Chapter 5H. Biological Resources

INTRODUCTION

To provide the context on which potential impacts can be assessed, this chapter describes vegetation and wildlife resources present in the City's planning area, including common and sensitive plant communities, waters of the United States (including wetland communities), noxious weeds, special-status plant species, and special-status wildlife species.

Information on biological resources is based on a review of the California Department of Fish and Game's (DFG's), Natural Diversity Data Base (NDDB) (1998); the California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994); The Jepson Manual: Higher Plants in California (Hickman 1993); The City of Davis General Plan (1987); the City of Davis General Plan Update (Public Review Draft 1996); Yolo County Habitat Conservation Plan (EIP Associates 1998); Environmental Analysis of Research Park Proposals (Jones & Stokes Associates 1998); Final Environmental Impact Report on the East Davis Specific Plan (City of Davis 1987); Final Environmental Impact Report - Draft EIR/SEIR with Revisions for the Wildhorse Project (WPM Planning Team, Inc. 1994); City of Davis Covell Center EIR (Jones & Stokes Associates 1997); Sutter-Davis Hospital/Head Properties Environmental Impact Report (ESA 1992); Soil Survey of Solano County, California (U.S. Soil Conservation Service 1977); Soil Survey of Yolo County, California (U.S. Soil Conservation Service 1972); a review of other pertinent literature; and a reconnaissance-level survey of the planning area. During the survey, the biologists recorded plant and wildlife species encountered, habitat types occurring at the site, and general site conditions. Habitat types were subsequently described. Table E-1 in Appendix E provides a list of the common and scientific names of plants and wildlife mentioned in the text.

Because habitat locations, sensitive resource information, and their extent were determined based only on existing available information and a reconnaissance-level survey and interpretation of aerial photographs, not all biological resources were recorded. For example, small, but sensitive biological resource occurrences, such as vernal swales, alkaline grassland, or special-status species' populations may occur in the planning area. Consequently, the following discussion regarding biological resources for the proposed General Plan is programmatic in nature. The main objective of this chapter is to provide the City with a baseline from which future project-related environmental assessments may be conducted, and to help determine the scope of future studies.

SETTING

Planning Area Setting

The planning area is characterized by a Mediterranean climate, with warm, dry summers and cool, moist winters. Average annual rainfall is about 17 inches, most of which occurs in winter and early spring. Summer rainfall is infrequent. The planning area is generally flat, located in the fertile Sacramento Valley. Few biologically pristine areas exist in Davis representative of the historic natural landscape. Most nonurbanized land within the planning area is currently used for agriculture, or had been under cultivation in the past. The historic landscape in the planning area was predominantly a mixture of grassland, oak savanna, wetlands, and riparian woodland along natural drainages.

The planning area is located in the Pacific Flyway, a major migration route for migratory waterfowl and other birds. Though there is currently little natural habitat for such wildlife, its location and the presence of water in Putah Creek, Willow Slough, and the Yolo Bypass offer high potential for habitat restoration within the planning area.

Existing nature preserves in and near the planning area are as follows:

- the UC Davis Putah Creek Riparian Reserve, approximately 255 acres, supporting riparian and upland habitats for a diversity of plants and wildlife;
- the UC Davis Arboretum, 119 acres, with 1,400 plants, including oaks from throughout the world;
- the Hunt-Wesson/Yolo Audubon Society Hawk-Owl Reserve west of the County landfill site;
- the City of Davis South Fork Preserve on Putah Creek;
- the North and West Davis Ponds;
- the Davis Wetlands demonstration project of the Wastewater Pollution Control Plan; and
- the state-owned Vic Fazio Yolo Wildlife Area in the Yolo Bypass east of the planning area.

Sensitive Habitat Types

Sensitive habitats are natural communities that are especially diverse biologically, regionally uncommon, or of special concern to local, state, and federal agencies. Elimination or substantial degradation of these habitats would constitute a significant impact under CEQA. The riparian woodland and scrub, wetlands and other waters of the United States, alkali grassland, and native perennial grassland would qualify as sensitive habitat types in the planning area.

Riparian Woodland and Scrub

Riparian woodland and scrub is known to occur along Putah Creek, Chickahominey Slough, Dry Slough, Willow Slough, Channel A (north of Covell Boulevard and crossing County Road 102), and potentially along other channels in the planning area. Riparian woodland is characterized by a multilayered canopy commonly dominated by a mixture of native mid- and upper-story woody tree species such as Fremont cottonwood, arroyo willow, red willow, sandbar willow, valley oak, Oregon ash, and box elder, and non-native species such as tamarisk, blue gum eucalyptus, arundo, and tree-of-heaven. Common dominant understory shrubs include native shrubs such as blue elderberry, wild grape and California rose, and non-native shrubs such as Himalayan blackberry. Native and non-native grasses and herbs typically dominate the understory. Riparian scrub is characterized by the absence of a tree layer, and a denser canopy of shrubs and small trees similar to those found in the riparian woodland community. Riparian woodland and scrub may be subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the federal Clean Water Act. The DFG considers riparian woodland and scrub communities sensitive natural communities.

Riparian woodland and scrub provide high-quality foraging and breeding habitat for wildlife. Riparian woodland and scrub has high biological productivity and species diversity because of its multilayered vegetation and the presence of surface water. Riparian habitats provide important breeding and foraging habitats for resident and migratory birds. Birds that typically use riparian habitats in the planning area include green heron, red-tailed hawks, American kestrels, mourning doves, great horned owls, Anna's hummingbirds, Nuttall's woodpeckers, western-scrub jays, bushtits, American crows, ruby-crowned kinglets, yellow-rumped warblers, and song sparrows. Many species of mammals also use riparian habitats for movement corridors, breeding, and foraging habitat. Mammals that are common in riparian habitats include California voles, California ground squirrels, Botta's pocket gophers, raccoons, striped skunks, Virginia opossums, coyotes, gray fox, and red fox. Reptiles and amphibians typically found in the riparian habitat include California kingsnakes, gopher snakes, western fence lizards, alligator lizards, Pacific treefrogs, and western toads.

Waters of the United States

"Waters of the United States" are areas that qualify for federal jurisdiction under Section 404 of the Clean Water Act. For the purpose of this report, waters of the United States are divided into wetlands and other waters of the United States.

Wetlands. Wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b], 40 CFR 230.3). To be considered jurisdictional wetlands under Section 404 of the Clean Water Act, a wetland must support all three wetland indicators, including hydrophytic vegetation, hydric soil, and wetland hydrology as defined in the USACE Delineation Manual (Environmental Laboratory 1987). However, DFG or U.S. Fish and Wildlife Service (USFWS) may still consider nonjurisdictional wetlands sensitive wetland habitat if they support one or more of the wetland indicators. Wetlands in the planning area include freshwater marshes, seasonal wetlands, vernal pools and swales, and alkali wetlands.

Freshwater Marshes and Seasonal Wetlands. Freshwater marshes and seasonal wetlands are found in or along natural drainages such as Putah Creek and in or along agricultural and roadside drainages. Freshwater marshes and seasonal wetlands also occur in the Yolo Bypass (including the Vic Fazio Yolo Wildlife Area), Davis Wetlands, West Pond, Core Pond, North Pond, some locations within the 100-year floodplain, and in other natural and created ponds in the planning area.

Freshwater marshes are characterized by permanent flooding or saturated soils and dominant emergent herbaceous vegetation such as cattail, tule, willow weed, and marsh purslane. Seasonal wetlands are seasonally flooded areas found in a variety of soil types. They are characterized by a mixture of dominant hydrophytic species such as cocklebur, willow herb and umbrella sedge, and non-native species such as curly dock and sweet clover. Seasonal wetlands differ from vernal pools in their species richness and composition, as described below.

Freshwater marshes provide high-quality habitat for wildlife species that are dependent on marsh vegetation for cover, feeding, and breeding. Birds that are expected to occur in the freshwater marshes in the Davis area include great blue herons, green herons, great egrets, Virginia rails, soras, marsh wrens, common yellowthroats, song sparrows, and red-winged blackbirds. Mammals that use freshwater marshes include muskrats, beavers and river otters (in rural areas), and coyotes. Reptiles and amphibians that use marshes in the Davis area include garter snakes, pond turtles, and Pacific treefrogs.

Seasonal wetlands in the Davis area provide foraging habitat for wintering and breeding wildlife. Many species of waterbirds use seasonal wetlands, including long-billed dowitchers, dunlins, greater yellowlegs, long-billed curlews, white-faced ibis, great egrets, great blue herons, and killdeer. During the breeding season, American avocets, black-necked stilts, killdeer, and Canada

geese forage in wetlands. Seasonal wetlands in the Davis area also provide foraging and roosting habitat for many species of shorebirds during the spring and fall migration.

Vernal Pools, Vernal Swales, and Alkali Wetlands. Vernal pools are depressions that pond water during the rainy season and completely dry up during the summer. They occur in annual grasslands or in an intricate matrix with vernal swales, typically on alluvial soils containing a cemented "duripan" layer or a clay-rich horizon that expands on wetting and forms an impermeable "hard pan". Vernal swales are natural, gently sloping broad drainages that convey runoff during and for short periods after rainfalls and may be connected with vernal pools. Both vernal pools and vernal swales support a distinctive biota adapted to periodic or continuous inundation during the wet season and the absence of either ponded water or wet soil during the dry season.

Vernal pools and swales support a high diversity of native annual hydrophytes. Common dominants include goldfields, navarretia, prostrate pigweed, coyote thistle, woolly marbles, popcorn flowers, downingias, annual hairgrass, and common spikerush.

Alkali wetlands are vernal pools or seasonal wetlands characterized by a high alkaline salt content and dominance by plant species adapted to these conditions. They are typically found in a mix of alkali grassland and meadow that also support salt- or alkaline-tolerant species.

Vernal pools, swales, and alkali wetland habitat known to occur in the planning area include those at the U.S. Air Force Global Communications Transmitter Station, Yolo County Grasslands Regional Park, and D-Q University land. Additional habitat may occur on uncultivated lands in other locations in the planning area.

Alkali wetlands may include dominant plant species described above for vernal pools and seasonal wetlands along with additional dominant species such as alkali heath, alkali mallow, alkali weed, saltgrass, and an invasive introduced species, matgrass. Vernal pools, swales, or alkali wetlands often provide habitat for a number of rare endemic plant species, such as legenere, dwarf downingia, Solano grass, and Colusa grass.

Vernal pools in the aquatic phase often support diverse and dense assemblages of invertebrates, particularly crustaceans and insects. Common crustaceans in vernal pools include copepods, seedshrimp, and fairy shrimp. Many invertebrates thrive in vernal pools because of the absence of fish, which are their primary predators in other aquatic habitats. The abundance of invertebrates provides food for a variety of bird species, including cinnamon teal, mallards, and other ducks as well as shore and wading birds such as avocets, killdeer, and yellowlegs. Other species commonly encountered in the drying phase include Pacific treefrog and common garter snake.

