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**I-80/Hiddenbrooke Parkway Interchange Project
Biological Resources Report**

Project #3328-21

Prepared for:

Juliet Martin
Circlepoint
46 South First Street
San Jose, CA 95113

Prepared by:

H. T. Harvey & Associates

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List of Preparers

Kelly Hardwicke, Ph.D., Principal Plant/Wetland Ecologist
Steve Rottenborn, Ph.D., Senior Wildlife Ecologist
Mark Bibbo, M.S., Project Manager/Senior Plant Ecologist
Jane Lien, B.S., Wildlife Ecologist
Robert Lee, M.S., Plant Ecologist

Section 1. Introduction

1.1 Project Description

The City of Vallejo is proposing operational improvements at the Interstate 80 (I-80)/Hiddenbrooke Parkway interchange in Solano and Napa Counties (Fig. 1) to address existing and future vehicle queues on Hiddenbrooke Parkway. The project will convert the existing stop-sign-controlled intersections of the I-80 on and off-ramps with American Canyon Road and Hiddenbrooke Parkway, and the intersection of the Hiddenbrooke Parkway and McGary Road, into roundabouts. Conversion of these intersections to roundabouts will not require modification of the existing American Canyon Road overcrossing of I-80. The project will require some modification of the on and off-ramps to I-80 but would not involve any modification or change to the ramp connections with I-80 or the existing mainline of the freeway. All proposed improvements would occur within existing State and local public rights of way. No private property acquisition is anticipated to be necessary. In addition, no nonstandard design features have been identified at this stage of project development.

The purpose of this report is to describe the biological resources present in the vicinity of the project area (biological study area) (Fig. 2), as well as the potential impacts of the project on biological resources. Where necessary, this report also describes measures necessary to reduce impacts to less-than-significant levels under the California Environmental Quality Act (CEQA).



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Figure 1. Vicinity Map
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Section 2. Methods

2.1 Background Review

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed aerial images (Google Inc. 2020) of the biological study area (BSA); a U.S. Geological Survey (USGS) topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDDB 2020); and other relevant scientific literature and technical databases. In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the *Cordelia, California* 7.5-minute USGS quadrangle and surrounding eight quadrangles (*Napa, Mount George, Fairfield North, Cuttings Wharf, Fairfield South, Mare Island, Benicia, and Vine Hill*). Quadrangle-level results are not maintained for CRPR 3 and 4 species, so we also conducted a search of the CNPS Inventory records for these species occurring in Napa and Solano Counties (CNPS 2020). In addition, we queried the CNDDDB (2020) for natural communities of special concern that occur in the BSA region. For the purposes of this report, the "BSA vicinity" encompasses a 5-mi radius surrounding the BSA.

2.2 Site Visits

Reconnaissance-level field surveys of the BSA were conducted by H. T. Harvey & Associates plant ecologist Robert Lee, M.S., on June 23–24 and July 17, 22, and 28, 2020 and by H. T. Harvey & Associates wildlife ecologists Jane Lien, B.S., on July 14, 2020 and Steve Rottenborn, Ph.D., on July 27, 2020. The purpose of these surveys was to (1) assess existing biotic habitats and general plant and wildlife communities in the study area, (2) assess the potential for the project to impact special-status species and/or their habitats, (3) identify potential jurisdictional habitats, such as waters of the U.S./State and riparian habitat, and (4) conduct focused surveys for potentially occurring rare plants that are detectable in early to mid-summer.



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Figure 2. Biological Study Area

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Section 3. Regulatory Setting

Biological resources in the BSA are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal

3.1.1 Clean Water Act

The Clean Water Act (CWA) functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, U.S. Army Corp of Engineers (USACE) jurisdiction extends to the ordinary high water (OHW) mark, which is defined in Title 33, Code of Federal Regulations (CFR), Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and, depending on the circumstances, may be subject to USACE jurisdiction. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands.

On June 23, 2020, the Navigable Waters Protection Rule went into effect. This Rule clarifies that federal waters do not include ephemeral streams or features adjacent to such features. Ephemeral streams have no connection to groundwater and only convey flows during and shortly after precipitation events. They do not include intermittent streams with a seasonal connection to groundwater and seasonal flows that persist for several days or more following rain events or persist between winter storms.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

Project applicability: Portions of the study area contain wetlands that are currently unlikely to be claimed as waters of the U.S. by the USACE under the Navigable Waters Protection Rule. The drainage to the outside of McGary Road in the northeast part of the BSA is considered an ephemeral drainage, and therefore drainages and wetlands near it may not be claimed as jurisdictional waters of the U.S. based on the new federal treatment of ephemeral drainages. Similarly, the wetland ditch on the north side of the northeast part of the project area drains via ephemeral drainages to the nearest waters of the U.S., as do the wetlands to the outside of McGary Road on the southwest portion of the BSA. Finally, wetlands near the westbound on-ramp do not have any clear connecting or natural drainage between this area and American Canyon Creek to the west. The features

that were designated as ditches (see Section 4.2.3) were excavated in uplands to convey runoff from roadsides and are not jurisdictional wetlands or other waters of the U.S.

3.1.2 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S.C. 403).

Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as “the line on the shore reached by the plane of the mean (average) high water.” It is important to understand that the USACE does not regulate wetlands under Section 10, only the aquatic or open waters component of bay habitat, and that there is overlap between Section 10 jurisdiction and Section 404 jurisdiction. According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as “navigable in law” even though it is not presently used for commerce as a result of changed conditions and/or the presence of obstructions. Historical Section 10 waters may occur behind levees in areas that are not currently exposed to tidal or muted-tidal influence, and meet the following criteria: (1) the area is presently at or below the mean high water line; (2) the area was historically at or below mean high water in its “unobstructed, natural state”; and (3) there is no evidence that the area was ever above mean high water.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a project also proposes to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

Project applicability: There are no Section 10 Waters present in the study area.

3.1.3 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or “take”, which is broadly defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.” Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as “take” even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains

lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project applicability: No suitable habitat for federally listed plant species is present in the study area. One federally listed animal species, the California red-legged frog, is known to occur nearby and may occur in the BSA during dispersal (especially during the wet season) or use wetlands and other habitats in the BSA as nonbreeding habitat. A second federally listed animal species, the Callippe silverspot butterfly, may breed in the BSA if its larval host plant is present. Incidental take approval from the USFWS would be needed if take of either species were to occur.

3.1.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

Project applicability: No EFH is present in the BSA.

3.1.5 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents." Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

In its June 14, 2018 memorandum, the USFWS clarified that the destruction of an active nest "while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents" is not prohibited by the MBTA. On February 3, 2020, the USFWS published a proposed rule to codify the scope of the MBTA as it applies to activities resulting in the injury or death of migratory birds (85 FR 5915-5926); the USFWS is currently considering comments on the proposed rule.

Project applicability: All native bird species that occur in the BSA are protected under the MBTA.

3.2 State

3.2.1 Clean Water Act Section 401/Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the State. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the State as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the State include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director, has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the State require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures for Discharges of Dredged or Fill Material to Waters of the State describe riparian habitat buffers as important resources that may be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs for impacts. The RWQCBs may impose mitigation requirements even if the USACE does not, and it should be noted that the State of California's jurisdiction to regulate its water resources is much broader than that of the federal government.

Project applicability: Portions of the BSA contain wetlands and riparian habitats that may be claimed as waters of the State or important buffers to waters of the State by the RWQCB. The features that were designated as ditches (see Section 4.2.3) were excavated in uplands to convey runoff from roadsides and are not jurisdictional waters of the state. A formal wetland delineation is being conducted to verify the exact extent of any

jurisdictional wetlands. Such areas would fall under jurisdiction of the San Francisco RWQCB, and a Section 401 Water Quality Certification would be required if any impacts on these waters would occur.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in “take” of individuals (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. The CDFW, however, has interpreted “take” to include the “killing of a member of a species which is the proximate result of habitat modification.”

Project applicability: No suitable habitat for any state listed plant or animal species occurs in the BSA. Thus, no state listed plant or animal species are expected to occur in the BSA.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA are known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of “species of special concern” that serve as “watch lists”. Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the Inventory of Rare and Endangered Plants (CNPS 2020). The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.
- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA’s Section 15380 criteria, and adverse effects on these species may be considered significant. Impacts on plants that are listed by the CNPS as CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of “special concern” are tracked in Rarefind (CNDDDB 2020). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings reflect the condition of a habitat within California. If an alliance is marked as a G1–G3, all the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program’s currently accepted list of vegetation alliances and associations (CDFG 2010a).

Project applicability: All potential impacts on biological resources will be considered during CEQA review of the project. This Biological Resources Report assesses these impacts to facilitate project planning and CEQA review of the project by Caltrans. Project impacts are discussed in Section 6 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” Using this definition, the CDFW extends its jurisdiction to encompass riparian habitats that function as part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as “lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source.” The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of the CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, the CDFW would claim jurisdiction over a stream’s bed and bank. In areas that lack a vegetated riparian corridor, CDFW jurisdiction would be the same as USACE jurisdiction. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, the CDFW regulates any project proposed by any person that will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds.” California Fish and Game Code Section 1602 requires an entity to notify the CDFW of any proposed activity that may modify a river, stream, or lake. If the CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Specific sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the

code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered “take” by the CDFW.

Project applicability: The ephemeral drainage located on the southeast side of McGary Road in the northeastern part of the BSA is not a downstream continuation of a stream, and it only collects localized runoff and irrigation from the nearby landscaping at Hiddenbrooke Road. However, this feature has a defined bed and banks and is the remnant of a historic irrigation canal that connects downstream of the BSA to an unnamed tributary of Green Valley Creek. As a result, the channel bed and associated riparian vegetation would therefore be regulated by the CDFW under California Fish and Game Code Section 1603. The features that were designated as ditches (see Section 4.2.3) were excavated in uplands to convey runoff from roadsides and do not meet CDFW criteria for regulated riparian areas. Most native bird, mammal, and other wildlife species that occur in the BSA and in the immediate vicinity are protected by the California Fish and Game Code.

3.2.5 State Requirements to Control Construction-Phase and Post-construction Water Quality Impacts

3.2.5.1 Construction Phase

Caltrans projects in California must comply with state requirements to control the discharge of stormwater pollutants under the National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit (SWRCB Order No. 2014-0077-DWQ) and the Statewide Construction General Permit (SWRCB Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Management Plan must be developed and maintained during the project and must include the use of best management practices (BMPs) to protect water quality until the site is stabilized.

Standard permit conditions under these permits require that the applicant utilize various measures, including on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks. Additionally, both the Construction General Permit and Statewide Storm Water Permit do not extend coverage to projects if stormwater discharge-related activities are likely to jeopardize the continued existence, or result in take of any federally listed endangered or threatened species.

Project applicability: The Proposed Project will comply with the requirements of the NPDES Statewide Storm Water Permit and Statewide Construction Permit; thus, construction-phase activities would not result in detrimental water quality effects on biological/regulated resources.

3.2.5.2 Post-Construction Phase

In many Bay Area cities and counties, including the Vallejo Sanitation and Flood control District, projects must also comply with the San Francisco Bay RWQCB's Municipal Regional Stormwater NPDES Permit (Water Board Order No. R2-2009-0074, as amended). These policies, which are in line with the Statewide Storm Water Permit measures, require that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate features such as green roofs, pervious surfaces, tree planters, grassy swales, and bioretention or detention basins.

Similarly, the Napa Countywide Stormwater Pollution Prevention Program (NCSPPP) is a joint effort of the County of Napa, cities of American Canyon, Napa, St. Helena and Calistoga, and the Town of Yountville to: prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses of local waterways, and comply with State and federal regulations governing post-construction stormwater management. This Program complies with Phase II Small MS4 General Permit (Water Board Order 2013-0001-DWQ), which requires many of the same low impact development and treatment requirements as described above for Bay Area counties and municipalities.

Project applicability: The Proposed Project will comply with the requirements of the Municipal Regional Stormwater NPDES Permit and Phase II Small MS4 General Permit, as well as the NPDES Statewide Storm Water Permit; therefore, post-construction activities would not result in detrimental water quality effects on biological/regulated resources.

3.2.6 California Senate Bill 1334 and State Senate Concurrent Resolution 17

California Senate Bill 1334 (SB-1334), the Oak Woodlands Conservation Act, added Section 21083.4 to the Public Resources Code (CPRC). This act requires that, as part of determining whether an environmental impact report, a negative declaration, or a mitigated negative declaration shall be required for any project (Section 21081.1 CPRC), a county determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a significance finding is made the county shall require oak woodland mitigation that may include one or more of the following measures: (1) conserve oak woodlands through the use of conservation easements, (2) plant an appropriate number of trees, (3) contribute funds to the Oak Woodlands Conservation Fund, and (4) other measures as approved by the county that reduce the impact to a less than significant level. Several types of projects are exempt from these provisions including those undertaken pursuant to an approved Natural Community Conservation Plan, affordable housing projects, conversion of oak woodlands on agricultural land, and when the regulatory program of a state agency requires a plan or other written documentation containing environmental information (Section 21080.5 CPRC). For purposes of this section, the term "oak" is defined as a native tree species in the genus *Quercus* with a diameter at breast height of greater than 5 inches and is not a species designated as use for commercial purposes including (A) the cutting or removal of trees that are processed into logs, lumber, or other wood

products and offered for sale, barter, exchange, or trade, or (B) the cutting or removal of trees or other forest products during the conversion of timberlands to land uses other than the growing of timber, including, but not limited to, residential or commercial developments, production of other agricultural crops, recreational developments, ski developments, water development projects, and transportation projects (Section 4526 of the CPRC).

State Senate Concurrent Resolution No. 17 requires that all state agencies having land use planning duties assess and determine the effects of their land use decisions or actions within any oak woodland containing blue, Engelmann, valley or coast live oak that may be affected by their decisions or actions. For purposes of this measure, the term “oak woodlands” means a 5-ac circular area containing five or more oak trees per ac. The state agencies are required to preserve and protect native oak woodlands to the maximum extent feasible or provide replacement plantings where any of the oak trees listed above are removed from oak woodlands.

Project applicability: The project area does not contain oak woodland habitat as defined by either SB 1334 or State Senate Concurrent Resolution 17.

3.3 Local

3.3.1 Solano County Code

The Solano County Code contains all ordinances for Solano County. Chapter 31; Grading, Drainage, Land Leveling, and Erosion Control, and includes regulations relevant to biological resources in the BSA as discussed below. Section 31-11 outlines the purpose of this chapter as providing the means for controlling soil erosion, sedimentation, increased rates of water runoff and related environmental damage by establishing minimum standards and providing regulations for the construction and maintenance of fills, excavations, cuts and clearing of vegetation, revegetation of cleared areas, drainage control, and the protection of exposed soil surfaces in order to protect downstream waterways and wetlands and to promote the safety, public health, convenience and general welfare of the community. (Ord. No. 1087, §1; Ord. No. 1512, §1; Ord. No. 1687, §1)

Grading and Drainage Permit Requirement. Section 31-20 requires all acts that change the topography of the land in a manner that alters or interferes with existing water drainage; fill, close, or divert any storm water drainage channel or water course; grade, fill, excavate, or clear vegetation for any purpose to first obtain a grading and drainage permit from the Resource Management department.

General Design Principles and Standards. Section 31-30 lists general design principles and standards to assure that development is accomplished so as to minimize adverse effects upon the existing terrain and to minimize the potential for erosion.

Project applicability: If project activities within Solano County will change the topography of the land as described in Section 31-20, a permit needs to be obtained and general design principles and standards followed

as required by the Solano County Code of Ordinances, unless the project qualifies for an exemption (Sections 31-21 and 31-22).

3.3.2 Solano County General Plan

Resource Implementation Element RS.I-3 directs the development and adoption of an ordinance to protect oak woodlands as defined in Senate Bill (SB) 1334, and defines heritage oak trees as:

- Trees with a trunk diameter of 15 inches or more measured at 54 inches above natural grade;
- Any oak tree native to California, with a diameter of 10 inches or more measured at 54 inches above natural grade;
- Any tree or group of trees specifically designated by the County for protection because of its historical significance, special character, or community benefit.

Project applicability: If any oak trees meeting the definition of a heritage tree occur in work areas within the portions of the BSA in Solano County, they should be protected to the extent feasible during construction.

Resource Implementation Element RS.I-8 requires the planting of shade and roadside trees in development projects; encourages the use of native tree species, especially native oaks; and directs the County to evaluate the feasibility of planting of roadside trees as part of major County road improvement projects.

