edges of agricultural fields may provide opportunities for burrowing animals such as California ground squirrels and burrowing owls. In addition, agricultural areas are often some of the few sites with readily available water, irrigation ditches, and stock ponds that are not heavily disturbed and often support various species of reptiles and amphibians.

## **Grassland**

Grassland occupies most of the undeveloped areas north, east, and south of the EIR Study Area. Grassland in the EIR Study Area consists of alkali meadow and scalds, California annual grassland, and valley sink scrub grassland communities.

California annual grassland is the most common grassland community in the EIR Study Area covering 3,738 acres. California annual grassland is generally composed of introduced grasses and can be found in areas that have been grazed or in abandoned agricultural fields and vacant lots. Dominant species typically observed in California annual grassland include foxtail brome (*Bromus madritensis*), ripgut brome (*Bromus diandrus*), slim oat (*Avena barbata*), and wild oats (*Avena fatua*). Non-native forbs such as filaree (*Erodium* sp.) and mustard (*Brassica* sp.) are often found in non-native annual grassland.

Alkali meadow and scalds occur in the northern portion of the EIR Study Area. Dominant species in alkali meadows include barley (*Hordeum* sp.), beardless wild rye (*Elymus triticoides*), and salt grass (*Distichlis spicata*). Associated plant species consist of halophytes, including alkali heath

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(*Frankenia salina*), alkali weed (*Cressa truxillensis*), alkali mallow (*Malvella leprosa*), common tarweed (*Centromadia pungens*), and saltbush (*Atriplex* sp.).

Valley sink scrub occurs in the northern portion of the EIR Study Area. Valley sink scrub develops where clay-rich alkaline soils area seasonally saturated because of a shallow water table, low surface runoff, and slow infiltration. The herbaceous layer consists of a patchwork of barren, salt-encrusted scalds and alkali grassland vegetation, including alkali heath, iodine bush (*Allenrolfea occidentalis*), and salt grass.

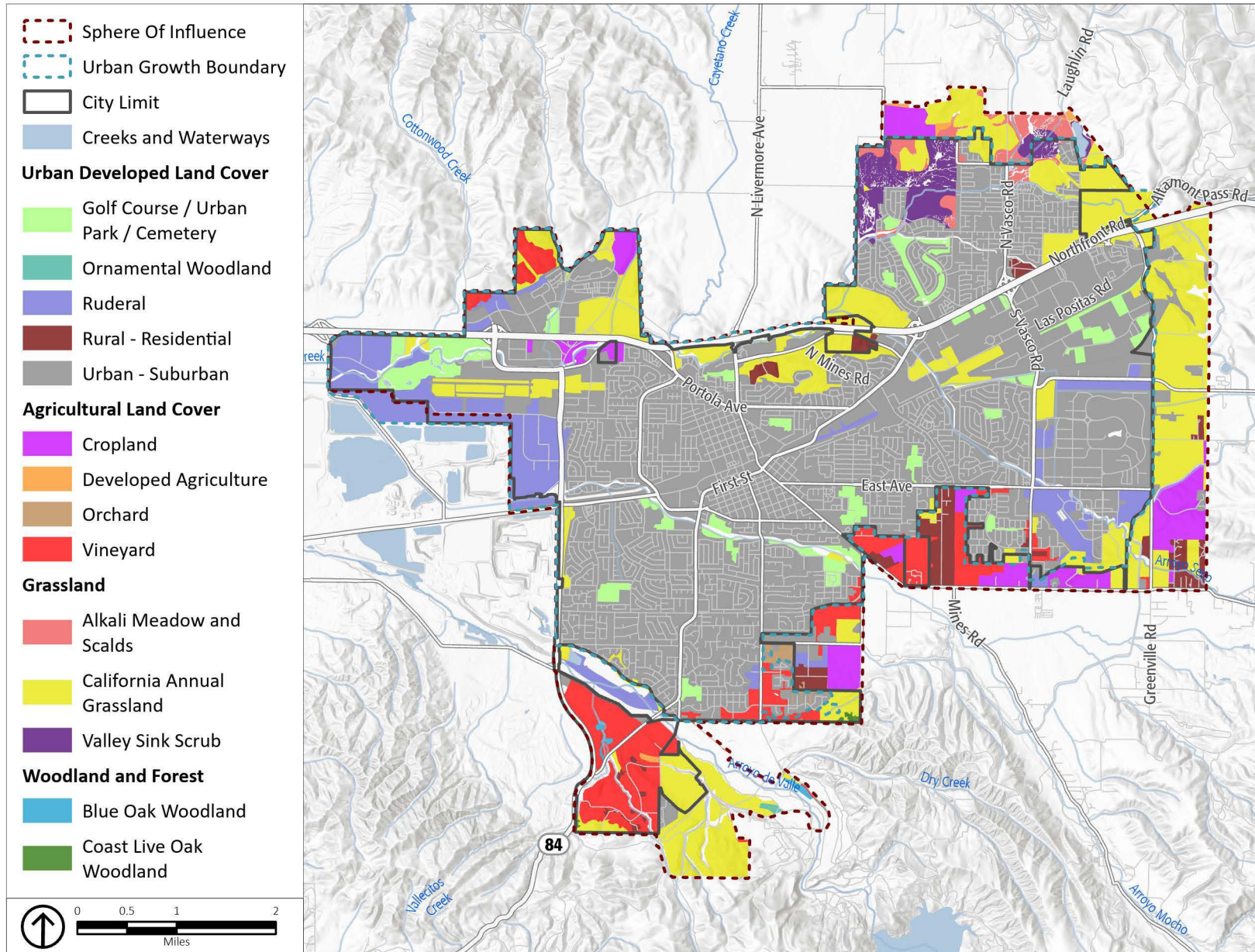
Many wildlife species use both non-native and native grasslands, including northern pacific rattlesnake (*Crotalus viridis*), California horned lark (*Eremophila alpestris*), and black-tailed jackrabbit (*Lepus californicus*). California ground squirrels may also be found in these habitats, whose burrows may be occupied by burrowing owl where vegetation height is suitable. In addition, grassland habitats support vernal pools and seasonal wetland features, where federally listed endangered branchiopods such as vernal pool fairy shrimp (*Branchinecta lynchi*) can be found. These vernal pool habitats may also support special-status amphibians such as federally and/or State-listed California tiger salamander (*Ambystoma californiense*) and federally listed California red-legged frog (*Rana draytonii*) when inundated.

### Woodland and Forest

Woodland and forested habitats are largely restricted to the north and east-facing slopes or higher elevations to the south and west of the EIR Study Area. The moist microclimate produced by the altitude, steepness, and/or aspect of these areas has allowed the establishment of dense stands of trees. Two woodland/forest communities are present in the EIR Study Area, depending on the microclimate of the site: coast live oak woodland and blue oak woodland.

Coast live oak woodland is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content. These woodlands are extensive on west-facing slopes from the ridgeline to mid-elevation. The dominant tree species is coast live oak. Wildlife species found in coast live oak woodlands include a variety of bird species, including birds of prey such as white-tailed kite (*Elanus leucurus*) and cavity nesters such as acorn woodpeckers (*Melanerpes formicivorus*), a variety of reptiles and amphibians, and common mammals such as black-tailed deer.

Blue oak woodland is usually found in low to mid-elevation hills in slightly drier microclimates. Blue oak woodland is dominated by blue oak (*Quercus douglasii*), a drought-tolerant species adapted to grow on thin soils in the dry foothills. California buckeye (*Aesculus californica*) and foothill pine (*Pinus sabiniana*) are associated tree species in blue oak woodland. The understory varies from dense to open with a composition similar to California annual grassland. Understory species typically include coffeeberry (*Rhamnus californica*), holly leaf cherry (*Prunus ilicifolia*), and poison oak (*Toxicodendron divesilobum*).



Source: East Alameda County Conservation Strategy, 2011; City of Livermore, 2022.

Figure 3.4-1  
**Vegetation Communities and Land Cover**

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Because they generally offer opportunities for basking in canopy openings, woodland communities are home to a number of reptile species, including the federally and State-listed Alameda whipsnake (*Masticophis lateralis euryxanthus*), northern pacific rattlesnake, California kingsnake (*Lampropeltis getulus*), western fence lizard, and northern alligator lizard (*Elgaria coerulea*). Bird species include California thrasher (*Toxostoma redivivum*), wrentit (*Chamaea fasciata*), spotted towhee (*Pipilo maculatus*), and California quail (*Callipepla californica*). Mammals that are likely to use this habitat for cover and forage include black-tailed deer, coyote, gray fox (*Urocyon cinereoargenteus*), black-tailed jackrabbit, and various rodents.

## SPECIAL-STATUS SPECIES

Special-status species are plants and animals that are legally protected under FESA, CESA, or other regulations, as well as other species that are considered rare by the scientific community and resource agencies to warrant special consideration, particularly regarding protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat (see Section 3.4.1, *Regulatory Framework*). Species with legal protection under the FESA and CESA often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species. Special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the FESA.
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the CESA.
- Plant species with a rank of 1A, 1B, and 2 in the CNPS Inventory of Rare and Endangered Plants.
- Animal species designated as Species of Special Concern or Fully Protected by the CDFW.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA Guidelines.
- Focal Species from the EACCS.
- Species considered a taxon of special concern by relevant local agencies.

The primary information source on the distribution of special-status species in California is the California Natural Diversity Database (CNDDDB) inventory, which is maintained by the Biogeographic Data Branch of CDFW. The CNDDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data is obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location

does not necessarily mean that special-status species are absent from the area in question; only that no data has been entered into the CNDDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location, where there is evidence of potential occurrence.

### **Special-Status Plants**

Review of the CNDDDB, USFWS's Information for Planning and Consultation (IPac) resource list (USFWS 2025), and CNPS occurrence records indicate a total of 25 special-status plant species that have been reported within or in the vicinity of the EIR Study Area (CDFW 2025). These special-status plant species are listed in Table 3.4-1, *Special-Status Plant Species in the EIR Study Area*, together with information on their status, description of typical habitat characteristics, and normal flowering season.

