Redding Riverfront Specific Plan Update
Redding, CA

Biological Constraints Report

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City of Redding

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1 Introduction

1.1 Project Introduction and Scope of Work

The City of Redding (City) is in the initial stages of developing a Specific Plan for the Riverfront Area along the Sacramento River (Plan Area) located in Shasta County, California. The approximate 418-acre Plan Area is located west of Interstate 5 and north of E. Cypress Avenue (Appendix A, Figures 1 and 2). Major natural resources in the plan area include Turtle Bay Exploration Park, the Sacramento River Trail, Marina RV Park, Kutras Park and Lake, and ponds and habitat associated with the Sacramento River watershed. The purpose of the Specific Plan is to determine how to best meet the future land use, recreation, trail, open space, and other needs of citizens in the Plan Area. To do so, the City and consultant team (project team) will engage the citizens of the community in a robust community engagement process.

Within the Specific Plan, the project team will address the natural areas, river access, and protection of the riparian habitat outside of currently developed areas (Figure 2). The Specific Plan will include recommendations for potential expansion of low-impact public uses directly adjacent to the Turtle Bay Exploration Park and Paul Bunyan Forest Camp facilities to enhance access to the existing trail system. The project team will also analyze public and private boat and watercraft launch facilities and provide a detailed plan on how to improve existing amenities.

1.2 Purpose of the Biological Constraints Analysis

The purpose of this biological constraints analysis is to describe sensitive biological resources with the potential to occur in the Plan Area, potential impacts to those resources resulting from the Redding Riverfront Specific Plan Update, and conservation measures to avoid adverse impacts. The Plan Area includes all areas that could potentially be impacted by future projects under the Specific Plan. The analysis includes a buffer to account for resources adjacent to the specific plan project limits and project design that may occur during project development. The constraints analysis will be used during specific plan development and environmental review.

This analysis identifies potential biological constraints from implementing the Redding Riverfront Specific Plan Area Update. Biological resources that were considered for this analysis are:

- California species of special concern or species listed on California Native Plant Society (CNPS) or California Natural Diversity Database (CNDDB) lists of rare plants,
- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA), and/or under the California Endangered Species Act (CESA),
- Wildlife protected by the Fish and Game Code, the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Act, and local codes and ordinances,
- Waters of the state or U.S.,
- Sensitive habitats such as wetlands and riparian woodland,

- Critical habitat for federally listed species,
- Wildlife Movement Corridors and Nursery Sites, and
- City of Redding Tree and Water Resources Protection Ordinances

While the specific plan is currently in its planning stages, it is assumed that no major activities or impacts are planned to occur within the Sacramento River.

2 Methods

This section describes the methods used to complete the biological constraints analysis. Methods include a database and literature review, a field survey, an assessment of plant communities and wildlife habitats and corridors present, an assessment of sensitive habitats and aquatic features present, and a habitat evaluation for special-status species.

2.1 Background Review

Available background information pertaining to the biological resources within the Plan Area was reviewed before conducting field surveys. Information was compiled and subsequently compared to site conditions during field surveys. The following sources were reviewed:

1. CDFW CNDDB for natural communities of special concern that occur within the project region (CNDDB 2023).
2. CNDDB record search for nine quadrangles: Redding, Shasta Dam, Enterprise, Bella Vista, Cottonwood, Balls Ferry, Palo Cedro, Olinda, and Project City (CNDDB 2023).
3. CNPS Rare Plant Program Inventory of Rare and Endangered Plants of California search of nine-quadrangles, including Redding, Shasta Dam, Enterprise, Bella Vista, Cottonwood, Balls Ferry, Palo Cedro, Olinda, and Project City (CNPS 2023).
4. ebird (Cornell Lab of Ornithology 2023) and iNaturalist (2023).
5. Google Earth and Geohub Map Data.
6. National Marine Fisheries Service (NOAA Fisheries) Essential Fish Habitat Mapper for the locations of designated, mapped Essential Fish Habitat and Habitat Areas of Particular Concern (NOAA Fisheries 2023a).
7. NOAA Fisheries ESA Critical Habitat Mapper for the locations of designated critical habitat for federally listed threatened or endangered species under the jurisdiction of NOAA Fisheries (NOAA Fisheries 2023b).
8. United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2023).
9. USFWS Critical Habitat Mapper for the locations of designated critical habitat for federally listed threatened or endangered species under the jurisdiction of the USFWS in the Plan Area (USFWS 2023).
10. USFWS Information for Planning and Consultation (IPaC) tool (USFWS 2023).
11. USFWS National Wetland Inventory (NWI 2023) and San Francisco Estuary Institute (SFEI 2022).
12. Other relevant scientific literature, technical databases, resource agency reports, Federal Register notices, and other information published by USFWS and NMFS to

assess the current distribution of special-status plants and animals in the project vicinity.

2.2 Field Surveys

The project consultant completed a field reconnaissance survey to evaluate the potential for special-status species and other sensitive biological resources to be impacted by the potential build out (e.g., expansion of public uses) in the Plan Area. Todd Easley (MIG Director of Biological Services) conducted field surveys on September 8 and 9, 2023. The surveys evaluated existing conditions and verified previous vegetation mapping and habitat types. Specifically, surveys were conducted to (1) assess existing biotic habitats and plant and animal communities in the Plan Area, (2) assess the Plan Area for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional habitats (e.g., waters of the U.S./state), and other sensitive biological resources. At this planning level a wetland delineation was not necessary to determine the limits of federal jurisdiction. A wetland delineation may be necessary in the future for site specific projects allowed under the Specific Plan.

The islands within the Plan Area were not accessed during the field survey, however riparian scrub was observed via binoculars from the shoreline and bridge.

3 Existing Conditions

3.1 Specific Plan Area Description

The Plan Area is characterized by a mixture of urban, forested, and scrub land cover types that extend along approximately three river miles of the Sacramento River (see Appendix A, figures 1 and 2). The river, shoreline, adjacent riparian habitat, marsh, lakes, and ponds provide excellent habitat for fish and wildlife as well as recreational activities. The Plan Area is located within the Inner North Coast Ranges and Cascade Range Foothills geographic subdivisions (Baldwin et al. 2012) and within the Stillwater-Churn Creek watershed that is tributary to the Sacramento River. Elevations within the Plan Area range from approximately 400 to 700 feet (NAVD88) above sea level (Google Inc. 2023). The average precipitation in Redding is 34.62 inches; the average winter low temperature in the vicinity is 38.1° Fahrenheit, while the average summer high temperature is 93° Fahrenheit (NOAA 2022a).

The Plan Area has a history of intensive excavation and fill operations. Gravel excavation for the construction of Shasta Dam from the Turtle Bay Park West Site occurred from 1940-1944 when 12,200,000 tons of sand and gravel were quarried and sent to build Shasta Dam on a conveyor belt. Over the years, riparian vegetation re-established over the gravel extraction areas in Turtle Bay and now provides wildlife habitat. Lake Shasta, which is the largest reservoir in California, feeds the Sacramento River approximately ten miles upstream from the Plan Area.

The vegetation in Turtle Bay West includes riparian forest and scrub that covers the riverbanks throughout the Plan Area and the peninsula separating Kutras Lake from the river (Figure 3). The forested areas are dominated by cottonwood and mixed riparian forest with some riparian scrub and valley oak forest, as described in section 3.2.

Turtle Bay is a bird sanctuary per Redding Ordinance Chapter 7.24 (Figures 2 and 3). Approximately 195 species of birds have been observed in the Turtle Bay bird sanctuary (eBird, 2023). The Sacramento River has historically supported a plethora of fish and wildlife, including several anadromous species. Special status wildlife species are discussed in section 4.2.

3.2 Existing Land Cover Types, Habitats, and Natural Communities

Vegetation communities were mapped using CDFW's Vegetation Classification and Mapping Program's (VegCAMP) accepted list of vegetation alliances and associations. Specifically, CNDDB Riparian Habitat Data (ds343) along the Sacramento River was used for the Plan Area (CDFW 2023). Descriptions occurring in the project area are based on those contained in Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) and A Manual of California Vegetation (Sawyer et. al 2009). Forest and woodland habitat types were generally mapped as Fremont cottonwood forest and woodland alliance. "Great Valley" vegetation types were classified by Holland and are restricted to areas influenced by the major rivers and tributaries that drain the surrounding uplands in California (Holland 1986; Figure 3).

According to the CNDDB, seven natural communities, habitats, and land cover types occur in the Plan Area: (1) Fremont cottonwood forest and woodland / Great Valley Cottonwood Riparian Forest, (2) Great Valley Mixed Riparian Forest, (3) Great Valley Riparian Scrub, (4) Great Valley Oak Riparian Forest (5) Blackberry Scrub, (6) Giant Reed, and (7) Herbland Cover. The existing natural communities and land cover types in the Plan Area are summarized in Table 1. The land cover distribution within the Plan Area is shown in Figure 3.

Table 1. Summary of Existing Land Cover Types, Habitats, and Natural Communities

Land Cover Types, Habitats, Natural Communities		
Type	***Rank**	**Acres**
Great Valley Cottonwood Riparian Forest	G4- apparently secure/S3- vulnerable	9.51
Great Valley Mixed Riparian Forest	G2- imperiled/S2- imperiled	48.3
Great Valley Riparian Scrub	G3- vulnerable/S3- vulnerable	21.5
Great Valley Oak Riparian Forest	G1- critically imperiled/S1- critically imperiled	2.76
Blackberry Scrub	N/A-Invasive species	1.81
Giant Reed	N/A-Invasive species	0.87
Gravel and Sand Bars	N/A	11.2
Herbland Cover	N/A	2.04
Open Water	N/A	170
Disturbed	N/A	3.04

Land Cover Types, Habitats, Natural Communities		
Type	***Rank**	**Acres**
Developed	N/A	147
Plan Area Total		**418**

Source: CNDDB. *G = global and S = State rank

Each land cover type, habitat, and natural community in Table 1 is described below. Observations made about these land cover types during the reconnaissance-level field survey are also included.

Great Valley Cottonwood Riparian Forest (9.51 acres). Great Valley cottonwood riparian forest is a tall, dense, winter deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and one or more species of willow; typically, Goodding's black willow (*Salix gooddingii variabilis*) (Holland 1986). The understory vegetation is dense and typically includes seedlings and saplings of shade tolerant species such as California box elder (*Acer negundo var. californicum*) and Oregon ash (*Fraxinus latifolia*), as well as cottonwood and willow seedlings and saplings, which was confirmed during the field survey (Appendix B, Photo 3). Vines such as California wild grape (*Vitis californica*) are also common. In general, threats to Fremont cottonwood include reduced water availability (through groundwater pumping), livestock use, hydrologic alterations and irrigation schemes, competition from non-native plants, direct habitat destruction, and other human activities. Invasive plants observed in locations throughout the forest within Turtle Bay West include St. John's wort (*Hypericum perforatum*), Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halepense*), yellow star-thistle (*Centaurea solstitialis*), Himalayan blackberry (*Rubus armeniacus*), glossy privet (*Ligustrum lucidum*), and tree of heaven (*Ailanthus altissima*).

Great Valley Mixed Riparian Forest (48.3 acres). Great Valley Mixed Riparian Forest is a tall, dense, winter-deciduous, broad-leafed riparian forest. According to Holland, the tree canopy usually is closed and moderately to densely stocked with several species including California box elder, Northern California walnut (*Juglans hindsii)*, California sycamore (*Platanus racemosa),* Fremont cottonwood*,* Goodding's black willow*,* red willow (*Salix laevigata)*, and Pacific willow (*S. lasiandra)*. Understories consist of these taxa in addition to shade tolerant shrubs like buttonbush (*Cephalanthus occidentalis)* and Oregon ash. Several long-stemmed, woody vines are conspicuous in both tree and shrub canopies *(*Holland 1986). Invasive plants observed in this habitat within the Plan Area include Bermuda grass, Johnson grass, yellow star-thistle, Himalayan blackberry, glossy privet, bouncing-bet (*Saponaria officinalis*), silver wattle (*Acacia dealbata*), poke weed (*Phytolacca americana*), and tree of heaven. Turtle Bay contained most of the Great Valley Mixed Riparian Forest which was dominated by trees including California sycamore, California box elder, Northern California walnut, Goodding's black willow, black willow (*Salix nigra*)*,* red willow, narrow-leaved willow (*Salix exigua*), desert willow (*Chilopsis linearis*), white alder (*Alnus rhombifolia*), western redbud (*Cercis occidentalis*), toyon (*Heteromeles arbutifolia*), gray pine (*Pinus sabiniana*), interior live oak (*Quercus wislizeni*), and valley oak (*Quercus lobata*). Common plants within the understory included

mugwort (*Artemisia douglasiana*), curlycup gumweed (*Grindelia squarrosa*), sedge (*Carex spp.*), rush (*Juncus spp.*), tufted hairgrass (*Deschampsia cespitosa*), Himalayan blackberry, yerba santa (*Eriodictyon californicum*) Johnson grass, pennyroyal (*Mentha pulegium*), California wild grape, and common mullein (*Verbascum thapsus*). Representative photos are in Appendix B, Photos, 1, 2,13-15, and 26.