Historic losses of vernal pool and vernal swale habitats have exceeded 90% statewide as a result of agricultural land conversion and urbanization. Many species dependent on vernal pool and vernal swale habitats are now considered rare, and several of these are now legally protected under state or federal endangered species laws. Because of the rarity of these habitat types and their

biological importance, vernal pools and vernal swales are considered sensitive. Vernal pools and swales qualify as wetlands subject to USACE jurisdiction under Section 404 of the Clean Water Act.

Other Waters of the United States. The term "other waters of the United States" refers to seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark (OHWM) but lack positive indicators for one or more of the three wetland parameters (listed under Wetlands above [33 CFR 328.4]). The OHWM is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3[e]).

Portions of Putah Creek, Dry Slough, and other drainages are considered other "waters of the United States" where they lack hydrophytic vegetation, hydric soils, or both. Irrigation ditches within the planning area are typically not considered jurisdictional under Section 404 of the Clean Water Act because they were excavated for irrigation purposes. They may, however, contain areas qualifying as wetlands that would be considered sensitive habitats (e.g., freshwater marshes).

Putah Creek, Dry Slough, Willow Slough Bypass, and other drainages in Davis have substantial value for wildlife and fish. Many species of waterbirds use these creeks and drainages for foraging and roosting. Herons, egrets, cormorants, killdeer, yellowlegs, and kingfishers occur along these drainages. Mammals, such as the striped skunk, raccoon, and coyote feed on fish and invertebrates in the streams. These drainages also provide important habitat for amphibians and fish, including bullfrogs, Pacific treefrogs, western toads, and native fish.

Alkali Grassland, Meadow, and Scrub

Alkali grasslands and meadows occur in the bottom of flat, level, or gently sloped valleys characterized by alkaline soil formed on alluvial valley fill. Alkali grasslands and meadows are both dominated by halophytic vegetation, but alkali grasslands are dominated by annual vegetation while the alkali meadows are dominated by perennial vegetation. Common species in alkali grasslands and meadows are low barley, Italian ryegrass, annual hairgrass, soft chess, saltgrass, alkali heath, creeping wildrye, alkali sacaton, and crown saltbush. Alkali scrub areas occur in areas flooded during fall and early winter and are characterized by Chenopodium species (alkaline plants).

Some rare species supported by alkali grassland, meadow, and scrub include brittlescale, San Joaquin spearscale, heartscale, alkali milk-vetch, and palmate-bracted bird's-beak. Alkali grassland and meadow may occur in the planning area in ruderal areas or fallow agricultural lands on alkaline soils or along drainages, including irrigation channels and roadside drainages. These habitats provide foraging habitat for common wildlife species, including red-tailed hawks, American kestrels, barn owls, killdeer, American pipits, western meadowlarks, savannah sparrows, and house finches.

Nonsensitive Habitat

Nonsensitive habitat types are those that are locally and regionally common or of concern to local, state, and federal agencies for reasons of biological resource protection. They may, however, provide habitat for sensitive species that are of concern. Nonsensitive habitat types occurring in the planning area include agricultural, non-native grassland, and developed and ruderal areas.

Agricultural Fields

Agricultural fields are the most common land use and habitat type in the planning area. The primary form of agriculture in the planning area is the production of row and grain crops.

Overall, agricultural fields have moderate value for wildlife because they have low biological diversity, are disturbed by human activity, and often have pesticides applied to them. Despite this, agricultural fields provide foraging habitat for common wildlife species, including red-tailed hawks, American kestrels, barn owls, killdeer, American pipits, western meadowlarks, savannah sparrows, and house finches.

Non-Native Grassland

Non-native grasslands are found throughout the planning area on lands not developed or under cultivation (e.g., formerly cultivated fields, floodplains of drainages). Non-native grasslands are dominated by a mixture of introduced annual grasses such as soft chess, ripgut brome, and Italian rye, and native and introduced forbs such as filarees, wild lettuce, and annual sunflower. Uncultivated grassland areas in the proposed planning area sometimes include patches of native perennial grassland. Non-native grasslands provide foraging habitat and cover for many wildlife species in the planning area. The wildlife use is similar to that described above for agricultural fields.

Developed and Ruderal Areas

Ruderal and developed areas occur throughout the planning area, primarily within the existing City boundaries. This habitat type also includes the County Airport, UC Davis, D-Q University, the County Landfill and Sewage Treatment Plant, the U.S. Air Force Radar Station facilities, all existing roads, and open fields dispersed among currently developed areas. Ruderal areas are characterized by non-native (often weedy) plants including many also found in non-native grassland. Developed areas are characterized by vegetation ranging from ruderal grasses, forbs, scrub and trees, to ornamental shrubs and trees in urban areas and around farm dwellings.

Ruderal and developed areas generally have low wildlife value because they consist of non-native (often weedy) plants and occur in disturbed areas. These areas support common wildlife species, including red-tailed hawks, rough-legged hawks, American kestrels, killdeer, American pipits, western meadowlark, savannah sparrows, lesser goldfinches, and house finches.

Noxious Weeds

Noxious weeds are plants that have the potential to displace native plants and natural habitats, affect the quality of forage on rangelands, or affect cropland productivity. High-priority noxious weeds include all California Department of Food and Agriculture's A rated species, and B and C rated species that also are considered target noxious weeds by the County agricultural commissioner. Additional high-priority weeds include those considered to have great potential for displacing native plants and damaging natural habitats and are not considered too widespread to be effectively controlled. Noxious weeds may be found in nearly any habitat type in the planning area, but primarily occur in uncultivated areas and ruderal habitats.

Special-Status Species

Definition of Special-Status Species

Special-status species are plants and animals that are legally protected under state and federal Endangered Species Acts (ESA) or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants and animals are species in the following categories:

- species listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]);
- species that are candidates for possible future listing as threatened or endangered under the federal ESA (61 FR 7596-7613, February 28, 1996);
- species listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 California Code of Regulations [CCR] 670.5);
- species that meet the definitions of rare, threatened or endangered under CEQA (State CEQA Guidelines, Section 15380);
- plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);

- plants considered by the CNPS to be "rare, threatened, or endangered in California" (Lists 1B and 2 in Skinner and Pavlik 1994);

- plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik 1994), which may be included as special-status species on the basis of local significance or recent biological information;

- animal species of special concern to the DFG (Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1994 [amphibians and reptiles]); and

- animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Special-Status Plant Species

A list of 10 special-status plant species was compiled based on a search of DFG's NDDB for the Davis, Merritt, Dixon, Saxon, Winters, and Sacramento West U.S. Geological Survey quadrangles; information from CNPS's Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994); The Jepson Manual: Higher Plants in California (Hickman 1993); and knowledge of the area. All 10 species occur on alkaline soils, clay soils with an alkaline surface component, and/or in vernal pools.

Suitable habitat and substrates for the special-status species are present in disjunct locations throughout the planning area. All species described in Table E-2 of Appendix E have the potential to occur in the planning area in vernal pools, on alkaline soils, or clay soils with an alkaline surface component. No special-status plant species surveys were performed for this EIR. Therefore, a qualified botanist should conduct surveys for special-status plant species and their habitat on potentially sensitive sites during the appropriate identification periods before project construction.

Special-Status Wildlife Species

Fifteen special-status wildlife species were identified as potentially occurring in the planning area due to the presence of suitable habitat to support these species (see Table E-3 in Appendix E.).

Sites Being Studied

This section provides information collected from the data sources identified at the beginning of this section. For the Nishi/Gateway, Covell Center, Sutter-Davis Hospital, and Oeste Campus

sites, additional biological resources information was available from previously prepared EIRs. Information from these documents also has been summarized in this section

Nishi/Gateway

The 44-acre site (gross acres) includes agricultural land under active cultivation for row crops, and riparian woodland and scrub habitat. Lesser amounts of non-native grassland/savanna and ruderal habitat occur along fences, uncultivated open areas, and along the railroad tracks and the I-80 corridor.

The riparian woodland and scrub occurs along the North Fork Putah Creek channel and is characterized by a multistory canopy dominated by native and non-native species, including native Fremont cottonwood, willows, box elder, and blue elderberry and non-native tree-of-heaven, arundo, and Himalayan blackberry. The predominant tree species on the site is the introduced California black walnut. Valley oak and interior live oak occur in scattered locations in the riparian and adjacent grassland and ruderal areas along with escaped cultivars such as almond. A list of trees on the site, including their sizes, was compiled and is available in the Final Environmental Impact Report Draft Gateway Olive Drive Specific Plan (City of Davis 1996). The North Fork Putah Creek channel does not convey water from Putah Creek (Putah Creek water flows through the created South Fork channel). However, seasonal wetlands may occur in the channel that could qualify as wetlands subject to USACE jurisdiction under the federal Clean Water Act.

Special-Status Species. Two special-status wildlife species or their habitats have been observed in the Nishi/Gateway area. The mature oak trees and other mature trees in the area are suitable nesting trees for Swainson's hawks and the agricultural field is considered suitable foraging habitat. Swainson's hawks have been observed nesting in mature trees along the North Fork Putah Creek. They also have been observed foraging in the agricultural field at the Nishi/Gateway site.

Suitable valley elderberry longhorn beetle (VELB) habitat (i.e., elderberry shrubs) occurs along the North Fork of Putah Creek. Two elderberry shrubs were found on the Nishi/Gateway site prior to the 1999 reconnaissance-level survey.

Covell Center Property

The 386-acre site (gross acres) is primarily land presently or formerly used for agricultural purposes. Ornamental plants, such as elm, hackberry, pine, and privet are limited to the farm site in the southern portion of the project site and scattered individual trees along Channel A. Ruderal vegetation occurs along roadsides and developed areas. Adjacent areas to the east and south of the site are developed with housing areas and a golf course use. Areas to the north include agricultural land and semi-developed non-native grassland areas, including a go-cart park, target range, and photovoltaic facility. Areas to the west include the Hunt-Wesson Cannery and a vacant parcel owned by the cannery, along with residential areas.

Sensitive habitats on the site include emergent marsh, seasonal wetlands, jurisdictional drainages, riparian scrub, and woodland habitat. Channel A is one of two drainages that occur on the site. Channel A is approximately 1.5 acres in size and is a channelized tributary that flows west to east. It qualifies as "other waters of the United States" subject to USACE jurisdiction under Section 404 of the Clean Water Act. The other channel is approximately 0.8 acre and is a recently excavated drainage that flows from south to north to convey flows from the Covell Drain to Channel A. This channel does not likely qualify as other waters of the United States under the Clean Water Act, since it was excavated for the purpose of draining uplands and is not part of a natural tributary. A narrow band of emergent marsh vegetation occurs along either side of the low-flow channels in both drainages. A seasonal wetland occurs on approximately 3.2 acres in the middle of the agricultural land, on clayey soil with varying alkalinity. The seasonal wetlands on the project site qualify as wetlands subject to USACE jurisdiction under Section 404 of the Clean Water Act (Jones & Stokes Associates 1997).

Riparian woodland and scrub habitat occurs on approximately 2 acres along portions of Channel A and is characterized by seedlings, saplings, and 10- to 30-foot-tall Oregon ash, black walnut, white alder, box elder, and willow trees.

The agricultural fields, seasonal wetlands, marsh vegetation, riparian woodland, and scrub in the Covell Center area have substantial value for wildlife (Jones & Stokes Associates 1997). Channel A has high-wildlife value for migratory birds and wetland riparian wildlife.