Existing development limits the likelihood of continued occurrences of populations of special-status plant species within the EIR Study Area, with the possible exception of riparian and wetland-dependent species that may occur along arroyo and stream corridors and other major drainages, or species associated with seasonal wetlands and grassland where suitable habitat remains. Special-status plant species with the potential to occur in the grassland and aquatic resources land cover types in the EIR Study Area include big tarplant (*Blepharizonia plumosa*, California Rare Plant Rank [CRPR] 1B.1), brittlescale (*Atriplex depressa*, CRPR 1B.2), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*, CRPR 1B.1), hispid salty bird's-beak (*Chloropyron molle* ssp. *hispidum*, CRPR 1B.1), Livermore tarplant (*Deinandra bacigalupii*, CRPR 1B.1), palmate-bracted bird's-beak (*Chloropyron palmatum*, FE, SE, CRPR 1B.1), and San Joaquin spearscale (*Extriplex joaquinana*, CRPR 1B.2). Focused surveys would be required to provide confirmation of presence or absence of special-status plant species on undeveloped portions of the EIR Study Area where thorough studies have not been conducted.

### **Special-Status Animals**

Based on a review of the CNDDDB, the IPac resource list, and other sources, a total of 51 special-status animal species are known or suspected to potentially occur in the EIR Study Area and surrounding region. A total of 30 of these special-status animal species have been reported by the CNDDDB within or near EIR Study Area (CDFW 2025). These species are listed in Table 3.4-2, *Special-Status Animal Species in the EIR Study Area*, together with information on their status, and description of typical habitat characteristics. As shown on Figure 3.4-2, *Critical Habitats*, critical habitat has been designated by USFWS for California red-legged frog in the northeastern foothills and for vernal pool fairy shrimp in open spaces at the northern edge of the EIR Study Area.

**Table 3.4-1 Special-Status Plant Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	—	—	1B.2	Alkaline soils. Playas, valley and foothill grassland (adobe clay), and vernal pools. Elevation ranges from 3 to 197 feet (1 to 60 meters). Blooms March–June.
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	—	—	1B.2	Alkaline substrates in chenopod scrub, meadows and seeps, and valley and foothill grassland habitats. Elevation below 1,230 feet (375 meters). Blooms April–October.
<i>Atriplex depressa</i>	brittlescale	—	—	1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Elevation ranges from 5 to 1,050 feet (1 to 320 meters). Blooms April–October.
<i>Atriplex minuscula</i>	lesser saltscale	—	—	1B.1	Chenopod scrub, playas, and valley and foothill grassland. Elevation ranges from 50 to 655 feet (15 to 200 meters). Blooms May–October.
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	—	—	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland. Elevation ranges from 150 to 5,100 feet (45 to 1,555 meters). Blooms March–June.
<i>Blepharizonia plumosa</i>	big tarplant	—	—	1B.1	Valley and foothill grassland. Elevation ranges from 100 to 1,655 feet (30 to 505 meters). Blooms July–October.
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	—	—	1B.2	Chaparral, cismontane and riparian woodland, and valley and foothill grassland. Elevation below 2,750 feet (840 meters). Blooms April–June.
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon’s tarplant	—	—	1B.1	Alkaline valley and foothill grasslands. Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms May–November.
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird’s beak	—	—	1B.1	Meadows and seeps, playas, and valley and foothill grassland. Elevation ranges from 5 to 510 feet (1 to 155 meters). Blooms June–September.
<i>Chloropyron palmatum</i>	palmate-bracted bird’s-beak	Federal Endangered	State Endangered	1B.1	Chenopod scrub, and valley and foothill grassland. Elevation ranges from 15 to 510 feet (5 to 155 meters). Blooms May–October.

**Table 3.4-1 Special-Status Plant Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat
<i>Deinandra bacigalupii</i>	Livermore tarplant	—	State Endangered	1B.1	Meadows and seeps. Elevation ranges from 490 to 605 feet (150 to 185 meters). Blooms June–October.
<i>Delphinium californicum</i> ssp. <i>interius</i>	Hospital Canyon larkspur	—	—	1B.2	Chaparral, cismontane woodland, and coastal scrub. Elevation ranges from 640 to 3,595 feet (195 to 1,095 meters). Blooms April–June.
<i>Extriplex joaquinana</i>	San Joaquin spearscale	—	—	1B.2	Meadows and seeps, playas, and valley and foothill grasslands. Elevation ranges from 3 to 2,740 feet (1 to 835 meters). Blooms April–October.
<i>Fritillaria agrestis</i>	stinkbells	—	—	4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation ranges from 35 to 5,100 feet (10 to 1,555 meters). Blooms March–June.
<i>Helianthella castanea</i>	Diablo helianthella	—	—	1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Elevation ranges from 200 to 4,250 feet (60 to 1295 meters). Blooms April–June.
<i>Hesperolinon breweri</i>	Brewer's western flax	—	—	1B.2	Chaparral, oak woodland, and grassland communities, often in open areas with low vegetation cover like transitions between grasslands and chaparral. Elevation ranges from 100 to 3,100 feet (30 to 945 meters). Blooms May–June.
<i>Navarretia nigelliformis</i> ssp. <i>radicans</i>	shining navarretia	—	—	1B.2	Vernal pools within cismontane woodland and valley or foothill grassland. Elevation ranges from 150 to 330 feet (45 to 100 meters). Blooms April–July.
<i>Navattetia prostrata</i>	prostrate vernal pool navarretia	—	—	1B.2	Coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation ranges from 10 to 3,970 feet (3 to 1,210 meters). Blooms April–July.
<i>Plagiobothrys glaber</i>	hairless popcornflower	—	—	1A	Marshes and swamps, and meadows and seeps. Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms March–May.

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**Table 3.4-1 Special-Status Plant Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat
<i>Puccinellia simplex</i>	California alkali grass	—	—	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation ranges from 5 to 3,050 feet (2 to 930 meters). Blooms March–May.
<i>Ravenella exigua</i>	chaparral harebell	—	—	1B.2	Chaparral communities near cliff sides or rocky areas. Elevation ranges from 900 to 4,100 feet (275 to 1,250 meters). Blooms May–June.
<i>Senecio aphanactis</i>	chaparral ragwort	—	—	1B.2	Chaparral, cismontane woodland, coastal scrub; sometimes in alkaline soils. Elevation ranges from 50 to 2,625 feet (15 to 800 meters). Blooms January–April.
<i>Spergularia macrotheca</i> var. <i>longistyla</i>	long-styled sand-spurrey	—	—	1B.2	Marshes and swamps, and meadows and seeps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms February–May.
<i>Trifolium hydrophilum</i>	saline clover	—	—	1B.2	Marshes and swamps, valley and foothill grassland, and vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms April–June.
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	—	—	1B.1	Valley and foothill grassland. Elevation ranges from 5 to 1,495 feet (1 to 455 meters). Blooms March–April.

Source: CDFW 2025.

Notes: California Native Plant Society (CNPS) California Rare Plant Rank

- 1A: Plants presumed extinct in California.
- 1B: Plants rare, threatened, or endangered in California and elsewhere.
- 2: Plants rare and endangered in California but more common elsewhere.
- 3: Plants about which additional data are needed – a review list.
- 4: Plants of limited distribution – a watch list

**Table 3.4-2 Special-Status Animal Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	Habitat
<b>Birds</b>				
<i>Agelaius tricolor</i>	tricolored blackbird	—	State Threatened; CDFW Species of Special Concern	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.
<i>Ammodramus savannarum</i>	grasshopper sparrow	—	CDFW Species of Special Concern	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.
<i>Aquila chrysaetos</i>	golden eagle	—	California Fully Protected Species	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and manufactured structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during the winter.
<i>Athene cunicularia</i>	burrowing owl	—	State Candidate (Endangered); CDFW Species of Special Concern	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.
<i>Buteo swainsoni</i>	Swainson's hawk	—	State Threatened	Summer resident in California's Central Valley. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.
<i>Circus hudsonius</i>	northern harrier	—	CDFW Species of Special Concern	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.

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**Table 3.4-2 Special-Status Animal Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	Habitat
<i>Elanus leucurus</i>	white-tailed kite	—	California Fully Protected Species	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.
<i>Haliaeetus leucocephalus</i>	bald eagle	—	State Endangered; California Fully Protected Species	Typically nests in forested areas near large bodies of water in the northern half of California; nests in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands.
<i>Lanius ludovicianus</i>	loggerhead shrike	—	CDFW Species of Special Concern	Year-round resident in open woodland, grassland, savanna, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely foliated shrubs or trees.
<b>Mammals</b>				
<i>Antrozous pallidus</i>	pallid bat	—	CDFW Species of Special Concern	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and hollow trees and various human-made structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	—	CDFW Species of Special Concern	Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g., along streams.
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	—	CDFW Species of Special Concern	Maritime chaparral and woodlands with moderate to dense cover and abundant dead wood for nest construction.

**Table 3.4-2 Special-Status Animal Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	Habitat
<i>Taxidea taxus</i>	American badger	—	CDFW Species of Special Concern	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Federal Endangered	State Threatened	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.
<b>Amphibians</b>				
<i>Ambystoma californiense</i>	California tiger salamander – Central coast DPS	Federal Threatened	State Threatened	Occurs in grasslands of the Central Valley and oak savanna communities in the Central Valley, the Sierra Nevada and Coast ranges, and the San Francisco Bay area. Needs seasonal or semi-permanent wetlands to reproduce, and terrestrial habitat with active ground squirrel or gopher burrows.
<i>Rana boylei</i>	foothill yellow-legged frog Central coast DPS	Federal Threatened	State Endangered	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.
<i>Rana draytonii</i>	California red-legged frog	Federal Threatened	CDFW Species of Special Concern	Found mainly near ponds in riparian woodlands, grasslands, coastal scrub, and stream sides with emergent vegetation. Most common in lowlands or foothills. Frequently found in woodlands adjacent to streams. Breeding habitat is in permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry.
<i>Spea hammondi</i>	western spadefoot	Federal Proposed Threatened	CDFW Species of Special Concern	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.
<b>Reptiles</b>				
<i>Actinemys marmorata</i>	Northwestern pond turtle	Federal Proposed Threatened	CDFW Species of Special Concern	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking.