Great Valley Riparian Scrub (21.5 acres). Great Valley Riparian Scrub includes several community types dominated by different shrub species, including Buttonbush Scrub, Elderberry, and Great Valley Willow Scrub (Holland 1986). Within the Plan Area riparian scrub is generally dominated by willows such as sand bar willow (*Salix exigua)* and patches of Himalayan blackberry. The understory sometimes included Himalayan blackberry, mulefat (*Baccharis salicifolia*), mugwort, sedge, and rush species. Representative photos are in Appendix B, Photos 6 and 21.

Great Valley Oak Riparian Forest (2.76 Acres). Great Valley Oak Riparian Forest is a medium to tall broad-leafed, winter deciduous, closed-canopy riparian forest dominated by valley oak. Understories include scattered Oregon ash, Northern California walnut, and California sycamore as well as young valley oak (Holland 1986). Plants observed throughout the shady understory included Himalayan blackberry, mulefat, yerba santa, Johnson grass, tufted hairgrass, pennyroyal, California wild grape, common mullein, and patches of sedge and rush. A significant amount of trash was observed within the southern portion of the mapped valley oak habitat in Turtle Bay Park (Appendix B Photo 17). Invasive Himalayan blackberry dominates the understory in Turtle Bay Park (Appendix Photo 18).

Blackberry Scrub (1.81 acres). Blackberry scrub is a dense shrubby thicket dominated by California blackberry (*Rubus ursinus*) and/or Himalayan blackberry (Holland 1986). This habitat type generally has very little understory vegetation other than being dominated by blackberry shrubs. Native or non-native trees could be a co-dominant in the shrub canopy. Shrubs are less than 2 meters, and the canopy is intermittent to continuous (Sawyer et. al 2009). Emergent trees may be present at low cover which include California box elder, Northern California walnut, willows, white alder, western redbud, live oak, and valley oak. Himalayan blackberry was the dominant plant species within the blackberry scrub habitat within Turtle Bay Park, along with non-native grasses in the open areas. The larger area mapped as Blackberry Scrub in the south portion of Turtle Bay Park was previously disturbed when an underground gas pipeline was installed (Appendix B Photo 7).

Giant Reed (0.87 acres). Giant reed (*Arundo donax)* is a tall perennial grass that can form dense stands in riparian areas and wetlands. This species is highly invasive and can out-compete native plants for resources (e.g., water and light) (Cal-IPC 2023). Some trees may be present, including Fremont cottonwood or willow species. Emergent shrubs may be present, including mulefat or buttonbrush within a giant reed herbaceous semi-natural alliance (Sawyer et al. 2009). Within the Plan Area giant reed was historically located on the island at the south end of the Plan Area and portions that are difficult to access. Giant reed was not observed during the site survey due to the restricted access; however, it may still be present in the Plan

Area. Giant Reed disperses or relocates downstream by rhizomes, and it is possible that the higher water flows last winter changed this location.

Gravel and Sand Bars (11.2 acres). Gravel and Sand Bars covered approximately 11.2 acres of the Plan Area at the time of the mapping, however this land cover is subject to change in location and size based on the flows of the Sacramento River. Gravel is essential for salmon and steelhead trout spawning; however, the Shasta Dam restricts the flow of sand and gravel into the Plan Area. For the month of September 2023, the Shasta Dam released from 7,901 – 6,343 cubic feet/second (cfs) of water, which resulted in the highest flow since 2019 (BoR 2023). As previously noted, gravel mining from the Plan Area occurred to build the Shasta Dam. Figure 4 shows the location of the historical gravel pit in the Turtle Bay Park and locations of other soil types containing gravel and/or sand. The historical gravel pit is not included in the 11.2 acres because it now supports riparian forest and disturbed habitat (walking area/trail, signage, and weedy), nonetheless the underlying soil could be primarily sand and gravel. Examples of Gravel and Sand Bars within the Plan Area are in Appendix B, Photos 4 and 5.

Herbland Cover (2.04 acres). Herbland Cover is often low growing and dominated by perennial herbs such as sedges and grasses (CNPS 2023). Within the Plan Area it is adjacent to riparian scrub, riparian forest, and valley oak forest (Figure 3). There are two patches of herbland cover mapped in the Planning Area. The western patch contains an approximate 10-foot-wide walking trail and one area just off the trail had weeds and piles of cut vegetation for removal (Appendix B, Photos 26 and 27). The area may be cleared regularly to control weeds. Herbland Cover within the Plan Area was dominated by dove weed (*Croton setigerus*), yerba santa, and non-native grasses. Invasive plants observed in these areas include Bermuda grass, Johnson grass, yellow star-thistle, blackberry, and Japanese honeysuckle (*Lonicera japonica*).

Open Water (170 acres). Open water includes the Sacramento River and its associated ponds and lakes, including Kutras Lake off Park Marina Drive. The area just north of Highway 44 and adjacent to riparian scrub in the Turtle Bay Duck Pond Wildlife view area could be classified as freshwater marsh rather than open water due to the amount aquatic vegetation such as cattails in the area (Appendix B, Photo 6). This could be re-mapped during a project specific wetland delineation. Refer to Figure 3 for mapped locations of open water and Appendix B, Photos 13-16 and 19-21.

Disturbed (3.04 acres). Disturbed habitat is primarily composed of early successional or ruderal plant species such as non-native vegetation and other weedy species including non-native invasive plant species. Disturbed habitat is land that has been permanently altered by previous human activity, including grading, repeated clearing, intensive agriculture, vehicular damage, trails, or dirt roads. The disturbed habitat within the study area consists of areas cleared of vegetation, trails (approximately 10-foot wide), signage, park benches and/or areas dominated by nonnative plant species. Invasive species such as yellow star thistle were observed in these areas. (Appendix B, Photo 8). Small portions of mapped forest and Herbland Cover within the Plan Area could be considered disturbed habitat based on the description above.

Developed (147 acres). Developed landcover consists of buildings, paved streets/roads/parking, landscaping, paved or gravel trails, a vehicle bridge (Highway 44) and a pedestrian bridge (Sundial bridge) (Appendix B, Photos 9-12). Developed land cover within the Plan Area includes the rodeo grounds, hotels, gas station, golf facility, health club, RV park, office space, the Kutras Park Marina, and other businesses in the south portion of the Plan Area, along with access roads and parking. Due to the scarcity of vegetation, the developed portions of the Plan Area provide relatively low-quality habitat for wildlife species. However, many wildlife species that occur in the adjacent habitat likely move through developed areas to neighboring habitats. The wildlife most often associated with developed areas are those that are urban-adapted species tolerant of human disturbance.

An exception to the scarcity of vegetation is Paul Bunyon Forest Camp, which was heavily vegetated, wooded, and appears to provide good habitat for wildlife. It is possible that this area was mapped as landscaped/developed because it was revegetated with a mix of forested species including pines and redwood. Currently, much of the forest camp could be re-mapped to a type of mixed forest. Paul Bunyon Forest Camp was not accessed due to fencing (Appendix B, Photos 9-10).

3.3 Soils

The Plan Area is underlain by five soil types or map unit descriptions (Figure 4): Cobbly Alluvial Land, Gravel Pits, Reiff Fine Sandy Loam, Reiff Loam, and river-wash (NRCS 2023a). The soils were mapped on flat land with 0 to 3% slopes. These soil types are typically associated with floodplains and soil map units are classified as “excessively” to “well-drained”. “Riverwash” is listed as hydric on the National Hydric Soils List for Shasta County (NRCS 2022b). Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils and their associated component landforms are found within basin floors, basin rims, alluvial fans, fan aprons, or sloughs. Although soil survey information can be used for planning, onsite investigation of soil types is needed to confirm and precisely map the soil types.

3.4 Aquatic Resources

Wetlands and Waters of the U.S. The Plan Area contains several habitat types and aquatic resources that may be jurisdictional. Because this is a dynamic system, the specific acreages may change. Any project proposed in the future in the Plan Area should be subject to a jurisdictional delineation and may be required to identify and mitigate impacts to wetlands and waters as part of the regulatory process. The USFWS National Wetlands Inventory (NWI) provides information on the abundance, characteristics, and distribution of wetlands, based on a review of aerial photographs. The California Aquatic Resources Inventory (CARI) was also reviewed for data accuracy (SFEI 2022). Waterbodies and wetland features that have been mapped either in or near the Redding Riverfront Plan Area include freshwater forested/shrub wetland, freshwater pond, lake, and riverine. Major wetland types, waterbodies and soils in the Plan Area are shown in Figure 4. The USFWS Wetland Inventory (1996 national list) defines Fremont cottonwood as a facultative wetland plant and willows as facultative or obligate wetland

plants. The Plan Area has rushes and sedges within the forest understory which are obligate wetland plants and indicators that a wetland could be present. A wetland delineation would need to be performed to determine if all three wetland parameters (i.e., plants, hydric soils, and evidence of hydrology) are present for specific project locations and impacts.

Lakes and Ponds. Kutras Lake is an approximate 58-acre lake located just east of Kutras Park. There is also an 18-acre lake approximately 700 feet north of Kutras Lake. Refer to Appendix B, Photos 19-24 for representative photos of Plan Area ponds/lakes. According to the NWI, the lake habitat is classified as L1UBHx which is Lacustrine (L), Subsystem Limnetic (1), Class Unconsolidated Bottom (UB), Water Regime Permanently Flooded (H), and Special Modifier Excavated (x) which is used to identify wetland basins or channels that were excavated by humans (NWI 2023). Refer to Figure 4 for the locations of specific wetlands and soil types.

4 Potential Biological Constraints

This section evaluates the potential impacts to biological resources due to future development in the Plan Area and identifies conservation measures that can reduce adverse impacts. Also provided are conceptual conservation measures and Best Management Practices (BMPs) that would avoid or reduce potential adverse impacts.

4.1 Special Status Species

Impacts to special-status species could occur from development facilitated by the Specific Plan. This could have a substantial adverse effect, either directly through habitat modifications, or indirectly through the increases in human use, noise, and lighting that effects adjacent habitats. The following sections describe the potential impacts to species and their habitats. The list of species reviewed and their probability to in the Plan Area is provided in Appendix C, Table 2.

Certain plant and wildlife species are protected by state and federal laws. These are summarized below.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under FESA. FESA has the following four primary components: (1) provisions for listing species, (2) requirements for consultation with the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), (3) prohibitions against "taking" (i.e., harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". FESA also discusses recovery plans and the designation of critical habitat for listed species.

Both the USFWS and NOAA Fisheries share the responsibility for administration of FESA. Section 7 requires federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Non-federal agencies and private entities can seek authorization for take of federally listed species under Section 10 of FESA, which requires the preparation of an HCP.

U.S. Migratory Bird Treaty Act

The U.S. Migratory Bird Treaty Act (MBTA; 16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) states it is "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof…" In short, under MBTA it is illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. The USFWS enforces MBTA. The MBTA does not protect some birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA.

California Endangered Species Act

The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) generally parallels FESA. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by regulations. "Take" is defined in Section 86 of the California Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition differs from the definition of "take" under FESA. CESA is administered by CDFW. CESA allows for take incidental to otherwise lawful projects but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

California Fish and Game Code Sections 1600-1607

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration application be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions in the application and, if necessary,

prepares a Lake or Streambed Alteration Agreement (LSAA or SAA), that includes measures to protect affected fish and wildlife resources.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code sections 1900 to 1913). The NPPA is administered by CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take." CDFW maintains a list of plant species that have been officially classified as endangered, threatened, or rare. These special-status plants have special protection under California law and projects that directly impact them may not qualify for a categorical exemption under CEQA guidelines.