Special-Status Species. The major project site is generally disturbed and does not support suitable habitat for most special-status plant species. However, two special-status plants were located on the site in 1996 (Jones & Stokes Associates 1997). The two plants, brittlescale and San Joaquin spearscale, do not have any federal or state listing status but are considered rare, threatened, or endangered in California and elsewhere by the CNPS (Skinner and Pavlik 1994). On the project site in upland and seasonal wetland sites, one colony of brittlescale with approximately 70 individuals and several colonies of San Joaquin spearscale totaling about 85 individuals were found in the vicinity of Channel A. The area has been cultivated since the discovery and the two populations may no longer exist, although suitable alkaline soil remains for the populations to reestablish under the right conditions.

The Covell Center site was considered suitable habitat for 10 special-status wildlife species:

- A pair of Swainson's hawks nested on the site from 1984 through 1990. The site habitats are considered suitable Swainson's hawk foraging habitat and are actively used by these birds.

- The site is considered year-round territory for white-tailed kites and a communal hunting area.

- Burrowing owls have been observed using the site and still could occur there.

- Channel A and adjacent upland is considered suitable giant garter snake habitat, although none have been observed in the channel.

- One elderberry shrub was located on the site. This shrub was considered suitable VELB habitat.

- The seasonal wetlands at the site were considered suitable vernal pool fairy shrimp and tadpole shrimp habitat.

- The fields at the site were considered suitable ferruginous hawk, northern harrier, and short-eared owl foraging habitat.

Signature Site

Nearly the entire 90-acre site (gross acres) is under active agricultural use as disked cropland with small strips of ruderal vegetation occurring along the edges of roadways. There are no sensitive plant communities.

Special-Status Species. It is unlikely that any special-status plant species occur on the property. The agricultural field is considered suitable Swainson's hawk foraging habitat. Although unlikely, other raptor species may use this site as well. Swainson's hawks have been observed foraging in this agricultural field on a regular basis (Jones & Stokes Associates file data).

Mace Ranch Interior Retail Site

The 8-acre site (net acres) is approximately 7.5 acres of former agricultural fields now characterized as ruderal and annual grassland habitat. Newly planted urban landscaping occupies an approximately 0.5-acre strip along the roadside bounding the eastern edge of the property. Mature oak trees occur west of the property. There are no sensitive habitats on the property. Residential housing areas surround the property.

Special-Status Species. Because of the history of the property as an agricultural field and the moderate permeability of the Sycamore silt loam (drained) soil type occurring onsite, the property is unlikely to support special-status plant species. The field is considered suitable Swainson's hawk foraging habitat. Swainson's hawks that nest in the vicinity forage in the field.

Burrowing owls also have been observed in the field on a regular basis since 1997 (Jones & Stokes Associates file data). The entire field is considered suitable nesting and foraging habitat.

Under Second Street

The 11-acre site (net acres) includes mostly developed and ruderal habitats surrounding the Anderson Farms building. Ornamental vegetation surrounding the building includes palm trees and pampas grass. The ruderal vegetation is characterized by species such as silverscale, annual sunflower, and various annual grassland plants. A drainage occurs along the railroad adjacent to the property. The property is in a low-lying area bounded by the railroad corridor, Second Street, and the I-80 on-ramp.

Special-Status Species. No sensitive habitat types have been identified onsite.

Sutter-Davis Hospital

The 20-acre site (net acres) includes primarily agricultural cropland that is currently fallow. Along the perimeter of the site, is a strip of annual grassland and ruderal habitat. Interspersed with the ruderal habitat, along the western and northeastern edges of the site, are hedgerows of mature walnut and false indigo trees that range in size from 4 to 43 inches diameter at breast height (ESA 1992). Drainage features are located within the project site, including a ditch adjacent to County Road 99D and the Covell Drain. The portion of the Covell Drain which occurs on the site may be subject to USACE jurisdiction under the Clean Water Act (ESA 1992). The Covell Drain supports substantial emergent marsh vegetation and the County Road 99D drainage supports patches of emergent marsh vegetation. At the northwestern edge of the site is a freshwater marsh, which has high wildlife value. To the south of the property is Sutter-Davis Hospital and to the east is Highway 113.

Special-Status Species. One special-status species, the burrowing owl, was found nesting on the Sutter/Davis North area (ESA 1992). The grassland and ruderal areas remain suitable nesting and foraging habitats for burrowing owls. Swainson's hawks have been observed nesting about 1,000 feet west of the Sutter/Davis North area. The grassland and ruderal areas are considered suitable foraging habitat (ESA 1992). Covell Drain was considered suitable giant garter snake habitat, although this species has not been recorded at the site or in the drain (ESA 1992).

Oeste Campus

Most of the 175-acre site (gross acres) is actively cultivated agricultural land (i.e., row and grain crops). Mature black walnut trees are located along the roads (especially County Road 98) on the perimeter of the site. Mature ornamental trees and plants occur around the residences at the southeast corner of the site. About 80 acres in the southern half of the southeast quarter of Section 6 is fallow and dominated by ruderal vegetation. No sensitive habitat types have been identified on the site, although emergent marsh vegetation occurs in the roadside drainage. About 10 acres of the fallow farmland occur on Pescadero clay soils that have the potential to support populations of

special-status plant species. Covell Boulevard and residential housing areas lie to the south, Sutter Hospital is located to the east, and agricultural lands border the site at the north and west.

Special-Status Species. Special-status wildlife species were found on the Oeste Campus during surveys for the Sutter-Davis Hospital/Head Properties EIR (ESA 1992). Species include the following:

- A Swainson's hawk was observed nesting at the Head property and the agricultural and ruderal fields were considered suitable Swainson's hawk foraging habitat.
- An elderberry shrub, VELB habitat, was found on the eastern edge of the Head property.
- Covell Drain was considered suitable giant garter snake habitat.
- Northern harriers, white-tailed kites, and loggerhead shrikes were observed on the Oeste Campus site, but no nests were found. The agricultural fields are considered suitable foraging habitats for these species.
- The Oeste Campus area should be considered suitable burrowing owl nesting and habitat. The species has been observed in the immediate area.

Intervening Lands

The 142-acre site (gross acres) includes primarily actively cultivated agricultural land (i.e., row crops) and developed land, with smaller quantities of ruderal habitat. The developed land includes a public soccer field and DFG's Yolo Bypass headquarters. A small demonstration seasonal wetland was created on the DFG site. Ruderal habitat occurs along roadsides and in uncultivated fields surrounding developed areas and is characterized by species such as silverscale, yellow starthistle, wild radish, fireweed, and pigweed.

Special-Status Species. Swainson's hawks have been observed nesting and foraging onsite. They also forage in the agricultural fields.

Davis Technology Campus

The 319-acre site (gross acres) includes mostly agricultural land under active cultivation (e.g., corn, rice) or currently left fallow. A large agricultural drainage ditch runs east to west along the southern boundary of the site and is dominated by ruderal vegetation such as pepperweed. Casuarina trees occur within a relatively small grove. Additional ruderal vegetation occurs along roadside edges and in the fallow areas, including native and non-native weedy species such as yellow starthistle, bristly ox-tongue, prickly lettuce, cocklebur, annual sunflower, and saltbush. The soil at this site includes well drained to poorly drained silty clay and silty clay loam, some of which may

support special-status plant species in long-term fallow areas. Lands south of the site are used for agricultural research, including test plots and greenhouses. Land to the west of the site is used primarily for agriculture or as public uses (i.e., DFG's Yolo Bypass headquarters, public soccer field). The Yolo Bypass lies to the east of the site and the I-80 corridor to the north.

Special-Status Species. Swainson's hawks have been recorded in the vicinity of the Davis Technology Campus site, but there is no suitable nesting habitat onsite. The agricultural field is considered suitable Swainson's hawk foraging habitat, and Swainson's hawks have been observed foraging onsite (Jones & Stokes Associates file data). The agricultural ditch is considered suitable, although marginal-quality giant garter snake habitat.

Regulatory Setting

This section summarizes the laws and regulations that apply to development in the planning area. A brief explanation of the application of each law follows.

Clean Water Act, Section 404

The USACE and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into waters of the United States under Section 404 of the Clean Water Act. "Waters of the United States" include lakes, rivers, streams and their tributaries, and wetlands. Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3). Specific project proponents must obtain a permit from the USACE for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed action.

The USACE may either issue individual permits on a case-by-case basis or general permits on a program level. General permits are prior-authorized and issued to cover similar activities that are expected to cause only minimal environmental effects. Nationwide Permits are a type of general permit that is issued to cover particular fill activities. All Nationwide Permits have a general set of conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each Nationwide Permit.

Executive Order 11990, Protection of Wetlands

Executive Order 11990 (May 24, 1977) directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on public or privately owned wetlands.

Federal Endangered Species Act

The USFWS has jurisdiction over species listed as threatened or endangered under Section 9 of the federal ESA. The act protects listed species from harm, or "take", which is broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". For any project with a federal component that affects a listed species, the federal agency must consult with the USFWS under Section 7 of the federal ESA. The USFWS issues a Biological Opinion and, if the project does not jeopardize the continued existence of that species, issues an incidental take permit. When the project has no federal component, proponents of the project affecting a listed species must consult with the USFWS and apply for an incidental take permit under Section 10 of the federal ESA. Section 10 requires an applicant to submit a conservation plan that specifies project impacts and mitigation measures.

California Endangered Species Act

The DFG has jurisdiction over species listed as threatened or endangered under Section 2080 of the California Fish and Game Code. Section 2080 prohibits the "take" of a species listed as threatened or endangered by DFG. The state definition of take is similar to the federal definition, except that Section 2080 does not prohibit indirect harm to listed species by way of habitat modification. Proponents of a project affecting a state-listed species must consult with DFG and enter into a management agreement and take permit under Section 2081.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. This act sets seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10).

California Fish and Game Code, Sections 1601-1607

Under the California Fish and Game Code, Sections 1601-1607, the DFG regulates projects that divert, obstruct, or change the natural flow or bed, channel or bank of any river, stream, or lake. Proponents of such projects must notify the DFG and enter into a streambed alteration agreement with DFG. Sections 1601-1607 typically do not apply to drainages that lack a defined bed and bank, such as vernal swales.

Yolo County Habitat Conservation Plan

A draft Yolo County Habitat Conservation Plan (Yolo HCP) has been prepared for the County of Yolo; the Cities of Davis, West Sacramento, Winters, and Woodland; the DFG; and the USFWS. The Yolo HCP is a proposed conservation plan supporting application a federal permit under Section 10(a) of the federal ESA and a state permit under Section 2081 of the California Fish and Game Code. The Yolo HCP describes a cooperative federal, state, and local program of conservation for a number of covered species of plants and animals, within the jurisdictional limits of the cities and the County of Yolo. The Yolo HCP has been prepared as a "multiple habitat and species" plan pursuant to federal and state law to meet local endangered species requirements. The plan is currently in public review. Acceptance by all parties involved is uncertain at this time.