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**Table 3.4-2 Special-Status Animal Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	Habitat
<i>Actinemys pallida</i>	Southwestern pond turtle	Federal Proposed Threatened	CDFW Species of Special Concern	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking.
<i>Anniella pulchra</i>	Northern California legless lizard	—	CDFW Species of Special Concern	The most widespread of California's <i>Anniella</i> species. Occurs in sandy or loose soils under sparse vegetation from Antioch south coastally to Ventura. Bush lupine is often an indicator plant, and two melanistic populations are known.
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	—	CDFW Species of Special Concern	Occurs in open, dry, treeless areas, including grassland and saltbush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	Federal Threatened	State Threatened	Found in chaparral and sage scrub with rock outcrops, deep crevices, or abundant rodent burrows.
<i>Phrynosoma blainvillii</i>	coast horned lizard	—	CDFW Species of Special Concern	Occurs primarily in scrub, chaparral, and grassland habitats associated with undisturbed sandy substrates.
<b>Insects and Crustaceans</b>				
<i>Bombus crotchii</i>	Crotch's bumble bee	—	State Candidate (Endangered)	Found in a variety of habitats. Once common and widespread. Species has declined precipitously, perhaps from disease.
<i>Bombus occidentalis</i>	western bumble bee	—	State Candidate (Endangered)	Found in a variety of habitats. Once common and widespread. Species has declined precipitously, perhaps from disease.
<i>Branchinecta longiantenna</i>	longhorn fairy shrimp	Federal Endangered	—	Endemic to the eastern margin of the central coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Federal Threatened	—	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water

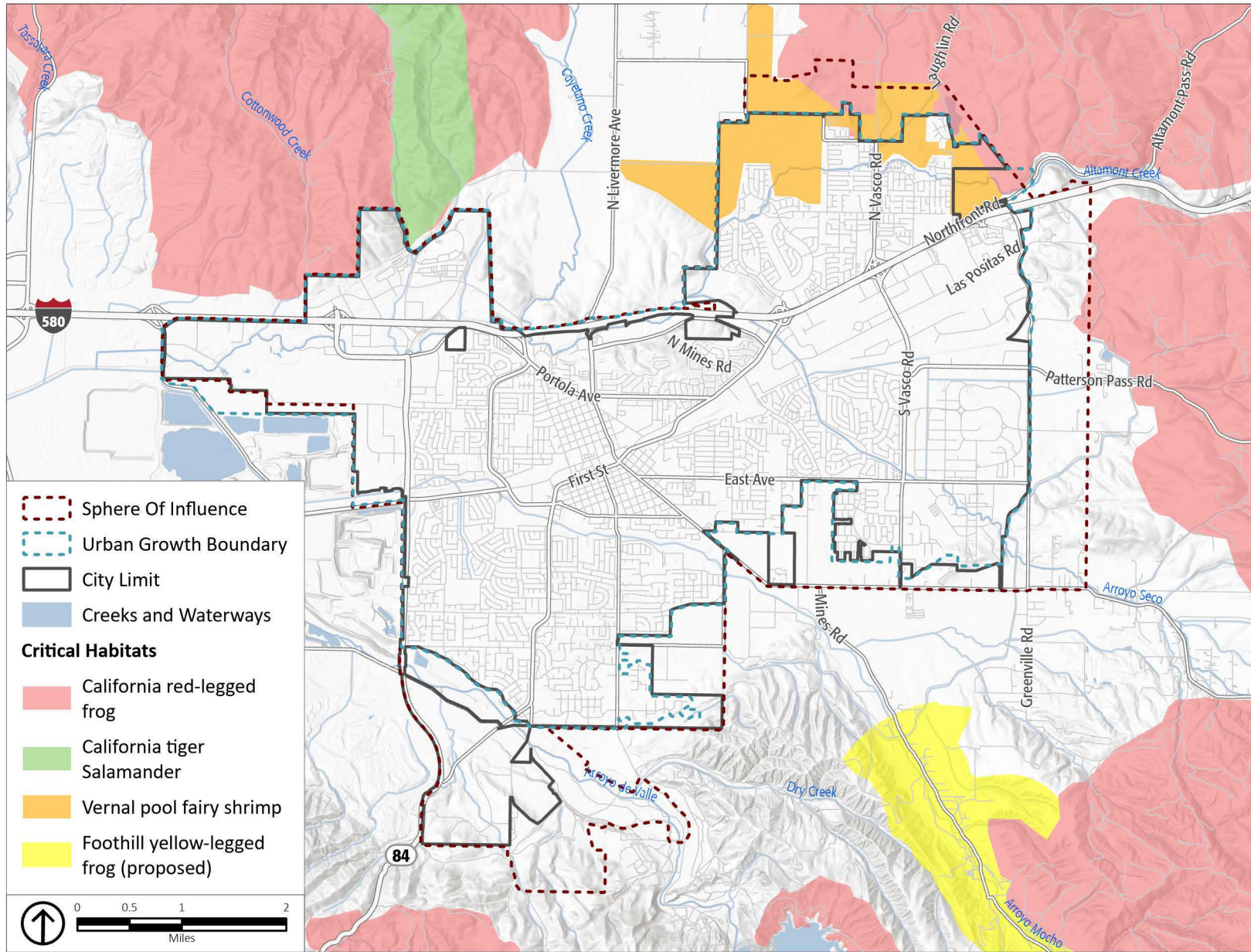
**Table 3.4-2 Special-Status Animal Species in the EIR Study Area**

Scientific Name	Common Name	Federal Status	State Status	Habitat
				sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
<i>Danaus plexippus</i>	Monarch butterfly	Federal Proposed Threatened	—	Coastal California groves of eucalyptus, Monterey pine, or cypress. Cool and humid climate sheltered from wind. Nectar-rich stopover sites during migration routes.
<b>Fish*</b>				
<i>Oncorhynchus mykiss irideus</i>	steelhead - central California coast DPS	Federal Threatened	—	Occurs from the Russian River south to Aptos Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.

Source: CDFW 2025.

Note: CDFW = California Department of Fish and Wildlife, DPS = distinct population segment

\*Not reported by CNDDDB, but EIR Study Area is known to have potential suitable habitat to support a population.



Source: City of Livermore, 2022; United States Fish and Wildlife Service, 2025.

Figure 3.4-2  
**Critical Habitats**

Many of the special-status animal species listed in Table 3.4-2 may occasionally pass through or forage in the EIR Study Area vicinity but are not known or believed to breed in the EIR Study Area. These include San Joaquin kit fox (*Vulpes macrotis mutica*), Swainson's hawk (*Buteo swainsoni*), foothill yellow-legged frog (*Rana boylei*), and longhorn fairy shrimp (*Branchinecta longiantenna*). Most of the species listed in Table 3.4-2 without federal and/or State listing status are not closely monitored by the CNDDDB, and therefore, occurrence records are typically not included in the database. These include most of the species identified as species of special concern or fully protected by the CDFW.

Special-status animal species known in the EIR Study Area are of greatest concern from a planning perspective because of their protection status or restricted distribution, which is discussed in further detail herein (City of Livermore 2022).

### *Tricolored Blackbird*

Tricolored blackbird (*Agelaius tricolor*) is a State Threatened Species and CDFW Species of Special Concern. The tricolored blackbird is a locally common resident in the Central Valley and along coastal California. Most tricolored blackbirds reside in the Central Valley from March through August, then migrate to the Sacramento-San Joaquin Delta, and east to Merced County and coastal locations during winter. This species breeds adjacent to freshwater, preferring emergent wetlands with tall, dense cattails or tules, thickets of willow or blackberry, and/or tall herbs. Flooded agricultural fields with dense vegetation are also used. This species is highly colonial; nesting habitat must be large enough to support a minimum of 30 pairs, and colonies are commonly substantially larger (up to thousands of pairs). Tricolored blackbird often intermingles with other blackbird species during the non-breeding season. Individuals typically forage up to 5.6 miles (9 kilometers) from their colonies, although in most cases only a small part of the area within this range provides suitable foraging habitat.

Tricolored blackbird has been documented within the EIR Study Area, in created wetlands and concrete-lined channels with emergent vegetation growth. Similarly, detention basins or other artificial water bodies may support sufficiently large areas of suitable vegetation for the establishment of a tricolored blackbird colony. These habitats are scattered throughout the EIR Study Area wherever semi-perennial aquatic habitats exist.

### *Burrowing Owl*

Burrowing owl (*Athene cunicularia*) is a State Candidate (Endangered) Species and CDFW Species of Special Concern. Burrowing owl occurs as a year-round resident and winter visitor in much of California's lowlands, inhabiting open areas with sparse or non-existent tree or shrub canopies. Typical habitat is annual or perennial grassland, although human-modified areas such as agricultural lands are also used. This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in Northern California it

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is typically found in close association with California ground squirrels. Human-made substrates such as pipes or debris piles may also be occupied in place of burrows. Prey consists of insects and small vertebrates. Breeding typically takes place from March to July.

Burrowing owl have the potential to occur widely within the EIR Study Area given the presence of ground squirrel activity (and thus suitable burrows). Ruderal uplands or grasslands in open spaces are the most likely to support both ground squirrels and burrowing owl, provided vegetation height is suitable (i.e., less than six inches). Burrowing owl may occur in relatively developed areas as well if the proper habitat elements are present.