Project applicability: Native trees, especially native oaks, should be utilized in planting plans that include road right-of-way areas in portions of the BSA in Solano County.

3.3.3 Napa County Code

A very limited portion of the BSA, along McGary Road in the southwestern part of the site, is within Napa County. The Napa County Code contains all ordinances for Napa County. Title 16, Environment, includes regulations relevant to biological resources in the BSA as discussed below.

Riparian Zones – Restricted Activities. Chapter 16.04.750 requires certain restrictions on vegetation removal, building of facilities or structures, and unprotected cut or fill slopes within any riparian zone (i.e., an area extending laterally outward fifty feet beyond the top of banks on either side of a watercourse channel). A watercourse is defined as, “all areas shown within the one-hundred-year floodplain boundary on maps identified as ‘FIRM (Flood Insurance Rate Map) Napa County, California, (unincorporated area)’ on file in the office of the county department of planning, building and environmental services,” and a channel is, “a natural or artificial watercourse of perceptible extent, with a definite bed and banks to confine and conduct continuously or periodically flowing water” (Ord. 1307 § 1 (part), 2008).

Project applicability: There are no riparian zones within the portions of the BSA in Napa County; these areas are not in the 100-year floodplain of any stream. All riparian habitat in the BSA in Napa County consists of isolated trees associated with roadside ditches and wetlands that do not have natural defined bed and banks, and do not contain flowing water (simply local inundation or saturation).

Title 18, Zoning, includes regulations relevant to biological resources in the BSA as discussed below.

Water Quality Buffer Zones. Chapter 18.20.050 states that in all Agricultural Watershed (AW) districts, on parcels greater than one acre, water quality buffer zones are defined as the following:

- Within 125 feet of any Class I stream
- Within 75 feet of any Class II stream
- Within 25 feet of any Class III stream
- Within 150 feet of any wetland, as measured horizontally from the point at which the area no longer meets the definition of wetland

Tree removal (i.e., causing the death or removal of any living tree of any species that is five inches or more in diameter, measured at four feet six inches above mean natural grade) within water quality buffer zones is not allowed except under certain exemptions.

Project applicability: Portions of the BSA in Napa County are zoned AW. Seasonal and perennial wetlands were delineated along McGary Road in these portions. There is one small willow that does not meet the definition of a tree under this Chapter. There is also a stand of red willow at the Napa/Solano County line that is within the wetland boundaries, and therefore within the water quality buffer zone. None of these red willow trees occurring in Napa County are anticipated to be removed by the project.

Oak Removal Requirements. Chapter 18.20.060 states that, for projects on privately owned parcels within the AW district that are greater than one acre, Napa County will require replacement of lost oak trees or oak woodlands, or permanent preservation of comparable habitat, at a minimum 3:1 ratio.

Project applicability: There are no oak trees in the portions of the BSA in Napa County.

General provisions. Chapter 18.108.020(C–D) states that in the AW zoning district, a minimum of seventy percent vegetation canopy cover as configured on the parcel existing on June 16, 2016 shall be maintained as part of any use involving earth-disturbing activity. The removal of any native vegetation canopy cover shall be mitigated by permanent replacement or preservation of comparable vegetation canopy cover, on an acreage basis typically at a minimum 3:1 ratio. Vegetation canopy cover is defined in Chapter 18.108.030 as, “the biotic communities classified as oak woodland, riparian oak woodland, or coniferous forest based on the current Manual of California Vegetation (MCV) and as described in the Napa County Baseline Data Report (2005 or as amended).

Project applicability: Portions of the BSA in Napa County are zoned AW; however, there is no such vegetation canopy cover in these areas of the BSA. The only trees in these portions of the study area are isolated willows.

General provisions – Intermittent/perennial streams. Chapter 18.108.025 states that activities including earthmoving, grading and removal of vegetation shall be prohibited within stream setback areas ranging from 35–150 feet, with steeper slopes requiring larger setbacks. A stream is defined in Chapter 18.108.030 as any of the following:

- A watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol;
- Any watercourse which has a well-defined channel with a depth greater than four feet and banks steeper than 3:1 and contains hydrophilic vegetation, riparian vegetation or woody vegetation including tree species greater than ten feet in height; and
- Those watercourses listed in Resolution No. 94-19 and incorporated herein by reference.

Ephemeral or intermittent streams that do not meet the above criteria for a stream shall have a minimum 35-foot setback, and the stream setbacks shall be measured from the top of bank on both sides of the stream as it exists at the time of replanting, redevelopment, or new agricultural activity. Ephemeral or intermittent streams are defined as, “any natural channel with defined bed and banks containing flowing water or showing evidence of having contained flowing water, such as deposit of rock, sand, gravel, or soil.”

Project applicability: There are no streams, including ephemeral or intermittent streams, in the portions of the BSA in Napa County. There is a section of wetland with bed and banks parallel to McGary Road that does not meet the above definition of an ephemeral or intermittent stream because it is excavated, and is not a natural channel.

General provisions – Wetlands. Chapter 18.108.026 states that construction of main or accessory structures, earthmoving activity, land clearing or agricultural uses of land shall be set back 50 feet from the delineated wetland boundary. In limited circumstances, the 50-foot setback may be reduced if recommended by a qualified professional biologist and approved by the director. (Ord. No. 1438, § 4, 4-9-2019).

Project applicability: Seasonal and perennial wetlands were identified and delineated in the portions of the BSA in Napa County, parallel to McGary Road. Wetlands have been avoided by the project to the greatest extent feasible, although due to existing roadway and facilities, and the fact that the wetlands in the BSA tend to occur in roadside ditches, a 50-foot avoidance setback is not feasible. Wetlands located near the eastbound off-ramp will be avoided by the project, with no new hardscape or grading closer to the wetlands than the existing street area. As a 50-foot buffer is not feasible and does not exist for these wetlands currently, project biologists recommend modified/reduced allowed setbacks, and in the case of the small wetlands near the westbound on-ramp where avoidance is infeasible, allowed wetland impacts.

Erosion hazard areas – Use requirements and Vegetation preservation and replacement. Chapters 18.108.070 and 18.108.100 state that uses within erosion hazard areas (i.e., those portions of parcels of land having slopes over five percent) shall comply with requirements intended to minimize and control erosion resulting from site development, earthmoving activity, grading, improvement, or construction. Project activities within an erosion hazard area require issuance of a discretionary permit subject to conditions which preserve and protect existing vegetation to the extent feasible, and when preservation is not feasible direct appropriate replacement measures. (Ord. 1300 § 6, 2007: Ord. 1259 § 10, 2005: Ord. 991 § 1 (part), 1991: prior code § 12457)

Project applicability: If areas of slopes over five percent in the portions of the BSA within Napa County are to be impacted by project activities, all use requirements must be complied with, and a permit must be obtained that includes all conditions for vegetation preservation and replacement, as stated by the Napa County Code of Ordinances.

3.3.4 Napa County General Code

Action Item CON NR-7 directs the adoption of a voluntary Oak Woodland Management Plan to identify and mitigate significant direct and indirect impacts to oak woodlands. Emphasis is placed on retention of existing vegetation, and where this is not possible mitigation is required.

Project applicability: The portions of the BSA in Napa County do not contain any oak trees.

Section 4. Environmental Setting

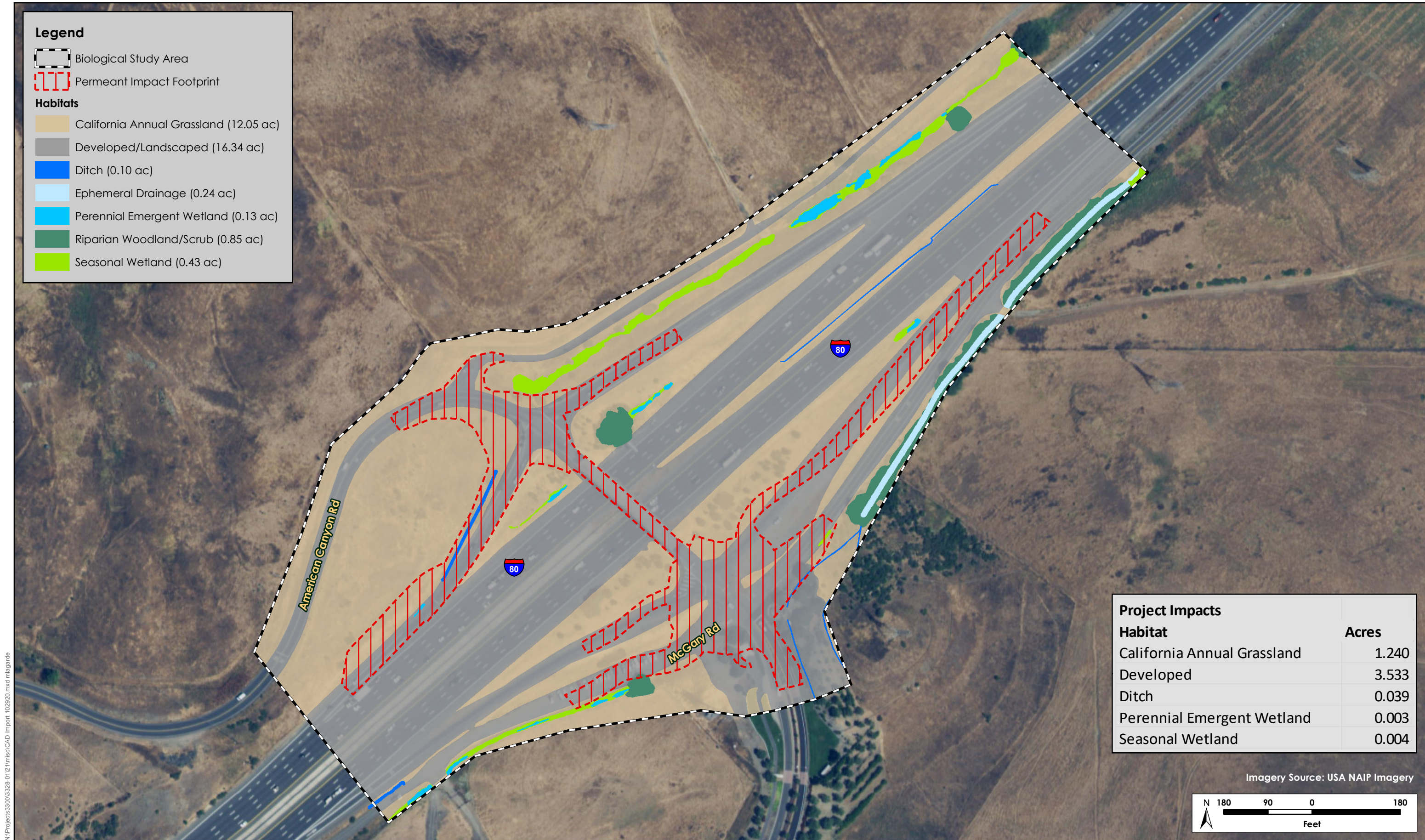
4.1 General Project Area Description

The approximately 29.9-acre (ac) BSA is located in unincorporated Solano and Napa Counties, north of the city limit of Vallejo and east of the City of American Canyon. It is located within the *Cordelia, California* 7.5-minute USGS quadrangle. The BSA is in a rural area and consists of transportation and infrastructure uses. A majority of the BSA comprises the I-80/Hiddenbrooke Parkway/American Canyon Road interchange, as well as McGary Road, a frontage road that runs parallel to the existing I-80 ramps on the eastern side of the interchange. Hiddenbrooke Parkway provides access to the Hiddenbrooke Golf Club and residential development surrounding the golf club. American Canyon Road provides access to predominantly residential areas of the City of American Canyon. The surrounding lands in Solano County are designated Exclusive Agricultural, and the surrounding lands in Napa County (at the southwest edge of the BSA) are designated Agriculture, Watershed, and Open Space.

Elevations within the study area range from approximately 400 ft to 490 ft above sea level. The site is predominantly underlain by one soil type, Dibble-Los Osos clay loams, 9 to 30 percent slopes (NRCS 2020), which covers approximately 94.4% of the BSA. The Dibble series contains clay loam down to a restrictive bedrock layer at 20 to 40 inches. The Los Osos series is similar with the exception of a transition from clay loam to clay soil before the restrictive layer. Both are considered well-drained soils. Two other soil types are present in the BSA in small amounts, at the northeast edge of the BSA: Dibble-Los Osos clay loams, 30 to 50 percent slopes, eroded; and Rincon clay loam, 2 to 9 percent slopes.

4.2 Biotic Habitats

Reconnaissance-level surveys identified seven habitat types/land uses in the study area: developed/landscaped (16.34 ac), California annual grassland (12.05 ac), perennial emergent wetland (0.13 ac), ditch (0.10 ac), seasonal wetland (0.43 ac), ephemeral drainage (0.24 ac), and riparian woodland/scrub (0.85 ac) (Figure 3). These habitats are described in detail below. Plant species observed during the reconnaissance survey are listed in Appendix A.



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4.2.1 California Annual Grassland

Vegetation. Ruderal (i.e., disturbed) California annual grassland habitat occurs throughout much of the study area (Photo 1). At the time of the reconnaissance survey, this habitat was dominated by non-native grasses and forbs such as wild oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), black mustard (*Brassica nigra*), bristly ox-tongue (*Helminthotheca echioides*), brome fescue (*Festuca bromoides*), fennel (*Foeniculum vulgare*), and wild radish (*Raphanus sativus*). The California annual grassland habitat also includes small patches of coyote brush (*Baccharis pilularis*), mostly along the margins of the seasonal wetland north of the I-80 eastbound off-ramp, and on the south side of McGary Road east of the artificial water feature. Planted oak trees (*Quercus* spp.) between Interstate 80 and the onramps and offramps, as well as a few isolated silver wattle (*Acacia dealbata*) trees, were also mapped to this habitat type.



Photo 1. California annual grassland with scattered coyote brush and planted native oaks, between I-80 and the westbound onramp.

Many of the non-native forb species present in this habitat are ranked as moderately or highly invasive by the California Invasive Plant Council (Cal-IPC 2020). For example, fennel is highly invasive and has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Moderately invasive species, such as wild oats and black mustard, have substantial and apparent ecological impacts (Cal-IPC 2020).

Wildlife. Grasslands lack the structural diversity necessary to support a high diversity of wildlife species, but these habitats are used as foraging, burrowing, and nesting locations by moderate numbers of species. Annual grassland habitat in the BSA is used by reptiles and amphibians such as the western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*), that feed on invertebrates found within and beneath debris in the vegetation. Insect-eating birds, such as the California scrub-jay (*Aphelocoma californica*), western bluebird (*Sialia mexicana*), and western kingbird (*Tyrannus verticalis*), also use this habitat for foraging, and the scattered trees provide nesting habitat for some of these species. Bird species such as the mourning dove (*Zenaidura macroura*), western meadowlark (*Sturnella neglecta*), and lesser goldfinch (*Spinus psaltria*) forage on the seed crop this community provides, and a limited number of mammal species, such as the deer mouse (*Peromyscus maniculatus*), black-tailed hare (*Lepus californicus*), and mule deer (*Odocoileus hemionus*) forage within these grasslands. These species, in turn, attract predators such as the gopher snake (*Pituophis catenifer*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and coyote (*Canis latrans*).

4.2.2 Developed/Landscaped

Vegetation. The developed/landscaped habitat type consists of asphalt and gravel roads (i.e., Interstate-80, American Canyon Road, Hiddenbrooke Parkway, McGary Road, and an unnamed gravel road), bare gravel along roadsides, utility structures, a water feature, and landscaping/planted vegetation (Photo 2). Although most of this type consists of concrete, asphalt, and other impervious surfaces; areas of turf, flowers, trees, and shrubs are present in the landscaping near the entrance to the Hiddenbrooke development. Species present in the landscaping mostly consist of non-natives including olive trees (*Olea* sp.), rosemary (*Rosmarinus officinalis*), ornamental roses (*Rosa* sp.), and heavenly bamboo (*Nandina domestica*).



Photo 2. View facing east across the intersection of McGary Road and Hiddenbrooke Parkway, toward the landscaped entrance to the Hiddenbrooke development.