The proposed Yolo HCP would address the potential impacts of development, natural habitat loss, and species endangerment and creates a plan to mitigate for the loss of covered species (see Tables E-4 and E-5 of Appendix E for a complete list of these species) and their habitats due to the direct and indirect impacts of future development of both private and public lands within the Yolo HCP area. A goal of the Yolo HCP is to conserve biodiversity in the plan nine area and to achieve certainty in the land development process for both private- and public-sector development projects anticipated under the general plans of the respective cities and Yolo County.

The key elements of the Yolo HCP for developers are the mitigation options for impacts on covered species and their habitats. If the City adopts the HCP and the developer chooses to participate in the HCP process, several mitigation options can be pursued. The developer can pay the mitigation fees required through the HCP process, submit easements in-lieu of the mitigation fee, or provide in-kind resources, such as habitat restoration services.

Compliance with the Yolo HCP does not satisfy the requirements of wetlands regulations when waters of the United States are permanently filled or adversely modified. Projects that fill or otherwise adversely affect wetlands and waters of the United States will be required to obtain the required permits or authorizations from the USACE independent of the Yolo HCP. The proposed HCP mitigation fee does not cover the cost of project-specific wetland permitting and mitigation. The Yolo HCP is compatible with wetlands regulations in that it provides the foundation for required endangered species consultations to ensure that permits for wetland fills will not adversely affect threatened, endangered, or other special-status species. The Yolo HCP can expedite the wetlands permitting process by providing a comprehensive plan for endangered species mitigation when applications for wetland permits or authorizations are filed. Where mitigation under the Yolo HCP can satisfy the mitigation required under wetland permits, "double" mitigation for both wetland and endangered species impacts will not be required. With approval from all permitting agencies, one mitigation scenario could satisfy both programs.

Noxious and Invasive Weed Laws

A number of laws pertain to noxious and invasive weeds. Federal laws include the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 as amended (16 USC 4701

et seq.), Lacey Act as amended (18 USC 42), Federal Plant Pest Act (7 USC 150aa et seq.), Federal Noxious Weed Act of 1974 as amended (7 USC 2801 et seq. and Executive Order 11312, released February 3, 1999). State and local agencies are also concerned about weed infestation and dispersal on private and public lands. The U.S. Department of Agriculture, California Department of Food and Agriculture, County Agricultural Commission, and California Exotic Pest Plant Council all maintain lists of pest plants of economic or ecological concern.

IMPACTS AND METHODOLOGY

This chapter presents an assessment of potential impacts to biological resources. Impact assessment was based on the relationships between species and habitat distribution and on the area affected by the sites being studied under each land use map alternative.

Development at any of the sites being can result in direct and indirect impacts on biological resources. Direct impacts include removal of vegetation and wildlife habitat, direct mortality of wildlife, and displacement of wildlife from ground disturbance and clearing of vegetation. Indirect impacts include alterations of hydrological patterns, introduction of weeds and pests, and increased human activity in sensitive biological resource areas.

This analysis will provide an assessment of the overall potential impacts related to implementation of the proposed General Plan update, and will provide appropriate mitigation to reduce significant impacts on biological resources. Impacts on biological resources in the City's planning area, including the sites being studied, were evaluated based on a reconnaissance-level field survey conducted by a Jones & Stokes Associates botanist and wildlife biologist in September 1999, a review of existing environmental documents and soil surveys describing the planning area, and the project description.

Two of the significance criteria identified in the model initial study checklist (Appendix G) of the State CEQA Guidelines do not apply to the Davis General Plan. There will be no adverse impacts to migratory fish in the Davis planning area (Table 5-2) and there are no adopted habitat management plans for the area.

Applicable Policies

The proposed General Plan update contains a number of goals, policies, standards, and actions that are designed to reduce or eliminate potential environmental impacts that may be related to the implementation of the update. Alternative 2 assumes implementation of the existing General Plan and the goals, policies, standards, and actions it contains. In evaluating the biological resource impacts associated with land use map Alternatives 3 through 5, it is assumed that the goals, policies, standards, and actions contained in the proposed General Plan update will be implemented with all

future projects. A comparison of the existing General Plan and General Plan update is contained in Chapter 3, "Project Description".

In this section, the following policies were applied to the impact assessment for Alternatives 3 through 5.

- **Policy LU A.2.** Encourage in-fill projects, which respect setback requirements, preserve existing greenbelts, and maintain desirability of existing housing.

- **Policy LU E.8.** Give priority to development on lands designated "Urban Reserve" over those designated as Habitat Areas.

- **Policy WATER 3.1**. Coordinate and integrate development of storm ponds and channels to maximize recreational, habitat, and aesthetic benefits.

- **Policy POS 1.2 (Action d)**. Incorporate existing habitat areas into the open space network, while maintaining the emphasis on wildlife and habitat preservation in those areas.

- **Policy POS 5.1.** Protect and retain wildlife habitat, agricultural land, and open space when planning and maintaining City park lands.

GOAL HAB1. Identify, preserve, restore, enhance and create natural habitats. Preserve and improve biodiversity consistent with the natural biodiversity of the region.

- **Policy HAB 1.1**. Preserve existing natural habitat areas, including designated Natural Habitat Areas.

  - **Standard HAB 1.1a**. Heritage oak trees shall be protected. Riparian corridors and wetlands should be protected.

  - **Standard HAB 1.1b**. Where preservation of habitat is not feasible in new development, replacement with habitat in Yolo County of equal or greater habitat value shall be required.

  - **Standard HAB 1.1d**. Recreation or interpretive facilities within natural areas should be designed to be site sensitive and minimally intrusive. Public access into Sensitive Habitat Areas should be limited.

  - **Standard HAB 1.1e**. New development shall be setback from creeks and channels.

  - **Standard HAB 1.1f**. Preservation plans are required for all habitats that are to be preserved in new development areas.

- **Standard HAB 1.1g**. Storm retention ponds and drainage ponds that have become wildlife habitats should be preserved as habitat.

- **Standard HAB 1.1h**. Develop a list of wildlife species that should be encouraged or protected. A map should be developed that indicates that areas where these species should be encouraged or protected.

- **Action HAB 1.1m**. Maintain the City owned South Fork Preserve site as natural habitat and compatible agriculture with public access limited to certain portions of the site so as to minimize impacts to sensitive areas.

- **Policy HAB 1.2**. Enhance and restore natural areas and create a new wildlife habitat areas.

  - **Standard HAB 1.2d**. Hedgerows and other features to provide habitat for beneficial insects and wildlife are encouraged within the Urban Agricultural Transition Area and other agricultural areas.

  - **Standard HAB 1.2e**. As a means to promote safety of habitat areas from toxic materials, new habitat areas should be designated on non-agricultural lands or on agricultural lands that are in organic production.

  - **Action HAB 1.2g**. Implement a program of habitat enhancement in the existing drainage ponds and other appropriate areas within the Urban Agricultural Transition Area for migratory wetland wildlife.

  - **Action HAB 1.2h**. Implement the Wetlands Demonstration Project associated with the City's wastewater treatment plant. This should be done in a manner that does not impose restrictions on adjacent agricultural operations.

- **Policy HAB 1.4.** Preserve and protect scenic resources.

Summary of Impacts Related to the Land Use Map Alternatives

This chapter evaluates impacts on biological resources related to the General Plan update and the establishment of a new junior high school, including, the four land use map alternatives. For this evaluation, impacts have been assessed in three categories. Table 5H-1 provides an overview of the significance findings made for the project and each of the sites being studied under each alternative. The table also shows the impacts related specifically to the establishment of a new junior high school site under the heading "Signature Site" for Alternatives 4 and 5. The following paragraphs provide a brief summary of each impact.

Of the various impacts associated with loss of natural habitats and sensitive species, the adversity of these impacts varies by alternative in accordance with the amount of development proposed, the location of development, and the existence of habitat.

- **Impact BIO-1. Consistency with General Plan Policies.** Consistency of each of the four alternatives with the policies of the existing General Plan and the General Plan update was evaluated.

- **Impact BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub.** There has been a substantial statewide decline of riparian communities in recent years, which has led state and federal agencies to adopt policies to arrest further losses. Riparian woodland and scrub are present along Putah Creek, Dry Slough, Channel A (north of Covell Boulevard and crossing County Road 102), possibly along other drainages in the planning area, and on some of the sites being studied. Therefore, implementation of each land use map alternative may result in the loss or temporary disturbance of riparian woodland and scrub habitat. For this resource, the General Plan was found to have a significant impact, and mitigations were added to reduce this to a less than significant level.

- **Impact BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal or Agricultural Areas.** The overall impact of each of the four alternatives is significant, but can be reduced to a less than significant impact with mitigations proposed. Mitigation of Alternative 2 is dependent upon application of the identified mitigation measures to all future development projects. Mitigation of the impacts of Alternatives 3, 4, and 5 is dependent upon both the policies of the General Plan update and application of the mitigation measures to future development projects. Based on the reduced area potentially subject to development, Alternative 3 would have the least potential impact, and Alternative 5 would have the greatest relative potential impact.

- **Impact BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub.** All of the alternatives would result in losses, but with the identified mitigation measures, the overall impact of each is less than significant. Alternatives 2 and 3 offer the least impacts, with Alternatives 4 and 5 having greater relative impacts.

- **Impact BIO-5. Loss or Temporary Disturbance of Wetlands and Other Waters of the U.S.** All the alternatives would result in significant impacts, but with the identified mitigation measures, the impacts would be less than significant. Alternative 3 has the least impact during the planning time frame. Alternative 2 has a smaller relative impact than Alternatives 4 and 5.

- **Impact BIO-6. Impacts to Special-Status Species.** The overall impact of each of the four alternatives was significant based on the potential to impact a range of species on the sites being studied. Alternative 5, by virtue of its larger area of potential development, would have the greatest relative impact.

- **Impact BIO-7. Impacts from Noxious Weeds.** The overall impact of each of the four alternatives is significant due to the potential for spread of noxious weeds through grading and other site disturbance. Alternative 5, by virtue of its larger area of potential development, would have the greatest relative impact.

- **Impact BIO-8. Impacts to Landmark Trees and Other Existing Trees.** Based on existing and proposed General Plan policies, potential impacts to heritage trees was reduced to a less than significant level. The relative impacts of Alternatives 4 and 5 are likely to be greater than those of the other two alternatives based on land area converted.