### *White-Tailed Kite*

White-tailed kite (*Elanus leucurus*) is a CDFW Fully Protected Species. White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities. Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall. This species preys on a variety of small mammals as well as other vertebrates and invertebrates.

White-tailed kite may occur widely throughout the EIR Study Area, although most common occurrences would be in parks and open spaces given the need for foraging habitat adjacent to nest trees. Documented occurrences within the EIR Study Area are generally in semi-developed locations with suitable nest trees and ruderal uplands that likely support a suitable small mammal prey base.

### *California Tiger Salamander*

California tiger salamander (*Ambystoma californiense*), Central Coast Distinct Population Segment, is Federal Threatened Species and State Threatened Species. California tiger salamander is restricted to grasslands and low-elevation foothill regions in California (generally under 1,500 feet) where it uses seasonal aquatic habitats for breeding. The salamanders breed in natural ephemeral pools and natural and created ponds, and occupy substantial areas surrounding the breeding pool as adults. California tiger salamanders spend most of their time in the grasslands surrounding breeding pools. They survive hot, dry summers by living underground in burrows (e.g., those created by ground squirrels and other mammals and deep cracks or holes in the ground) where the soil atmosphere remains near the water saturation point. During wet periods, the salamanders may emerge from refugia and feed in the surrounding grasslands.

California tiger salamander has generally been documented in undeveloped portions of the EIR Study Area or at the periphery of development (chiefly at the northern and southern extremes of the EIR Study Area). Rangeland areas or other similar habitats are commonly occupied by this species due to the presence of suitable aquatic habitat (i.e., stock ponds and vernal pools) adjacent to grasslands with small mammal burrows or soil fissures where they seek underground refugia. This species is rarely found in waterways within developed areas.

### *California Red-Legged Frog*

California red-legged frog (*Rana draytonii*) is a Federal Threatened Species and CDFW Species of Special Concern. Suitable aquatic breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or riparian vegetation, typically with at least 20 weeks of continuous inundation. Suitable features include ponds (perennial and non-perennial), streams/creeks, seasonal wetlands, springs, seeps, human-made features (e.g., stock ponds, roadside ditches), marshes, dune ponds, and lagoons. Dependent upon local conditions, California red-legged frog may complete its entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages) or use multiple habitat types. In aquatic features that dry down seasonally, California red-legged frog often retreat to small mammal burrows or other substrates that provide suitable refugia. Adults and sub-adults (newly metamorphosed individuals) may disperse from breeding habitats to nearby riparian and/or refugia areas in the summer. Conversely, during the rainy season, California red-legged frogs may migrate from refugia sites to waters suitable for breeding. During such dispersals, frogs can travel over one mile over a variety of topographic and habitat types. Upland dispersal habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

Occurrences of California red-legged frog are variable within the EIR Study Area, although they are most likely to be found in grassland or rangeland areas outside of developed areas due to the presence of both aquatic breeding habitat and upland habitat. However, unlike California tiger salamander, California red-legged frog is documented in stormwater conveyances, natural creeks, and modified channels in more developed areas within the EIR Study Area. California red-legged frog critical habitat has been designated by USFWS along the northern edge of the EIR Study Area.

### *Northwestern Pond Turtle and Southwestern Pond Turtle*

Northwestern pond turtle (*Actinemys marmorata*) and southwestern pond turtle (*Actinemys pallida*) are Federal Proposed Threatened Species and CDFW Species of Special Concern. The taxonomy of western pond turtle has undergone a reclassification of the genus and splitting of the single species into two species: northwestern pond turtle and southwestern pond turtle. Both the northwestern pond turtle and the southwestern pond turtle are collectively referred to western pond turtle in this document. Western pond turtle is the only native freshwater turtle in California. Western pond turtle range from uncommon to common in aquatic habitat

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throughout California, west of the Sierra-Cascade crest and Transverse ranges. Western pond turtle inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. Pond turtles also occupy human-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks, and sand. Warm, shallow, nutrient-rich waters are ideal as they support prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, western pond turtle often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, western pond turtle may move upstream and/or take refuge in vegetated, upland habitat for up to four months. Although upland habitat is used for aestivation and nesting, this species preferentially uses aquatic and riparian corridors for movement and dispersal.

Western pond turtle has been reported from various locations within the EIR Study Area. Typical habitats within the EIR Study Area include aquatic habitats with adjacent ruderal or grassland areas, including detention basins, natural creeks, modified channels, and ponds.

### *Vernal Pool Fairy Shrimp*

Vernal pool fairy shrimp (*Branchinecta lynchi*) is a Federal Threatened Species. Vernal pool fairy shrimp is widespread but not abundant; populations are known from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County (additional disjunct populations exist at various locations throughout the state). Vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools.

Vernal pool fairy shrimp are limited in where they can occur by the presence of vernal pool habitats, which are generally limited to grassland areas along the northern edge of the EIR Study Area. Some vernal pool habitats may also occur within grasslands in the southeast corner of the EIR Study Area, although it is possible these areas have not been specifically surveyed for this species. Portions of the northern edge of the EIR Study Area are designated as critical habitat for vernal pool fairy shrimp.

### *Steelhead - Central California Coast DPS*

Central California Coast DPS (*Oncorhynchus mykiss irideus*) is a Federal Threatened Species. Central California Coast DPS includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin. Steelhead typically migrate to marine waters after spending two years

in freshwater, though they may stay up to seven. They then reside in marine waters for two or three years prior to returning to their natal stream to spawn as four- or five-year-olds. Steelhead adults typically spawn between December and June. In California, females typically spawn two times before they die. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels, and fast-flowing water. Abundant riffle areas (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.

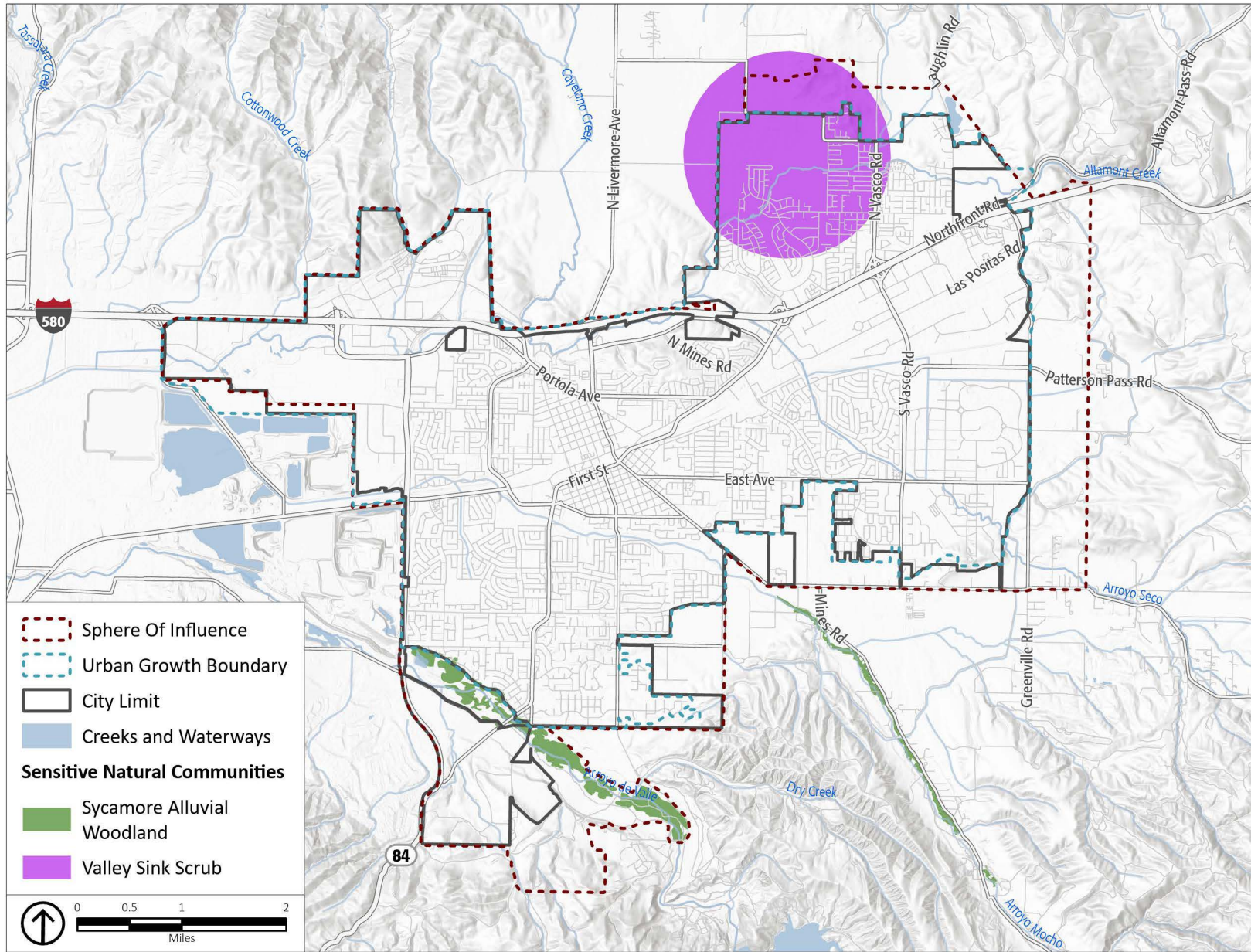
Steelhead is not documented in the CNDDDB within the EIR Study Area or the immediate vicinity. However, some sources suggest that Arroyo Mocho, which flows through the EIR Study Area, contains a steelhead run or at least supports a population. This population may be historical rather than current, because downstream water control structures (e.g., dams) prevent Arroyo Mocho from being inundated for long periods of the year. Thus, under certain circumstances, Arroyo Mocho could support steelhead within the EIR Study Area, but only during conditions when Arroyo Mocho is inundated and when/if fish passage is feasible.