Fully Protected Species and Species of Special Concern

The classification of California fully protected (CFP) species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (§5515 for fish, §5050 for amphibian and reptiles, §3511 for birds, §4700 for mammals) deal with CFP species and state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species" (CDFW Fish and Game Commission 1998). "Take" of these species may be authorized for necessary scientific research. This language makes the CFP designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with CFP species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species. On July 10, 2023, Governor Newsom signed Senate Bill 147, which allows for permits to take "fully protected" species for certain renewable energy and infrastructure projects (e.g., critical regional or local water agency infrastructure, and certain transportation projects). This law now establishes a permitting process for these species. Under this new law, all permits must be processed pursuant to provisions in the CESA that authorize CDFW to issue incidental take permits and require permittees to minimize and fully mitigate impacts to the species. The law also requires permittees to satisfy "conservation standards" that require permittees to exceed typical minimization and mitigation measures associated with permits under CESA.

California species of special concern (CSSC) are broadly defined as animals not listed under FESA or CESA, but which are nonetheless of concern to CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA, and cumbersome recovery efforts that might ultimately be required. This designation is also intended to stimulate collection of additional information on the ecology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

Nesting Birds

Nesting birds, including raptors, are protected under California Fish and Game Code Section 3503, which reads, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” In addition, under California Fish and Game Code Section 3503.5, “it is unlawful to take, possess, or destroy any birds in the orders 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”. Passerines and non-passerine land birds are further protected under California Fish and Game Code 3513. As such, CDFW typically recommends surveys for nesting birds that could potentially be directly (e.g., actual removal of trees/vegetation) or indirectly (e.g., noise disturbance) impacted by project-related activities. Disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.

Non-Game Mammals

Sections 4150-4155 of the California Fish and Game Code protects non-game mammals, including bats. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission”. The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as a non-game mammal and are protected under the California Fish and Game Code, in addition to being protected if they are a listed species (e.g., CSSC, CFP, state or federal threatened, or state or federal endangered).

Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of limited distribution in the region, or are of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by the CDFW (i.e., CNDDB) or the USFWS. The CNDDB identifies many natural communities as rare, which are given the highest inventory priority (CNDDB 2024, CDFW 2024).

4.1.1 Special-Status Plants

The CNPS (2023) and CNDDB (2023) databases identify 37 special-status plant species as potentially occurring in the nine 7.5-minute quadrangles containing and/or surrounding the Plan Area (see Appendix C). All 37 of those potentially occurring special-status plant species were determined to have a low potential to occur or are absent from the Plan Area for at least one of the following reasons: (1) a lack of specific habitat (e.g., vernal pools) and/or edaphic requirements (e.g., serpentine soils) for the species in question, (2) the geographic range and

elevation of the species does not overlap the Plan Area, (3) the species is known to be extirpated from the site vicinity, (4) a viable seed bank is unlikely to be present due to historic and contemporary soil alterations of the area and/or (5) there is limited suitable habitat and/or the species is not known to occur within the vicinity of the Project Area based on CNDDB records and other available documentation. The basis for the determination of probability to occur in the Plan Area is included in Appendix C. A protocol level special-status plant survey would need to be done to determine if special-status plants are present.

4.1.2 Special-Status Animals

Special-status animal species include species that are (1) listed as threatened or endangered under the state or federal endangered species acts; (2) proposed for listing as threatened or endangered; (3) identified as state or federal candidates for listing as threatened or endangered; and/or (4) identified by CDFW as Species of Special Concern or California Fully Protected Species. The CNDDB (2023) and USFWS IPaC identified 39 special-status animal species as potentially occurring in the nine 7.5-minute quadrangles containing and/or surrounding the Plan Area. Based on a review of the USFWS and CNDDB databases (IPac 2023, CNDDB 2023) and other data sources, and an assessment of the habitats within the Plan Area, many special-status species occur within the Plan Area region. Special-status species that are not expected to occur in the study area 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 were excluded from the analysis. The basis for the determination of probability for special status animals to occur in the Plan Area is included in Appendix C, Table 2.

Special Status Fish

Twelve special-status fish species have documented occurrences or have the potential to occur within the Plan Area. Most of these fish are anadromous and require clean, unrestricted flows to complete their life cycle. The Sacramento River provides habitat for many of these species. There has been a joint effort by local, state, and federal entities to enhance the Sacramento River's ecosystem with the salmon spawning gravel project by depositing over 21,000 tons of gravel into the Sacramento River system, creating essential spawning habitats for both salmon and trout in the river's upper reaches and tributaries. The following special-status fish species have a high probability of occurrence or are known to be present in the Plan Area.

Green sturgeon (*Acipenser medirostris* pop. 1) – southern DPS. Federal Listing Status: Threatened; State Listing Status: None. Green Sturgeon can live to 70 years old and grow to over 8 feet in length, with females growing larger than males (Moyle 2002). The species is anadromous, migrating in March-June from seawater into the freshwater reaches of larger coastal rivers to spawn. They do not die after spawning and are capable of repeated migrations every 2 to 6 years. Green Sturgeon spawn in cool, deep, swift flowing river reaches over gravel and cobble bottoms. They primarily spawn in the upper mainstem of the Sacramento River (CDFW 2023b). However, they are not known to spawn as far north as the Plan Area. Some adults exit the river rapidly after spawning, but many over-summer in deep pools and leave with

the onset of winter rainstorms (Moyle 2002). Southern DPS Green Sturgeon are found in the Sacramento and San Joaquin rivers and Delta. CNDDB documented a historical green sturgeon spawning reach on the Sacramento River from the Highway 32 Bridge near Hamilton City to the Anderson-Cottonwood Diversion Dam in Redding. Threats to green sturgeon include altered flood/tidal/hydrologic regime, barriers due to dams, insufficient population size, over-collecting/poaching, and surface water diversion (CNDDB 2023).

Steelhead (*Oncorhynchus mykiss irideus* pop. 11) - Central Valley DPS. Federal Listing Status: Endangered; State Listing Status: None. Historically, steelhead runs occurred in many streams and rivers, including the Sacramento River. However, passage barriers such as dams within the Sacramento River and tributaries preclude passage through these watersheds. These barriers preclude upstream migration or outmigration of resident/non-anadromous rainbow trout, which are known to occur in the upper reaches of the Sacramento River watershed (Leidy et al 2005, SCBWMI 2001). Threats include altered flood/tidal/hydrologic regime, channelization, warm water temperatures in low flow years; dam/inundation, degraded water quality, pollution, surface water diversion, and waterway bank protection/maintenance (CNDDB 2023). Sulphur Creek, located just north of the Plan Area, drains into the Sacramento River approximately 200 meters east of the Sundial Bridge. The Anderson Cottonwood Canal is located just west of the Plan Area. Sulphur Creek, Anderson Cottonwood Canal, and the Sacramento River are designated critical habitat for steelhead trout. Figure 5 shows critical habitat within Plan Area. Steelhead require gravel bottomed and well oxygenated rivers (e.g., Sacramento River) and streams such as Sulphur Creek and Clear Creek (south of the Plan Area) for spawning and rearing habitat. River and stream restoration for steelhead have occurred in these watersheds including in the Sacramento River within the Plan Area.

Chinook salmon *(Oncorhynchus tshawytscha*) - Sacramento River winter-run ESU; Federal status: Threatened; State status: California Species of Special Concern. Central Valley spring-run ESU; Federal status: Threatened; State status: Threatened. Historically, Sacramento River winter-run Chinook salmon migrated to the headwaters of the Sacramento, Pit, and McCloud rivers, as well as Battle Creek in Tehama County. All historical spawning habitat is now upstream of major dams, however the one remaining population spawns in the mainstem Sacramento River immediately downstream of Keswick Dam near Redding in Shasta County (Caltrout 2023). Sacramento River winter-run Chinook salmon are known to occupy the Sacramento River from Keswick Dam downstream into the Plan Area (CNDDB 2023). Winter-run juveniles appear to occupy fresh water year-round, and generally prefer temperatures between 10- 16°C (50-61°F). Fry emerge from redds from July to mid-October and juveniles feed for five to ten months before migrating downstream in January through April during the first high flows of the rainy season, moving mostly at night to avoid predators (Caltrout 2023). Threats include altered thermal regime, warm water temperatures in low flow years, dam/inundation, insufficient population/stand size, and surface water diversion (CNDDB 2023). Sacramento River winter-run Chinook salmon as well as other populations (i.e., Chinook salmon Central Valley spring-run ESU and Central Valley fall/late-fall-run ESU) are known to occur in the Plan Area.

Birds

Mature trees within the Plan Area provide suitable nesting habitat for bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus carolinensis),* red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*) and other raptors. A large inactive nest was observed in a cottonwood tree in Turtle Bay Park during the field survey. The large trees in Turtle Bay Park provide excellent nesting habitat for raptors and the riparian vegetation attracts a variety of bird species. The following special-status bird species have a high probability of occurrence or are known to be present in the Plan Area.

Bald eagle. **Federal Listing Status: Delisted; State Listing Status: Endangered**. Bald eagles may be found throughout most of California in winter at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. The State's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers (CDFW 2023b). Most breeding territories are in northern California where the breeding season generally lasts from about January through August. Typically, eagles build large stick nests in the upper canopy of the tallest trees in the area. The adults may repair the same nest annually, increasing its size over time, or they may build a new nest in their territory. In many cases, the territory of a pair of eagles may include several nests in addition to the one they most recently used (CDFW 2023b). Bald eagles have historically occupied the Plan Area along the Sacramento River at Turtle Bay Bird Sanctuary. In 2005, an active nest was observed in a cottonwood tree where young eagles had fledged in 2006 and 2007 (CNDDB 2023). A bald eagle was documented to nest in the Turtle Bay Bird Sanctuary in winter 2023 (eBird 2023).

Bank swallow (*Riparia riparia*). Federal Listing Status: None; State Listing Status: Threatened. Bank swallows breed in colonies and build nests by tunneling into sandbanks. They can be found over open habitat including fields, marshes, and ponds, often in mixed flocks with other species of swallows. Two bank swallows were recorded within the Turtle Bay Bird Sanctuary in 2018 and at other sites adjacent to the Plan Area within the last few years (eBird 2023).

Osprey (*Pandion haliaetus*). Federal Listing Status: None; State Listing Status: Watch List. Osprey is a watch list species which was previously a species of special concern (SSC) but does not currently meet SSC criteria. Watch list species have conservation concerns and a need for additional information to clarify status. Osprey habitat includes shallow water where fish are plentiful, including rivers, lakes, reservoirs, lagoons, swamps, and marshes. They often build nests on small islands or structures over bodies of water for protection from predators. Manmade structures such as power poles and other stable structures are common nesting sites. Osprey have been recorded within the Turtle Bay Bird Sanctuary and other sites adjacent to the Plan Area within the last few years and as recent as August 2023 (eBird 2023). Shallow portions of the Sacramento River within the Plan Area are ideal habitat for Osprey.

Tricolored blackbird (***Agelaius tricolor***). **Federal Listing Status: None; State Listing Status: Threatened**. Tricolored blackbirds are typically found in marshes and adjacent fields and are known to breed in colonies. They are undergoing significant population decline due to

habitat loss. Tricolored blackbird was documented in 2022 within the Plan Area (i.e., Kutras Lake) (eBird 2023) and have also been documented in and around Clear Creek near the Plan Area (CNDDB 2023).

Yellow-breasted chat (*Icteria virens*). Federal Listing Status: None; State Listing Status: California Species of Special Concern. Yellow-breasted chat typically occurs in riparian woodland/scrub with dense undergrowth. They are known to occur within the riparian habitat in the Plan Area and were recently documented in the Turtle Bay Sanctuary (eBird 2023). Destruction of riparian woodlands by development, other human activities, and brown-headed cowbird parasitism have contributed to the decline of the species (Shuford and Gardali 2008). Brown-headed cowbirds were observed in the Turtle Bay Bird sanctuary during the field surveys on September 8 and 9, 2023.

Yellow Warbler (*Setophaga petechia*). Federal Listing Status: None; State Listing Status: California Species of Special Concern. Suitable yellow warbler breeding habitat consists of moist riparian corridors, often dominated with an overstory of mature cottonwoods (*Populus* spp.), western sycamores (*Platanus racemosa*), a midstory willow (*Salix* spp.), and a dense shrub understory (Bousman 2007). Yellow warblers are known to occur in the riparian habitat within the Plan Area (eBird 2023) and were documented in Turtle Bay during the field surveys on September 8 and 9, 2023. This species is declining due to the loss of riparian habitat and because of nest parasitism by brown-headed cowbirds (Zeiner et al. 2005), which were also observed present during the field surveys.