Table 5H-1. Summary of Biological Resource Impacts by Land Use Map Alternative

Project Impacts	Project Mitigations	Overall General Plan	Sites Being Studied									In-fill
			Nishi/Gateway	Covell Center	Signature Site	Mace Ranch	Under 2nd Street	Sutter-Davis	Oeste Campus	Davis Technology	Intervening Lands	
Alternative 2. Buildout to 2010 Using Existing General Plan												
BIO-1. Consistency with General Plan Policies	Not required	LS	LS	LS		LS	LS					LS
BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub	BIO-2.1	S	S	S		LS	LS					S
BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas	BIO-2.1	S	S	S		S	S					S
BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub	BIO-2.1	S	LS	LS		LS	LS					S
BIO-5. Loss or Temporary Disturbance of Wetlands and Other Waters of the U.S.	BIO-2.1	S	S	S		LS	LS					S
BIO-6. Impacts to Special-Status Species	BIO-2.1	S	S	S		S	LS					S
BIO-7. Impacts from Noxious Weeds	BIO-7.1	S	S	S		S	S					S
BIO-8. Impacts to Landmark Trees and Other Existing Trees	Not required	LS	LS	LS		LS	LS					LS
Alternative 3. Reduced Buildout Scenario												
BIO-1. Consistency with General Plan Policies	Not required	LS		LS		LS	LS					LS
BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub	BIO-2.1	S		S		LS	LS					S
BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas	BIO-2.1	S		S		S	S					S
BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub	BIO-2.1	S		LS		LS	LS					S
BIO-5. Loss or Temporary Disturbance of Wetlands and Other Waters of the U.S.	BIO-2.1	S		S		LS	LS					S

Table 5H-1. Summary of Biological Resource Impacts by Land Use Map Alternative

Project Impacts	Project Mitigations	Overall General Plan	Sites Being Studied									In-fill
			Nishi/Gateway	Covell Center	Signature Site	Mace Ranch	Under 2nd Street	Sutter-Davis	Oeste Campus	Davis Technology	Intervening Lands	
BIO-6. Impacts to Special-Status Species	BIO-2.1	S		S		S	LS					S
BIO-7. Impacts from Noxious Weeds	BIO-7.1	S		S		S	S					S
BIO-8. Impacts to Landmark Trees and Other Existing Trees	Not required	LS		LS		LS	LS					LS
Alternative 4. Community Expansion Scenario with Oeste Campus												
BIO-1. Consistency with General Plan Policies	Not required	LS	LS	LS	LS	LS	LS	LS	LS			LS
BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub	BIO-2.1	S	S	S	LS	LS	LS	LS	LS			S
BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas	BIO-2.1	S	S	S	S	S	S	S	S			S
BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub	BIO-2.1	S	LS	LS	LS	LS	LS	S	S			S
BIO-5. Loss or Temporary Disturbance of Wetlands and Other Waters of the U.S.	BIO-2.1	S	S	S	LS	LS	LS	S	S			S
BIO-6. Impacts to Special-Status Species	BIO-2.1	S	S	S	LS	S	LS	S	S			S
BIO-7. Impacts from Noxious Weeds	BIO-7.1	S	S	S	S	S	S	S	S			S
BIO-8. Impacts to Landmark Trees and Other Existing Trees	Not required	LS	LS	LS	LS	LS	LS	LS	LS			LS
Alternative 5. Community Expansion Scenario with Davis Technology Campus												
BIO-1. Consistency with General Plan Policies	Not required	LS	LS	LS	LS	LS	LS	LS		LS	LS	LS
BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub	BIO-2.1	S	S	S	LS	LS	LS	LS		LS	LS	S
BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas	BIO-2.1	S	S	S	S	S	S	S		S	S	S
BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub	BIO-2.1	S	LS	LS	LS	LS	LS	S		S	S	S
BIO-5. Loss or Temporary Disturbance of Wetlands and Other Waters of the U.S.	BIO-2.1	S	S	S	LS	LS	LS	S		S	S	S
BIO-6. Impacts to Special-Status Species	BIO-2.1	S	S	S	LS	S	LS	S		S	S	S
BIO-7. Impacts from Noxious Weeds	BIO-7.1	S	S	S	S	S	S	S		S	S	S
BIO-8. Impacts to Landmark Trees and Other Existing Trees	Not required	LS	LS	LS	LS	LS	LS	LS		LS	LS	LS

SU = Significant unavoidable
S = Significant, but can be reduced to less than significant with mitigations included
LS = Less than significant
NI = No impact
N/A = None available

Impact BIO-1. Consistency with General Plan Policies

Significance Criteria

- A significant impact would occur if a land use map alternative or one of its components would conflict with the environmental plans and goals of the local community or other planning regulations.
- For Alternatives 3 through 5, a significant impact would occur if a policy change in the General Plan update would result in a substantial adverse change in the environment related to biological resources.

Impacts of the proposed project related to General Plan consistency were assessed with application of the above significance criteria. Table 5H-2 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-2. General Plan Policy Consistency under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Consistent with biological-resource related locational policies	• Consistent with biological-resource related locational policies • Positive changes in policy to protect sensitive biological resources	• Consistent with biological-resource related locational policies • Positive changes in policy to protect sensitive biological resources	• Consistent with biological-resource related locational policies • Positive changes in policy to protect sensitive biological resources

Alternative 2. Buildout to 2010 Using Existing General Plan. While the existing General Plan provides policy guidance on the treatment of sensitive resources that may exist on a given site, the General Plan does not include goals and polices that provide guidance on project locations within the planning area. Therefore, this land use map alternative does not conflict the existing General Plan and is considered to be a ***less than significant*** impact.

Alternative 3. Reduced Buildout Scenario. Implementation of Alternative 3 would only allow growth and development in the City to 2010 for projects that are already entitled and additions in Covell Center (Variation 3, business park). For these projects, application of the policies in the General Plan update are assumed. Like the existing General Plan, the General Plan update provides policy guidance on the treatment of sensitive resources that may exist on a given site, but does not include goals and polices that provide guidance on project locations within the

planning area. Therefore, this land use map alternative does not conflict the existing General Plan and is considered to be a ***less than significant*** impact.

In preparing the General Plan update, City staff has identified the primary areas of policy where the proposed update differs from the existing General Plan. A list of these major changes is listed in Chapter 3 under a section labeled "New, Expanded, or Modified Goals and Policies in the General Plan Update". From this list, the following statements represent new policy direction (in bold type) associated with noise topics.

- **Policy and action to establish a distinct and permanent urban boundary/limit line, and**

- **Habitat mitigation required.**

  The addition of new policy statements in the General Plan update related to the above two topics is seen as having a positive impact on protecting sensitive biological resources. The establishment of a permanent urban boundary/limit line will help to contain sprawl, preserve open space and agricultural lands, and maintain existing habitat areas. Within the urbanized area, the General Plan update contains additional policy guidance aimed at protecting existing habitat.

  This emphasis is seen as being a positive change with the General Plan update, and will be a ***less than significant*** impact.

Alternative 4. Community Expansion Scenario with Oeste Campus. Implementation of Alternative 4 includes many new development opportunities on public and private lands within Davis. Like the existing General Plan, the General Plan update provides policy guidance on the treatment of sensitive resources that may exist on a given site, but does not include goals and polices that provide guidance on project locations within the planning area. Therefore, this land use map alternative does not conflict the existing General Plan and is considered to be a ***less than significant*** impact.

Related to the second significance criteria (impacts related to policy changes), changes in policy will have an overall positive affect on biological resource issues (the same as described for Alternative 3, above), and would have a ***less than significant*** environmental impact.

Alternative 5. Community Expansion with Davis Technology Campus. Implementation of Alternative 5 includes many new development opportunities on public and private lands within Davis. Like the existing General Plan, the General Plan update provides policy guidance on the treatment of sensitive resources that may exist on a given site, but does not include goals and polices that provide guidance on project locations within the planning area. Therefore, this land use map alternative does not conflict the existing General Plan and is considered to be a ***less-than-significant*** impact.

Related to the second significance criteria (impacts related to policy changes), changes in policy will have an overall positive affect on biological resource issues (the same as described for Alternative 3, above), and would have a ***less-than-significant*** environmental impact.

Impact BIO-2. Loss or Temporary Disturbance of Riparian Woodland and Scrub

Significance Criteria

- A land use map alternative would have a significant impact if it would adversely affect sensitive natural communities, including riparian communities, wetlands, or other sensitive habitats.

Impacts of the proposed project related to loss or temporary disturbance of riparian woodland and scrub were assessed with application of the above significance criteria. Table 5H-3 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-3. Loss or Temporary Disturbance of Riparian Woodland and Scrub under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential habitat loss at Nishi/Gateway, Covell Center, and in-fill sites	• Potential habitat loss within the in-fill area	• Potential habitat loss at Nishi/Gateway, Covell Center, and in-fill sites	• Potential habitat loss at Nishi/Gateway, Covell Center, and in-fill sites

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 may result in the loss or temporary disturbance of riparian woodland and scrub habitat. Riparian woodland and scrub are present along Putah Creek, Dry Slough, Channel A (north of Covell Boulevard and crossing County Road 102), and possibly along other drainages in the planning area. Typical impacts would occur as a result of construction activities associated with development proposed under this alternative. As shown in Table 5H-1, significant impacts to riparian woodland and scrub habitats have the potential to occur at the Nishi/Gateway site, the Covell Center site, and other potential drainage sites in the in-fill area. Impacts to riparian woodland and scrub habitats are not likely to occur at the other major project sites due to the absence of this habitat type.

Substantial statewide decline of riparian communities in recent years has led state and federal agencies to adopt policies to arrest further losses. DFG has adopted a no-net loss policy for riparian habitat value. The USFWS mitigation policy places California's riparian habitats in Resource Category 2, for which no net loss of existing habitat value is recommended. Riparian woodland and

scrub habitat areas also may qualify as wetlands subject to USACE jurisdiction under CWA Section 404. Because riparian woodland and scrub habitat provides important habitat for many fish and wildlife species and has sustained considerable losses statewide, the existing General Plan was determined to have a ***significant*** impact.

Alternative 3. Reduced Buildout Scenario. The area affected by development under this scenario is the least of the four land use map alternatives. As shown in Table 5H-1, significant impacts to riparian woodland and scrub habitat are not likely to occur at the sites being studied under this alternative due to the absence of this habitat type. Impacts to riparian woodland and scrub found along Channel A on the Covell Center site are likely to remain similar to existing conditions since urban development (Variation 3, Business Park) is limited to a 60-acre area adjacent to Covell Boulevard. Variations 2 and 3 will maintain the site in agricultural use. However, this impact has the potential to occur in other drainage sites found throughout the in-fill area. The adversity of potential impacts are reduced by Policy POS 1.2 (Action d) which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Because this alternative has the potential to damage this habitat type, the impact is considered to be ***significant***.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, significant impacts to riparian woodland and scrub habitat are only likely to occur at the Nishi/Gateway site, the Covell Center site, and other potential drainage sites in the in-fill area. The adversity of potential impacts are reduced by Policy POS 1.2 (Action d) of the General Plan update which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Because this alternative has the potential to damage this habitat type, the impact is considered to be ***significant***.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. As shown in Table 5H-1, significant impacts to riparian woodland and scrub habitat are only likely to occur at the Nishi/Gateway site, the Covell Center site, and other potential drainage sites in the in-fill area. The adversity of potential impacts are reduced by Policy POS 1.2 (Action d) of the General Plan update which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Because this alternative has the potential to damage this habitat type, the impact is considered to be ***significant***.

Mitigation Measures

BIO-2.1. Additional Biological Resources Policy (Alternatives 2 through 5)

For Alternatives 2 through 5, impacts to riparian woodland and scrub can be reduced in adversity by adding new standards to Policy HAB 1.1 in the General Plan update and adding a similar policy and actions to the existing General Plan. Also included is a revision to Standards 1.1a and 1.1b in the General Plan update.