### **SENSITIVE NATURAL COMMUNITIES**

As shown on Figure 3.4-3, *Sensitive Natural Communities*, sensitive natural communities documented by CNDDDB within the EIR Study Area include sycamore alluvial woodlands and valley sink scrub. Occurrences of other sensitive natural communities may be present within the EIR Study Area but have not been mapped as part of EACCS or other regional mapping efforts. Detailed surveys would be required to provide confirmation on the presence or absence of any sensitive natural communities on undeveloped portions of the EIR Study Area where thorough studies have not been conducted.

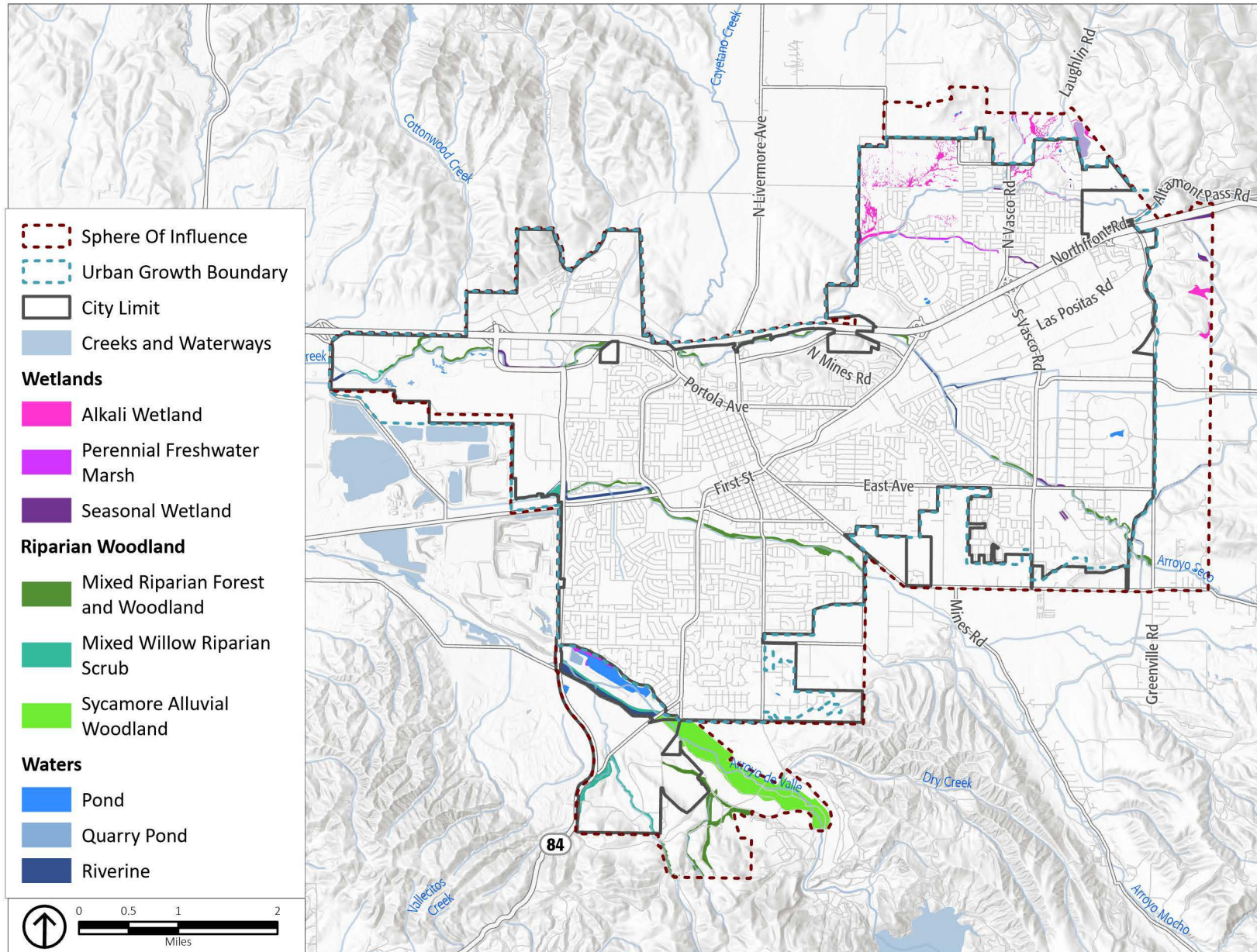
### **AQUATIC RESOURCES**

Aquatic resources in the EIR Study Area include wetlands, streams and arroyos, modified channels, and riparian habitats. These resources are recognized as important features on a regional and national level because of their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. As shown in Figure 3.4-4, *Aquatic Resources*, features within the EIR Study Area that could be considered wetlands or other waters of the U.S. by USACE include alkali wetland, perennial freshwater marsh, seasonal wetland, and riverine features. Additional federal- and State-regulated aquatic features may be present elsewhere in the EIR Study Area, but site-specific assessments and jurisdictional delineation studies would be required to confirm presence or absence on undeveloped lands.



Source: City of Livermore, 2022; California Natural Diversity Database, 2025.

Figure 3.4-3  
**Sensitive Natural Communities**



Source: East Alameda County Conservation Strategy, 2011; City of Livermore, 2022.

Figure 3.4-4  
**Aquatic Resources**

## BIOLOGICAL RESOURCES

As discussed in Section 3.4.1, *Regulatory Framework*, USACE, CDFW, and RWQCB generally exercise authority over aquatic resources, including wetland and non-wetland waters. Numerous features within the EIR Study Area can be assumed to fall under jurisdiction of USACE and RWQCB pursuant to Sections 404 and 401 of the Clean Water Act and Porter-Cologne Water Quality Control Act. Streams and lakes are also regulated by the CDFW pursuant to Section 1600 of the CFGC, with jurisdiction extending to the top of bank or the outer dripline of riparian vegetation along these features, whichever is greater.

The limit of federal jurisdiction in non-tidal, non-wetland waters extends to the ordinary high-water mark rather than the band of adjacent riparian vegetation, limiting USACE's jurisdiction where dense willow riparian scrub and forest extend a considerable distance from the stream bank. However, the limit of waters of the State regulated by CDFW and the RWQCB typically encompass both the bed and bank of a stream, as well as the limits of the associated riparian vegetation where it extends beyond the top of bank. Both agencies typically request that an adequate setback be provided to avoid both direct and indirect impacts on riparian corridors as part of environmental review for specific development plans.

### Creeks and Waterways

Several creeks and arroyos cross the EIR Study Area. Watershed and principal waterways in the EIR Study Area are shown on Figure 3.4-4, including Altamont Creek, Arroyo Las Positas, Arroyo Mocho, Arroyo Seco, Arroyo Valle, Cottonwood Creek, Cayetano Creek, and Dry Creek and are classified as riverine aquatic features. Most of these waterways flow from east to west. The Arroyo Valle drains a relatively small area of the central and southern portion of the EIR Study Area. Arroyo Mocho flows through the southern portion of the EIR Study Area. Arroyo Las Positas generally flows along Interstate 580 through the EIR Study Area. The major tributaries to Arroyo Las Positas include Altamont Creek, Arroyo Seco, and Cottonwood Creek. Arroyo del Valle, Arroyo Las Positas, and Arroyo Mocho join Arroyo de la Laguna in Pleasanton, which drains the Livermore Valley in a southerly direction approximately 18 miles to the San Francisco Bay via Niles Canyon and Alameda Creek, which occur outside the EIR Study Area. These riverine aquatic features are associated with riparian vegetation communities described as follows (City of Livermore 2022).

#### *Mixed Riparian Forest and Woodland*

Riparian vegetation refers to native woodlands occurring along streams and riverbanks. Mixed riparian forest and woodland is found along perennial and intermittent streams in the EIR Study Area. Dominant cover includes alder (*Alnus* sp.), California sycamore, Fremont cottonwood (*Populus fremontii*), and willows (*Salix* sp.).

There are several arroyos in the EIR Study Area that support riparian vegetation. Arroyo Mocho is relatively undisturbed and supports some mature riparian woodland. Arroyo Valle, particularly within the Sycamore Grove Park, also supports mature riparian woodland. Other

arroyos, such as Arroyo Las Positas and Arroyo Seco, have been largely modified for flood-control purposes. As a result, the riparian vegetation is sparse and has been replaced by aquatic vegetation like cattails (*Typha* sp.) and rushes (*Juncus* sp.).

Riparian areas provide important breeding and foraging habitat for many amphibians, reptiles, birds, bats, and mammals and comprise one of the most biologically diverse habitats in the region. Riparian habitats may also provide upland areas that would be used by native special-status reptiles and amphibians, such as California red-legged frog and western pond turtle.

### *Mixed Willow Riparian Scrub*

Mixed willow riparian scrub occurs in and along the margins of the active channel on intermittent and perennial streams. The most extensive reach of willow riparian forest and scrub occurs along Arroyo del Valle as it passes through the EIR Study Area. This vegetation community is dominated by shrubby willows, typically including arroyo willow (*Salix lasiolepis*), narrowleaf willow (*Salix exigua*), red willow (*Salix laevigata*), and yellow willow (*Salix lutea*). Understory development is controlled by canopy density. Where the canopy is more open and dominated by trees or scattered willow scrub, an understory of shrubs and herbs is present.

### *Sycamore Alluvial Woodland*

Sycamore alluvial woodland is generally present on broad floodplains and terraces along low gradient streams where soils are cobbly or rocky alluvium. Within the EIR Study Area, Sycamore alluvial woodland primarily occurs along Arroyo del Valle in Sycamore Grove Park. The canopy is mostly open and dominated by California sycamore (*Platanus racemosa*). Other associated species include bigleaf maple (*Acer macrophyllum*), California bay (*Umbellularia californica*), coast live oak, valley oak (*Quercus lobata*), white alder (*Alnus rhombifolia*), and willows.