Wildlife. The wildlife most often associated with developed/landscaped areas are those that are tolerant of periodic human disturbances, including introduced species such as the European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), and black rat (*Rattus rattus*). Numerous common, native species are also able to utilize these habitats, especially the landscaped areas, including the western fence lizard, striped skunk (*Mephitis mephitis*), and a variety of birds, such as the American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), California towhee (*Melospiza crissalis*), bushtit (*Psaltirparus minimus*), and California scrub-jay. In addition, human-made structures associated with developed areas are often attractive to nesting or roosting birds and bats. However, an examination of existing structures, including the I-80 highway overpass, as well as trees and shrubs in the BSA, failed to find any cavities suitable for bat roosting. Thus, large roosting or maternity colonies of bats are not expected to occur in the BSA. Similarly, no evidence of bird nesting (e.g., by swallow colonies) was evident on the exterior structure of the overpass.

4.2.3 Ditch

Vegetation. Ditches occur in the study area mostly along roadsides. Some of these drainage features were lined with concrete, and appear to convey water from landscaped hillsides near the entrance to the Hiddenbrooke development during and immediately following rain events, as well as runoff from irrigation in the urban

development. One concrete ditch also appears to convey overflow from the artificial water feature at the Hiddenbrooke entrance. Another concrete ditch, which was identified using aerial imagery, is located in the median between the eastbound and westbound lanes of I-80. These concrete ditches in the BSA were mostly unvegetated, though in some areas enough sediment was built up to support small amounts of wetland vegetation such as cattails and tall flatsedge (*Cyperus eragrostis*); however, it appears that periodic maintenance is



Photo 3. Concrete ditch in the landscaped area near the entrance to the Hiddenbrooke development.

conducted to remove the vegetation (Photo 3). Other unlined, excavated roadside ditches in the BSA contained a mix of plants found in the surrounding California annual grassland, described above, and were sometimes characterized by a mostly unvegetated (i.e., bare sediment and gravel) channel with occasional wetland vegetation. Standing water was present in a concrete ditch near the artificial water feature, but no flowing water was present in any of the ditches during the surveys conducted in July 2020.

Wildlife. The ditches in the BSA provide habitat that is of limited value to wildlife due their structural simplicity (many are concrete or gravel-lined), steep walls that prevent wildlife access, predominant lack of vegetation, periodic human disturbance, position within the highway corridor, and lack of consistently flowing water. However, wildlife species that utilize the surrounding annual grassland, riparian, and wetland habitats may be found opportunistically using these ditches. Reptiles such as gopher snake and western fence lizard may bask on the concrete surfaces, and birds, such as the black phoebe, Bewick's wren (*Thryomanes bewickii*), and California towhee may forage in the widely dispersed vegetation. Kildeer (*Charadrius vociferus*) may nest in the dry substrate of gravel-lined ditches. If water is present, mammals such as the mule deer and dusky-footed woodrat (*Neotoma fuscipes*) may opportunistically drink from this source.

4.2.4 Ephemeral Drainage

Vegetation. An ephemeral drainage occurs in the study area within the mixed riparian woodland or scrub canopy at the northeastern portion of the intersection along McGary Road, described below. This feature is characterized, and distinguished from ditches in the study area, by the presence of a clear bed and banks, as well as an Ordinary High Water Mark (OHWM), and this historic irrigation channel flows to a tributary of Green Valley Creek. Some of these OHWM indicators that were present in the study area include a distinct break in slope exposed tree roots. This drainage was mostly unvegetated in the understory and covered with leaf litter (Photo 4). A small amount of water was present in the ephemeral drainage within the section of Himalayan blackberry scrub during surveys conducted in July 2020. However, this water appeared to be runoff from irrigation of nearby landscaping rather than groundwater.



Photo 4. Ephemeral drainage channel under riparian canopy of oak and willow.

Wildlife. Because ephemeral drainages only flow during or shortly after precipitation events, these habitats do not support populations of fishes. Also, they generally do not support breeding amphibians due to lack of ponding depth and limited duration of flows. However, amphibians such as Sierran chorus frog (*Hyla regilla*) and western toad (*Anaxyrus boreas*) may be present in this habitat during wet times of the year. Animals that are present in the surrounding grassland, riparian woodland, and scrub habitats, such as dusky-footed woodrat and mule deer, may also use these habitats opportunistically, utilizing the temporarily flowing water for drinking.

4.2.5 Perennial Emergent Wetland

Vegetation. The perennial emergent wetlands occur in small patches throughout the study area and intergrade with seasonal wetland habitat. As with the seasonal wetlands, the perennial wetlands are influenced hydrologically by seasonal flow from culverts. The perennial emergent wetlands in the BSA also appear to be situated in slight depressions relative to the seasonal wetlands that surround them, and are thus also more hydrologically influenced by the water table. Although the soil surface within perennial emergent wetlands was not observed to be ponded during surveys in 2020, the soils in these freshwater wetlands remain saturated for a period long enough, or are inundated regularly enough, to support dense stands of cattails



Photo 5. Perennial freshwater wetland in the northeast section of the study area, northwest of I-80.

(*Typha* sp.) (Photo 5). Other species commonly observed in the emergent wetlands were iris-leaved rush (*Juncus xiphioides*), fringed willowherb (*Epilobium ciliatum*), and spearmint (*Mentha spicata*).

Wildlife. Normally, the presence of perennial emergent wetlands on a project site would provide habitat for a diverse suite of wetland-associated wildlife species. However, the relatively small size and minimal ponding depth of the perennial emergent wetlands in the study area preclude many wetland and aquatic wildlife species from using these features. Thus, waterbirds such as ducks, gulls, and terns are not expected to occur in the freshwater perennial wetlands west on the project site. Similarly, passerine birds associated with more extensive wetlands, such as the marsh wren (*Cistothorus palustris*) and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), are not expected to occur here. Nevertheless, amphibians such as the native Sierran chorus frog and western toad may breed here and terrestrial species that occur in adjacent habitats, such as house finches (*Haemorrhous mexicanus*), bushtits, yellow-rumped warblers (*Setophaga coronata*), black phoebes (*Sayornis nigricans*), white-crowned sparrows (*Zonotrichia leucophrys*), and golden-crowned sparrows (*Zonotrichia atricapilla*), will forage occasionally in the vegetation.

4.2.6 Riparian Woodland/Scrub

Vegetation. Riparian woodland and scrub habitats occur in the study area primarily along the ephemeral drainage that runs east parallel to McGary Road, on the southeastern edge of the BSA. The canopy of this woodland corridor is composed of arroyo willow (*Salix lasiolepis*), coast live oak (*Quercus agrifolia*), and Fremont cottonwood (*Populus fremontii*). The understory is mostly unvegetated and covered with leaf litter, but some portions contain patches of poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), or rushes (*Juncus* sp.). A section of the drainage has no tree canopy, and was identified as riparian scrub habitat (Photo 6). This riparian scrub habitat is characterized by dense Himalayan blackberry. Small patches of riparian woodland elsewhere in the BSA were characterized by isolated stands of arroyo willow or red willow (*Salix laevigata*).



Photo 6. Himalayan blackberry riparian scrub and willow/oak riparian woodland along the ephemeral drainage.

The riparian woodland/scrub associated with the ephemeral stream to the southeast of McGary Road is associated with bed and banks and indicators of regular flows, and would likely be considered jurisdictional by the CDFW and RWQCB. All other areas mapped as riparian woodland/scrub within the BSA are associated with wetlands within roadside ditches without clear indicators of regular stream flows, and are therefore expected to be considered jurisdictional by the RWQCB only.

Wildlife. Due to its small size and isolation, wildlife diversity in the riparian woodland/scrub habitat is fairly low. However, the dense foliage provided by the willow stand and other trees is likely to support several species of nesting birds and provide cover and foraging habitat for others. Bird species that may forage in this habitat include many of the same species as described in the habitats above, such as the Bewick's wren, northern mockingbird, and the yellow-rumped warbler. Amphibians such as the native Sierran chorus frog and western toad may also be present in this habitat, though water is not expected to pond long enough for these species to breed here. Dusky-footed woodrats also use the structure of the riparian willows to support their nests in this habitat; several nests were noted during site visits in July 2020.

4.2.7 Seasonal Wetland

Vegetation. Seasonal wetlands occur in the BSA in low-lying areas that have been excavated in uplands. The seasonal wetlands receive water from rain events, and also from urban irrigation runoff in the case of the roadside wetland feature south of McGary Road and west of American Canyon Road. Seasonal wetlands in the

BSA are hydrologically influenced by culverts (i.e., culvert outflow has created wet enough conditions over time for wetland vegetation and soils to develop). The large seasonal wetland complex along the northwestern side of the study area appears to also receive sheet flow runoff from the adjacent Interstate offramp. At the time of the reconnaissance survey, there was no ponding water or saturated soils observed. Additionally, review of historical aerial imagery indicates that these wetlands do not typically contain ponded water for any significant length of time (Google Inc. 2020). The large seasonal wetland complex is characterized by beardless wild rye (*Elymus triticoides*), bristly ox-tongue, and teasel, as well as small components of upland plants such as annual fescues (*Festuca* spp.) and ripgut brome (Photo 7). Other species observed in the seasonal wetlands include tall flatsedge, bird's-foot trefoil (*Lotus corniculatus*), iris-leaved rush, and curly dock (*Rumex crispus*).



Photo 7. Seasonal freshwater wetland located in a drainage along the northwest side of the study area.

Wildlife. The seasonal freshwater wetlands in the study area provide only marginal habitat for most wildlife species due to their limited extent and limited depth and duration of ponding, and wildlife diversity is expected to be low. However, many of the same animal species described in the perennial wetland, riparian, and California annual grassland habitats above may forage in the seasonal freshwater wetlands. Birds such as the black phoebe, western bluebird, and sparrows may forage there, and amphibians such as the native Sierran chorus frog and western toad may also be present in this habitat during wet times of the year.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as “threatened, rare, or endangered”; such species are typically described as “special-status species”. For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3.0 above.

For purposes of this analysis, “special-status” plants are considered plant species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

For purposes of this analysis, “special-status” animals are considered animal species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur in the study area was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the study area and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.

5.1 Special-Status Plant Species

The CNPS (2020) and CNDDB (2020) identify 113 special-status plant species as potentially occurring in at least one of the nine USGS quadrangles containing or surrounding the study area for CRPR 1 or 2 species, or in Solano County or Napa County for CRPR 3 and 4 species. One-hundred-six of those potentially occurring special-status plant species were determined to be absent from the study area for at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic suitable habitat, edaphic requirements, and elevation range were determined to be present in the study area for seven plant

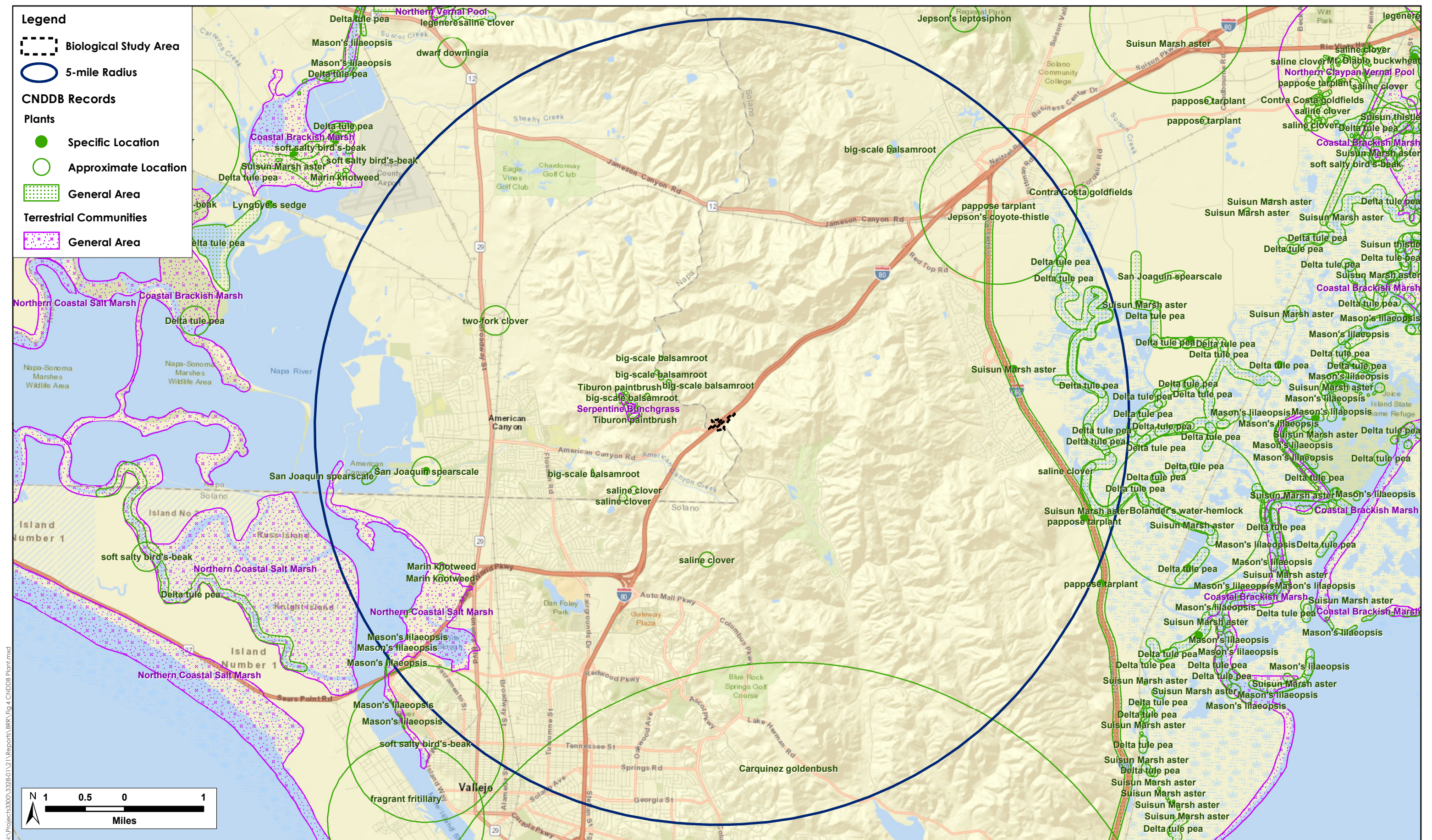


Figure 4. CNDDDB-Mapped Records of Special-Status Plants

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species: big tarplant (*Blepharizonia plumosa*), bristly leptosiphon (*Leptosiphon acicularis*), Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), Johnny nip (*Castilleja ambigua* ssp. *ambigua*), Henderson's bentgrass (*Agrostis hendersonii*), Napa bluecurls (*Trichostema ruygtii*), and Tehama navarretia (*Navarretia heterandra*). These species are discussed in detail below.

Big tarplant (*Blepharizonia plumosa*). Federal Listing Status: None; State Listing Status: None; CNPS

List: 1B.1. Big tarplant is an annual herb in the sunflower family (Asteraceae) that blooms from July to October. This plant grows on dry, grassy slopes in valley and foothill grassland habitat at elevations between 98 and 1657 ft (CNPS 2020). Big tarplant is known from Alameda, Contra Costa, San Joaquin, San Luis Obispo, and Stanislaus counties. It is extirpated from its historical range in Solano County. Most historical occurrences were probably extirpated by agriculture and non-native plants. The species is currently threatened by residential development (CNPS 2020). Although the historical range of big tarplant extends north into Solano County, the northernmost record is in Benicia, approximately 8 miles south of the BSA, and this population has not been observed since 1917 (Calflora 2020). The nearest known extant populations are in Contra Costa County approximately 20 miles south and southeast of the BSA. Finally, the species was not observed during focused surveys in June and July 2020. Therefore, because the BSA is substantially north of the extant range for big tarplant, likely north of even the historical range of the species, any areas of potentially suitable grassland slopes within the BSA are relatively disturbed and overgrown, and the species was not detected during focused surveys, the species is considered absent.

Bristly leptosiphon (*Leptosiphon acicularis*). Federal Listing Status: None; State Listing Status: None;

CNPS List: 4.2. Bristly leptosiphon is an annual herb in the phlox family (Polemoniaceae) that blooms from April to July. This species occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland habitats at elevations from 180 to 4921 ft. It is a California endemic documented in Alameda, Butte, Fresno, Humboldt, Lake, Mendocino, Marin, Napa, Santa Clara, San Mateo, and Sonoma counties. Occurrences in Contra Costa County are unconfirmed (CNPS 2020). Bristly leptosiphon was observed in 2009 in Napa County slightly outside the project vicinity, approximately 7 miles north of the BSA (Calflora 2020). Potentially suitable habitat for bristly leptosiphon exists in the BSA in open areas of California annual grassland. Focused surveys conducted by a qualified botanist in June and July of 2020 failed to detect the species, but most collections of this species have been made in April, May, and early June. Therefore, occurrence of this species in the study area cannot be fully ruled out until a focused survey is conducted in the earlier months of its blooming period.