*"**Standard HAB 1.1a**. Heritage oak trees and City-designated signature trees shall be protected. Sensitive biological resources should be protected."*

*"**Standard HAB 1.1b**. Project design shall demonstrate that avoidance of sensitive resources has been integrated into project design. Where avoidance is not feasible, the project proponent shall compensate for the loss or disturbance within Yolo County. The type and amount of compensation shall be determined in conjunction with the appropriate local, state, and/or federal regulatory agency involved."*

*"**Standard HAB 1.1n**. The City shall require a biological survey be prepared by a qualified biologist for proposed development areas that may contain sensitive resources as defined by the City or appropriate state or federal regulatory agencies. The biological study shall be prepared as a requirement of the environmental assessment of a given project unless the City's Planning Director determines, based on previous studies or other evidence, that the site's current state would preclude the finding of sensitive resources. Agricultural use or plowing of a site does not eliminate the probability of sensitive resources.*

Such studies, when required, shall include:

- *surveys and mapping of special-status plants and wildlife during the appropriate identification periods;*
- *mapping and quantification of sensitive habitat loss; and*
- *delineation and quantification of waters of the U.S., including vernal pools, swales, alkali wetlands, seasonal wetlands, and other wetlands shall be done use the current USACE wetland delineation manual.*

For areas of non-native grassland, ruderal, developed, or agricultural lands that are determined to contain no special-status species, inclusions of alkali grassland, meadow and scrub, native perennial grassland, or wetlands, no further mitigation will be required. If sensitive habitats are identified, please refer to the mitigation measure(s) below pertaining to that resource to avoid, minimize, or compensate significant effects on these resources accordingly."

*"**Standard HAB 1.1o**. If a biological study of a site determines the presence of sensitive biological resources, the project proponent will retain a qualified biologist, approved by the agency(s) with regulatory responsibility, to monitor construction activities in sensitive biological resource areas."*

*"**Standard HAB 1.1p**. Sensitive biological resources located in or adjacent to the construction area will be protected by placing orange construction barrier fencing, or stakes and flags, including buffer zones (where appropriate and depending on the type of resource). Adjacent resources that may require protection include oak woodland, riparian woodland*

and scrub vegetation, drainages, vernal pools and swales, other wetlands, native grassland, special-status species populations, and elderberry shrubs."

Funding Source:	*Davis City Council (policy change), project proponent (compliance with policy)*
Implementing Party:	*City of Davis Planning and Building Department and Davis City Council (policy change), project proponent (compliance with policy)*
Monitoring Agency:	*City of Davis Planning and Building Department, USACE, USFWS, DFG*
Timing:	*Prior to adoption of General Plan update for Alternative 3 through 5, and as part of a General Plan amendment presented during the year 2000 (policy change); prior to any ground-disturbing activities (compliance with policy)*

Impact BIO-3. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas

Significance Criteria

- adversely affect sensitive natural communities, including riparian communities, wetlands, or other sensitive habitats; or
- substantially reduce the acreage of any agricultural crop, or common natural community that serves as valuable foraging or nesting habitat.

Impacts of the proposed project related to loss or temporary disturbance of non-native grassland, ruderal, or agricultural areas (in relation to biological resources) were assessed with application of the above significance criteria. Table 5H-4 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-4. Loss or Temporary Disturbance of Non-Native Grassland, Ruderal, or Agricultural Areas under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential for sensitive habitats within these non-sensitive habitats	• Potential for sensitive habitats within these non-sensitive habitats	• Potential for sensitive habitats within these non-sensitive habitats	• Potential for sensitive habitats within these non-sensitive habitats

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 could result in the loss or temporary disturbance of annual grassland, ruderal, or agricultural areas. Typical impacts would occur as a result of construction activities associated with development proposed under this alternative. As shown in Table 5H-1, significant impacts to these habitat types have the potential to occur at the Nishi/Gateway, Covell Center, Mace Ranch, and Under Second Street sites, and other smaller sites in the in-fill area.

While non-native grassland, ruderal, and agricultural areas are common locally and regionally, large areas of the planning area have not been surveyed, and sensitive biological resources like seasonal wetlands and drainages, patches of native perennial grassland, alkali grassland and meadow, populations of special-status species, and existing trees may be found interspersed in these areas. Although loss of non-native grassland, ruderal, and agricultural areas would not be significant itself (on biological resources), the loss of sensitive species within these areas would be significant. Therefore, the program impact is considered ***significant***.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, significant impacts to non-native grassland, ruderal, or agricultural areas are only likely to occur at the Covell Center site (under Variation 3, Business Park), the Mace Ranch interior site, the Under Second Street site, and other smaller sites in the in-fill area. Development at Covell Center under Variations 2 and 3 would maintain the site in agricultural uses similar to existing conditions. The potential impacts of this alternative are limited by Policy POS 1.2 (Action d) of the General Plan update which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Although loss of non-native grassland, ruderal, or agricultural areas would not be significant itself, the loss of sensitive species within these areas would be significant. Therefore, the program impact is considered ***significant***.

Alternative 4. Community Expansion Scenario with Oeste Campus. This impact is similar to the description under Alternative 2 on a program level, although the area to be disturbed will be larger due to the addition of potential development of the Signature Site, Covell Center, Nishi/Gateway, Mace Ranch, Under Second Street, and Oeste Campus sites. The potential impacts of this alternative are limited by Policy POS 1.2 (Action d) of the General Plan update which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Although loss of non-native grassland, ruderal, or agricultural areas would not be significant itself, the loss of sensitive species within these areas would be significant. Therefore, the program impact is considered ***significant***.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. This scenario substitutes development at the Davis Technology Campus and Intervening Land sites for the Oeste Campus. This alternative involves the largest developed land area, but its major sites have fewer habitat impacts than Alternative 4. The potential impacts of this alternative are limited by Policy POS 1.2 (Action d) of the General Plan update which requires the incorporation of existing habitat areas into the open space network and Policy HAB 1.1 which requires preservation of existing natural habitat areas. Although loss of non-native grassland, ruderal, and

agricultural areas would not be significant itself, the loss of sensitive species within these areas would be significant. Therefore, the program impact is considered ***significant***.

Mitigation Measures

With implementation of the following mitigation measures, this impact will be reduced to a ***less-than-significant*** level.

BIO-2.1. Additional Biological Resources Policy (Alternatives 2 through 5)

Impact BIO-4. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub

Significance Criterion

- Adversely affect sensitive natural communities, including riparian communities, wetlands, or other sensitive habitats

Impacts of the proposed project related to loss or temporary disturbance of alkali grassland, meadow, or scrub were assessed with application of the above significance criteria. Table 5H-5 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-5. Loss or Temporary Disturbance of Alkali Grassland, Meadow, or Scrub under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential for sensitive habitats within the in-fill area	• Potential for sensitive habitats within the in-fill area	• Potential for sensitive habitats within the Sutter-Davis, Oeste Campus, and in-fill sites	• Potential for sensitive habitats within the Davis Technology Campus, Intervening Lands, and in-fill sites

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 may result in the loss or temporary disturbance of alkali grassland, meadow, or scrub in any areas with alkaline soils or soils exhibiting alkaline surface soil characteristics. Typical impacts would occur as a result of construction activities associated with development proposed under this alternative. Alkaline grassland, meadow, and scrub habitat are most likely to occur in

ruderal, uncultivated, or fallow agricultural lands on alkaline soils; or drainage banks such as irrigation channels and roadside drainages. As shown in Table 5H-1, significant impacts to these habitats have the potential to occur at various areas with alkaline soils or soils exhibiting alkaline surface soil characteristics throughout the in-fill area. Impacts to alkali grassland, meadow, or scrub habitats are not likely to occur at the other sites being studied for development under this alternative due to the absence of this habitat.

Alkali grassland, meadow, and scrub have undergone extensive losses locally and regionally due to conversions to agricultural and urban land uses and are considered sensitive habitat. Additionally, alkali grassland meadow and scrub, and alkaline soils are potential habitat for several special-status plant species. Overall, the program impact is considered ***significant***.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, significant impacts to alkali grassland, meadow, or scrub areas would occur on smaller potential sites in the in-fill area that exhibit alkaline soil characteristics, but is not likely to occur on the sites being studied with this alternative. General Plan update policies HAB 1.1 and 1.2 will help to reduce the adversity of this impact, but the potential for impact remains ***significant***.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, significant impacts to alkali grassland, meadow, or scrub areas would likely occur at the Sutter-Davis site, the Oeste Campus site, and on smaller potential sites in the in-fill area that exhibit alkaline soil characteristics. General Plan update policies HAB 1.1 and 1.2 will help to reduce the adversity of this impact. However, development of the Oeste Campus site may conflict with policy HAB 1.1 calling for the preservation of natural habitat areas. The overall project impact is considered to be ***significant***.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. This impact is similar to the description of Impact BIO-4 described above under Alternative 2 on a project level, although the area to be disturbed will be larger due to the expansion of development in the planning area. As shown in Table 5H-1, significant impacts to alkali grassland, meadow, or scrub areas would likely occur at the Sutter-Davis, Davis Technology Campus, and Intervening Lands, and on other smaller sites in the in-fill area that exhibit alkaline soil characteristics. General Plan update policies HAB 1.1 and 1.2 will help to reduce the adversity of this impact. However, development of the Davis Technology Campus and Intervening Lands sites may conflict with policy HAB 1.1. The effects of Alternative 5 are more severe than those of Alternative 4 due to the larger amount of land being affected. The overall project impact is considered to be ***significant***.

Mitigation Measures

With implementation of the following mitigation measures, this impact will be reduced to a ***less-than-significant*** level.

BIO-2.1. Additional Biological Resources Policy (Alternatives 2 through 5)

Impact BIO-5. Loss or Temporary Disturbance of Wetlands or Other Waters of the U.S.

Significance Criterion

- A land use map alternative was determined to have a significant impact if implementation of the could result in the filling or other disturbance of jurisdictional wetlands.

Impacts of the proposed project related to loss or temporary disturbance of wetlands or other waters of the U.S. were assessed with application of the above significance criteria. Table 5H-6 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-6. Loss or Temporary Disturbance of Wetlands or Other Waters of the U.S. under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential for sensitive habitats within the Nishi/Gateway, Covell Center, and in-fill areas	• Potential for sensitive habitats within the in-fill area	• Potential for sensitive habitats within the Nishi/Gateway, Covell Center, Sutter-Davis, and Oeste Campus sites, and in-fill area	• Potential for sensitive habitats within the Nishi/Gateway, Covell Center, Sutter-Davis, Davis Technology Campus, Intervening Lands sites, and in-fill area

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 may result in the loss or temporary disturbance of wetlands and other waters of the U.S., including freshwater marsh, seasonal wetlands, vernal pools, vernal swales, alkali wetlands, and drainages. Typical impacts would occur as a result of construction activities associated with development proposed under this alternative. In general, these habitats may occur in or along natural, agricultural, or roadside drainages; other seasonal or perennial water bodies; or on relatively level, uncultivated or fallow lands with poorly drained soils (e.g., clay, silty clay loam). As shown in Table 5H-1, significant impacts to these habitats have the potential to occur at the Nishi/Gateway, Covell Center, and other smaller in-fill sites. Impacts to wetlands and other waters of the U.S. are not likely to occur at the other project sites being studied for development under this alternative due to the absence of this habitat.