## **Wetlands**

Wetlands are natural communities that depend on year-round or seasonally dependable sources of water. The EIR Study Area supports several different types of wetlands: alkali wetland, perennial freshwater marsh, and seasonal wetlands (City of Livermore 2022).

### *Alkali Wetland*

Alkali wetlands are typically found in valley bottoms where highly alkaline Rincon Solano, Clear Lake, and Pescadero soil series are present. The soils are seasonally saturated and slow to drain, supporting vegetation that is distinct from the surrounding grasslands or woodland. Similar to vernal pools and native grasslands, the extent of this habitat has diminished greatly with only small pockets left in the vicinity of the EIR Study Area. Plant species typically observed in alkali wetlands include salt grass, wild carrot (*Daucus pusillus*), and palmate-bracted bird's-beak, a federally listed and State-listed endangered plant.

## BIOLOGICAL RESOURCES

### *Perennial Freshwater Marsh*

Perennial freshwater marshes occur in areas that are wet year-round and are typically associated with ponds (natural or human-made), the shallow edges of lakes, and large pools in riparian areas. Marshes typically support bulrushes (*Scirpus* sp.), cattails, rushes, sedges (*Carex* sp.), and willows and provide habitat for wildlife species such as California red-legged frog, California tiger salamander, and western pond turtle.

### *Seasonal Wetland*

Seasonal wetlands, including vernal pools, were mapped in grasslands throughout the EIR Study Area. Seasonal wetlands are freshwater wetlands that support ponded or saturated soil conditions during winter and spring and are dry through the summer and fall until the first substantial rainfall. Associated species include wetland generalists such as cocklebur (*Xanthium* sp.), hyssop loosestrife (*Lythrum hyssopifolia*), and Italian rye grass (*Festuca perennis*).

To form, vernal pools require slight depressions over bedrock or hardpan soils that allow water to pool during the winter and spring rains. Since vernal pools are a unique habitat and tend to be isolated, vernal pools often support species that are endemic (i.e., restricted) to vernal pools or even to pools in that region. As a result of this endemism and the dramatic decline of vernal pools due to agriculture and development, vernal pools support many special-status plant and animal species protected by the state or federal government.

### **Open Water**

Permanently inundated open water bodies are mostly restricted to the former sand and gravel pits west of the EIR Study Area such as Shadow Cliffs Lake within Shadow Cliffs Regional Recreation Area (City of Livermore 2022). Other open water habitats may exist as small natural or human-made ponds and reservoirs. Although open water does not provide habitat for many plant species, it is important for wildlife and fish species such as California red-legged frog (during their aquatic life history periods). These habitats may also support more common and/or invasive fish and amphibian species such as bass (*Micropterus* sp.), bluegill (*Lepomis macrochirus*), and American bullfrogs (*Lithobates catesbeianus*).

## **WILDLIFE CORRIDORS**

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms “landscape linkage” and “wildlife corridor” are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas. It is useful to think of a landscape linkage as valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term wildlife corridor is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local

biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat.

The EIR Study Area is not within a designated wildlife corridor, as based on the Essential Connectivity Areas habitat mapper (CDFW 2023). The EIR Study Area is generally within a dense urban and residential matrix, which is typically considered to serve as a barrier to dispersal for most wildlife species. While common and/or urban-adapted wildlife species presumably use the EIR Study Area to some degree for movement at a local scale, the EIR Study Area itself does not provide corridor functions beyond connecting other more desirable habitat patches in surrounding areas. Peripheral portions of the EIR Study Area that are characterized by larger patches of grassland or woodlands, such as along the northern and southeastern boundary, may provide more function as corridors (ICF 2010).

### **3.4.3 Standards for Analysis**

#### **SIGNIFICANCE CRITERIA**

Appendix G, *Environmental Checklist Form*, of the CEQA Guidelines states that the proposed Project would result in a significant impact on biological resources if it would:

- a) Have a substantial 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 CDFW or USFWS.
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.
- c) 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.
- d) 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.
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- f) Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.

**BIOLOGICAL RESOURCES**

### 3.4.4 Project Impact Analysis

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- a) **Would the project have a substantial 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 CDFW or USFWS?**
- 

**Less than significant.** As discussed in Section 3.4.2, *Existing Conditions*, 25 special-status plant species have been reported within or in the vicinity of the EIR Study Area. Most of the special-status plant species occurrences in the EIR Study Area are associated with the grassland and aquatic resources land cover types in the EIR Study Area. Additionally, 51 special-status animal species have some potential to occur in or frequent the EIR Study Area. Of these, a total of 30 have been reported by the CNDDDB to occur within the EIR Study Area. Many of the special-status animal species may occasionally pass through or forage in the EIR Study Area vicinity but are not known or believed to breed in the EIR Study Area. These include San Joaquin kit fox (*Vulpes macrotis mutica*), Swainson's hawk (*Buteo swainsoni*), foothill yellow-legged frog (*Rana boylei*), and longhorn fairy shrimp (*Branchinecta longiantenna*).

The proposed General Plan 2045 would not directly result in new development; however, it is a regulatory document that includes proposed changes in land use designation that would allow for redevelopment and increased density on certain parcels within the EIR Study Area. The proposed Project promotes infill development and encourages higher density in already-developed areas, which greatly minimizes potential impacts to special-status species. The potential for occurrence of special-status species in developed areas is typically remote in comparison to undeveloped lands with natural habitat that contain essential habitat characteristics for the range of species known in the EIR Study Area vicinity. While the potential for adverse impacts on special-status species is relatively low, there remains a potential for loss or disruption due to conversion of areas of natural habitat, removal of trees and other vegetation, increases in light and noise, and other modifications and disturbance, especially where future development occurs on undeveloped land. Grading and other construction disturbance to existing natural habitat could include the direct loss of special-status plants and animal species or further isolate them from other occurrences where urbanization creates barriers between the remaining areas of natural habitat. This includes possible loss or disturbance to bird nests in active use.

Local, regional, State, and federal regulations provide varying levels of protection for special-status species, depending on several factors, including legal protective status, rarity and distribution, the magnitude of the potential impact on essential habitat, specific occurrence and overall population levels, and take of individual plants or animals. Activities requiring discretionary approvals by local, regional, State, and federal agencies provide for the greatest oversight because future development would be evaluated for potential impact on special-status species and other sensitive biological resources. Future development would be subject to

the local, regional, State, and federal regulations outlined in Section 3.4.1, *Regulatory Framework*, including requirements of USFWS and CDFW, the strategies of the EACCS, and the BMPs of the SMP to protect special-status species. The USFWS generally requires a permit under Section 10 of the ESA for incidental take of federally listed species from development activities. Additionally, the CDFW generally requires a CESA Section 2081(b) permit for incidental take of State-listed species from development activities. The SMP recognizes that maintenance activities may disturb sensitive species and includes BMPs such as seasonal scheduling to avoid sensitive periods, pre-construction surveys for special-status species, and targeted vegetation management to reduce impacts to special-status species. Future development would also undergo review through the City's entitlement process and, as applicable, CEQA to ensure consistency with federal, State, and local regulations intended to protect sensitive biological resources, including special-status species.

Additionally, the Open Space and Conservation (OS) Element of the proposed General Plan 2045 contains the following goals and policies that are designed to address potential impacts on special-status species:

- **Goal OS-1:** Conserve the value and function of Livermore's open space for natural resource protection, recreation, and scenic value.
  - **Policy OS-1.1: Diverse Open Space System.** Foster an open space system that supports the natural function of the land, protects sensitive wildlife and plant species, preserves important views, and creates opportunities for recreation.
  - **Policy OS-1.3: Open Space Preservation and Restoration.** Prioritize opportunities to preserve, restore, rewild, and enhance natural landscapes to support environmental and community health.
  - **Policy OS-1.4: Open Space Acquisition and Connection.** Prioritize land acquisition efforts that would result in the creation and expansion of permanent open spaces or corridors that link existing or create new protected natural resource areas.
  - **Policy OS-1.6: Open Space Easement Designation.** Work with local stakeholders and agencies to use open space easements to preserve sensitive habitat and resources.
  - **Policy OS-1.10: Preservation of Natural Amenities.** Preserve and enhance, or work with other agencies, as appropriate (e.g., with joint grant applications, sharing of staff resources and legal services), to preserve and enhance the following natural amenities:
    - a) Ridgelines
    - b) Oak Woodlands and Grasslands
    - c) Grasslands
    - d) Riparian Woodland
    - e) Arroyos and Creeks
    - f) Knolls
    - g) Doolan Canyon

## BIOLOGICAL RESOURCES

- h) Arroyo Mocho/Cedar Mountain
  - i) Corral Hollow
  - j) Sycamore Grove
  - k) Hilltops (North Livermore Urban Growth Boundary Initiative)
  - l) Slopes (North Livermore Urban Growth Boundary Initiative)
  - m) Viewscapes (North Livermore Urban Growth Boundary Initiative)
  - n) Frick Lake
  - o) Springtown Alkali Sink
- **Goal OS-2:** Protect and enhance biological resources.
    - **Policy OS-2.1: Biodiversity Preservation.** Preserve biodiversity within the Planning Area, with special emphasis on species that are sensitive, rare, declining, unique, or represent valuable biological resources.
    - **Policy OS-2.2: East Alameda County Conservation Strategy.** Require all development projects involving ground-disturbing activities to submit an Environmental Site Assessment Form as part of a complete application. The City will use this assessment to identify potential effects on special-status species and sensitive habits and require that project design and implementation are consistent with the applicable avoidance, minimization, and, where necessary, compensatory mitigation measures set forth in Tables 3.2 through 3.12 of the East Alameda County Conservation Strategy.
    - **Policy OS-2.3: Livermore Habitat Conservation Plan.** Adopt and implement the Livermore Habitat Conservation Plan to address impacts to the federally listed species that result from implementation of the City's Capital Improvement Program and Stream Maintenance Program, and other projects implemented by the City to support General Plan buildout.
    - **Policy OS-2.5: Cluster Development.** Work with project applicants to cluster new development to minimize its overall footprint in areas of ecological sensitivity, such as hillsides, alkali springs, creek corridors, and watersheds, and preserve space for habitat and wildlife connectivity.
    - **Policy OS-2.6: Avoidance of Sensitive Features.** Protect wetland and biological resources by requiring new development to avoid areas that support wildlife and plant habitats that contribute to ecological connectivity. Instead, integrate these features into overall development to support long-term ecological health.
    - **Policy OS-2.7: Habitat Mitigation and Long-Term Management.** Use habitat mitigation as a tool to support the long-term protection and management of sensitive natural habitats, including alkali sinks, riparian vegetation, freshwater marshes, vernal pools, wetlands, and woodlands. Support the use of mitigation banks and other mechanisms that provide durable, landscape-scale conservation outcomes.