Invertebrates

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus),* Federal Listing Status: Threatened; State Listing Status: None. The valley elderberry longhorn beetle got its name from its dependence on its host plant, elderberry (*Sambucus spp.)*, for food and reproduction (USFWS 2023c). Suitable habitat consists of elderberry shrubs with stems one inch or greater at ground level (USFWS 2023c). Females lay their eggs on the bark of the elderberry shrub, then larvae hatch and burrow into the stems. Larvae take one to two years to emerge as adults and only live from a few days to a few weeks after emerging (up to 3 weeks lifespan) (USFWS 2023). Historical records indicate valley elderberry longhorn beetle occurred adjacent to the Redding Riverfront at the Turtle Bay East fishing access (CNDDB 2023). The occupied habitat consisted of disturbed riverine habitat with five blue elderberry (*Sambucus mexicana*) clumps present (CNDDB 2023). Significant impacts on valley elderberry longhorn beetle may result from the direct removal of shrubs or soil disturbance. A focused valley elderberry longhorn beetle survey would be required to determine if it occurs in the Plan Area.

Bats

Many bats including Western red bat (*Lasiurus frantzii*) (SSC), Townsend's big-eared bat (*Corynorhinus townsendii*) (SSC), pallid bat (*Antrozous pallidus*) (SSC), spotted bat (*Euderma maculatum)* (SSC), silver-haired bat (*Lasionycteris noctivagans),* hoary bat (*Lasiurus cinereus*) (SSC), and Yuma myotis (*Myotis yumanensis*) have been documented within the quadrangles

containing and/or surrounding the Plan Area. These bat species roost in suitable cavities such as on structures and in tree crevices. Within the Plan Area, trees within the riparian corridor and bridges provide suitable roosting habitat for colonially roosting bat species such as the western red bat, Townsend's big-eared bat, pallid bat, and spotted bat, as well as several non-special-status bats that are protected by the California Fish and Game Code as nongame mammals. Refer to Section 4.7 and Appendix 3, Table 2 for more details on bats and their potential to occur within the Plan Area.

Amphibians and Reptiles

Northwestern Pond Turtle (*Actinemys marmorata*). Federal Listing Status: Proposed Threatened; State Listing Status: California Species of Special Concern. Western pond turtles occur in ponds, streams, and other wetland habitats in the Pacific slope drainages of California (Bury and Germano 2008). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and they do not commonly occur along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded areas. Juveniles occur in shallow aquatic habitats with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 feet of aquatic habitat, but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest (Jennings and Hayes 1994). Populations of western pond turtles are in decline due to disease, upland and aquatic habitat alterations and destruction, and the introduction of predators such as bullfrog and introduced warm freshwater fish, which prey on small juvenile turtles (USFWS 2015). Pond turtles have been historically documented within and just outside the Plan Area (CNDDB 2023, iNaturalist 2023). The ponds/lake (e.g., Kutras) south of Highway 44 provide suitable habitat for pond turtle, however Turtle Bay Exploration Park and the Sacramento River no longer provide good habitat for pond turtles due to the high-water release of the Shasta Dam resulting in colder water.

Foothill yellow-legged frog - population 1 North Coast Distinct Population Segment (DPS) (*Rana boylii*). Federal Listing Status: None; State Listing Status: California Species of Special Concern. The foothill yellow-legged frog occurs in a wide variety of vegetation types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral and wet meadows. The frog is closely associated with streams and is rarely observed far from the water's edge. Breeding stream habitat is typically shallow, rocky, and at least partially exposed to direct sunlight (USFWS 2023 d). Occurrences of foothill yellow-legged frog are documented within five miles of the Plan Area such as off Highway 299 East and in the Whiskeytown-Shasta-Trinity Recreation Area (CNDDB 2023).

Potential Impacts. Development and activities facilitated by the Plan could occur in proximity to areas where there are known occurrences of special-status species and/or their habitats. This could have adversely affect, either directly or through habitat modifications, candidate, sensitive, or special-status species and is therefore considered a potentially significant impact. Work adjacent to the sensitive habitats could result in injury or mortality of special status species due to equipment, vehicle traffic, and foot traffic. Impacts on fish and wildlife from construction

related disturbances include increased sedimentation and turbidity, release of contaminants into surrounding waterbodies (e.g., stormwater outfall), noise disturbance, increased lighting, increased potential for bird strike, and reduction of habitat quality. Increases in sedimentation, chemicals, and turbidity could also affect the fish in the Plan Area. Increased turbidity levels may affect fish and other wildlife by altering their physiology, behavior, and habitat, all of which may lead to physiological stress, reduced survival rates, and reduced population numbers (Bash et al. 2001). Direct removal of blue elderberry bushes could impact the Valley elderberry longhorn beetle.

Potential Conservation Measures. Measures for impacts on special-status species may include Best Management Practices (BMPs) such as erosion control devices (e.g., straw wattles, silt fence), installation of temporary wildlife exclusion fencing along the limits of disturbance, worker environmental awareness training, preconstruction surveys, and biological monitoring by a qualified biologist. Compensatory mitigation for impacts to special- status species or their habitat could also be required. Compensatory mitigation may include restoration within the Sacramento River such as the salmon spawning gravel project, planting of blue elderberry for Valley elderberry longhorn beetle, and/or the removal of invasive species such as Himalayan blackberry, yellow star thistle, giant reed, brown headed cowbirds, and bull frog. These measures would likely also be conditions of the wildlife agencies' approval for work in the watershed and riparian habitats.

4.2 Sensitive and Regulated Habitats

Impacts to riparian habitat, sensitive natural communities, and wetlands including state or federally protected wetlands could occur through direct removal, filling, hydrological interruption, or other means by development and activities facilitated by the Specific Plan. This could have a substantial adverse effect, either directly or indirectly on these habitats.

4.2.1 Sensitive Natural Communities/Riparian Habitat

Sensitive Natural Communities and Vegetation Alliances. Sensitive natural communities are vegetation types, associations, or sub-associations that support concentrations of special-status plant and/or wildlife species, are of relatively limited distribution, and/or are of value to wildlife (CDFG 2007). Natural communities are evaluated using NatureServe's Heritage Methodology, the same system used to assign global and state rarity ranks for plant and animal species in the CNDDB (Faber et al. 2012). Evaluation is done at both the global (full natural range within and outside of California) and state (within California) levels resulting in a single G (global) and S (State) rank ranging from 1 (very rare and threatened) to 5 (demonstrably secure). According to the CDFW Vegetation Program, natural communities with state ranks of S1-S3 and certain other specified associations are considered imperiled, and thus, potentially of special concern.

Five CDFW classified sensitive natural communities are reported to occur within the USGS Redding quad and/or eight surrounding 7.5-minute series quadrangles (Shasta Dam, Enterprise, Bella Vista, Cottonwood, Balls Ferry, Palo Cedro, Olinda, and Project City) (CNDDB 2023). These communities are classified as Great Valley Cottonwood Riparian Forest (Rank G4

apparently secure/S3 *vulnerable*), Great Valley Mixed Riparian Forest (G2 *imperiled*/S2 *imperiled*), Great Valley Valley Oak Riparian Forest (Rank G1 *critically imperiled*/S1 *critically imperiled*), Great Valley Willow Scrub (G3 *vulnerable*/S3 *vulnerable*), and Northern Basalt Flow (G3 *vulnerable*/S2 *imperiled*), which is associated with vernal pools (Holland 1986). Of these, the Great Valley Valley Oak Riparian Forest has the highest sensitivity rating, followed by the Great Valley Mixed Riparian Forest and the Northern Basalt Flow.

The riparian woodland within the Redding Riverfront and around the Sacramento River Trail is mapped as Fremont Cottonwood Forest and Woodland Alliance as defined by CDFW's Vegetation Classification and Mapping Program (VegCAMP) (CDFW 2023). This alliance is ranked as G4 *apparently secure*/S3 *vulnerable*. CNDDB (Riparian Habitat Data ds343) mapped the following sensitive natural communities within the Plan Area: Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian, Great Valley Valley Oak Riparian Forest, and Great Valley Willow Scrub (Figure 3). CDFW considers riparian communities to be sensitive because they provide important ecological functions and values. Refer to section 3.2 for a description of the sensitive natural communities in the Plan Area.

Potential Impacts. Specific Plan projects may have a substantial adverse effect on 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. Impacts to riparian habitat and sensitive natural communities could result from direct removal, root damage, and temporal loss. Additionally, if the project includes new impervious surfaces that increase stormwater runoff into the Sacramento River or surrounding riparian vegetation, there is potential for the project to impact water quality if it contains harmful pollutants like trash, chemicals, and soil/sediment. Impacts to water quality and riparian areas may in turn adversely affect wildlife.

Potential Conservation Measures. Measures to reduce impacts to riparian habitat and sensitive natural communities may include preconstruction surveys and planning, BMPs such as erosion control devices (e.g., straw wattles, silt fence), and the installation of temporary fencing along the limits of disturbance, worker education, and biological construction monitoring. If permanent impacts to riparian and other sensitive habitats occur (e.g., loss of habitat), the impacts will trigger a requirement for regulatory permits, and compensatory mitigation will be required as a condition of the regulatory permits. Compensatory mitigation for impacts to jurisdictional/sensitive habitats may be achieved through creation, restoration, and/or enhancement of such habitat either on-site or in a suitable off-site location. The extent of mitigation would be determined based on the extent of the impact and the quality of the impacted habitat relative to the activity. Additionally, long-term monitoring may be required. Alternatively, there may be an option to purchase credits from a conservation bank or an in-lieu fee program, which involves the restoration, establishment, enhancement and/or preservation of habitat through funds paid to a government or non-profit natural resources management entity.

4.2.2 Wetlands and Other Waters

The implementation of the Specific Plan could have a substantial adverse effect on state or federally protected wetlands and waters through direct removal, filling, hydrological interruption, or other means. Figure 4 shows different wetland types and their potential location within the Plan Area. A formal jurisdictional delineation would be required to determine the extent and the precise location of state and federal jurisdictional wetland habitat. Areas that require jurisdictional delineation are indicated in Figure 6. Delineations are done at the project stage, so they reflect current conditions.

Waters of the U.S./State and California Department of Fish and Wildlife Regulated Habitats. The U.S. Army Corps of Engineers (USACE) regulates waters of the U.S. under Section 404 of the Clean Water Act (CWA), and the Regional Water Quality Control Board (RWQCB) regulates waters of the state under Section 401 of the CWA, and under the State Porter Cologne Water Quality Control Act. The USACE and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into "Waters of the United States" or WOTUS, under Section 404 of the CWA (33 USC 1344). In response to the ruling in Sackett v. EPA (2023), the USACE and EPA issued a revised definition of the WOTUS (i.e., the Conforming Rule of 2023), which excludes many types of waterways and wetlands, and relies on continuous surface flows to navigable waters in determining if wetlands or tributaries are jurisdictional under the CWA.

Activities in WOTUS regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into WOTUS, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Anytime a Section 404 permit is obtained, Section 401 of the CWA (33 U.S.C. 1341) requires an applicant to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The EPA has delegated responsibility for the protection of water quality in California to State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCBs), and the State Portor Cologne Water Quality Control Act. Any permit issued by the USACE must have a water quality certification before it is valid.

The intent of the Porter-Cologne Water Quality Control Act (Porter-Cologne) is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as "waters of the State," include isolated waters that are not regulated by the USACE. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the state are required to comply with the terms of the Water Quality

Certification Program. If a proposed project does not require a federal license or permit, any person discharging, or proposing to discharge, waste (e.g., soil) to waters of the State must file a Notice of Intent (NOI) or a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

The Sacramento River meets the definition of waters of the U.S/state and any impacts on waters and associated habitats would likely be subject to jurisdiction by the USACE, RWQCB, and CDFW (see below). Within the Plan Area, WOTUS include the channel of the Sacramento River up to the ordinary high-water mark (OHWM). The USACE defines the OHWM as “the line on the shore that is established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas”. Waters of the state include the same features regulated by the USACE but also extend to the top of bank (TOB) and sometimes beyond. RWQCB may assume jurisdiction to the outer drip line of the riparian canopy outside of the TOB, which parallels CDFW’s jurisdiction (see below) depending on potential project impacts to water quality. The jurisdictional limits of RWQCB for a given project is based on a review of the vegetation communities, other land cover types, and the project description, and takes into consideration impacts to RWQCB-defined beneficial uses.