Freshwater marsh, seasonal wetlands, vernal pools, vernal swales, and alkali wetlands are considered sensitive natural communities by DFG and, along with drainages and other waters of the U.S., may also qualify as wetlands subject to USACE jurisdiction under CWA Section 404. With the potential for disturbance and lack of detailed policy in the existing General Plan, the overall project impact is considered to be ***significant***.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, significant impacts to wetland or other waters of the U.S. are not likely to occur at the sites being studied during the planning period (the Sutter-Davis and Nishi/Gateway sites would be in Urban Reserve) due to the absence of this habitat type. Impacts to this habitat type are minimal on the Covell Center site since wetland areas north of Channel A are designated as part of the urban reserve or agriculture area, and would be used in a similar manner that occurs today. However, this impact has the potential to occur in other smaller sites found throughout the in-fill area. General Plan update policies HAB 1.1 and 1.2 will help to reduce the adversity of this impact, but the potential for a ***significant*** impact would remain.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, significant impacts to wetland or other waters of the U.S. are likely to occur at Nishi/Gateway, Covell Center, Sutter-Davis, and Oeste Campus sites, and in other small sites found throughout the in-fill area. This impact is reduced in adversity in light of General Plan update policies such as WATER 3.1 (integrating storm ponds and channels with habitat benefits), POS 5.1 (protecting habitat areas when planning public parks), and HAB 1.1 (preserving existing natural habitat areas). With application of these policies, the proposed project remains a ***significant*** impact.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. As shown in Table 5H-1, significant impacts to wetland or other waters of the U.S. are likely to occur at Nishi/Gateway, Covell Center, Sutter-Davis, Davis Technology Campus, Intervening Lands sites, and in smaller sites found throughout the in-fill area. This impact is reduced in adversity in light of General Plan update policies such as WATER 3.1 (integrating storm ponds and channels with habitat benefits), POS 5.1 (protecting habitat areas when planning public parks), and HAB 1.1 (preserving existing natural habitat areas). With application of these policies, the proposed project remains a ***significant*** impact.

Mitigation Measures

With implementation of the following mitigation measures, this impact will be reduced to a ***less-than-significant*** level.

BIO-2.1. Additional Biological Resources Policy (Alternatives 2 through 5)

Impact BIO-6. Impacts to Special-Status Species

Significance Criterion

- Based on the State CEQA Guidelines and professional judgment, it was determined that implementation of the General Plan update would result in a significant impact on biological resources if it would substantially affect a special-status plant or wildlife species or the species' habitat.

Impacts of the proposed project related to special-status species were assessed with application of the above significance criteria. Table 5H-7 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-7. Impacts to Special-Status Species under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential to significantly impact sensitive plant and wildlife species	• Potential to significantly impact sensitive plant and wildlife species	• Potential to significantly impact sensitive plant and wildlife species	• Potential to significantly impact sensitive plant and wildlife species

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 could result in the loss or disturbance of special-status species populations or their habitats as the result of specific project construction. Several occurrences of special-status plant species have been reported in the planning area. Most occur on preserved or private lands outside of the existing City limits. As shown in Table 5H-1, significant impacts to special-status plant species have the greatest potential to occur at the Nishi/Gateway and Covell Center sites, and other smaller sites throughout the in-fill area that exhibit appropriate soil characteristics. Impacts to special-status plant species are not likely to occur at the Mace Ranch and Under Second Street sites due to the absence of suitable habitat type. Overall, the program impact is ***significant*** on sensitive plant species.

Development of grasslands, ruderal habitats, and agricultural lands under this alternative would contribute to a direct and cumulative loss of Swainson's hawk foraging habitat throughout the planning area. Typical impacts would occur as a result of construction activities associated with development proposed under this alternative. Significant impacts to this species' foraging habitat have the potential to occur at the Nishi/Gateway site, the Covell Center Property site, the Mace Ranch interior site, and other smaller in-fill sites. Impacts to potential foraging habitat are not likely to occur at the Under Second Street site.

Implementation of Alternative 2 may also result in disturbance or nest failure of Swainson's hawks. Swainson's hawks nest in many locations throughout the planning area. Development and construction-related activities within a 0.5 mile radius of a active nest could result in disturbance and nest failure. Significant impacts to this species' nesting areas have the potential to occur at the Nishi/Gateway, Covell Center, and Mace Ranch interior sites, and other smaller in-fill sites. Impacts to potential nest areas are not likely to occur at the Under Second Street site.

Implementation of Alternative 2 may result in the mortality or displacement of western burrowing owls occurring on project sites. Construction activities or changes in land use could harm burrowing owls or remove occupied foraging habitat occurring in agricultural areas, ruderal areas (e.g., fields), and grasslands in the planning area. Significant impacts to this species have the potential to occur at the Covell Center and Mace Ranch interior sites, and other smaller in-fill sites. Impacts to western burrowing owls are not likely to occur at the Nishi/Gateway or Under Second Street sites.

If burrowing owls were harmed or displaced during construction activities, DFG could consider these impacts to be a violation of the California Fish and Game Code and federal Migratory Bird Treaty Act. This also would be considered a significant impact under CEQA because the burrowing owl is a DFG species of special concern and a USFWS species of concern.

Implementation of Alternative 2 may result in the mortality or disturbance of giant garter snakes if they occur on the project sites. Construction activities or changes in land use could harm giant garter snakes occurring in suitable habitat (i.e., channels with perennial or nearly perennial water and marsh vegetation) throughout the planning area. Significant impacts to this species have the potential to occur at the Covell Center site and smaller in-fill sites. Impacts to giant garter snakes are not likely to occur at the other sites being studied.

Implementation of Alternative 2 may result in the direct mortality or disturbance of VELB or remove its habitat (i.e., elderberry shrubs with stems 1 inch or greater at ground level). No comprehensive surveys have been conducted to determine whether suitable habitat exists in the project areas, although potential habitat has been found on the Nishi/Gateway site. If habitat for VELB exists within 100 feet of a project area, VELB could directly (e.g., elderberry shrub removal) or indirectly (e.g., dust) be affected by construction-related activities. Significant impacts to this species have the potential to occur at the Nishi/Gateway and Covell Center sites, or other smaller sites in the in-fill area. Impacts to VELB are not likely to occur at the other major project sites under this scenario. This potential impact is important because VELB is federally listed as threatened.

Implementation of Alternative 2 may result in the loss of, or disturbance to, vernal pool fairy shrimp or vernal pool tadpole shrimp (if they occur in the project area) if vernal pools or other seasonal wetlands occur within 250 feet of the project site. Construction activities under this alternative could directly or indirectly impact seasonal wetlands, vernal pools, and vernal swales which are potential vernal pool fairy shrimp or vernal pool tadpole shrimp habitat. Significant impacts to this species have the potential to occur at the Covell Center site and smaller sites in the in-fill area. Impacts to these species are not likely to occur at the other sites being studied. This potential impact is important because theses species are federally listed as threatened or endangered.

Overall, this proposed alternative has the potential to have a ***significant*** impact on sensitive plant and wildlife species.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, significant impacts to special-status plant species are only likely to occur at the Covell Center site (under Variation 3) and the smaller sites in the in-fill area. Policies are included in the General Plan update to reduce the adversity of these impacts. For example, POS 1.2 (incorporating existing habitat areas into the open space network), POS 5.1 (protecting habitat areas when planning public parks), HAB 1.1 (preserving existing natural habitat areas), and HAB 1.2 (enhancing and restoring natural areas). Although these will reduce the adversity of the impact, a ***significant*** impact on sensitive plant species is likely to occur with development of the proposed sites being studied under this land use alternative.

Impacts to Swainson's Hawks foraging habitat and nesting sites would be similar to those described fore Alternative 2. ***Significant*** impacts to this species' foraging habitat and nesting sites would only occur at the Covell Center site (under Variation 3, Business Park), Mace Ranch interior site, and other smaller sites in the in-fill area.

Implementation of Alternative 3 may also result in the mortality or displacement of western burrowing owls occurring on project sites. Construction activities or changes in land use could harm burrowing owls or remove occupied foraging habitat occurring in agricultural areas, ruderal areas (e.g., fields), and grasslands in the planning area. ***Significant*** impacts to this species could occur at the Covell Center site (Variation 3, Business Park), Mace Ranch interior site, and other smaller in-fill sites.

For the giant garter snake, significant impacts to this species are not likely to occur at the sites being studied due to a lack of suitable habitat. Under this alternative, fewer impacts to this species are likely to occur if suitable habitat on the Covell Center site is designated as part of the urban reserve or agriculture area (Variations 1 and 2). This impact has the potential to occur in other smaller sites found throughout the in-fill area. The adversity of impacts on this species are reduced with new policies in the General Plan update, such as WATER 3.1 (coordinating and integrating development of storm ponds and channels to maximize habitat benefits), POS 1.2 (incorporating existing habitat areas into the open space network while maintaining the emphasis on preservation), POS 5.1 (protecting and retaining wildlife habitat when planning parks), HAB 1.1 (preserving existing natural areas), and HAB 1.2 (enhancing and restoring natural areas). The overall project impact is considered to remain ***significant***.

Implementation of Alternative 3 may result in the direct mortality or disturbance of VELB or remove its habitat (i.e., elderberry shrubs with stems 1 inch or greater at ground level). If habitat for VELB exists within 100 feet of a project area, VELB could directly (e.g., elderberry shrub removal) or indirectly (e.g., dust) be affected by construction-related activities. ***Significant*** impacts to this species would only occur at the Covell Center site (all variations) and other smaller sites in the in-fill area.

Implementation of Alternative 3 may result in the loss of, or disturbance to, vernal pool fairy shrimp or vernal pool tadpole shrimp (if they occur in the project area) if vernal pools or other seasonal wetlands occur within 250 feet of a project site. Construction activities under this alternative could directly or indirectly impact seasonal wetlands, vernal pools, and vernal swales which are potential vernal pool fairy shrimp or vernal pool tadpole shrimp habitat. ***Significant*** impacts to these species would occur at the Covell Center site (Variation 3, Business Park) and other smaller sites in the in-fill area. Development at Covell Center under Variations 2 and 3 would maintain the site in agricultural uses similar to existing conditions.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, significant impacts to special-status plant species are likely to occur at the Nishi/Gateway, Covell Center, Sutter-Davis, and Oeste Campus sites, and other smaller sites in the in-fill area. Development of the Signature, Mace Ranch interior, and Under Second Street sites would not have impacts. Implementation of policies in the General Plan update, such as POS 1.2 (incorporating existing habitat areas into the open space network), POS 5.1 (protecting habitat areas when planning public parks), HAB 1.1 (preserving existing natural habitat areas), and HAB 1.2 (enhancing and restoring natural areas) will reduce the adversity of these impacts, but the overall project impact will remain ***significant***.

Impacts on Swainson's hawk foraging areas will be similar to Alternative 3, except that the area impacted will be larger. ***Significant*** impacts to this species' foraging habitat would occur at all the sites being studied under this alternative (except the Under Second Street site, and other smaller sites in the in-fill area.