- **Policy OS-2.8: Habitat Restoration.** Restore areas adjacent to existing open space areas with native plant and animal communities.
- **Policy OS-2.9: Riparian Enhancements.** Promote the long-term health and ecological function of riparian areas by ensuring that adjacent development supports the protection, enhancement, and restoration of native riparian vegetation.
- **Policy OS-2.14: Biological Resource Preservation Grant Funding.** Work with local, regional, and State natural resource agencies and area nonprofit organizations to develop programs and apply for grants to fund preservation of sensitive biological resources, including arroyos, wetlands, riparian areas, and grasslands.

Specifically, proposed Policies OS-2.5 and OS-2.6 would serve to protect sensitive species and their habitats through project design by clustering development and avoiding areas that support wildlife and plan habitats that contribute to ecological connectivity. Proposed Policies OS-1.6 and OS-1.10 require the City to work with local stakeholders and agencies to preserve sensitive habitats. Proposed Policies OS-2.2 and OS-2.3 would require the City to implement the EACCS and future, proposed Livermore HCP, which include further strategies and BMPs to minimize impacts to sensitive species and their habitats. A key strategy of the EACCS is the conservation of core habitat areas that support sensitive and special-status species, and the EACCS provides technical guidance for focal sensitive species, including recommendations for survey approaches, buffers, and mitigation to reduce disturbance. Implementation of these recommendations would be required for applicable projects per OS-2.2. Proposed Actions OS-A-1.3, OS-A-1.4, and OS-A-2.1 would further support these policies by developing a program to manage City-owned open space lands using sustainable practices and to identify, prioritize, and implement conservation easements on these lands to support habitat values and collaborating with other agencies to preserve natural and near-natural landscape communities.

Therefore, with regulatory compliance with the local, regional, State, and federal regulations listed in Section 3.4.1, *Regulatory Framework*, along with implementation of the proposed General Plan 2045 goals and policies, development would not result in significant adverse effects to special-status species, and impacts would be **less than significant**.

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**b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?**

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**Less than significant.** As shown on Figure 3.4-3, sensitive natural communities in the EIR Study Area include alkali meadow and scalds and valley sink scrub. Occurrences of other sensitive natural communities may be present within the EIR Study Area but have not been mapped as part of EACCS or other regional mapping efforts. Additionally, as shown in Figure 3.4-4, aquatic features within the EIR Study Area that could be considered sensitive natural communities include alkali wetland, perennial freshwater marsh, seasonal wetland, and riverine features.

## BIOLOGICAL RESOURCES

The proposed General Plan 2045 would not directly result in new development; however, it is a regulatory document that includes proposed changes in land use designation that would allow for redevelopment and increased density on certain parcels within the EIR Study Area. The proposed Project promotes infill development and encourages higher density in already-developed areas, which greatly minimizes potential impacts to riparian habitats and sensitive communities; however, future development (especially on undeveloped land) could occur within riparian habitat or other sensitive communities.

As described under impact discussion (a), future development would be subject to the local, regional, State, and federal regulations outlined in Section 3.4.1, *Regulatory Framework*, including requirements of USFWS, CDFW, the strategies of the EACCS, and the BMPs of the SMP to protect sensitive natural communities. Some sensitive natural communities (e.g., wetlands and riparian habitat) and aquatic habitats qualify as protected wetlands or jurisdictional waters and are regulated through the CWA. Riparian habitats and sensitive natural communities receive protection under the CFGC (Sections 1601–1603). Any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream would be required to obtain a Streambed Alteration Agreement from the CDFW prior to any alteration of a lakebed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. A core objective of the EACCS is the avoidance and minimization of impacts to riparian forest and scrub communities, and the EACCS establishes specific conservation targets for riparian communities. The SMP includes BMPs for riparian habitat preservation during routine maintenance such as work timing controls, pre-maintenance biological training, and having an on-call qualified biologist. Future development would also undergo review through the City’s entitlement process and, as applicable, CEQA to ensure consistency with federal, State, and local regulations intended to protect sensitive biological resources, including riparian habitats and sensitive natural communities.

Additionally, the proposed General Plan 2045 goals and policies identified under impact discussions (a) and (c), in addition to the following goal and policy from the Open Space and Conservation (OS) Element, are designed to protect riparian habitat and other sensitive natural communities by concentrating development in previously disturbed areas and by emphasizing avoidance, minimization, and mitigation of impacts through development guidelines and standards:

- **Goal OS-3:** Protect Livermore’s groundwater resources, waterways, tributaries, and associated riparian habitats.
  - **Policy OS-3.2: Waterway Maintenance and Improvement.** Maintain and enhance Livermore’s creeks, arroyos, and wetlands in as natural a state as possible to reduce erosion, improve water quality, preserve habitat, and increase resilience to climate change. Coordinate with Zone 7 Water Agency and other partners to implement nature-

based solutions that support flood protection and stormwater management, ecological function, and public safety.

Specifically, implementation of proposed Policy OS-2.9 would ensure development adjacent to riparian habitats supports the protection, enhancement, and restoration of riparian vegetation and Policy OS-2.7 would require habitat mitigation as a tool to protect sensitive natural habitats. Proposed Policies OS-1.6 and OS-1.10 require the City to work with local stakeholders and agencies to preserve sensitive habitats. A key strategy of the EACCS is the conservation of core habitat areas that support sensitive and special-status species, and the EACCS provides technical guidance for focal sensitive species, including recommendations for survey approaches, buffers, and mitigation to reduce disturbance. Implementation of these recommendations would be required for applicable projects per proposed Policy OS-2.2.

Therefore, with compliance with the proposed General Plan 2045 goals and policies and the existing federal, State, and local regulations outlined in Section 3.4.1, *Regulatory Framework*, future development would not result in significant adverse effects to riparian habitat or other sensitive natural communities, and impacts would be **less than significant**.

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**c) Would the project 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?**

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**Less than significant.** As shown in Figure 3.4-4, features within the EIR Study Area that could be considered wetlands or other waters of the U.S. by USACE include alkali wetland, perennial freshwater marsh, seasonal wetland, and riverine features. The proposed 2045 General Plan would not directly result in new development; however, it is a regulatory document that includes proposed changes in land use designation that would allow for redevelopment and increased density on certain parcels within the EIR Study Area, in proximity to wetlands.

As described under impact discussions (a) and (b), future development would be required to comply with existing federal, State, and local regulations, as detailed in Section 3.4.1, *Regulatory Framework*, including requirements of USFWS, CDFW, the strategies of the EACCS, and the BMPs of the SMP to protect wetlands. Section 404 of the CWA requires any project that impacts a protected wetland must obtain a permit that authorizes fill of that feature. If a wetland is determined to be present, then a permit must be obtained from the USACE to authorize filling of the wetland. Although future projects may impact protected wetlands, the regulatory process that is established through Section 404 of the CWA would ensure that there is “no net loss” of protected wetlands. If, through the design process, it is determined that a future development project cannot avoid a protected wetland, then the USACE would require an equal amount of wetland created elsewhere to mitigate any loss of wetland.

## BIOLOGICAL RESOURCES

Section 401 of the CWA requires that an applicant seeking a 404 permit also obtain a water quality certification from the RWQCB. To issue a water quality certification, the RWQCB must indicate that the proposed fill is consistent with the standards set forth by the State and confirm that any discharge into regulated wetlands comply with applicable water quality standards. Future development would also be reviewed through the City's entitlement process and, as applicable, CEQA, to ensure consistency with federal, State, and local regulations intended to protect sensitive biological resources, including wetlands.

Additionally, the same proposed General Plan 2045 goals and policies from the Open Space and Conservation (OS) Element identified under impact discussions (a) and (b) would also serve to minimize impacts to wetlands. Specifically, proposed Policy OS-2.6 and Policy OS-3.2 would require the City to protect wetlands by avoiding development in areas that support wildlife and plant habitats and maintaining and enhancing Livermore's creeks, arroyos, and wetlands. Proposed Policy 2.14 would require the City to work with natural resource agencies and organizations to develop programs to fund preservation of sensitive biological resources, including arroyos, wetlands, riparian areas, and grasslands.

Indirect water quality-related issues are discussed further in Section 3.10, *Hydrology and Water Quality*. Refer to Section 3.10 for a list of goals and policies that would preserve water quality of all water resources in the EIR Study Area, including wetlands. As discussed under impact discussion (a) in Section 3.10, water quality impacts are determined to be less than significant with implementation of the proposed General Plan 2045 goals and policies, in conjunction with State and local regulations.

Future development would comply with adopted State, federal, and local regulations for the protection of wetlands and waters of the United States and/or State. In addition, future projects would comply with requirements of the proposed General Plan 2045 goals and policies related to the protection of these biological resources. Implementation of these regulations would reduce impacts on State or federally protected wetlands and waters by emphasizing avoidance, minimization, and mitigation of impacts, including finding that there is "no net loss" of wetlands or other adverse effects on wetlands through hydromodification, filling, diversion, or change in water quality before approving development permits. Therefore, with mandatory regulatory compliance, future development projects would have not result in adverse effects related to State or federally protected wetlands and waters, and impacts would be **less than significant**.