Given the proximity of the wetlands and ponds to the Sacramento River, most of the features mapped as freshwater wetland and pond appear to be "connected" to the river by riverwash, which is defined as material deposited by the movement of water or impoundments of WOTUS. Most of these ponds and lakes are likely impoundments since they are surrounded by berms. The OHWM may or may not include the riverwash sections since some sections may be from 5-year flood intervals or from 1-year flood intervals. The USACE will likely take jurisdiction of all wetlands and ponds that are connected to the river by riverwash since they will likely be considered adjacent to a Traditionally Navigable Water, or these features are impoundments of WOTUS. That said, the definition of WOTUS can change in response to court decisions and could be different at the time of specific plan development.

The California Fish and Game Code includes regulations governing the use of, or impacts to many of the state’s fish, wildlife, and sensitive habitats, including the bed and banks of rivers, lakes, and streams. The Sacramento River, including the bed and banks up to the outer limits of the riparian canopy which extends beyond the TOB, are subject to CDFW jurisdiction under Section 1600 et seq. of the California Fish and Game Code. All wetlands, ponds, lakes, and riparian vegetation are considered CDFW jurisdictional and may be RWQCB jurisdictional. The RWQCB may take jurisdiction up to the 100-year flood plain and would likely request a hydraulic study that models flood intervals up to the 100-year event to be included in any permit package. CDFW also reviews projects through the CEQA process and may require mitigation for impacts to natural resources beyond the TOB and riparian vegetation.

Potential Impacts. Specific Plan projects may have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Any impacts (permanent or temporary) to features regulated by the USACE, RWQCB,

and CDFW would necessitate permits from those agencies, and those permits may include additional conditions to mitigate the loss of WOTUS, waters, and associated sensitive habitats (as discussed above).

The Natural Resources Element of the General Plan Update contains policies that address potential impacts to wetlands: Policy NR5A, which directs the City to work to preserve the Sacramento River; Policy NR5B which calls for the preservation of watercourses, vernal pools, riparian habitat, and wetlands in their natural state to the extent feasible; and Policy NR5C which encourages the acquisition, preservation, restoration, and enhancement of native vegetation with a focus on wetlands and riparian habitat that will improve the biological value and integrity of the City's natural resources. Additionally, impacts to wetlands that occur in the Plan Area will require mitigation (no net loss) to offset the impacts.

Potential Conservation Measures. If permanent impacts to waters of the U.S./state occur, compensatory mitigation may be required as a condition of state and/or federal regulatory permits. Compensatory mitigation for impacts to jurisdictional waters may be achieved through creation, restoration, and/or enhancement of such habitat either on-site or in a suitable off-site location. The mitigation or mitigation ratios (i.e., the ratio of mitigation lands to impact areas, expressed in terms of acreage) would be determined based on the extent of the impact and the quality of the impacted habitat relative to the mitigation activity. There is also an option to purchase credits from a mitigation bank or in-lieu fee program, which compensates for the impacts and satisfies agency requirements.

A hydrological study may be required depending on the location and type of potential impacts. If the project design does not alter the hydrology of the Sacramento River, or adversely affect the movement of native wildlife, or adversely impact any special-status species or sensitive plant communities, the regulatory agencies may accept design measures incorporated into the project as mitigation for impacts to jurisdictional waters or riparian habitat (e.g., native plantings, impervious surfaces, and removal of invasive species) provided that the habitat is restored at an accepted ratio.

4.3 Critical Habitat, Wildlife Corridors and Nursery Sites

Critical habitat is defined in the federal Endangered Species Act as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. As shown in Figure 5, there is designated critical habitat for green sturgeon, Chinook salmon, and steelhead in the Sacramento River portion of the Plan Area (NOAA 2023a).

Wildlife movement corridors provide linkages for animals through a variety of habitat types across the landscape that allow for physical movement and genetic interchange between otherwise isolated animal populations. Wildlife corridors are essential for a variety of common and special-status species including many mammals, fish, herptiles, and birds, and they are increasingly important in urban landscapes with fragmented habitat patches. Movement corridors provide access for wildlife across artificial and human made barriers and obstacles

such as roads, dams, and other development. They support natural processes that occur in a healthy ecosystem, such as finding food and water and expanding populations.

Wildlife movement corridors in the Plan Area vary for different species. Bird and bat species move readily over the landscape, foraging over and within both natural lands and landscaped areas. Mammals of different species move within their home ranges but also disperse between patches of habitat. Generally, reptiles and amphibians move between breeding areas and upland refugia, or hibernacula. Some species of fish born in freshwater streams such as steelhead and salmon migrate to the open ocean or bay where they spend most of their lives until they return as adults to their natal habitats to spawn. In the Plan Area, movement corridors or nursery sites primarily consist of the Sacramento River and surrounding riparian areas and woodlands such as in Turtle Bay Park. Development could directly or indirectly interfere with the movement of migratory fish or wildlife species or impact the use of wildlife nursery sites within the Sacramento River.

The Magnuson Stevens Fishery Conservation and Management Act (Magnuson Stevens Act) requires that federal agencies consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The legislation states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase “adversely affect” refers to the creation of any impact that reduces the quality or quantity of EFH.

The Sacramento River, including the Plan Area, has been designated as EFH by the Pacific Fisheries Management Council (PFMC) to protect and enhance habitat for coastal marine fish and macroinvertebrate species that support commercial fisheries. Under the Pacific Coast salmon fisheries management plan the entire Sacramento River, including the Plan Area, has been designated as EFH for spring-, fall-, late fall- and winter-run Chinook salmon (Figure 5), and serves as a wildlife corridor for green sturgeon, Central Valley steelhead, Sacramento River winter-run salmon, and lamprey species (PFMC 2022, NOAA 2023b).

Within the Specific Plan area, the Sacramento River and its associated natural areas attract a wide variety of resident birds seeking roosting, foraging, and nesting sites. The area is also within the Pacific Flyway, an important migration route for millions of migratory birds. As such the river and its natural areas also provide important resting and foraging habitat for millions of birds traveling between their summer and wintering grounds every year.

Potential Impacts. Specific Plan projects may interfere with the movement of native resident or migratory fish or wildlife species, or with established migratory wildlife corridors, or impede the use of native wildlife nursery sites. In addition, the Specific Plan projects may impact EFH and critical habitat.

Since critical habitat is designated in the Plan Area, federal agencies issuing permits for future development under the Specific Plan must consult with NOAA to ensure that any activities they authorize, fund, or carry out are not likely to destroy or adversely modify the critical habitat. This

would apply to the City of Redding if federal funding or permitting is involved such as permitting for a federally listed species or WOTUS. Under Section 7(a)(2) of the ESA federal agencies must consult with NOAA Fisheries when any project or action they take might affect an ESA-listed marine species or designated critical habitat. Projects/actions that commonly require consultation include dredging, hydroelectric, construction activities, permitting programs, research, and seismic surveys (NOAA 2023a). Permitting of some types of projects can be streamlined through a Programmatic Determination of Not Likely to Adversely Affect, issued by NOAA Fisheries for projects under USACE jurisdiction (called the USACE 2018 NLAA Program).

Impacts on wildlife movement corridors and nursery sites could result from development and/or activities facilitated by the Plan. Development activities could impair or destroy breeding sites, including the taking of active bird nests and bat maternity roosts. The Natural Resources Element of the 2023 General Plan Update contains policies that address potential impacts to native resident, migratory fish and wildlife species and corridors, such as Policy NR7A, which directs the City to maintain, where possible, the habitat linkages/wildlife corridors and sensitive habitats that are created by the open-space ("Greenway") network established by the General Plan Update (ECORP 2023). The Sacramento River floodplain is considered a Greenway in the General Plan. Policy NR7A also requires development in areas defined as "Greenway" to consider corridor impacts and, where necessary, provide alternate usable links between habitat types or areas and/or provide alternate development plans that avoid the open-space network and sensitive habitats. CEQA and Policy NR7B discourage impacts to these linkages and corridors and encourage impact avoidance (Redding 2023b).

Artificial lighting in and near riparian corridors can interfere with various processes such as movement patterns, feeding and breeding behavior of birds and mammals, and potentially other wildlife taxa that make daily/seasonal movements through the Sacramento River Trail and watershed. Although the Redding Riverfront and surrounding developed areas are lit with streetlights and streetlamps, much of the Plan Area is shielded from this lighting by trees and does not currently have artificial lighting at night. The night lighting on the Sundial Bridge attracts some species of nocturnal wildlife such as bats that feed on light-attracted insects (e.g., moths), however artificial lighting can adversely affect other species of bats and other wildlife. For example, other bat species avoid artificially lit areas, and this could lead to multiple issues for light-phobic bats such as spatial avoidance along flight pathways (e.g., forest edges, riverbanks) or delayed nightly emergence from roost sites. Thus, artificial lighting needs further evaluation.

Construction of new buildings or structures with glass facades adjacent to or in proximity to the river or other natural habitats in the Specific Plan Area increases the risk of injury or mortality to birds occupying or moving through the area. Injury or mortality can occur when birds collide with these surfaces. Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through

glass to reach that vegetation. Most avian collisions with buildings occur within the first 60 ft of the ground (City of San Francisco 2011), where birds spend most of their time engaged in foraging, territorial defense, nesting, and roosting activities, and where vegetation is most likely to be reflected in glass surfaces. However, very tall buildings (e.g., buildings 500 ft or higher) may pose a threat to birds that are migrating through the area, particularly to nocturnal migrants that may not see the buildings or that may be attracted to lights on the buildings.

Additionally, exterior lighting and overnight building interior lighting can contribute to collisions, as such lighting may attract and disorient birds flying at night, especially during inclement weather, which can lead to building collisions.

Although specific development of buildings or structures are not known at this early stage of the planning process, birds using riparian or other natural habitats in the Specific Plan Area could be attracted to areas around new structures if they support other perceived habitat (e.g., landscaping, ornamental plantings, artificial ponds), or the buildings are in proximity to natural habitats. If any new structures have extensive glass facades, birds moving through these areas may collide with these facades. Considering that the Specific Plan Area supports a variety of natural habitats and is within an important migratory bird path, construction of any buildings or structures with glass facades could potentially result in the mortality of large numbers of birds over the long term, which would result in a significant impact under CEQA.

Potential Conservation Measures. Design measures should be considered to avoid or minimize impacts to critical habitat, EFH, wildlife corridors and nursery sites. Focused, protocol surveys will need to be performed to determine the boundaries of suitable habitat and conservation measure details such as what buffers should be applied and where. Seasonal restrictions are also expected. Measures may include the creation and/or enhancement of wildlife nursery sites (e.g., gravel import into certain areas for fish spawning, invasive species removal). Policy NR7A requires alternate usable links between greenway areas such as Turtle Bay and/or to provide alternate development plans that avoid the open-space network and sensitive habitats.

Design should include measures to avoid or minimize lighting impacts on the riparian corridor, as it relates to the species that use the corridor. Such measures may include but are not limited to, orientation or shielding of lights, so they do not project upward or toward riparian habitat, use of glare shielded lights, alteration of the intensity and/or spectral composition of the lighting, restriction of hours of operation for lighting components, and construction of “walls” or planting of vegetation to shield sensitive areas against the light. Protection of wildlife movement also includes minimizing the impacts of erosion and turbidity on the Sacramento River and its tributaries. City Code (Chapter 14.18.060) requires that the Storm Drainage Utility Division control erosion, siltation, and sedimentation that will adversely affect storm drains, drainage ditches, watercourses, and other drainage facilities after the improvements have been constructed and are accepted for maintenance and operation. Cuts, fills, drainage, utility trenches, and erosion and sediment control shall be designed and constructed in accordance with the Standard Specifications for Public Works Construction (Green Book) adopted edition; the City of Redding Construction Standards; the City of Redding Erosion and Sediment Control

Standards Design Manual (Redding 2023). Design shall include measures to avoid or minimize erosion into the Sacramento River. Requirements will include Best Management Practices (BMPs) and other specific measures to prevent erosion and impacts to water quality.