Napa bluecurls (*Trichostema ruygtii*). Federal Listing Status: None; State Listing Status: None; CNPS

List: 1B.2. Napa bluecurls is an annual herb in the mint family (Lamiaceae) that blooms from June through October. This species occurs in open areas of chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools at elevations from 98 to 2,230 ft above sea level. It is a California endemic documented in Napa and Solano counties. Occurrences in Lake County are unconfirmed (CNPS 2020). There are two occurrences documented slightly outside the project vicinity, approximately 7 miles north of the BSA at Green Valley Ranch in Napa County (Calflora 2020). The project area has potentially

suitable habitat for Napa bluecurls in open areas of California annual grassland. Focused surveys by a qualified botanist in June and July 2020 failed to detect the species, and therefore it is considered absent from the BSA

Tehama navarretia (*Navarretia heterandra*). Federal Listing Status: None; State Listing Status: None; CRPR: 4.3. Tehama navarretia is an annual herb in the phlox family (Polemoniaceae) that blooms from April to June. This species occurs in vernal mesic sites in valley and foothill grasslands, such as vernal pools, and is found at elevations between 98 and 3114 ft. The species is documented in Butte, Colusa, Lake, Napa, Shasta, Tehama, Trinity, and Yuba counties, and is listed as endangered in Oregon State (CNPS 2020). The nearest occurrence to the north is approximately 25 miles outside the BSA, in Napa County. CNPS (2020) does not record any occurrences in Solano County, however a record of the species from 1956 is recorded in the Calflora database approximately 20 miles to the east of the project site. The study area does not contain vernal pools, or any suitable vernal mesic areas in grassland habitat. Such vernal mesic grasslands typically have heavy soils or a restrictive layer near the surface (i.e., duripan or claypan), and soils in the BSA do not meet these criteria (NRCS 2020). Additionally, focused surveys conducted by a qualified botanist in June of 2020 failed to detect the species. Because Tehama navarretia was not detected during surveys, and because there is a lack of suitable habitat in the BSA, the species is considered absent.

Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. This perennial herb occurs in vernal mesic wetlands and vernal pools within broadleaf upland forests, chaparral, coastal prairies, and valley and foothill grasslands at elevations up to 2,000 ft. The blooming period for Gairdner's yampah extends from June through October, and it is in the parsley family (Apiaceae). The range of this species includes Contra Costa, Del Norte, Kern, Mendocino, Monterey, Marin, Napa, San Benito, Santa Clara, Santa Cruz, Solano, and Sonoma counties. The species is presumed extirpated from its historical range in Los Angeles, Orange, San Diego, and San Mateo counties, and overall tends to be much rarer in the southern portion of its range (CNPS 2020). CNPS (2020) considers this species to be threatened by agriculture, grazing, non-native plants, habitat alteration, and urbanization. The nearest recorded extant population is approximately 10 miles north of the BSA, in Napa County. There is also a record approximately 14 miles northeast in Solano County. Despite these occurrences being well outside the project vicinity, the study area is located in a region where the species could be expected to appear. Potentially suitable habitat for Gairdner's yampah occurs in the BSA in seasonal wetlands or annual grassland near wetland margins. However, focused surveys conducted by a qualified botanist in June and July 2020 failed to detect the species, and it is considered absent from the project site.

Henderson's bent grass (*Agrostis hendersonii*). Federal Listing Status: None; State Listing Status: None; CNPS List 3.2. Henderson's bent grass is an annual herb in the grass family (Poaceae) that blooms from April through June. This species occurs in vernal pools and mesic valley and foothill grassland, and is found at elevations from 230 to 1,000 feet. It is documented in Calaveras, Merced, Napa, Shasta, Tehama, and Tuolumne Counties, and is a candidate for state listing in Oregon state but is presumed extinct there. An occurrence in Butte County is unconfirmed (CNPS 2020). Henderson's bent grass is apparently known from Napa County in the Mt. George 7.5-minute quadrangle (Calflora 2020), but no specific occurrence records exist

within the quadrangle. The main concentration of records for this species is in the north Central Valley in Tehama and Shasta counties; it appears to be much less common in other areas. There is also a lack of suitable vernal pool or mesic grassland habitat in the BSA, and focused surveys conducted by a qualified botanist in June and July 2020 failed to detect the species within the BSA. Henderson's bent grass is therefore considered absent.

Johnny nip (*Castilleja ambigua* ssp. *ambigua*). Federal Listing Status: None; State Listing Status: None; CNPS List 4.2. Johnny nip is an annual hemiparasitic herb in the broomrape family (Orobanchaceae) that blooms from March to August. This species occurs in coastal bluff scrub, coastal prairie, and coastal scrub; marshes and swamps; valley and foothill grassland; and vernal pool margins; and is found at elevations up to 1,430 feet. It is documented in Alameda, Contra Costa, Del Norte, Humboldt, Mendocino, Marin, Napa, Santa Cruz, San Luis Obispo, San Mateo, and Sonoma Counties. An occurrence in San Francisco County is unconfirmed (CNPS 2020). The nearest extant populations of Johnny nip are approximately 6 miles east of the BSA, in the Cuttings Wharf vicinity. These populations occur in the high marsh zone and drying mud flats, which are habitats that do not exist in the project area. Examples of Johnny nip in non-coastal habitats are known from approximately 15 miles north of the BSA, but only one of these records has been observed since 1965 (Calflora 2020). Potentially suitable habitat in the study area would be seasonal wetland or annual grassland adjacent to wetlands, and these habitats are relatively disturbed and overgrown in the BSA. Although marginally suitable habitat for this species occurs in or near wetlands of the project site, focused surveys by a qualified botanist in June and July of 2020 failed to detect the species, and it is considered absent.

5.2 Special-Status Animal Species

The legal status and likelihood of occurrence in the BSA of special-status animal species known to occur, or potentially occurring, in the project region are presented in Table 1. Most of the special-status species listed in Table 1 are not expected to occur in the BSA because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat. Animal species not expected to occur in the BSA for these reasons include the western bumble bee (*Bombus occidentalis*), California freshwater shrimp (*Syncaris pacifica*), vernal pool fairy shrimp (*Branchinecta lynchi*), Central California Coast Distinct Population Segment (DPS) steelhead (*Oncorhynchus mykiss*), green sturgeon (*Acipenser medirostris*), Delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), California tiger salamander (*Ambystoma californiense*), giant gartersnake (*Thamnophis gigas*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), salt marsh harvest mouse (*Reithrodontomys raviventris*), northwestern pond turtle (*Emys marmorata*), Sacramento splittail (*Pogonichthys macrolepidotus*), San Pablo song sparrow (*Melospiza melodia samuelis*), Suisun song sparrow (*Melospiza melodia maxillaris*), and Suisun shrew (*Sorex ornatus sinuosus*).

Six special-status bird species have the potential to occur in the BSA only as visitors, migrants, or transients, but they are not expected to reside or breed, to occur in large numbers, or otherwise to make substantial use

of the BSA. These species include the American peregrine falcon (*Falco peregrinus anatum*), a state fully-protected species; the tricolored blackbird (*Agelaius tricolor*), a California state threatened species; and the northern harrier (*Circus hudsonius*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), which are considered California species of special concern only when breeding. Similarly, a single mammal species, the American badger (*Taxidea taxus*) is not expected to reside or breed in the BSA, but may occasionally be present as a transient.

Five special-status animal species, the Callippe silverspot butterfly (*Speyeria callippe callippe*), California red-legged frog (*Rana draytonii*), Golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and loggerhead shrike (*Lanius ludovicianus*) have some potential to reside or breed in (or in close proximity to) the BSA. Expanded descriptions are provided in Appendix C for these species potentially occurring in or near the BSA.

Table 1. Special-Status Animal Species, Their Status, and Potential Occurrence in the BSA

Name	Status*	Habitat	Potential for Occurrence in the BSA
Federal or State Endangered, Rare, or Threatened Species			
Callippe silverspot butterfly (<i>Speyeria callippe callippe</i>)	FE	Grasslands; closely associated with <i>Viola pedunculata</i> .	May be present. The Cordelia Hills population of this species is known approximately 2 miles southeast of the BSA (CNDDDB 2020). If larval host plants are present in the BSA, the species may breed there. Appropriately-timed focused surveys for the larval host plant, flying adults, larvae, and pupae will be conducted to determine presence or absence.
Western bumble bee (<i>Bombus occidentalis</i>)	SC	Meadows and grasslands with abundant floral resources.	Absent. Although the species was historically found throughout much of central and northern California, including the BSA vicinity, it is not expected to occur on the site due to recent range contractions. Determined to be absent.
California freshwater shrimp (<i>Syncaris pacifica</i>)	FE	Low elevation, perennial freshwater streams within Marin, Sonoma, and Napa counties.	Absent. The BSA lacks suitable perennial freshwater stream habitat.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Vernal pool crustaceans live in vernal pools, swales, and ephemeral freshwater habitats. None are known to occur in riverine waters or marine waters.	Absent. The BSA lacks suitable vernal pool aquatic habitat.

Name	Status*	Habitat	Potential for Occurrence in the BSA
Central California Coast DPS steelhead (<i>Oncorhynchus mykiss</i>)	FT	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs.	Absent. The BSA lacks suitable stream habitat.
Green sturgeon (<i>Acipenser medirostris</i>)	FT, CSSC	This DPS includes green sturgeon that spawn in rivers south of the Eel River. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Absent. The BSA lacks suitable riverine or estuarine habitat.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, CSSC	Estuarine systems of the Sacramento-San Joaquin delta.	Absent. The BSA lacks suitable estuarine habitat.
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC, ST	Bay-Delta habitats including coastal lagoons, bays, estuaries, sloughs, tidal freshwater streams, and offshore.	Absent. The BSA lacks suitable aquatic habitat.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands.	Absent. While ostensibly suitable habitat is present in the region, the BSA is outside the known range of the species (USFWS 2017a).
California red-legged frog (<i>Rana draytonii</i>)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	May be present. The species is known to occupy streams in close proximity to the BSA, with individuals detected in 2000 and 2016 in pooled reaches of an unnamed creek that runs adjacent to McGary Road, between 0.2 and 1.5 miles northeast of the BSA. Several other records exist within approximately 1 mile of the BSA, including golf course ponds to the southeast and a tributary to American Canyon Creek 1.2 miles to the west (CNDDDB 2020). While the species is not known in the BSA, suitable non-breeding aquatic habitat, including perennial and seasonal freshwater wetlands and ephemeral streams, as well as upland dispersal habitat are present. While pooled reaches or deep wetland habitats suitable for breeding are absent, numerous potential breeding ponds are present within 1 mile of the BSA. Thus, the species is not expected to breed in the BSA, but non-breeding individuals may disperse into the BSA, opportunistically occupying its aquatic and upland habitats.

Name	Status*	Habitat	Potential for Occurrence in the BSA
Giant gartersnake (<i>Thamnophis gigas</i>)	FE, SE	Freshwater marshes and low gradient streams with emergent vegetation that persist throughout the dry season; adapted to drainage canals and irrigation ditches with mud substrate.	Absent. The species is restricted to California's Central Valley, and is not known from the BSA region (CNDDDB 2020). Furthermore, no suitable aquatic habitat is present in the BSA.
California Ridgway's rail (<i>Rallus obsoletus obsoletus</i>)	FE, SE, SP	Salt marshes characterized by large extents of saltmarsh cordgrass (<i>Spartina</i> spp.) or pickleweed (<i>Salicornia</i> spp.), with well-developed tidal channels.	Absent. No suitable salt marsh habitat is present in the BSA.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	ST, SP	Coastal and inland marsh habitat, nests primarily in pickleweed-dominated marshes.	Absent. The BSA lacks suitable marsh habitat.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pannes in Bay saline managed ponds.	Absent. The BSA lacks suitable sandy substrate or salt panne habitat.
California least tern (<i>Sterna antillarum browni</i>)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates. In the South Bay, nests in salt pans and on an old airport runway. Forages for fish in open waters.	Absent. The BSA lacks suitable nesting and foraging habitat.
Swainson's hawk (<i>Buteo swainsoni</i>)	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	May be present. The species is not known to nest in the BSA, but is known to nest in the region, with nesting documented in Cordelia Slough, approximately 4.8 miles northeast, and near the Napa County Airport, approximately 4.5 miles northwest (CNDDDB 2020). Because marginally suitable breeding and foraging habitat are present in and surrounding the BSA in the form of riparian trees, oak savannah, and adjacent grasslands, breeding cannot be ruled out. However, the species is much more likely to breed in more extensive lowlands to the east and west.

Name	Status*	Habitat	Potential for Occurrence in the BSA
Tricolored blackbird (<i>Agelaius tricolor</i>)	ST	Nests in colonies near fresh water in dense emergent vegetation.	Absent as breeder. The species is known from the BSA region, with the closest known colony approximately 2 miles to the northeast (CNDDDB 2020). However, the BSA lacks suitable nesting habitat: the wetlands in and surrounding the BSA are too limited in extent to support nesting colonies. The species may be present as an occasional forager or transient; however, it is not expected to breed in or in close proximity to the BSA.
Salt marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed or alkali bulrush.	Absent. The BSA lacks suitable salt marsh habitat.
California Species of Special Concern			
Northwestern pond turtle (<i>Emys marmorata</i>)	CSSC	Permanent or nearly permanent water in a variety of habitats.	Absent. The species is known in the region, with two records approximately 2.5 miles to the south and west (CNDDDB 2020). However, the wetlands in the BSA are too limited in ponding depth and extent to provide suitable aquatic habitat.
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	CSSC	Shallow, dead-end sloughs with submerged vegetation and backwater slough areas in the lower delta. Prefer low-salinity, shallow water areas.	Absent. The BSA lacks suitable slough habitat.
Northern harrier (<i>Circus cyaneus</i>)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	Absent as Breeder. This species is known to breed in the more extensive marshes in the lowlands to the east and west of the site (CNDDDB 2020). However, the wetlands in the BSA are too brushy and open, and of too limited extent to be suitable nesting habitat. The species may occur as an occasional forager or transient, but it is not expected to breed in the BSA.
Burrowing owl (<i>Athene cunicularia</i>)	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels (<i>Spermophilus beecheyi</i>).	Absent. While ostensibly suitable grassland habitat is present within and surrounding the BSA, the BSA lacks small mammal burrows of sufficient size for nesting or wintering owls. Determined to be absent.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	May be Present. Suitable nesting and foraging habitat is present in the BSA in riparian willows and adjacent grasslands.

Name	Status*	Habitat	Potential for Occurrence in the BSA
San Francisco common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	Absent as Breeder. This species is known to breed in the more extensive marshes in the lowlands to the east and west of the site (CNDDDB 2020). However, the wetlands in the BSA are too limited in extent to offer suitable nesting habitat. The species may occur as an occasional forager or transient, but it is not expected to breed in the BSA.
San Pablo song sparrow (<i>Melospiza melodia samuelis</i>)	CSSC	Nests and forages in tidal marshes in San Pablo Bay.	Absent. The BSA lacks suitable tidal marsh habitat.
Suisun song sparrow (<i>Melospiza melodia maxillaris</i>)	CSSC	Nests and forages in tidal marshes in Suisun Bay.	Absent. The BSA lacks suitable tidal marsh habitat.
Bryant's savannah sparrow (<i>Passerculus sandwichensis alaudinus</i>)	CSSC	Nests in pickleweed dominant salt marsh, adjacent ruderal habitat, moist grasslands, and, rarely, drier grasslands.	Absent as Breeder. While extensive grasslands suitable for breeding surround the BSA, the habitat in the BSA is too shrubby and ruderal to serve as breeding habitat. The species may be present as an occasional forager or transient, but it is not expected to breed in or in close proximity to the BSA.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	CSSC	Breeds and forages in extensive open grasslands, meadows, fallow fields, and pastures.	Absent as Breeder. While extensive grasslands suitable for breeding surround the BSA, the habitat in the BSA is too shrubby and ruderal to serve as breeding habitat. The species may be present as an occasional forager or transient, but it is not expected to breed in or in close proximity to the BSA.
Suisun shrew (<i>Sorex ornatus sinuosus</i>)	CSSC	Tidal marshes and adjacent upland habitats in the San Pablo and Suisun Bays. Dense cover within tidal marshes and litter, including driftwood, above the mean high tide line, may be critical for providing refugia for this species.	Absent. The study area lacks suitable tidal marsh habitat.