Significant impacts to Swainson's hawk nesting areas would occur at all the sites being studied (except the Signature and Under Second Street sites), and other smaller sites in the in-fill area. Due to the additional land being developed, this alternative would have a greater relative impact than Alternative 3.

Significant impacts to western burrowing owls could occur at all the sites being studied under this alternative (except the Nishi/Gateway, Signature, and Under Second Street sites, and other potential sites in the in-fill area. This alternative, by reason of its greater development area, would have a greater relative impact than Alternative 3.

Significant impacts to giant garter snakes would only occur at the Covell Center, Sutter-Davis, and Oeste Campus sites, in addition to smaller potential sites found throughout the in-fill area. Given the additional development area, this impact could be greater than under Alternative 3.

Significant impacts to VELB could occur at the Nishi/Gateway, Covell Center, and Oeste Campus sites, in addition to smaller potential sites in the in-fill area. Due to the larger area of potential habitat that could be affected under Alternative 4, its development would have a greater relative impact than Alternatives 3 and 5.

Vernal pool fairy shrimp or vernal pool tadpole shrimp (if they occur in the project area) may be present in vernal pools or other seasonal wetlands occur within 250 feet of the project site. ***Significant*** impacts to this species would occur at the Covell Center site and other smaller sites in the in-fill area. Because neither the Oeste Campus nor the Davis Technology Campus and Intervening Lands sites appear to have shrimp habitat, Alternatives 4 and 5 would be similar in the extent of relative impact.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. As shown in Table 5H-1, significant impacts to special-status plant species are likely to occur at Nishi/Gateway, Covell Center, Sutter-Davis, Davis Technology Campus, Intervening Lands, and other smaller sites in the in-fill area. Development of the Signature, Mace Ranch interior, and Under Second Street sites would not have impacts. The level of adversity of this impact is reduced with application of policies in the General Plan update, such as POS 1.2 (incorporating existing habitat areas into the open space network), POS 5.1 (protecting habitat areas when planning public parks), HAB 1.1 (preserving existing natural habitat areas), and HAB 1.2 (enhancing and restoring natural areas). Even with these policies, ***significant*** impacts could still occur due to incomplete policy protections. Based on the larger area involved, the impacts of Alternative 5 would be expected to be greater than those of Alternative 4.

Significant impacts to Swainson's hawk foraging habitat could occur at all the sites being studied (except the Under Second Street site) under this alternative, and other potential sites in the in-fill area. Given the greater area involved, the impact of Alternative 5 is expected to be greater than that of Alternative 4. Because of the expansive nature of foraging habitat, development of the listed sites may conflict with a strict reading of HAB 1.1.

This alternative was also found to have a ***significant*** impact to Swainson's hawk nesting sites. This impact may occur at the sites being studied under this alternative (except the Signature and Under Second Street sites), and other smaller sites in the in-fill area. Because this alternative has a larger development area than Alternative 4, its impact is expected to be greater.

This alternative was also determined to have a ***significant*** impact on western burrowing owls at all the sites being studied (except the Nishi/Gateway, Signature, and Under Second Street sites), and other smaller sites in the in-fill area. This alternative, by reason of its greater development area, would have a greater relative impact than Alternative 4.

Significant impacts to giant garter snakes could occur with development at the Covell Center, Sutter-Davis, Davis Technology Campus, and Intervening Lands sites, in addition to smaller sites found throughout the in-fill area. The impact of this Alternative is likely to be greater than that under Alternative 4 given the larger area of Alternative 5.

As described under Alternative 3, ***significant*** impacts to VELB could occur at the Nishi/Gateway and Covell Center sites, in addition to smaller sites in the in-fill area.

Vernal pool fairy shrimp or vernal pool tadpole shrimp (if they occur in the project area) may be present in vernal pools or other seasonal wetlands occur within 250 feet of the project site. ***Significant*** impacts to this species would occur at the Covell Center site and other smaller sites in the in-fill area. Because neither the Oeste Campus nor the Davis Technology Campus and Intervening Lands sites appear to have shrimp habitat, Alternatives 4 and 5 would be similar in the extent of relative impact.

Mitigation Measures

Implementation of the following mitigation measures would be required to reduce this impact to a ***less-than-significant*** level.

BIO-2.1. Additional Biological Resources Policy (Alternatives 2 through 5)

Impact BIO-7. Impacts from Noxious Weeds

Significance Criterion

- A land use map alternative was determined to have a significant impact if activities would cause the spread of noxious weeds in the planning area.

Impacts of the proposed project related to noxious weeds were assessed with application of the above significance criteria. Table 5H-8 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-8. Impacts from Noxious Weeds
under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Construction has the potential to spread noxious weed species	• Construction has the potential to spread noxious weed species	• Construction has the potential to spread noxious weed species	• Construction has the potential to spread noxious weed species

Alternative 2. Buildout to 2010 Using Existing General Plan. Implementation of Alternative 2 may result in impacts associated with noxious weeds. Impacts related to noxious weeds could occur as a result of construction activities and the inadvertent introduction of noxious weed species during landscaping activities or other land management activities associated with urban development. Federal, state, and local agencies; private individuals; and environmental

organizations are concerned about noxious weed infestation and dispersal that could cause damage to agricultural areas, sensitive habitats, special-status species, and other resources. As shown in Table 5H-1, significant impacts resulting from noxious weeds have the potential to occur at all sites proposed for development under this alternative. Therefore, this is considered to be a ***significant*** impact.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, significant impacts from noxious weeds are only likely to occur at the Covell Center site (Variation 3), Mace Ranch interior, and Under Second Street sites, and other smaller sites in the in-fill area. This impact is considered ***significant***, and there are no General Plan update policies that would directly relate to this impact.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, significant impacts from noxious weeds could occur at all the sites being studied under this alternative and other smaller sites in the in-fill area. There are no General Plan update policies that would directly relate to this impact. Therefore, this impact is considered to be ***significant***. Based on the size of the area involved, this alternative would have a greater relative impact than Alternative 3.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. As shown in Table 5H-1, significant impacts from noxious weeds could occur at all the sites being studied under this alternative and other potential sites in the in-fill area. There are no General Plan update policies that would directly relate to this impact. Therefore, this impact is considered to be ***significant***. Based on the size of the area involved, this Alternative would have a greater relative impact than Alternative 4.

Mitigation Measure

For Alternatives 2 through 5, this impact can be reduced in adversity by adding new standards to Policy HAB 1.1 in the General Plan update and adding a similar policy and actions to the existing General Plan.

BIO-7.1. Survey and Avoid Impacts from Noxious Weeds (Alternatives 2 through 5)

*"**Standard HAB 1.1q**. In order to avoid or minimize impacts from noxious weeds, the City, land manager, or project proponent should implement the following steps.*

- *The City shall work with regulatory agencies to develop a plan to identify and manage those weed species or weed infestation areas which pose the greatest threat to sensitive biological resources, agricultural areas, or other high priority resources.*

- *Project proponents will be required to survey and implement prevention measures, abatement measures, and postproject monitoring of noxious weeds as a component of*

land management or land development projects. All measures should be consistent with other City policies (e.g., minimization of pesticide use).

Funding Source:	*Davis City Council (policy change), project proponent (compliance with policy)*
Implementing Party:	*City of Davis Planning and Building Department and Davis City Council (policy change), project proponent (compliance with policy)*
Monitoring Agency:	*City of Davis Planning and Building Department, USACE, USFWS, DFG*
Timing:	*Prior to adoption of General Plan update for Alternative 3 through 5, and as part of a General Plan amendment presented during the year 2000 (policy change); prior to any ground-disturbing activities (compliance with policy)*

Impact BIO-8. Impacts to Landmark Trees and Other Existing Trees

Significance Criterion

- A land use map alternative was determined to have a significant impact if it was determined that implementation of the General Plan would adversely affect locally designated landmark trees or heritage oak trees.

Impacts of the proposed project related to loss or temporary disturbance of locally-designated landmark trees and other existing trees were assessed with application of the above significance criteria. For purposes of this chapter, a heritage oak is a native oak tree with a 60-inch or larger circumference. A landmark tree is a tree that is determined by the City of Davis to be of high value because of its species, size, age, form, historical significance, or similar criteria. Table 5H-9 provides an overview/comparison of the level of impact associated with the General Plan under the four land use map alternatives evaluated in this EIR. A more detailed discussion of each alternative is described below.

Table 5H-9. Impacts to Landmark Trees and Other Existing Trees under Each Land Use Map Alternative

Alternative 2	Alternative 3	Alternative 4	Alternative 5
• Potential impacts on all sites are mitigated by existing General Plan policies	• Potential impacts on all sites are mitigated by polices proposed in the General Plan update	• Potential impacts on all sites are mitigated by polices proposed in the General Plan update	• Potential impacts on all sites are mitigated by polices proposed in the General Plan update

Alternative 2. Buildout to 2010 Using Existing General Plan. Construction-related activities may result in the loss or disturbance of existing trees, including landmark trees and heritage oaks. Existing General Plan Policies 3.1, 3.2, 3.4 and 6.2, and policies in the Conservation Element require the preservation, enhancement, and creation of natural habitats and conservation of natural resources in the planning area. The City will require the developer to avoid or compensate for any impacts to landmark and/or heritage oak trees. The City will require measures to mitigate the impacts to these trees on the proposed project site as a condition of approval prior to development of the project.

As shown in Table 5H-1, impacts to landmark or heritage oak trees have the potential to occur at all sites proposed for development under this alternative. However, this impact is considered ***less than significant*** because compliance with existing City policies would protect significant existing trees.

Alternative 3. Reduced Buildout Scenario. As shown in Table 5H-1, impacts to landmark and/or heritage oak trees would likely occur only at the Covell Center site (under Variation 3), Mace Ranch interior site, and Under Second Street sites, and other potential sites in the in-fill area. However, this impact is considered ***less than significant*** because compliance with General Plan update policies such as HAB 1.1a (heritage oak protection), LU A.2 (preserving greenstreets at in-fill projects), POS 1.2 (incorporating habitat areas into the open space network), and HAB 1.4 (protecting scenic resources) would protect existing trees.

Alternative 4. Community Expansion Scenario with Oeste Campus. As shown in Table 5H-1, impacts to landmark and/or heritage oak trees could occur at all the major project sites (except the Signature site) to be developed under this alternative and other smaller sites in the in-fill area. However, this impact is considered ***less than significant*** because compliance with General Plan update policies such as HAB 1.1a (heritage oak protection), LU A.2 (preserving greenstreets at in-fill projects), POS 1.2 (incorporating habitat areas into the open space network), and HAB 1.4 (protecting scenic resources) would protect existing trees.

Alternative 5. Community Expansion Scenario with Davis Technology Campus. This impact is similar to the description of Impact BIO-8 described above under Alternative 4 on a program level, although the area to be disturbed will be larger due to the expansion of development in the planning area. As shown in Table 5H-1, impacts to landmark and/or heritage oak trees could occur at all the sites being studied (except the Signature site) under this alternative and other smaller sites in the in-fill area. However, this impact is considered ***less than significant*** because compliance with General Plan update policies, as noted under Alternative 4, would protect existing trees.

Mitigation Measure

Since this impact is ***less than significant***, no mitigation is required.

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