Typical design considerations to minimize the potential for bird-building collisions that would minimize the risk of bird collisions include but is not limited to:

- Conduct an avian collision risk assessment by a qualified biologist with knowledge in avian ecology and behavior to evaluate building and landscaping designs early in the planning phase of developments associated with the Specific Plan. The biologist shall evaluate building and landscaping design plans to evaluate potential collision risks and provide recommendations to minimize those risks. Typical design recommendations to minimize collision risks include a reduction in the amount of glass facades; incorporation of bird-safe glazing on glass facades and glass railings within the first 60 feet of buildings or structures; avoiding or limiting vegetation landscaping behind or adjacent to clear or extensive glass facades; and use of tested bird-safe glazing treatments. Examples of bird-safe glazing include fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing, or ultraviolet patterns visible to birds. Vertical elements of the patterns should be at least ¼-inch wide at a minimum spacing of 4 inches, and horizontal elements should be at least ⅛-inch wide at a minimum spacing of 2 inches.

- The collision risk assessment should also include an evaluation of potential lighting and measures to minimize collisions associated with lighting. Minimization measures for lights may include, but not be limited to, eliminating unnecessary lighting, using low-level illumination and timed lighting, using downward facing/shielded fixtures, incorporating a lights off program for new buildings/structures.

- The American Bird Conservancy's Bird-Friendly Building Design and other resources should be referenced for the latest tested architectural products at https://abcbirds.org/glass-collisions/resources/

4.4 Compliance with Local Policies or Ordinances

Specific Plan projects could conflict with Local Policies or Ordinances Protecting Biological Resources. The following policies from the City of Redding General Plan Update Natural Resource Element shall be considered during the development and approval of the Specific Plan Projects.

- Policy NR4A: Prioritize avoidance/minimization of development-related disturbances of sensitive habitats and "special status species" by encouraging innovative site design and planning. Ensure implementation of statutory protection for these species and require appropriate mitigation if disturbed.
- Policy NR4B: Work to preserve and enhance the fisheries of the Sacramento River.

- Policy NR4C: Maintain and update data and information as necessary regarding areas of significant biological value within the Plan Area to:
    - Provide critical information to the community.
    - Facilitate resource conservation.
    - Facilitate appropriate management of development activities.
- Policy NR4D: Provide adequate buffering of sensitive habitats based on the type of habitat, its size and value and requirements of regulatory agencies. Work with other agencies and organizations as appropriate to establish habitat mitigation banks, habitat conservation plans, conservation easements, and other mechanisms that serve to protect sensitive habitats and species.

Tree Management Ordinance

Future development and activities could result in the removal of an unknown number of trees, many of which may qualify as protected trees under the Redding Tree Management Ordinance. Similarly, the Specific Plan update could facilitate encroachment that could result in impacts on the Sacramento River floodplain. These impacts would be minimized with the proper conservation measures, and with the intent to comply with local ordinances. Title 18, Chapter 18.45 of the Redding Code of Ordinances states that trees contribute in many ways to the health, safety, and general welfare of all Redding's citizens. The intent and objectives of the Tree Management Ordinance is to:

- Protect and enhance the aesthetic qualities of the community provided by native and nonnative trees.
- Promote a healthy and attractive urban landscape as the community grows.
- Recognize the importance of trees as a visual and physical buffer.
- Preserve the City's valuable natural features.
- Require the replacement of trees that are removed, where appropriate.
- Establish a program for the planting of trees in new developments.
- Protect trees on undeveloped properties until such time as a development plan/building permit is approved.

The regulations require that a tree removal permit be obtained for removal of trees on vacant/undeveloped lands to ensure that trees can be identified and considered as candidates for preservation during the development process. The City of Redding Draft General Plan Update includes Policy NR6C which requires periodic review of the Ordinance to assess current standards and programs to protect, preserve, restore, and replant native trees and to amend the ordinance as may be necessary (ECORP 2023). Policy NR6E considers undertaking measures to maintain and expand the urban forest such as reviewing and updating the Heritage Tree provisions of RMC Section 13.40.020, particularly as part of an urban forestry program should one be established.

Potential Impacts. Development facilitated by the Specific Plan may conflict with local policies or ordinances protecting biological resources, such as the tree management ordinance. Under Title 18, Chapter 18.45 of the City's Municipal Code, it is unlawful to remove or damage trees

that exceed six inches in diameter at breast height (dbh) on any developed or undeveloped/vacant property, regardless of species, unless a tree removal permit is first obtained, except as may be permitted pursuant to the terms of Section 18.45.070 (Discretionary permits), or as may be expressly exempted under Section 18.45.040 (Exemptions) (Redding 2023). Clearing activities that exceed one acre in area require a clearing permit in accordance with Chapter 16.12 of the Redding Municipal Code (Redding 2023).

Potential Conservation Measures. The City shall comply with the guidelines in Chapter 18.45 of its Municipal Code, which may include planting and/or replacing trees, and tree protection measures for trees that will be preserved. Typical tree protection measures include implementation of tree protection zones with fencing (i.e., protecting trees that are intended to remain on the site from incidental project disturbance) and development of a tree protection plan by a certified arborist.

A tree inventory and arborist report is expected to be required prior to the removal of trees over 6 inches dbh. The arborist report will include a tree inventory, identification, and assessment results. Tree inventories and arborist reports are used to evaluate project impacts. The following tree planting requirements would apply to all new construction and to those parcels granted a tree removal permit (Redding 2023):

- *Residential Development*. One fifteen-gallon tree shall be planted for every five hundred square feet of enclosed gross living area, two of which shall be planted in the front yard. At least one of the trees must be planted within seven feet of the sidewalk or otherwise required by a tree planting plan established with approval of the development.
- *Commercial Development* (Retail, Office, Heavy Commercial Uses). One fifteen-gallon tree shall be planted for every one-thousand square feet of gross floor area or covered space.
- *Industrial Development.* One fifteen-gallon tree shall be planted for every two thousand square feet of gross floor area or covered space.

Floodplain Protection Ordinance

Title 18, Chapter 18.51 of the Redding Code of Ordinances is related to encroachment into floodplain areas. Any encroachment which significantly raises the projected flood levels on adjacent property or has the potential to increase erosion or divert the natural flow of water shall be subject to a CEQA Environmental Impact Report. The Environmental Impact Report shall evaluate the area and describe the cumulative and long-term impact of the proposed encroachment, its compliance with the Municipal Code, and alternatives to the proposed project (Redding 2023).

The City will notify adjacent communities and the California Department of Water Resources prior to such alteration of the floodplain, submit evidence of such notification to the Federal Emergency Management Agency (FEMA) in a request for a conditional letter of map revision (CLOMR), and ensure that the flood-carrying capacity of the altered or relocated portion of said watercourse is maintained. Whenever base flood-elevation changes are due to physical

alterations, the City shall submit technical or scientific data to FEMA for a letter of map revision (LOMR) within six months of information becoming available or project completion, whichever comes first. Preparation of the CLOMR application by the applicant's engineer and approval of the CLOMR by FEMA will be required prior to issuance of a grading permit or building permit. Approval of the final LOMR is typically required prior to final building permit approval (Redding 2023).

Potential Impacts. Development and/or activities facilitated by the Plan may conflict with local policies or ordinances protecting biological resources, such as the local floodplain protection. Any future development within the Plan Area will be subject to regulatory agency jurisdiction if it encroaches into the floodplain of the Sacramento River. Both the plan and development must comply with the conditions of the Floodplain Protection Ordinance currently in effect if any design feature results in floodplain modification such as, but not limited to, grading, paving, and the removal or installation of vegetation. For the City's Plan Area, the one-hundred-year flood elevation will need to be determined and considered in project design. This elevation may change with climate change.

Potential Conservation Measures. Any project activities that would occur within the limits of the Plan Area must conform to the Floodplain Protection Ordinance requirements. Conservation measures may be required for activities related to riparian corridor and stream bank protection, general landscaping, encroachments between the TOB, stormwater outfalls, site drainage, and trail construction. Mitigation may include the planting of native species, locating paved areas outside of riparian corridors, directing nighttime lighting away from riparian corridors, using design measures to minimize bird strike, drought-tolerant landscaping, minimizing new outfalls, biological monitoring, and worker training, among other requirements and recommendations.

4.5 Habitat Conservation Plan

The Redding Riverfront Specific Plan Update will not have any conflicts with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. There are no adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans within Redding or within Shasta County.

4.6 Other Considerations

Birds. The U.S. Migratory Bird Treaty Act (MBTA; 16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) protects most native bird species. Under the MBTA it is illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. The USFWS enforces MBTA. The MBTA does not protect some birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA. In addition, all native bird species that occur in the Plan Area are protected by California Fish and Game Code (§§3503, 2513, and 3800). Specifically, the code protects 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, falcons, hawks, and owls) and their nests are

specifically protected in California under Fish and Game Code §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."

A variety of common native bird species occupy the habitat currently present in the Plan Area and likely nest within vegetated (e.g., trees, shrubs) and developed habitats within the Plan Area. Based on the variety of species that are present or have potential to occur in the existing habitats in the Plan Area, there is a high probability for active nests to be found in the Plan Area during the nesting season (generally from February 1 to August 31).

Potential Impacts. The removal of vegetation supporting active nests can cause the direct loss of eggs or young. Project activities located near an active nest may cause adults to abandon the eggs or young. Impacts on active nests would be significant as all native birds and their nests are protected by the MBTA and California Fish and Game Code.

Potential Conservation Measures. Impacts on nesting birds could be adverse and could violate the MBTA and California Fish and Game Code, so conservation measures are warranted. Typical measures to avoid impacts to nesting birds are as follows. Such measures would likely also be conditions of any CDFW authorization required for a project.

- Avoid initiating project activities during the nesting bird season (generally from February 1 to August 31) to the extent feasible.
- Remove potential nesting substrate (trees, shrubs) for the project outside the nesting bird season. This would help to preclude some nesting activity.
- Conduct pre-construction surveys within seven days of disturbance, and if active nests are identified then appropriate disturbance-free buffers should be established. Disturbance-free buffers are based on the species of bird and raptor and determined in consultation with CDFW.
- Additional protections such as active nest monitoring may be required.

Common Roosting Bats

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 Fish and Game 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.

Potentially suitable roosting habitat within the Plan Area primarily occurs in riparian habitat. This includes tree cavities, crevices, and exfoliating bark. Many of the trees within the Plan Area do not have habitat suitable to support large maternity colonies, but smaller cavities and crevices may support small numbers of roosting bats. The Sundial Bridge is directly adjacent to the

northern portion of the Plan Area provides suitable roosting habitat in the form of expansion joints, and these structures could support bat maternity colonies (Appendix B, Photos 11-12). However, no bats were observed within the joints, nor were any signs of bat presence (e.g., guano or urine staining) detected within or below the joints of the bridge during the reconnaissance site visit, indicating that bats are probably not currently roosting in the bridge. Big brown bats (*Eptesicus fuscus*) and little brown bats (*Myotis lucifugas*) are often found roosting near water and eating insects. Mexican free-tailed bats (*Tadarida brasiliensis*) are cave dwellers and are seldom seen hunting near water, however the Sundial bridge lights up at night attracting moths which is one of the Mexican freetails favorite food. The Highway 44 bridge is also within the Plan Area and may provide suitable habitat for bats, however this has not been confirmed. No sign of bats was observed during the surveys, nonetheless suitable habitat (e.g., trees crevice's, structures) occurs in the Plan Area.

Potential Impacts. Tree or structure removal could result in injury or mortality of common bat species, or disturbance that causes the loss of a maternity colony (resulting in the death of young). It could also result in permanent loss of suitable roost/colony habitat. Additionally, noise or lighting from future nearby construction could impact maternity colonies if present. Such impacts would be adverse.

Potential Conservation Measures. Typical measures to avoid impacts on roosting bats may include pre-construction surveys of potential roost habitat, avoiding tree removal containing roost sites during the time of year when bats are inactive (generally mid-October to late March), exclusion or deterrence of non-reproductive bat colonies during the time of year when bats are most active (generally April to mid-October), avoidance of active maternity roost sites during the maternity season (April 1 – August 31), worker environmental awareness training, and establishment of disturbance-free buffer zones around active maternity roost sites. If CDFW authorization is required for the project, additional measures may be required.