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**d) Would the project 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?**

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**Less than significant with mitigation.** As discussed in Section 3.4.2, *Existing Conditions*, the EIR Study Area is not within a designated wildlife corridor, as based on the Essential Connectivity Areas habitat mapper. The EIR Study Area is generally within a dense urban and residential matrix, which is typically considered to serve as a barrier to dispersal for most wildlife species. While common and/or urban-adapted wildlife species presumably use the EIR Study Area to some degree for movement at a local scale, the EIR Study Area itself does not provide corridor functions beyond connecting other more desirable habitat patches in surrounding areas. Peripheral portions of the EIR Study Area that are characterized by larger patches of grassland or woodlands, such as along the northern and southeastern boundary, may provide more function as corridors.

The proposed 2045 General Plan would not directly result in new development; however, it is a regulatory document that includes proposed changes in land use designation that would allow for redevelopment and increased density on certain parcels within the EIR Study Area. The proposed Project promotes infill development and encourages higher density in already-developed areas, which greatly minimizes potential impacts to wildlife movement corridors; however, future development (especially on undeveloped land) could occur on the peripheral portions of the EIR Study Area that provide function as corridors.

Future development would be required to comply with existing federal, State, and local regulations, as detailed in Section 3.4.1, *Regulatory Framework*, and as discussed under impact discussions (a), (b), and (c), including requirements to implement the strategies of the EACCS and the BMPs of the SMP to conserve wildlife movement corridors. The EACCS identifies broad habitat linkage types (e.g., grassland corridors, riparian and streamside corridors, and aquatic upland connections) and includes strategies that emphasize maintaining continuity of such large high-quality habitat blocks and maintaining riparian buffers and avoiding habitat fragmentation. The SMP includes BMPs that protect and enhance native riparian vegetation to maintain continuous habitat structure for wildlife movement, minimizing disturbance during maintenance.

Additionally, the proposed General Plan 2045 goals and policies identified under impact discussions (a), (b), and (c), in addition to the following goal and policies from the Open Space and Conservation (OS) Element, are designed to protect wildlife movement corridors and native wildlife nursery sites by concentrating development in previously disturbed areas and by emphasizing avoidance, minimization, and mitigation of impacts through development guidelines and standards:

## BIOLOGICAL RESOURCES

- **Goal OS-2:** Protect and enhance biological resources.
  - **Policy OS-2.10: Wildlife Linkage.** Coordinate with Caltrans, the California Department of Fish and Wildlife, and other partners to plan for wildlife linkages to allow for the safe travel of wildlife across Interstate 580.
  - **Policy OS-2.11: Aquatic Habitat Corridor Maintenance.** Require the maintenance of aquatic movement corridors, in accordance with the Stream Maintenance Program, that connect natural open space areas.

Specifically, proposed Policy OS-2.5 would require the City to work with project applicants to cluster new development to preserve space for habitat and wildlife connectivity. Proposed Policy OS-2.10 would require coordination with other agencies to plan for the safe travel of wildlife across Interstate 580 and secure easements that protect wildlife corridors. Proposed Policy OS-2.11 would require the maintenance of aquatic movement corridors.

However, future development could include the development of buildings, reflective glass, and artificial lighting. These structures and lighting could disrupt movement or foraging behavior of native birds, including migratory and special-status species, and potentially increase collision-related mortality. Avian injury and mortality resulting from collisions with buildings, towers, and other human-made structures is a common occurrence in city and suburban settings. Some birds are unable to detect and avoid glass and have difficulty distinguishing between actual objects and their reflected images, particularly when the glass is transparent and views through the structure are possible. Night-time lighting can interfere with movement patterns of some night-migrating birds, causing disorientation or attracting them to the light source. As a result, development could interfere with the functionality of regional wildlife corridors with respect to avian species, and impacts would be *potentially significant*.

**Impact BIO-4: Implementation of the proposed Project could substantially interfere 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.**

**Mitigation Measure BIO-4:** Prior to the issuance of entitlements for a project, applicants or sponsors of projects on sites where migratory or nesting birds are present shall implement bird-safe design measures for all development projects where a qualified biologist, approved by the City of Livermore (City), determines that migratory or resident birds could be affected. This requirement shall apply to projects adjacent to or incorporating riparian corridors, wetlands, open-space areas, or other natural habitat features, or as otherwise determined by the qualified biologist.

Bird-safe design considerations and management strategies shall include avoiding the use of highly reflective glass that appears to reproduce natural habitat and may attract birds; limiting reflectivity and using non-attractive surface treatments; applying low-

reflectivity glass or other glazing treatments across the entirety of the building's glass surfaces, not only at lower levels; reducing interior light during evening hours through lighting control systems for commercial buildings; directing exterior lighting downward and screening it to minimize night-time illumination of the building exterior, except as needed for safety and security; avoiding glass skyways, freestanding glass walls, and transparent building corners; eliminating transparent glass at rooflines, including in conjunction with green roofs; and covering roof mechanical equipment with low-profile angled roofing to minimize obstacles to bird flight.

Project applicants shall demonstrate incorporation of bird-safe design measures in project plans and provide documentation of biologist review during entitlement or permitting stages. The City shall verify compliance before issuance of building or grading permits.

Mitigation Measure BIO-4 requires bird-safe design measures by project applicants to reduce potential impacts on migratory and resident birds. These measures would minimize collision-related mortality and maintain functional wildlife movement through riparian, wetland, and open-space habitats. Therefore, with mandatory regulatory compliance and implementation of Mitigation Measure BIO-4, future development projects would not 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, and impacts would be **less than significant**.

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**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

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**Less than significant.** The proposed General Plan 2045 is the primary planning document for Livermore. Because the proposed General Plan 2045 is the overriding planning document for the City, and because the proposed Project involves amending the current General Plan and Development Code, the proposed Project would not have an impact with respect to being inconsistent with policies or regulations protecting biological resources.

Future development would be subject to the LMC requirements pertaining to tree preservation and the BMPs of the SMP. The location and nature of development considered under the proposed Project would continue to be guided by the General Plan and Development Code. Future development would continue to be reviewed through the City's entitlement process and, as applicable, CEQA to ensure consistency with local regulations intended to protect biological resources. Future development would be required to comply with the proposed General Plan 2045 goals and policies related to biological resources. Therefore, impacts would be **less than significant**.

**BIOLOGICAL RESOURCES**

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**f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan?**

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**Less than significant.** There are currently no adopted local, regional, or State HCPs that cover the EIR Study Area.<sup>1</sup> Proposed Policy OS-2.3 requires the adoption and implementation of the Livermore HCP. Adoption is anticipated in 2028. The Livermore HCP would serve to protect covered species and their habitats while streamlining environmental permitting for covered activities, including the City’s Capital Improvement Projects, ongoing operations and maintenance, the SMP, and implementation of conservation strategies. The Livermore HCP would be designed to accommodate anticipated urban growth and infrastructure needs while ensuring compliance with applicable environmental regulations and would incorporate avoidance and minimization measures and comprehensive conservation strategy to mitigate potentially significant impacts. The Livermore HCP would analyze the effects of the covered activities on each covered species and include biological goals and objectives for each of the covered species, designed, at a minimum, to maintain current populations in conservation areas. The Livermore HCP would also establish and manage a conservation program to ensure mitigation sites are protected and managed for the benefit of the covered species to offset the permanent loss of covered species habitat. Additionally, the Livermore HCP would outline BMPs to avoid and minimize impacts, including general construction measures, biological resources conservation measures, species-specific conservation measures, hazardous materials conservation measures, and stream-specific conservation measures.

When the HCP is adopted, covered activities would be required to comply with these measures, adhere to defined mitigation ratios, and account for authorized take of species resulting from covered project activities. It is expected that some of the details of the conservation actions will be modified during HCP implementation through the monitoring and adaptive management program.

The proposed General Plan 2045 goals and policies identified under impact discussions (a) through (d) would serve to protect and enhance essential habitat for special-status species and sensitive natural communities within the EIR Study Area. Therefore, this impact is **less than significant**.

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<sup>1</sup> The EACCS is not an HCP because it does not include incidental take permits for threatened or endangered species.

### 3.4.5 Cumulative Impact Analysis

The discussion below considers how buildout of the EIR Study Area and region have the potential to cumulatively impact biological resources, including sensitive species, natural habitats, and wetlands in the eastern Alameda County region, as biological resources do not adhere to human-made boundaries.

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#### **Would the project have a cumulative effect related to biological resources?**

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**Less than significant.** The impacts of future development on biological resources tend to be site-specific, and the overall cumulative effects would depend on the degree to which significant vegetation and wildlife resources are avoided, or potential impacts are addressed through various forms of mitigation. This includes potential impacts on well-developed native vegetation (e.g., grassland, woodland, and forest), populations of special-status plant or animal species, and wetland features (e.g., riparian corridors and drainages, alkali wetland, freshwater marsh, and seasonal wetland).

Cumulative development contributes to an incremental reduction in the amount of existing natural wildlife habitat, particularly for birds and larger mammals. Habitat for species intolerant of human disturbance can be lost as development encroaches into previously undeveloped areas, disrupting or eliminating movement corridors and fragmenting the remaining suitable habitat retained within parks, public and private open space, and undeveloped properties. New cumulative development could result in further conversion of existing natural habitats to urban and suburban conditions, limiting the existing habitat values of the surrounding area.

Future development, as well as other future projects in the eastern Alameda County region, would be required to comply with federal, State, and local laws and policies and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on sensitive biological resources. Environmental review of specific development proposals, as applicable, would serve to ensure that important biological resources are identified, avoided, or adequately mitigated for where potential impacts exist. Accordingly, the proposed Project would not make a cumulatively considerable contribution, and cumulative impacts to biological resources would be **less than significant**.

### 3.4.6 References

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