Name	Status*	Habitat	Potential for Occurrence in the BSA
American badger (<i>Taxidea taxus</i>)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	Absent as Breeder. Suitable grassland habitat is present in small portions of the BSA, as well as surrounding the BSA, though no burrows or sign were observed during site visits. Because the available small mammal prey abundance in the BSA was observed to be low during reconnaissance surveys, this species is not expected to be present as a forager, and it is not expected to den in the BSA. It may, however, be occasionally present as a transient.

California Fully Protected Species

American peregrine falcon (<i>Falco peregrinus anatum</i>)	SP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	Absent as breeder. The BSA lacks suitable breeding habitat, though the species may occur incidentally during foraging.
Golden eagle (<i>Aquila chrysaetos</i>)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas. Usually refurbishes and reuses existing nests.	May be Present. The species is known to breed in the BSA region (CNDDDB 2020); however, suitable nesting habitat is absent from the BSA and no existing raptor nests of any species were observed in or surrounding the BSA during reconnaissance surveys. Marginally suitable nesting habitat, including large eucalyptus trees, scattered mature oak trees, and transmission towers, is present within approximately 1 mile of the BSA. Thus, while unlikely due to lack of high-quality breeding habitat, breeding in the vicinity cannot be ruled out.
White-tailed kite (<i>Elanus leucurus</i>)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	May be Present. Suitable breeding and foraging habitat are present in and surrounding the BSA. While no raptor nests were detected during site visits, the species may construct new nests in tall shrubs and trees in the BSA.

SPECIAL-STATUS SPECIES CODE DESIGNATIONS

FE =	Federally listed Endangered
FT =	Federally listed Threatened
SE =	State listed Endangered
ST =	State listed Threatened
SC =	State Candidate for listing
CSSC =	California Species of Special Concern
SP =	State Fully Protected Species

5.3 Sensitive Natural Communities, Habitats, and Vegetation Alliances

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDDB 2020). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings reflect the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (CDFG 2007):

- G1/S1: Less than 6 viable occurrences or less than 2,000 ac.
- G2/S2: Between 6 and 20 occurrences or 2,000 to 10,000 ac.
- G3/S3: Between 21 and 100 occurrences or 10,000 to 50,000 ac.
- G4/S4: The community is apparently secure, but factors and threats exist to cause some concern.
- G5/S4: The community is demonstrably secure to ineradicable due to being common throughout the world (for global rank) or the state of California (for state rank).

State rankings are further described by the following threat code extensions:

- S1.1: Very threatened
- S1.2: Threatened
- S1.3: No current threats known

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all the vegetation associations within it will also be of high priority (CDFG 2007). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFG 2010a).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

Sensitive Natural Communities. A query of sensitive habitats in Rarefind (CNDDDB 2020) identified five sensitive habitats as occurring within the nine USGS quadrangles containing or surrounding the study area:

northern claypan vernal pool (Rank G1/S1.1), northern vernal pool (Rank G2/S2.1), coastal brackish marsh (Rank G2/S2.1), serpentine bunchgrass (Rank G2/S2.2), and northern coastal salt marsh (Rank G3/S3.2). Serpentine bunchgrass occurs only on serpentine soils, which do not occur in the study area. Northern coastal salt marsh and coastal brackish marsh occur only in coastal habitat, which does not occur in the study area. There are no vernal pools in the study area.

Sensitive Vegetation Alliances. The riparian woodland along the ephemeral stream in the northeastern area of the site qualifies as a *Quercus agrifolia-Salix lasiolepis* Alliance (CDFW 2020). This alliance is ranked as G4/S3, meaning there are between 21 -100 viable occurrences worldwide and/or more than 10,000 hectares, and there are 21–100 viable occurrences statewide and/or more than 10,000 hectares (Sawyer et al. 2009). Thus, as both the riparian woodland along the ephemeral drainage and its associated alliance in the study area are considered highly imperiled, this woodland qualifies as a sensitive habitat (CDFW 2020).

Sensitive Habitats (CDFW Riparian Habitat). Isolated trees mapped in other areas of the BSA as riparian woodland are too isolated to be considered within a sensitive vegetation alliance, but all riparian woodland and scrub associated with the ephemeral stream may be claimed by the CDFW under Section 1603 of the State Fish and Game Code. This riparian woodland/scrub and all other isolated areas of riparian woodland/scrub in other areas of the BSA associated with roadside ditches and wetlands but not streams would be considered important riparian buffers to wetlands by the RWQCB, and as such these areas are considered to be sensitive.

Sensitive Habitats (Waters of the U.S./State). The seasonal wetland and perennial freshwater wetland habitats in the study area may be considered waters of the state. The ephemeral drainage and all other wetlands within the BSA (which only drain to waters of the U.S. via overland flow or ephemeral stream channels), are not expected to be considered waters of the U.S. per the Navigable Waters Protection Rule. Any impacts on verified waters of the U.S and state within the study area would require a Section 404 permit from the USACE and Section 401 Water Quality Certification from the San Francisco RWQCB; however, any impacts to waters of the state that are not also waters of the U.S. would require a Waste Discharge Requirement from the RWQCB.

5.4 Non-Native and Invasive Species

Several non-native, invasive plant species occur in the study area in the California annual grassland and seasonal wetland habitats. Of these, stinkwort (*Dittrichia graveolens*), fennel, and Fuller’s teasel have the potential to cause the most severe ecological impacts, as these species can invade and degrade the margins of sensitive wetlands, and are rated moderate by the Cal-IPC (2020). In addition, yellow starthistle (*Centaurea solstitialis*), purple starthistle (*Centaurea calcitrapa*), Himalayan blackberry, pampas grass (*Cortaderia selloana*), wild oats, black mustard, riggut brome, milk thistle (*Silybum marianum*), and artichoke thistle (*Cynara cardunculus*) were observed in the study area and can have substantial and apparent ecological impacts if they spread into native, sensitive habitats (Cal-IPC 2020).

Section 6. Impacts and Mitigation Measures

The State CEQA Guidelines provide direction for evaluating the impacts of projects on biological resources and determining which impacts will be significant. CEQA defines a “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Under State CEQA Guidelines Section 15065, a project's impacts on biological resources are deemed significant if the project would:

- A. “substantially reduce the habitat of a fish or wildlife species”
- B. “cause a fish or wildlife population to drop below self-sustaining levels”
- C. “threaten to eliminate a plant or animal community”
- D. “reduce the number or restrict the range of a rare or endangered plant or animal”

In addition to the Section 15065 criteria that trigger mandatory findings of significance, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

- A. “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- B. “have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- C. “have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means”
- D. “interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites”
- E. “conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance”
- F. “conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan”

6.1 Approach to the Analysis

Various biological resources, including sensitive and regulated habitats, as well as special-status plants and animals, could potentially be impacted by the proposed project. This section describes these biological resources, potential impacts to them, avoidance and minimization measure incorporated into the Proposed Project to protect them, and any necessary measures to compensate for impacts to these biological resources in accordance with applicable environmental laws and regulations.

6.2 Impacts on Special-Status Species

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

6.2.1 Impacts on Special-Status Plants (Less than Significant with Mitigation)

One plant species, bristly leptosiphon, categorized by the CNPS as CRPR 4 has the potential to occur within the California annual grassland habitat in the study area (Section 5.1, Appendix B). If present, project development may affect special-status plants due to disturbance of individuals within the populations and disturbance or destruction of suitable habitat. Direct impacts could include grading or filling areas supporting these species, trampling or crushing of plants, and soil compaction. Indirect impacts could include increased mobilization of dust onto plants, which can affect their photosynthesis and respiration, or changes to hydrology supporting these plants within adjacent wetlands due to grading or construction in nearby habitats.

Conservation of CRPR 4 species is important because their populations contribute to preserving the genetic resources for the species and ensuring persistence of rare species in the County and state. If this species is present and impacts occur to 20% or less of the population (by individuals or occupied area) extending into the study area, such a low level of impacts would not be expected to cause the extirpation of such a population, as long as the remaining plants were avoided and protected. However, due to the regional rarity of this species, impacts to more than 20% of a population could contribute to extirpation of that population and therefore a reduction in these species' range or genetic resources, which would be considered significant under CEQA (Criterion E). For bristly leptosiphon, which would be near the eastern extent of its range if present in the BSA extirpation of any population located within the study area could negatively impact the species' genetic resources. Implementation of the following mitigation measures will reduce impacts on special-status plants to a less-than-significant level.

Mitigation Measure 1. Pre-Activity Surveys for Special-Status Plants. Prior to initial ground disturbance and during the appropriate blooming period (April–early June) a focused survey for bristly leptosiphon will be conducted within suitable habitat in the project footprint and a 50-ft buffer around the project footprint. This buffer may be increased by the qualified plant ecologist depending on site-specific

conditions and activities planned in the areas, but must be at least 50 ft wide. Situations for which a greater buffer may be required include proximity to proposed activities expected to generate large volumes of dust, such as grading; potential for project activities to alter hydrology supporting the habitat for the species in question; or proximity to proposed structures that may shade areas farther than 50 ft away. The purpose of the survey will be to assess the presence or absence of the potentially occurring species. If bristly leptosiphon is not found in the impact area or the identified buffer, then no further mitigation will be warranted. If bristly leptosiphon individuals are found in the impact area then Mitigation Measure 2 will be implemented.

Mitigation Measure 2. Avoidance Buffers. To the extent feasible, and in consultation with a qualified plant ecologist, the project proponent will design and construct the project to avoid completely impacts on all populations of bristly leptosiphon within the BSA or within the identified buffer of the impact area. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the identified buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided will be flagged or fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities.

If complete avoidance is not feasible and more than 20% of the population (by occupied area or individuals) would be impacted as determined by a qualified plant ecologist, Mitigation Measure 3 will be implemented.

Mitigation Measure 3. Preserve Off-Site Populations of Special-Status Plant Species. If avoidance of bristly leptosiphon is not feasible and more than 30% of the population would be impacted, compensatory mitigation will be provided via the preservation, enhancement, and management of occupied habitat for the species. To compensate for impacts on bristly leptosiphon, off-site occupied habitat will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and at least one occupied acre preserved for each occupied acre affected), for any impact over the 20% significance threshold.

Areas proposed to be preserved as compensatory mitigation for this impact must contain a verified extant population of bristly leptosiphon. Mitigation areas will be managed in perpetuity to encourage persistence and even expansion of this species. Mitigation lands cannot be located on land that is currently held publicly for resource protection unless substantial enhancement of habitat quality will be achieved by the mitigation activities. The mitigation habitat will be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and will contain at least as many individuals of the species as are impacted by project activities. The permanent protection and management of mitigation lands will be ensured through an appropriate mechanism, such as a conservation easement or fee title purchase. A habitat

mitigation and monitoring plan (HMMP) will be developed and implemented for the mitigation lands. That plan will include, at a minimum, the following information:

- a summary of habitat impacts and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species;
- a description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist);
- proposed management activities to maintain high-quality habitat conditions for the focal species;
- a description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); and
- contingency measures for mitigation elements that do not meet performance criteria.

The HMMP will be prepared by a qualified plant or restoration ecologist. Approval of the HMMP by the City will be required before the project impact occurs.

6.2.2 Impacts on the Callippe Silverspot Butterfly (Less than Significant with Mitigation)

Callippe silverspot butterflies are known in the BSA region: the Cordelia Hills population is located approximately 2 miles southeast of the BSA (CNDDB 2020). In the absence of mitigation measures, if Callippe silverspot butterflies, larvae, or the larval host plant (*Viola pedunculata*) were present in the BSA, project activities could impact this rare species. Heavy equipment use, vehicle traffic, and worker foot traffic within impact areas could result in the injury or mortality of Callippe silverspot butterflies (including larvae and pupae) or their host plants (e.g., physically breaking, crushing, wilting, burying, or uprooting plants and damaging their roots as a result of soil disturbance by heavy equipment). In addition, Callippe silverspot butterflies and their host plants may be affected by petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment. Due to the rarity of the Callippe silverspot, any impacts to individuals of this species, or

to occupied habitat, would be considered significant under CEQA. Implementation of Mitigation Measures 4-6 would reduce Project impacts on the Callippe silverspot butterfly to a less-than-significant level.

Mitigation Measure 4. Worker Environmental Awareness Program. All construction personnel will participate in a worker environmental awareness program. These personnel will be informed about the presence of listed species and habitats associated with the species and that unlawful take of a federally listed animal is a violation of FESA. Prior to construction activities, a qualified biologist will instruct all construction personnel about (1) the description and status of the species; (2) the importance of their associated habitats; and (3) a list of measures being taken to reduce impacts on these species during project construction and implementation. A fact sheet conveying this information will be prepared for distribution to the construction crew and anyone else who enters the project site.

Mitigation Measure 5. Surveys and Avoidance. The following measures will be implemented to determine whether the Callippe silverspot is present, and if so, whether it can be avoided.

- Appropriately-timed surveys (approximately late February to early April) will be performed for the species' larval host plant, *Viola pedunculata*. Prior to commencement of Project activities, a qualified biologist will survey the BSA to identify any areas supporting larval host plants. Any detected host plants will be checked for larvae. If no host plants are detected, the Callippe silverspot will be presumed absent and no further action will be necessary.
- If larval host plants are detected, they will be protected, if feasible, by establishing buffer zone around individual plants or populations. Ideally, the buffer will be at least 50 feet, although a reduced buffer will be acceptable as long as the plants are not directly impacted. Project personnel and equipment will not operate within such areas. All avoided larval host plants will be clearly depicted on project plansets and marked in the field with ESA fencing or flagging.
- If host plants are present but avoidance of individual host plants is not feasible, a qualified biologist will conduct appropriately-timed focused surveys (approximately April to July) for individual larvae, pupae, and adults in areas surrounding the host plants. Although the host plants will be checked for larvae during the host plant surveys, a second survey will allow for detection of larvae emerging later in the season or other life stages such as pupae and adults. If no individuals are detected, the species will be presumed absent, and no further action will be necessary.

Mitigation Measure 6. Compensatory Mitigation for Callippe Silverspot Butterfly and Occupied Habitat. If individual larvae, pupae, or adults are detected, the habitat will be considered occupied, and compensatory mitigation will be provided at a 3:1 ratio (on an acreage basis) for the habitat occupied by the larval host plant as well as contiguous suitable habitat, as determined by a qualified biologist. Compensatory mitigation will be provided via purchase of credits in a USFWS-approved conservation bank, if one exists, or project-specific mitigation via preservation and management of suitable habitat for the species, at an appropriate off-site location within the range of the species.