5 Recommendations and Design Considerations

Specific Plan development designs should consider the location of sensitive biological resources to minimize and preferably avoid impacts to sensitive species and habitats. Potential regulatory considerations and conservation measures are highlighted at the end of each section above. Additional surveys pertaining to natural resources that are recommended include a jurisdictional delineation, hydrology analysis, focused special-status species (e.g., bird, bat, beetle, and fish) surveys, an invasive species survey, bird collision risk assessment, a tree inventory and arborist report, an assessment of mitigation opportunities, and habitat restoration plans/guidelines/strategies.

Wetlands, Water, and Floodplain Encroachment. The Redding Riverfront natural areas support wetlands, sensitive riparian vegetation, floodplain, and navigable waterways. Over 60% of the Plan Area may be considered wetland, but a delineation needs to be completed and may require confirmation with the USACE and CDFW. The soil types mapped in the area are associated with floodplains. The delineation and jurisdictional determination is necessary to confirm the extent of the jurisdictional waters within the Plan Area prior to determining the

potential impacts of implementing the Plan on wetlands and waters. Impacts to jurisdictional waters caused by individual projects would require permits from the USACE, RWQCB, and CDFW under the Clean Water Act, the Porter-Cologne Water Quality Protection Act, and California Fish and Game Code. The one-hundred-year flood elevation will also need to be accurately mapped within the Plan Area to determine Specific Plan impacts to the floodplain and hydrology of the Sacramento River.

Erosion Control, Stormwater Runoff and Best Management Practices. Projects in Shasta County must comply with the RWQCB and Municipal Regional Stormwater NPDES Permit. BMPs included in each project will comply by incorporating low impact development practices into the design that prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water leaving the site. A Storm Water Prevention Pollution Plan (SWPPP) is required for project site grading greater than 1 acre. The SWPPP and NPDES permit conditions will have specific requirements and BMPs to minimize runoff.

The protection of the Sacramento riverbank is a primary focus for erosion control within the Plan Area. There is evidence of erosion of the bank in some areas such as near Riverside Park just west of Turtle Bay (App. B, Photo 14). This area has been heavily used by tourists and is accessed for fishing. Some of these access areas have burlap erosion control material to project the bank, however, the erosion materials appear to be deteriorating. It is recommended that a bank protection plan that incorporates bioengineering methods be developed for the Plan Area, particularly for public access areas.

Inventory Habitat Protection, and Habitat Restoration. It is recommended that a Redding Riverfront Habitat Protection and Restoration Plan be developed to guide future development. A habitat protection/restoration plan should include an inventory and map of invasive plant species and an arborist report that inventories trees to be protected in the Plan Area. The protection and restoration plan would identify specific areas to protect, and areas suitable for successful restoration. It can also identify what public uses could be included in these areas. Future development could potentially fund restoration activities. The habitat protection and restoration plan should include a maintenance schedule with weed treatment methods, timing of maintenance activities, and trash removal. At a minimum the protection and restoration plan should include restoration guidelines (what to survey, when, what species to use, responsible parties, monitoring, reporting, adaptive management, etc.) that may be area specific but not project specific. Each project can use the guidelines so there is a cohesive restoration effect throughout the Plan Area.

Existing habitat restoration sites were observed adjacent to the Sundial Bridge during the field survey. The Great Valley Valley Oak Riparian Forest has the most sensitive rank of G1/S1, indicating this could be one of the main communities to focus on for restoration. Other areas for restoration include habitat mapped as Blackberry Scrub, Disturbed, and Herbland cover (Appendix B, Photos 7-8 and 25-26).

Invasive Plant and Animal Species. An invasive species survey is recommended due to the number of invasive species observed during the field surveys. Section 3.2 describes the

dominant invasive plant species within the habitat types. Some of the plant species are highly invasive and likely to result in habitat loss. The invasive species survey should identify the specific locations of infestations throughout the Plan Area and the extent of the potential infestation. The report should also highlight recommendations for treatment (e.g., hand or mechanical removal, aquatic approved herbicide) to eradicate or control plant and animal (e.g., brown-headed cow bird trapping) invasive species within the Plan Area. Two of the primary plant species to control within Turtle Bay Park are Himalayan blackberry and yellow star thistle. An Integrated Pest Management Plan is also recommended for the Plan Area. Invasive species control could be one of the forms of approved mitigation and is also a way to maintain and improve the Plan Area.

Sensitive Natural Communities and Protected Trees. The Plan Area supports 4 sensitive natural communities totaling approximately 82 acres (Figure 3) and includes many trees that qualify for protection under the City's Municipal Code. It is assumed that each project will comply with the City's tree protection ordinances, or project-specific conditions of approval that protect trees. Such measures include implementing a tree protection plan prepared by a certified arborist, for trees that will be preserved. Per General Plan policies NR6C and NR6E, it is recommended that the City's tree ordinance and the Heritage Tree provisions of RMC Section 13.40.020 be regularly reviewed and updated to current standards for tree protection, and that the City's ordinance include a provision to plant only native trees compatible with the sensitive natural communities found in the Specific Plan Area. The ordinance should also ensure that existing healthy, non-hazardous native trees are preserved and protected.

The best approach to preserving/protecting sensitive natural communities and biological resources in the Plan Area is to preserve a combination of habitat types and maintain connectivity between them. All of the Great Valley Valley Oak Riparian Forest (2.76 acres) should be preserved and protected. The Great Valley Mixed Riparian Forest (48.3 acres) is also imperiled, and future development should avoid this habitat or mitigate for its loss, ideally under a master restoration/mitigation plan (see above) that coordinates mitigation across projects.

Special-Status Species: Special status animal species are known to use the Plan Area including 10 birds, 7 bats, and 14 fish species An updated check of species status and presence would occur for each project when proposed. Also, focused surveys for some of the special-status species (refer to section 4.2) prior to project permitting are recommended. These surveys will help determine species occupancy in the Plan Area, specific conservation measures, locations, and the potential number of individuals that could be impacted.

Nesting Birds. It is known that many birds use the Plan Area for nesting. Nesting birds are protected under Fish and Game code and the Migratory Bird Treaty Act. Project-specific measures would be developed during project environmental review. Such measures may include removal of nesting habitat outside of the nesting season, or pre-construction surveys and nest buffers.

Roosting Bats: Bats have been known to occur in and around the Plan Area and there is suitable habitat for roosts. A focused habitat assessment for roosting bat habitat should be

conducted during the time of year when bats are active (March 1 – October 15) to evaluate if suitable roosting habitat is present in trees proposed for removal, or if there is potential for noise impacts within 50 feet of potential roost sites. If the Specific Plan design features are planned to occur within 50 feet of a bridge, it should also be surveyed to evaluate potential indirect noise impacts on roosting bats and determine appropriate avoidance and minimization measures.

Collision Risks: If future projects include construction of buildings or structures, it is recommended that a qualified biologist conduct a collision risk assessment of any development and landscaping plans to assess the potential collision risk and provide recommendations for minimizing those risks. Developers should review the recommendations and make every effort to implement them. Recommendations may include a reduction in glass facades near areas that may attract birds such as near riparian habitat and other natural habitat areas; incorporation of bird-safe glazing on glass facades and glass railings within the first 60 feet of buildings or structures; avoiding or limiting vegetation landscaping behind or adjacent to clear or extensive glass facades; and use of tested bird-safe glazing treatments as described in Section 4 above.

Artificial Lighting: If future project designs include artificial lighting, it is recommended to incorporate measures to minimize potential impacts on the wildlife corridor associated with Sacramento River such as orientation or shielding of lights so they do not project upward or toward riparian habitat, use of glare shielded lights, limiting fixture heights, restriction of hours of operation for lighting components, consider lights out program, and planting of vegetation to shield the riparian area against lights.

Regulatory Permit Timing. Communications with the agencies are typically not initiated until a project design/project description is at 30% completion or there is at least an idea of where and how the project impacts will occur. Once a project is far enough in the planning stage, it is recommended to meet with the agencies to introduce the project and gain informal feedback on the design. The agencies typically require 65% design plans with the permit applications.