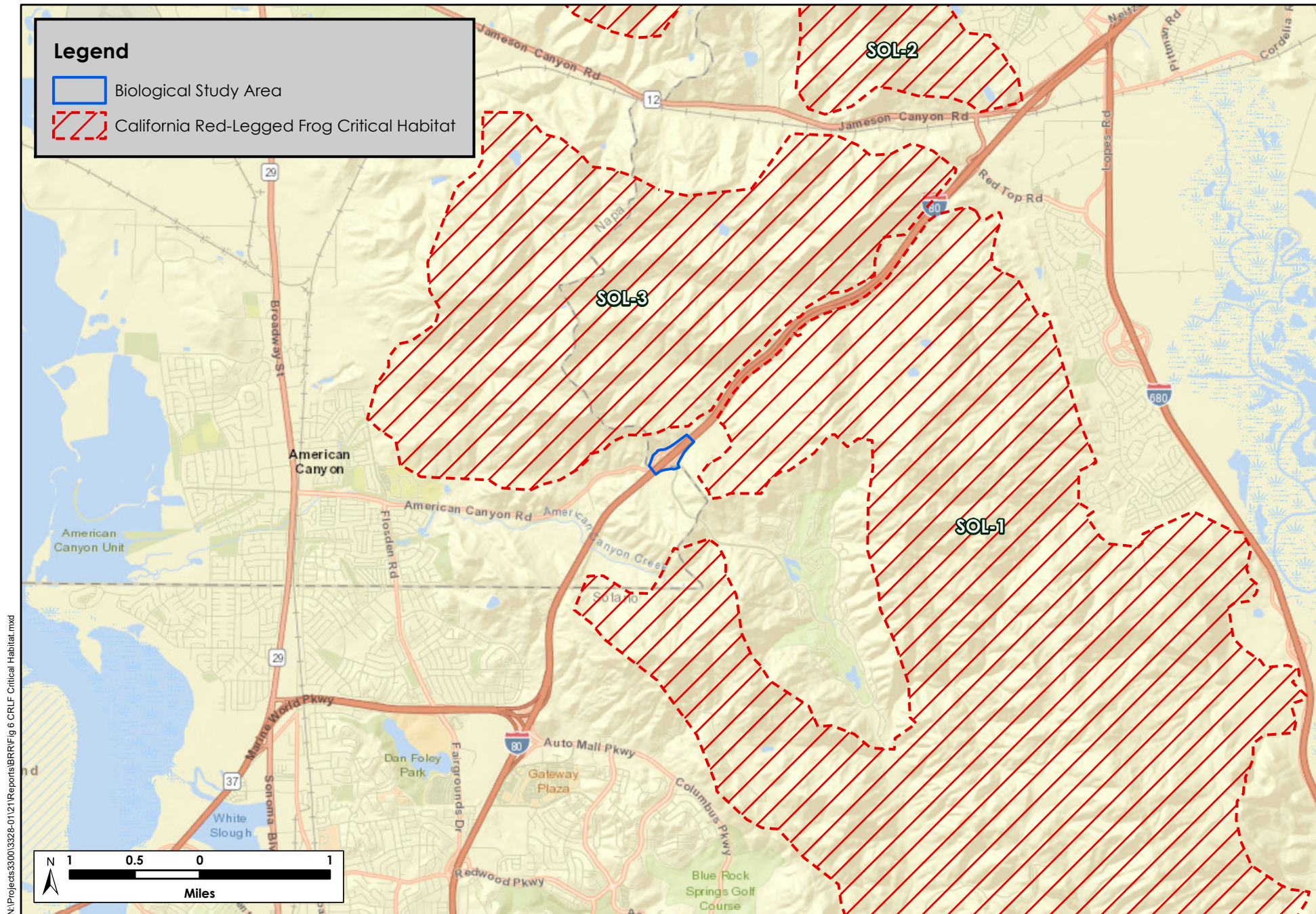
Prior to the initiation of construction, the project proponent will purchase credits from a mitigation bank approved by the applicable resource agencies and/or prepare a Habitat Mitigation and Management Plan (HMMP) describing the proposed mitigation. The HMMP will be prepared by a qualified ecologist and will include the following:

- summary of habitat impacts
- location of the habitat mitigation area (which must be within the range of the Callippe silverspot) and description of habitats in the mitigation area (which must include grassland supporting the silverspot's larval host plant)
- summary of information on the occurrence and distribution of the Callippe silverspot and its larval host plant on and/or in the immediate vicinity of the mitigation site
- description of any measures that will be implemented to enhance the mitigation area (e.g., management of non-native vegetation)
- measures that will be implemented to manage the mitigation site and maintain suitable habitat for the Callippe silverspot
- a funding plan to fund maintenance, management, monitoring, and reporting in perpetuity
- a monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). At a minimum, success criteria will include maintenance of populations of the larval host plant on the mitigation site.
- contingency measures and adaptive management measures to be implemented if necessary

6.2.3 Impacts on the California red-legged frog (Less than Significant with Mitigation)

While California red-legged frogs are not known or expected to reside or breed in the BSA, occasional individuals from nearby populations may opportunistically occupy non-breeding aquatic or terrestrial habitats in the BSA, especially during the wet season. However, the number of non-breeding individuals in the BSA is expected to be low due to the limited extent of aquatic habitats in the BSA, as well as the lack of upland refugia such as downed wood, debris, or small mammal burrows for dispersing or sheltering individuals. Although individuals are expected to occur in the study area only on an occasional basis, if at all, if individuals are present during construction activities, injury or mortality of individuals could result from vegetation removal, grading, excavation, and movement of personnel and heavy equipment. Seasonal movements may be temporarily and locally affected during construction activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. In addition, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Further, increases in human concentration and activity in the vicinity of potentially suitable dispersal habitat may result in an increase in native and nonnative predators that would be attracted to trash left at the work site and that would prey opportunistically on individuals of this species. The project would

result in impacts to up to 1.59 acres of non-developed habitat types that could potentially be used by this species during dispersal. Most such habitat, such as the California annual grassland that would be impacted, is of low value to the species due to the paucity of high-quality cover and refugia, and the roadways (e.g., McGary Road, the I-80 on- and off-ramps, and Hiddenbrooke Parkway) that frogs would need to traverse to reach such habitat areas. Nevertheless, potential impacts to individual frogs and potential dispersal and nonbreeding habitat would be considered significant due to the species' regional rarity. Implementation of Mitigation Measure 4 (Worker Environmental Awareness Program) and Mitigation Measures 7–14 described below would reduce project impacts on the California red-legged frog to a less-than-significant level.



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H. T. HARVEY & ASSOCIATES

Ecological Consultants

Figure 6. California Red-Legged Frog Critical Habitat

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Mitigation Measure 7. Seasonal Work Restrictions. Work will be avoided within habitat suitable for California red-legged frog (i.e., any non-developed habitat) from October 15 (or the first measurable fall rain of 1 inch or greater) to April 15. If avoidance is not feasible, work may be performed during the wet season in upland areas where clearing and grubbing have already been completed, so that habitat conditions for special-status species are no longer suitable, and where exclusion fencing isolates suitable habitats from the work area.

Mitigation Measure 8. Preconstruction surveys. A qualified biologist will conduct pre-construction surveys for California red-legged frogs in suitable habitat no more than 48 hours prior to commencement of Project activities. If individuals are found, work will not begin until the frogs have moved on their own, or are relocated by a qualified biologist (which would require USFWS approval), out of the construction zone to an appropriate relocation site.

Mitigation Measure 9. Exclusion Fencing. Wildlife exclusion fencing consisting will be installed on the northern and southern boundaries of the project area where construction activities border California red-legged frog aquatic and upland dispersal habitat. The lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under, and at least 36 inches will extend above the ground. Fencing will be inspected daily during construction (i.e., any day on which construction or biological personnel are present on the site), and any damaged sections will be repaired immediately.

Mitigation Measure 10. Construction Monitoring. A qualified biologist will be present for wildlife exclusion fence installation and initial ground disturbing activities, including vegetation clearing and grubbing. If any California red-legged frogs are detected within areas where they could be impacted by project activities, they will be allowed to move out of the impact areas on their own. If they will not do so, the qualified biologist will relocate any individuals found within the impact area to appropriate locations outside the site (which would require USFWS approval). Following the completion of initial clearing and grubbing, the qualified biologist will inspect the site weekly during the remainder of construction activities. If an animal that is thought to potentially be a California red-legged frog is detected by construction personnel, all work that could affect the frog will stop; a qualified biologist will be contacted; and the qualified biologist will determine whether the animal is a red-legged frog and what next steps are appropriate.

Mitigation Measure 11. Monofilament Plastic. No monofilament plastic will be used in erosion control features to avoid entanglement of frogs.

Mitigation Measure 12. Inspection of Open Trenches. Construction personnel will inspect open trenches in the morning and evening for trapped California red-legged frogs. If any frogs are found trapped, all work that could affect the frog will stop; a qualified biologist will be contacted; and the qualified biologist will determine whether the animal is a red-legged frog and what next steps are appropriate.

Mitigation Measure 13. Artificial Lighting. Any new roadway lighting shall be designed and placed to minimize the spillover of light into natural habitats. The intensity of lighting will be the minimum necessary for public safety; lighting will be directed downward rather than outward; and lighting will be shielded to direct light into the roadway.

Mitigation Measure 14. Compensatory Mitigation for California Red-legged Frog and Occupied Habitat. Compensatory mitigation will be provided at a 2:1 ratio (on an acreage basis) for all potential California red-legged frog habitat (i.e., any areas that are not occupied by developed habitat except for the median between the eastbound and westbound lanes of the highway) that is permanently impacted by the project. This ratio is appropriate given the relatively low quality of red-legged frog habitat but the likelihood that the species occasionally occurs on the project site. Compensatory mitigation will be provided via purchase of credits in a USFWS-approved conservation bank, if one exists, or project-specific mitigation via preservation and management of suitable habitat for the species, at an appropriate off-site location within the range of the species.

Prior to the initiation of construction, the project proponent will purchase credits from a mitigation bank approved by the applicable resource agencies and/or prepare a HMMP describing the proposed mitigation. The HMMP will be prepared by a qualified ecologist and will include the following:

- summary of habitat impacts
- location of the habitat mitigation area (which must be within the range of the California red-legged frog and likely to support the species given habitats on and contiguous with the site) and description of habitats in the mitigation area
- summary of information on the occurrence and distribution of the California red-legged frog on and/or in the immediate vicinity of the mitigation site
- description of any measures that will be implemented to enhance the mitigation area
- measures that will be implemented to manage the mitigation site and maintain suitable habitat for the California red-legged frog
- a funding plan to fund maintenance, management, monitoring, and reporting in perpetuity
- a monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). At a minimum, success criteria will include maintenance of suitable habitat for the California red-legged frog.
- contingency measures and adaptive management measures to be implemented if necessary

6.2.4 Impacts on the Golden Eagle, Swainson's Hawk, White-tailed Kite, and Loggerhead Shrike (Less than Significant with Mitigation)

The white-tailed kite (California fully-protected species), the Swainson's hawk (a California threatened species), and the loggerhead shrike (a California species of special concern when nesting) may all nest in trees or structures within or adjacent to the BSA. The golden eagle (*Aquila chrysaetos*), a California fully-protected species, is not expected to breed in the BSA due to the lack of suitably large trees or towers and the level of existing human activity, but it has a low potential to breed within 1 mile of the BSA. All of these species may forage over the BSA. Heavy ground disturbance, noise, and vibrations caused by Project activities could potentially disturb foraging or roosting individuals of these species and cause them to move away from work areas. Project grading and tree removal may result in the removal of active nests or the disturbance of nests adjacent to the study area, possibly to the point of abandonment of active nests with eggs or nestlings.

No adults of these species are expected to be killed or injured due to Project activities because they could easily fly from the work site prior to such effects occurring. However, eggs or young in nests of Swainson's hawks, white-tailed kites, or loggerhead shrikes may be killed or injured as a result of destruction by construction personnel or equipment, or removal of vegetation containing nests. Further, nesting of all four species may be disrupted to the extent that nests could fail because of disturbance that was too frequent or too severe. In addition, Project activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individuals causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. These types of impacts are expected to occur primarily while construction or maintenance activities are ongoing. Increases in human concentration, including ongoing construction activities associated with interchange construction, and activity associated with increased human activities near suitable habitat also may result in an increase in native and nonnative predators that would be attracted to trash left in the work site.

Based on our site observations, the areal extent of the study area, and known breeding densities of these species, no more than one pair of each species are expected to nest in or adjacent to the BSA, if these species are present at all. Impacts on one pair of loggerhead shrikes or white-tailed kites would represent a very small fraction of the regional population of these species and would not rise to the CEQA standard of having a *substantial* adverse effect. However, impacts causing the direct or indirect loss of nesting effort for one nesting pair of Swainson's hawk and golden eagle would be considered significant due to the regional scarcity of these species, and all native bird species, including all four of these special-status birds, are protected from direct take by the MBTA and California Fish and Game Code. Implementation of Mitigation Measures 15 through 17 below will reduce impacts on nesting special-status birds to less-than-significant levels.

Mitigation Measure 15. Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts on nesting birds protected under the MBTA and California Fish and Game Code will be

avoided. The nesting season for most birds in the project vicinity extends from February 1 through August 31. The nesting season for golden eagles extends from January 1 to August 31.

Mitigation Measure 16. Preconstruction/Pre-disturbance Surveys. If it is not possible to schedule construction activities between September 1 and December 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. These surveys will be conducted no more than 7 days prior to the initiation of construction activities. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., trees, shrubs, ruderal grasslands, buildings) in and adjacent to the impact areas for nests. Surveys will cover all areas within 1 mile for golden eagle, ½-mile for Swainson's hawk, 300 ft for other raptors, and 100 ft for other species.

Mitigation Measure 17. Buffers. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically 1 mile for golden eagle, ½-mile for Swainson's hawk, 300 ft for other raptors, and 100 ft for other species) to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. These buffers may be adjusted based on the judgment of a qualified biologist if a reduced buffer is determined to be adequate (e.g., due to intervening vegetation or topography that prevents the project area from being visible from the nest location).

6.2.5 Impacts on Wildlife from Artificial Lighting (Less than Significant with Mitigation)

Many animals, both special-status and common species, are extremely sensitive to light cues. These can influence their physiology and shape their behaviors, particularly during the breeding season (Ringer 1972, de Molenaar et al. 2006). Artificial light has been used as a means of manipulating breeding behavior and productivity in captive birds for decades (de Molenaar et al. 2006), and has been shown to influence the territorial singing behavior of wild birds (Longcore and Rich 2004, Miller 2006, de Molenaar et al. 2006). While it is difficult to extrapolate results of experiments on captive birds to wild populations, it is known that photoperiod (the relative amount of light and dark in a 24-hour period) is an essential cue triggering physiological processes as diverse as growth, metabolism, development, breeding behavior, and molting (de Molenaar et al. 2006). This holds true for birds, mammals (Beier 2006), and other taxa as well, suggesting that increases in ambient light may interfere with these processes across a wide range of species, resulting in impacts on wildlife populations.

Artificial lighting may also indirectly affect mammals and birds by increasing the nocturnal activity of predators like owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). The presence of artificial light may influence habitat use by rodents (Beier 2006) and by breeding birds (Rogers et al. 2006, de Molenaar et al. 2006), by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

Furthermore, areas surrounding the BSA are primarily undeveloped habitats that may support sensitive species that might be significantly impacted by illuminance from the proposed project. If lighting in the BSA were so bright that it increased illumination of the surrounding habitat, such an increase in lighting could potentially have adverse effects on special-status species in the area. Implementation of Mitigation Measure 13 above will therefore be necessary to reduce impacts on wildlife due to artificial lighting to a less-than-significant level.

6.3 Impacts on Sensitive Communities

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

6.3.1 Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant)

Riparian habitat occurs in scattered patches associated with roadside ditches and wetlands within the BSA, as well in a more contiguous area along the ephemeral stream near McGary Road. As described in Section 5.3, this habitat is considered sensitive/regulated because it is considered a sensitive natural community by the CDFW (in the case of the riparian woodland/scrub associated with the ephemeral drainage) and/or the RWQCB. In general, riparian vegetation has been extensively altered and removed throughout the state through land conversion for agriculture, bank stabilization, and extensive alteration of hydrologic regimes. Some estimates state that only 2 to 6% of historic riparian habitat remains throughout the state of California (Barbour et al. 2007). Despite anthropogenic impacts and forces on riparian habitat, it is still associated with high species richness and providing habitat for numerous special-status species.

Riparian habitat quality can be quantified based upon fish and wildlife habitat values such as the presence/absence and the density of the overstory vegetation, the presence or absence of native species, and the complexity of vegetation structure (e.g., presence of tree, shrub, and herbaceous layers). The three habitat quality categories are:

- High quality — native overstory with continuous understory or occurring in dense thickets; dense native overstory with sparse, non-native or no understory; and native willow thicket.
- Medium quality — sparse native overstory with sparse, non-native or no understory, non-native overstory with native understory, and dense non-native overstory with sparse, non-native or no understory.
- Lower quality — sparse non-native overstory with sparse, non-native or no understory. In addition, any areas not included in medium or high quality categories covered with riprap, gabions, etc. (e.g., ruderal habitat and bare ground).

The riparian habitat along the ephemeral stream in the northeastern portion of the BSA is of moderate quality, but this habitat will be avoided by the project. No riparian tree removal is anticipated from the project. Indirect impacts to riparian habitat within the BSA will be avoided through compliance with the Statewide General Construction permit and stormwater treatment features required by regional stormwater orders. Additionally, all riparian understory vegetation will be avoided due to being wetlands or is comprised of invasive species such as Himalayan blackberry and would not be considered an adverse impact to remove from these areas. However, native riparian willows occur very close to project impact areas and will be protected from inadvertent damage or removal. Therefore, removal of any riparian trees due to project activities would be considered a significant impact. Implementation of Mitigation Measures 18 - 20 below will reduce this impact to a less than significant level.

Mitigation Measure 18. Avoid Impacts to Riparian Habitat. As discussed above, the project has been designed to avoid most impacts to riparian habitat within the BSA, particularly the higher quality riparian habitat within the banks of the ephemeral stream. All riparian habitat shown on Figure 3 to be avoided by the project will be clearly shown on project construction plansets and will be clearly separated from project work areas by ESA fencing or flagging. Fencing will be installed on the driplines of riparian trees (the tree protection zone, TPZ) to avoid impacts to the canopy or roots from nearby work activities or ground disturbance. If work must take place within the dripline of any riparian tree to be preserved, Mitigation Measure 19, below, will be implemented.

Mitigation Measure 19. Arborist Evaluation of Tree Impacts within TPZs. If work must occur to a riparian tree preserved within a TPZ, any ground disturbance or trimming affecting more than 15% of the canopy will be monitored by an ISA certified arborist to ensure that impacts are minimized to the greatest extent feasible, and that the tree can be expected to survive following project implementation. If the arborist cannot make a determination that the riparian tree is expected to survive, the tree will be mitigated as per Measure 20, below.

Mitigation Measure 20. Compensate for Loss of Riparian Trees. All native riparian trees greater than 6 inches diameter at breast height (dbh) to be removed or that may be killed by the project (as determined by a certified arborist) will be replaced in a suitable location, which may include other roadside locations with sufficient hydrology within the BSA per a project riparian mitigation and monitoring plan (MMP). Native willows will be replaced at a ratio of 3:1 (replacement trees to impacted trees) while native oaks will be replaced at a ratio of 3:1 for trees 6 – 12 inches dbh and 5:1 for any riparian oak trees greater than 12 inches dbh. The MMP will include at a minimum:

- a summary of habitat impacts and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;

- a description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for planted riparian habitat;
- proposed management activities to maintain the restored riparian habitat, including replacement of trees that do not survive, if necessary;
- a description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria will include demonstration that 75% canopy cover of riparian vegetation has been achieved by year 5; and
- contingency measures for mitigation elements that do not meet performance criteria.

The MMP will be prepared by a qualified plant or restoration ecologist. Approval of the MMP by the City will be required before the project impact occurs. If permits from the CDFW and/or RWQCB have different mitigation requirements for impacts to riparian habitat from those described here, the agency-required mitigation would supersede that described in this document.

6.3.2 Impacts Caused by Non-Native and Invasive Species (Less than Significant with Mitigation)

Several non-native, invasive plant species occur in the ruderal California annual grassland and seasonal freshwater wetland habitats located throughout the study area. Invasive species can spread quickly and can be difficult to eradicate. Many non-native, invasive plant species produce seeds that germinate readily following disturbance. Further, disturbed areas are highly susceptible to colonization by non-native, invasive species that occur locally, or whose propagules are transported by personnel, vehicles, and other equipment. Activities such as trampling, equipment staging, and vegetation removal are all factors that would contribute to disturbance. Areas of disturbance could serve as the source for promoting the spread of non-native species, which could degrade the ecological values of wetland habitat and adversely affect native plants and wildlife that occur there. Invasive species can have an adverse effect on native species and habitats in several ways, including by altering nutrient cycles, fire frequency and/or intensity, and hydrologic cycles; by creating changes in sediment deposition and erosion; by dominating habitats and displacing native species; by hybridizing with native species; and by promoting non-native animal species (Bossard et al. 2000). The study area contains invasive species with the potential to invade the sensitive wetland habitats, such as fennel, Fuller's teasel, and black mustard. All three species are located in uplands directly adjacent to sensitive wetland habitats, where project activities could cause them to spread further into the wetlands in and adjacent to the study area. Therefore, this impact is considered significant. Implementation of the following mitigation measure will reduce potential weed-related impacts on sensitive habitats and the species they support to a less-than-significant level.

Mitigation Measure 21. Invasive Species Best Management Practices (BMPs). The following BMPs will be implemented to limit the spread of invasive species into sensitive habitats:

- All ground disturbing equipment used adjacent to the wetland habitat will be washed (including wheels, tracks, and undercarriages) at a legally operating equipment yard both before and after being used at the site.
- All applicable construction materials used on site, such as straw wattles, mulch, and fill material, will be certified weed free.
- The project will follow a Stormwater Pollution Prevention Plan as per the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Water Board Order No. 2009-0009-DWQ).
- All disturbed soils will be stabilized and planted with a native seed mix from a local source following construction.
- If excavating, soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 ft below final grade.

6.4 Impacts on Wetlands

Have a substantial adverse effect on state or federally protected wetlands
(Less than Significant with Mitigation)

Perennial freshwater wetlands and seasonal wetlands that may be subject to the regulatory jurisdiction of the RWQCB are present in the BSA. Wetlands are relatively scarce regionally, and even small wetland areas make disproportionate contributions to water quality, groundwater recharge, watershed function, and wildlife habitat in the region. Thus, any permanent loss or temporary disturbance of wetland habitat because of the project would be considered significant under CEQA (Criterion G).

Project development also has the potential to cause indirect impacts on wetlands due to changes in water quality. However, construction projects in California causing land disturbances that are equal to 1 ac or greater must comply with State requirements to control the discharge of stormwater pollutants under the Statewide Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and maintained during the project and it must include the use of Best Management Practices (BMPs) to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

Additionally, the project will be subject to the San Francisco Bay Municipal Regional Permit and the Napa Countywide Phase II MS4 permit requires that all projects implement BMPs and incorporate Low Impact

Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. To meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors. These same features will be used to treat any stormwater that flows to the wetland habitat during large storm events. Thus, impacts on water quality would be reduced to a level of less-than-significant.

Wetlands may also be directly and permanently impacted by filling or grading, leading to vegetation removal and disruption of topography suitable for wetlands, or could be indirectly impacted by the project if grading or filling in non-wetland areas disrupts the hydrology within avoided wetlands that rely on run-off. Temporary impacts could occur due to construction access or staging. Implementation of the following mitigation measure will reduce impacts due to permanent or temporary disturbance of wetlands to a less-than-significant level.

Mitigation Measure 22. Compensatory Mitigation for Wetland Habitats. The project proponent will obtain permits from the RWQCB (as needed) to obtain authorization to impact jurisdictional waters. Mitigation for temporary or permanent impacts on wetlands may be achieved through one or more options, potentially including (but not limited to):

- onsite restoration or creation of wetlands or aquatic habitats (including removal of onsite fill) if feasible onsite restoration opportunities exist;
- offsite restoration/creation of wetlands; or
- purchase of mitigation credits at approved mitigation banks within the San Francisco Bay/Vallejo Region (e.g., the Elsie Gridley Wetlands Mitigation Bank in Solano County provides appropriate wetland mitigation credits, and the site is on the border of the bank's service area).

Temporary impacts restored in-place within one year or less will be mitigated at a ratio of 1:1 (restoration area: impact area). For permanent impacts, if bank credits are purchased as mitigation, the amount of compensatory mitigation provided will be at least 1:1 (i.e., at least equivalent to the acreage of jurisdictional wetlands permanently impacted). If wetlands are created as mitigation, the amount of compensatory mitigation provided will be at least 2:1 to account for the time required for created wetland to reach maturation and replace the ecological function of the impacted wetland habitat.

Prior to construction, the project proponent will purchase credits from a mitigation bank approved by the applicable resource agencies and/or prepare a wetlands MMP (WMMP) describing the proposed creation of wetlands that will satisfy the mitigation requirements. Impacts on jurisdictional wetlands and other waters may not commence until the adequate credits in a mitigation bank have been purchased and/or the project proponent prepares the WMMP, so that the total mitigation requirement is satisfied.

The WMMP will be prepared by a qualified restoration ecologist and will include the following:

- a summary of wetland impacts and the proposed wetland creation mitigation
- goals of the restoration to achieve no net loss of habitat functions and values
- the location of the mitigation site and description of existing site conditions
- mitigation design:
 - existing and proposed site hydrology, geomorphology, and geotechnical stability, if applicable
 - grading plan if appropriate, including bank stabilization or other site stabilization features
 - soil amendments and other site preparation elements as appropriate
 - planting plan
 - irrigation and maintenance plan
 - construction schedule
- monitoring plan (including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). Performance criteria will include the establishment of wetland vegetation on any vegetated wetland mitigation area within 5 years of mitigation implementation.
- a contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan will include specific triggers for remediation if performance criteria are not being met.

If permits from the RWQCB have different mitigation requirements for impacts to wetlands from those described here, the agency-required mitigation would supersede that described in this document.

6.5 Impacts on Wildlife Movement:

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

The BSA is centered on an existing interstate highway alignment that currently functions as a nearly complete barrier to north-south wildlife movements, with the exception of most birds. An upgrade to the existing interchange from Hiddenbrooke Road and American Canyon Road will not result in further fragmentation of

the surrounding natural habitats, nor will it increase the existing barriers to wildlife movement across the alignment. The quality of habitat provided by the ruderal and annual grassland habitats in permanent impact areas is currently low: the predominantly non-native, sparse vegetation provides little structural diversity or cover, and the habitat is consistently subjected to high levels of disturbance from high-speed traffic on I-80, lower speed traffic on Hiddenbrooke Parkway and American Canyon Road, as well as pedestrian and vehicular traffic from park and ride activities along McGary Road. Animals that currently utilize these habitats for movement are already habituated to high disturbance regimes, and disturbance regimes will not be substantially altered by the upgraded interchange. Impacts to wetland and riparian habitats will be spatially limited to small, isolated portions of non-linear features, or, in one case, the terminus of a linear feature. As such, they represent both a small fraction of the overall wetland habitat available in and near the BSA and regionally, and they do not disrupt any existing linear pathways that may be currently utilized by animals moving along riparian corridors.

Disturbance related to construction activities and the commencement of post-construction operation of the improved interchange during the bird breeding season (February 1 through August 31 for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests located near the interchange. However, the habitats in the study area represent a very small proportion of the habitats that support these species regionally. In addition, many birds are expected to continue to nest and forage on the project site after project construction is completed as they are habituated to disturbance related to the existing interchange.

Therefore, project impacts on nesting and foraging birds and special-status species that use the site, due to habitat impacts or disturbance of nesting birds, would not rise to the CEQA standard of having a substantial adverse effect, and these impacts would not constitute a significant impact on these species or their habitats under CEQA. However, all native bird species are protected from direct take by federal and state statutes (see Sections 3.1.5 and 3.2.4). Therefore, we recommend that Mitigation Measures 15 through 17 above be implemented to ensure that project activities comply with the MBTA and California Fish and Game Code. In addition, if the applicant desires, it may optionally deter establishment of active nests to reduce the potential for impacts to nesting birds (and constraints on project construction related to nesting birds). For example, if construction activities will not be initiated until after the start of the nesting season, all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by the project may be removed prior to the start of the nesting season (e.g., prior to February 1). This will preclude the initiation of nests in this vegetation, and prevent the potential delay of the project due to the presence of active nests in these substrates. Nest-starts (incomplete nests that do not yet have eggs or young) can be removed to prevent active nests from becoming established where they could be impacted by project activities.

6.6 Impacts due to Conflicts with Local Policies

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant with Mitigation)

6.6.1 Solano County General Plan (Less than Significant with Mitigation)

Per the Solano County General Plan, trees with a trunk diameter of 15 inches or more measured at 54 inches above natural grade and any oak tree native to California, with a diameter of 10 inches or more measured at 54 inches above natural grade are considered protected. The removal or pruning of trees protected by Solano County General Plan measures is considered potentially significant under CEQA (Criterion I). As such, the project would need to comply with the General Plan for all trees removed within Solano County, including obtaining any necessary permits from the County to remove protected trees and paying any applicable fee if impacts to protected trees are proposed. Additionally, riparian trees would be protected and replaced as per Mitigation Measures 18 and 19, above. Therefore, any potential impacts related to conflict with local policies or ordinances protecting heritage trees would be less than significant.

6.7 Impact due to Conflicts with an Adopted Habitat Conservation Plan

Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (No Impact)

The study area is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not conflict with any such documents.

6.8 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities along the I-80, I-680, and State Route 12 corridors will affected the project region and similar habitats within the project vicinity, such as the I-80/I-680/State Route 12 Interchange Project that is currently in long term construction through several phases.

The cumulative impact on biological resources resulting from the project in combination with other projects in the project area and larger region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project. In the absence of

such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources would occur.

However, the Solano County General Plan and Napa County codes contain conservation measures that would benefit biological resources, as well as measures to avoid, minimize, and mitigate impacts on these resources. Further, the project would implement several BMPs and mitigation measures to reduce impacts on both common and special-status species, as described above. Thus, provided that this project successfully incorporates the mitigation measures described in this biological resources report, the project will not contribute to substantial cumulative effects on biological resources.

Section 7. References

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Appendix A. Plants Observed

Family	Scientific Name	Common Name
Alismataceae	<i>Alisma triviale</i>	northern water plantain
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak
Apiaceae	<i>Ammi majus</i>	bishop's weed
Apiaceae	<i>Conium maculatum</i>	poison hemlock
Apiaceae	<i>Daucus carota</i>	Queen Anne's lace
Apiaceae	<i>Foeniculum vulgare</i>	fennel
Apiaceae	<i>Torilis arvensis</i>	field hedge parsley
Asteraceae	<i>Achyrrachaena mollis</i>	blow wives
Asteraceae	<i>Baccharis pilularis</i>	coyote brush
Asteraceae	<i>Calendula arvensis</i>	field marigold
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle
Asteraceae	<i>Centaurea calcitrapa</i>	purple star thistle
Asteraceae	<i>Centaurea solstitialis</i>	yellow star thistle
Asteraceae	<i>Cichorium intybus</i>	chicory
Asteraceae	<i>Cirsium vulgare</i>	bull thistle
Asteraceae	<i>Crepis pulchra</i>	smallflower hawksbeard
Asteraceae	<i>Cynara cardunculus</i>	artichoke thistle
Asteraceae	<i>Dittrichia graveolens</i>	stinkwort
Asteraceae	<i>Erigeron canadensis</i>	horseweed
Asteraceae	<i>Grindelia camporum</i>	gumweed
Asteraceae	<i>Helminthotheca echioides</i>	bristly oxtongue
Asteraceae	<i>Hemizonia congesta</i> ssp. <i>luzulifolia</i>	hayfield tarweed
Asteraceae	<i>Heterotheca grandiflora</i>	telegraph weed
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce
Asteraceae	<i>Leontodon saxatilis</i>	hawkbit
Asteraceae	<i>Logfia gallica</i>	narrowleaf cottonrose
Asteraceae	<i>Madia gracilis</i>	slender tarweed
Asteraceae	<i>Pseudognaphalium stramineum</i>	cottonbatting plant
Asteraceae	<i>Silybum marianum</i>	milk thistle
Asteraceae	<i>Sonchus asper</i> ssp. <i>asper</i>	sow thistle
Asteraceae	<i>Sonchus oleraceus</i>	sow thistle
Asteraceae	<i>Tragopogon porrifolius</i>	salsify
Berberidaceae	<i>Nandina domestica</i> (ornamental)	heavenly bamboo
Brassicaceae	<i>Brassica nigra</i>	black mustard
Brassicaceae	<i>Brassica rapa</i>	common mustard
Brassicaceae	<i>Cardamine oligosperma</i>	bitter cress
Brassicaceae	<i>Hirschfeldia incana</i>	hoary mustard
Brassicaceae	<i>Nasturtium officinale</i>	watercress

Brassicaceae	<i>Raphanus sativus</i>	jointed charlock
Caryophyllaceae	<i>Silene gallica</i>	common catchfly
Caryophyllaceae	<i>Spergularia rubra</i>	red sandspurry
Convolvulaceae	<i>Convolvulus arvensis</i> <i>Bolboschoenus maritimus</i> ssp. <i>paludosus</i>	field bindweed alkali bulrush
Cyperaceae	<i>Carex praegracilis</i>	field sedge
Cyperaceae	<i>Cyperus eragrostis</i>	tall flatsedge
Dipsacaceae	<i>Dipsacus fullonum</i>	Fuller's teasel
Fabaceae	<i>Acacia dealbata</i>	silver wattle
Fabaceae	<i>Acmispon americanus</i>	Spanish lotus
Fabaceae	<i>Lotus corniculatus</i>	bird's foot trefoil
Fabaceae	<i>Lupinus bicolor</i>	annual lupine
Fabaceae	<i>Lupinus</i> sp.	lupine
Fabaceae	<i>Medicago polymorpha</i>	bur clover
Fabaceae	<i>Melilotus albus</i>	white sweetclover
Fabaceae	<i>Melilotus indicus</i>	annual yellow sweetclover
Fabaceae	<i>Trifolium angustifolium</i>	narrow leaved clover
Fabaceae	<i>Trifolium glomeratum</i>	clustered clover
Fabaceae	<i>Trifolium hirtum</i>	rose clover
Fabaceae	<i>Vicia sativa</i> ssp. <i>sativa</i>	spring vetch
Fagaceae	<i>Quercus agrifolia</i>	coast live oak
Fagaceae	<i>Quercus douglasii</i>	blue oak
Fagaceae	<i>Quercus lobata</i>	valley oak
Gentianaceae	<i>Centaurium tenuiflorum</i>	slender centaury
Geraniaceae	<i>Erodium botrys</i>	broad leaf filaree
Geraniaceae	<i>Erodium cicutarium</i>	red stemmed filaree
Geraniaceae	<i>Geranium dissectum</i>	cutleaf geranium
Hypericaceae	<i>Hypericum perforatum</i>	Klamath weed
Iridaceae	<i>Sisyrinchium bellum</i>	western blue eyed grass
Juglandaceae	<i>Juglans</i> sp.	walnut
Juncaceae	<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush
Juncaceae	<i>Juncus bufonius</i>	toad rush
Juncaceae	<i>Juncus patens</i>	spreading rush
Juncaceae	<i>Juncus xiphioides</i>	iris leaved rush
Lamiaceae	<i>Mentha pulegium</i>	pennyroyal
Lamiaceae	<i>Mentha spicata</i> <i>Rosmarinus officinalis</i> (ornamental)	spearmint rosemary
Lamiaceae	<i>Stachys</i> sp.	hedge nettle
Linaceae	<i>Linum bienne</i>	narrow leaved flax
Lythraceae	<i>Lythrum hyssopifolia</i>	hyssop loosestrife
Malvaceae	<i>Malva nicaeensis</i>	bull mallow
Malvaceae	<i>Malva parviflora</i>	cheeseweed

Malvaceae	<i>Malva pseudolavatera</i>	Cornish mallow
Oleaceae	<i>Olea</i> sp. (ornamental)	olive
Onagraceae	<i>Epilobium brachycarpum</i>	tall annual willowherb
Onagraceae	<i>Epilobium ciliatum</i>	slender willowherb
Orobanchaceae	<i>Bellardia trixago</i>	Mediterranean lineseed
Papaveraceae	<i>Eschscholzia californica</i>	California poppy
Papaveraceae	<i>Fumaria capreolata</i>	white ramping fumitory
Plantaginaceae	<i>Kickxia elatine</i>	sharp leaved fluellin
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain
Poaceae	<i>Agrostis</i> sp.	bent grass
Poaceae	<i>Aira caryophyllea</i>	silver hairgrass
Poaceae	<i>Avena</i> sp.	wild oats
Poaceae	<i>Brachypodium distachyon</i>	purple false brome
Poaceae	<i>Briza minor</i>	little rattlesnake grass
Poaceae	<i>Bromus caroli-henrici</i>	weedy brome
Poaceae	<i>Bromus diandrus</i>	ripgut brome
Poaceae	<i>Bromus hordeaceus</i>	soft chess
Poaceae	<i>Bromus</i> sp.	brome
Poaceae	<i>Cortaderia selloana</i>	pampas grass
Poaceae	<i>Ehrharta erecta</i>	panic veldt grass
Poaceae	<i>Elymus caput-medusae</i>	medusa head
Poaceae	<i>Elymus triticoides</i>	beardless wildrye
Poaceae	<i>Festuca arundinacea</i>	tall fescue
Poaceae	<i>Festuca bromoides</i>	brome fescue
Poaceae	<i>Festuca idahoensis</i>	Idaho fescue
Poaceae	<i>Festuca myuros</i>	rattail fescue
Poaceae	<i>Festuca perennis</i>	Italian ryegrass
Poaceae	<i>Holcus lanatus</i>	velvet grass
Poaceae	<i>Hordeum murinum</i>	wall barley
Poaceae	<i>Paspalum dilatatum</i>	dallis grass
Poaceae	<i>Phalaris aquatica</i>	Harding grass
Poaceae	<i>Poa pratensis</i>	Kentucky bluegrass
Poaceae	<i>Polypogon monspeliensis</i>	annual beard grass
Poaceae	<i>Stipa pulchra</i>	purple needlegrass
Polygonaceae	<i>Persicaria hydropiperoides</i>	false waterpepper
Polygonaceae	<i>Polygonum aviculare</i>	prostrate knotweed
Polygonaceae	<i>Rumex crispus</i>	curly dock
Polygonaceae	<i>Rumex pulcher</i>	fiddle dock
Polygonaceae	<i>Rumex transitorius</i>	willow dock
Primulaceae	<i>Anagallis arvensis</i>	scarlet pimpernel
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon
Rosaceae	<i>Prunus cerasifera</i>	cherry plum
Rosaceae	<i>Pyracantha</i> sp.	firethorn

Rosaceae	<i>Rosa californica</i>	California wild rose
Rosaceae	<i>Rosa</i> sp. (ornamental)	rose
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry
Rubiaceae	<i>Galium aparine</i>	cleavers
Salicaceae	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
Salicaceae	<i>Salix laevigata</i>	red willow
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow
Sapindaceae	<i>Aesculus californica</i>	California buckeye
Solanaceae	<i>Solanum americanum</i>	American black nightshade
Themidaceae	<i>Triteleia laxa</i>	Ithuriel's spear
Typhaceae	<i>Typha latifolia</i>	broad-leaved cattail
Verbenaceae	<i>Verbena</i> sp. (ornamental)	vervain

Appendix B. Detailed Descriptions of Special-Status Animal Species Potentially Occurring in the Study Area

Callippe Silverspot Butterfly (*Speyeria callippe callippe*). Federal status: Endangered; State status: None. The callippe silverspot butterfly was listed as endangered by the USFWS on December 5, 1997 (USFWS 1997). Critical habitat has not been designated. Historically, the callippe silverspot butterfly occupied much of the grassland in the San Francisco Bay region. However, upon listing, only two populations were known, one in San Mateo County, and one in a park in Alameda County. The Alameda County population is believed to be extirpated, but the species is now known from other locations within its historic range, including the hills between the cities of Vallejo and Cordelia (USFWS 2009, 2017b). Adults have one flight period, which is typically from mid-May to July, but largely depends on environmental conditions (USFWS 2009). Males seek hilltops and hillsides of native grasslands for mates. Females lay their eggs in the dead or dying larval food plant (*Viola pedunculata*) or in nearby woody debris. Upon hatching, larvae consume their egg shells and enter diapause, which lasts until the following spring, when the larvae emerge and feed. After passing through five instars, the larvae pupate, then emerge from their silk and leaf composite cocoons two weeks later.

One of the few populations recognized by the USFWS, the Cordelia Hills population occupies the hills approximately 2 miles southeast of the BSA (CNDDDB 2020). Because reconnaissance surveys commenced on the Project after the host plant senesced and at the end of the flight season, focused surveys for the host plant and individuals of the species could not be not conducted. If the larval host plant is present, individual female Callippe silverspot butterflies may deposit eggs on or near the dying plants, and larvae and adults may be present in the BSA. Appropriately-timed surveys for the larval host plant, larvae, and flying adults will be conducted to determine the presence or absence of this species in the BSA.

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The California red-legged frog inhabits perennial freshwater pools, streams, and ponds. Larvae, juveniles, and adult frogs have been collected from natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits (containing water), and large reservoirs (Jennings 1988). Adults need dense shrubby or emergent riparian vegetation closely associated with deep (more than 2.3 ft deep) still or slow-moving water (USFWS 2015). Preferred breeding habitat consists of deep perennial pools with emergent vegetation such as cattails, tules (*Scirpus* spp.), or sedges (*Carex* spp.) for attaching egg clusters (Hayes and Jennings 1988, Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Jennings and Hayes 1994). Non-breeding frogs may be found adjacent to streams and ponds in grasslands and woodlands. They use small mammal burrows in or under vegetation, willow root wads, the undersides of old boards and other debris within the riparian zone, and large cracks in the bottom of dried ponds as refugia (Jennings and Hayes 1994, USFWS 2002). Individuals may also occasionally use ground squirrel burrows as refugia (Tatarian 2008).

California red-legged frogs do not have a distinct breeding migration. Some frogs remain at breeding sites all year while others disperse. Red-legged frogs are often found in summer months in summer foraging habitat that would not be suitable for breeding; these individuals presumably move seasonally between summer foraging habitat and winter breeding habitat. Movements may occur along riparian corridors, but some individuals move directly from one site to another through normally inhospitable habitats (e.g., heavily grazed pastures or oak-grassland savannas) (USFWS 2002, Fellers 2005, Fellers and Kleeman 2007). Evidence from marked and radio-tagged frogs on the San Luis Obispo County coast suggests that frog movements, via upland habitats, of about 1 mi are possible over the course of a wet season (USFWS 2002). A radio-tracking study in Marin County found a range of migration distances (0.02–0.87 mi, straight-line) (Fellers and Kleeman 2007), and migrating frogs in northern Santa Cruz County traveled straight-line distances of 0.12–1.74 mi (Bulger et al. 2003). The distance moved is highly site-dependent, as influenced by the local landscape (Fellers and Kleeman 2007). The USFWS (2010) considered 1 mi a more typical dispersal distance for the species in its critical habitat designation.

The California red-legged frog was listed as threatened by the USFWS in 1996 (USFWS 1996) and critical habitat was most recently designated in 2010 (USFWS 2010). While the BSA does not fall within designated critical habitat, it is located immediately between two adjacent units, SOL-1 and SOL-3, which are separated from one another by the I-80 corridor (Appendix A, Figure 5).

California red-legged frogs are not known to occur in the BSA. However, the species is known from several records in close proximity, including pooled reaches of an unnamed stream adjacent to McGary Road approximately 0.2 to 1.5 miles to the northeast, several ponds approximately 1 mile to the south, and a tributary to American Canyon Creek approximately 1.2 miles west (CNDDDB 2020). Additionally, numerous potential breeding ponds are present in the grasslands surrounding the BSA within the typical dispersal distance of 1 mile (Google, Inc. 2020). The aquatic habitats within the BSA itself, however, are not suitable for breeding; while they support dense shrubby cover and emergent vegetation, they lack sufficient depth, pooling, and hydroperiod to support breeding. Upland refugia are also largely lacking in the BSA, with little debris such as downed wood or root wads, and no sufficiently-sized small mammal burrows for sheltering or dispersing individuals. The California annual grassland that would be impacted by the project is of low value to the California red-legged frog due to the paucity of high-quality cover and refugia, and the roadways (e.g., McGary Road, the I-80 on- and off-ramps, and Hiddenbrooke Parkway) that frogs would need to traverse to reach such habitat areas. Thus, non-breeding individuals may occasionally occupy aquatic habitats in the BSA, but they are not expected to be frequently encountered or abundant, and no high-quality habitat for the species is present in the BSA.

Golden Eagle (*Aquila chrysaetos*). **Federal status: None; State status: Fully Protected.** In California, the golden eagle is an uncommon permanent resident and migrant throughout the state. The species' breeding range in California excludes only the Central Valley, the immediate coast in the far north, and the southeastern corner of the state (Zeiner et al. 1990). The golden eagle nests in a range of open habitats, including desert scrub, foothill cismontane woodlands, and annual or perennial grasslands. Nesting habitat is characterized by large, remote patches of grassland or open woodland; a hilly topography that generates lift; an abundance of

small mammal prey; and tall structures that serve as nest platforms and hunting perches. Once a breeding pair establishes a territory, they may build a number of nests in tall structures such as tall trees or snags, cliffs, or utility towers (Zeiner et al. 1990, Kochert et al. 2002), only one of which is used in any given year. The nesting season begins in late January and continues through August. Following nesting, adult eagles usually remain in or near their breeding territory (Zeiner et al. 1990). Young birds in California tend to be sedentary, remaining in or near their parental home ranges (Kochert et al. 2002).

This species is known to nest in the BSA region, with historical records of nesting (1993) within approximately 1 mile of the BSA (CNDDB 2020). However, during site visits in July, 2020, no individuals were encountered, and no existing raptor nests were observed either in the BSA or the surroundings. The BSA itself lacks suitable nest trees, cliffs, or other structures. However, nesting habitat exists within approximately 1 mile of the BSA in scattered mature oaks and other large, primarily eucalyptus, trees at nearby farmsteads, and nearby electrical transmission towers. Thus, while unlikely, nesting cannot be ruled out.

Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened.

Swainson's hawks are distributed throughout western North America during the breeding season, but in California, they are primarily limited to the Central Valley and the southeastern Great Basin region (Woodbridge 1998). Swainson's hawks in California are strongly associated with riparian habitats, though they are also found in oak woodlands and other open habitats (Woodbridge 1998, Smallwood 1995, England et al. 1997). Prime breeding habitat for Swainson's hawk encompasses riparian draws or clumps of trees surrounded by open grassland or oak savannah for foraging (England et al. 1997, Woodbridge 1998). However, in many parts of their range, including Central California, they have adapted well to foraging in agricultural areas, although they do not forage in most perennial crops or in crops that grow much higher than native grasses (Bloom 1980, Bechard 1982, Estep 1989, Woodbridge 1998). In the project region, Swainson's hawks forage in dryland pasture and irrigated pasture, as well as row crops and grain crops, particularly during and after harvest, when prey are numerous and conspicuous. They are also attracted to flood irrigation areas, primarily in alfalfa fields, when prey take refuge on field margins (Smallwood 1995, England et al. 1997).

Swainson's hawks build sturdy stick nests in low willows, box elders, oaks, or other trees, breeding from early March through July (England et al. 1997). Individuals frequently use the same nest or nest tree in successive breeding seasons or move only short distances within the same territory (Fitzner 1980, England et al. 1997). The Swainson's hawk was listed as threatened by the State of California in 1983 due to population declines likely precipitated by significant losses of riparian habitat and conversion of open foraging habitats to developed lands (Woodbridge 1998, England et al. 1997).

Suitable nesting habitat is present in the BSA in the riparian willows and cottonwoods, and the species is known to nest in the BSA region: there are numerous records approximately 5 miles to the west along the Napa River and associated wetlands, and a single record approximately 5 miles to the east, near Cordelia Slough (CNDDB). However, no existing raptor nests were observed during site visits in July, 2020. Because the species tends to

more commonly nest in the lowlands to the west and east, it is not expected to breed with regularity in the BSA. However, the possibility that a single nesting pair could occupy the BSA, while unlikely, cannot be ruled out.

White-tailed Kite (*Elanus leucurus*). **Federal Listing Status: None; State Listing Status: Fully Protected.** In California, white-tailed kites can be found in the Central Valley and along the coast, in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Zeiner et al. 1990, Dunk 1995, Erichsen et al. 1996). White-tailed kites are year-round residents of the state, establishing nesting territories that encompass open areas with healthy prey populations, and snags, shrubs, trees, or other nesting substrates (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997). Although the species recovered after population declines during the early 20th century, its populations may be exhibiting new declines because of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996).

White-tailed kites are common in the BSA region (Cornell Lab of Ornithology 2020), and the CNDDB (2020) notes a single nest approximately 3 miles to the east of the BSA. Suitable nesting habitat is present in riparian trees along the southern border of the BSA, and a single pair of white-tailed kites may nest in the BSA.

Loggerhead Shrike (*Lanius ludovicianus*). **Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting).** The loggerhead shrike is a predatory songbird associated with open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt (Yosef 1996). Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and upon which prey items are impaled. The breeding season for loggerhead shrikes may begin as early as mid-February and lasts through July (Yosef 1996). Nationwide, loggerhead shrike populations have declined significantly over the last 20 years. Loggerhead shrikes are still fairly common in parts of the San Francisco Bay area, but urbanization has reduced available habitat, and local populations are likely declining (Cade and Woods 1997, Humple 2008). Loggerhead shrikes are fairly common in the BSA region, and a single pair may nest in the dense trees and shrubs of the BSA.