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Appendix A. Figures

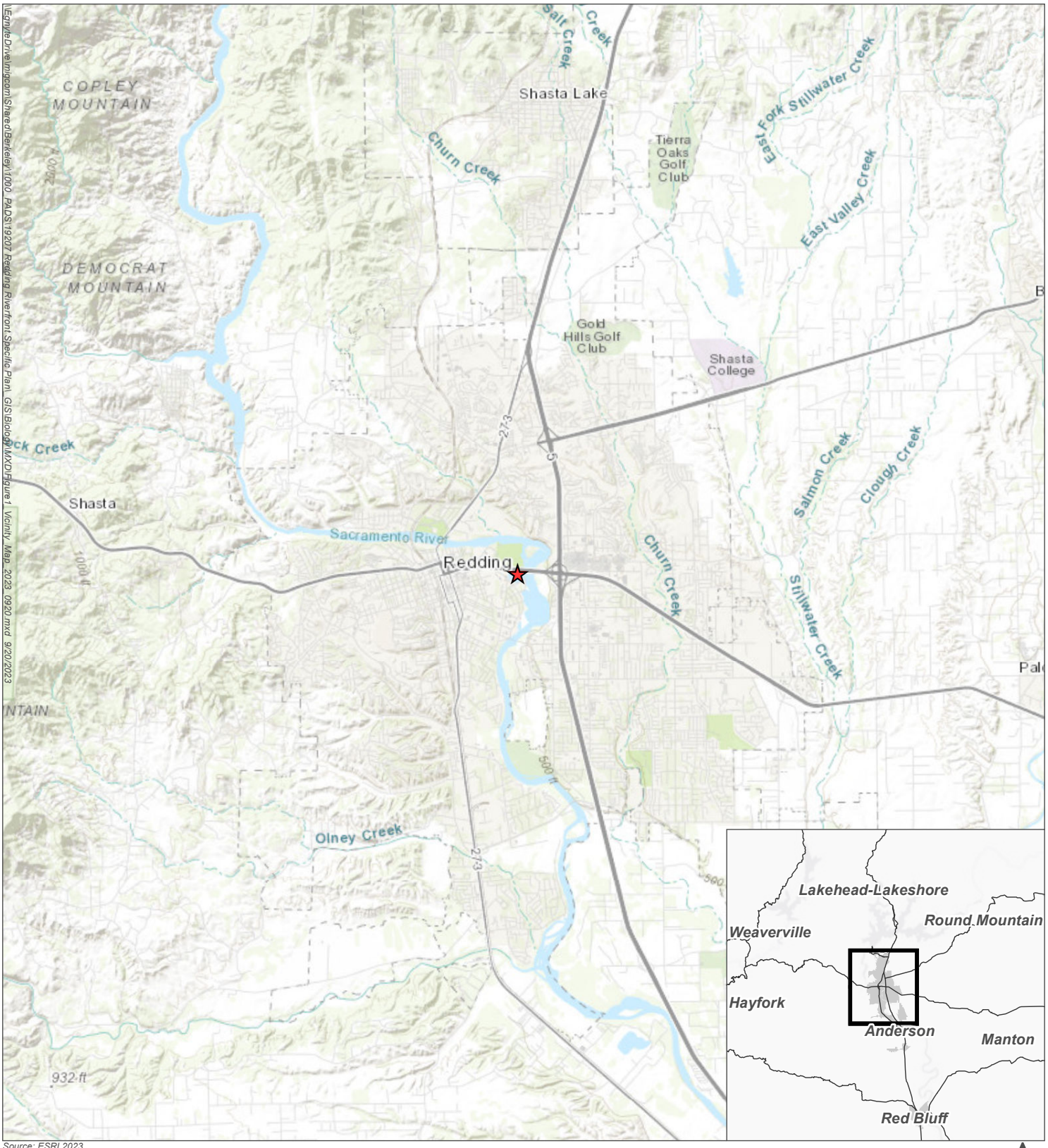


Figure 1 Vicinity Map

Redding Riverfront Specific Plan Update

Source: Google Earth 6/5/2022

Plan Area

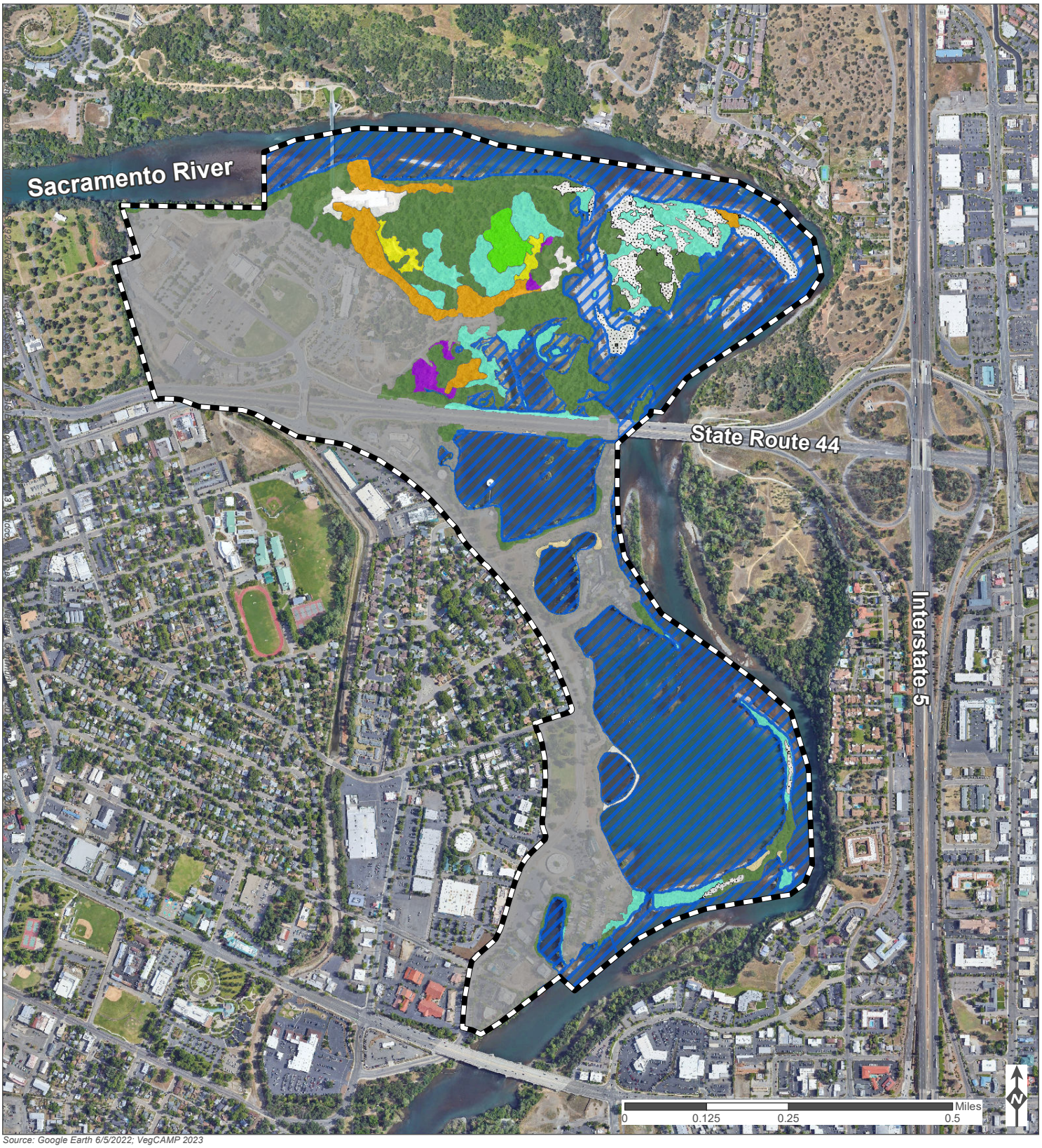
0 0.125 0.25 0.5 Miles

N

Figure 2 Plan Area

Redding Riverfront Specific Plan Update

MIG



Source: Google Earth 6/5/2022; VegCAMP 2023

- Blackberry Scrub
- Developed
- Disturbed
- Giant Reed
- Gravel and Sand Bars
- Great Valley Cottonwood Riparian Forest
- Great Valley Mixed Riparian Forest
- Great Valley Riparian Scrub
- Herbland Cover
- Open Water
- Valley Oak
- Plan Area

Figure 3 Landcover Types, Habitats, and Natural Communities

Redding Riverfront Specific Plan Update

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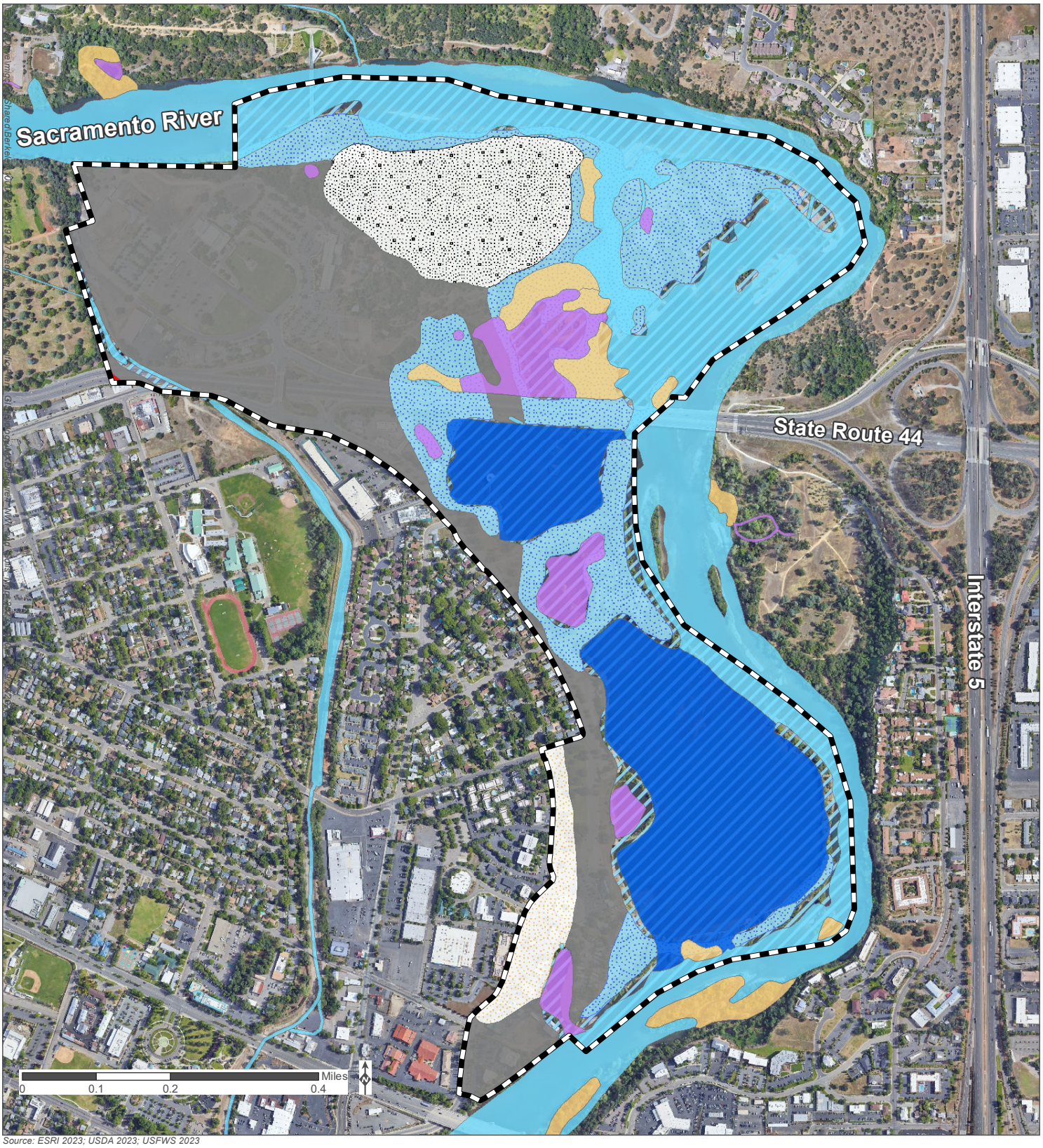

Source: ESRI 2023; USDA 2023; USFWS 2023

USDA Soil Type

- Ch- Cobbly Alluvial Land
- GP- Gravelly Pits
- RgA- Reiff fine sandy loam, 0 to 3 percent slopes
- RlA- Reiff loam, 0 to 3 percent slopes
- Rw- Riverwash
- W- Water

Wetland Type

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Plan Area

Figure 4 NWI and Soils Map

Redding Riverfront Specific Plan Update

Source: ESRI 2023; USDA 2023; USFWS 2023

Salmon Chinook- Sacramento River winter run

Steelhead- California Central Valley DPS

Green Sturgeon (Southern DPS)

Plan Area

****The entire Plan Area is essential fish habitat for chinook salmon: Clear Creek-Sacramento River - Below Dam**

Figure 5 Critical Habitat and Essential Fish Habitat

Redding Riverfront Specific Plan Update and Environmental Impact Report

MIG

Appendix B. Photographs

Photo 1. View southeast of riparian forest understory vegetation with Turtle Bay Museum in background.

Photo 2. View northeast of live oak tree with park bench in background near the bank of Sacramento River within mixed riparian forest.

Photo 3. View east of paved walking path through Great Valley Cottonwood Riparian Forest within Turtle Bay Park

Photo 4. View east of channel along Sacramento River gravel/sandbar in background.

Photo 5. View south along the west channel of the Sacramento River within Great Valley Riparian Scrub and gravel/sandbar in the background.

Photo 6. View southeast of aquatic vegetation in the Turtle Bay Duck Pond Wildlife view Area.

Photo 7. View southeast of Blackberry Scrub habitat that established after the installation of the underground gas pipeline.

Photo 8. View northeast of yellow star thistle infestation along Sacramento River Trail within Disturbed Habitat.

Photo 9. View west into Paul Bunyon Forest Camp.

Photo 10. View southwest of mule deer within Paul Bunyon Forest Camp.

Photo 11. View north of Sundial Bridge

Photo 12. View north beneath the Sundial Bridge.

Photo 13. View west of Sacramento River from Sundial Bridge with Great Valley Mixed Riparian Forest on the banks of the river.

Photo 14. View northeast showing burlap bank stabilization material in foreground with Great Valley Mixed Riparian Forest on the riverbank.

Photo 15. View east from the Hwy 44 Bridge Bikeway of an island with Great Valley Mixed Riparian Forest.

Photo 16. View northwest of the Sacramento River Bend Wildlife Viewing Area.

Photo 17. Trash within Valley Oak habitat in east side of Turtle Bay Park.

Photo 18. Evidence of camping within Valley Oak with an understory of Blackberry Scrub habitat in the east side Turtle Bay Park.

Photo 19. View northwest of pond just south of Hwy 44 and east of the Outrigger Building.

Photo 20. View southeast of pond east of Park Marina Drive and adjacent to Village Drive.

Photo 21. View south of parking area near Kutras Pond and Boat Ramp with Great Valley Riparian Scrub in background

Photo 22. View south of parking area near Kutras Pond and Boat Ramp

Photo 23. View east of Kutras Pond.

Photo 24. View north of Kutras Pond (right) and Park Maina Drive (left).

Photo 25. View southeast of herbland cover in foreground and invasive Johnson grass and Great Valley Mixed Riparian Forest in the background.

Photo 26. View east of vegetation piles mapped as herbland cover.

Appendix C. Species

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
		Plants	
Shasta maidenhair fern *(Adiantum shastense)*	4.3	Known only from the Eastern Klamath Range surrounding Shasta Lake and grows in mesic hardwood-coniferous forests on the forest floor, on limestone and metasedimentary rock outcrops, and rocky road cuts (1,085'5,035'); Blooms April-August	**Low.** Known occurrences in the Shasta Dam quadrangle. Higher elevations near Shasta Lake. The Plan Area provides marginal potential habitat.
Shasta ageratina *(Ageratina shastensis)*	1B.2	Rocky and often carbonate soils in chaparral and lower montane coniferous forest (1,310'–5,905'). June-October.	**Low.** Known occurrences in the Shasta Dam quadrangle. Higher elevations near Shasta Lake. Plan Area is lower elevation and only provides marginal habitat.
Henderson's bent grass (*Agrostis hendersonii*)	3.2	Vernal pools and mesic areas in valley and foothill grasslands (230'–1,000'). April–June	**Low.** There are no vernal pools, valley and foothill grasslands documented in the Plan Area, which only provides marginal habitat.
Sanborn's onion *(Allium sanbornii var. sanbornii)*	4.2	Chaparral, cismontane woodland, and lower montane coniferous forest, usually with gravelly, serpentinite soils (855'– 4,955'). May-September.	**Low**. Prefers serpentine soils, and there are no serpentine soils within the Plan Area, which only provides marginal habitat.
Slender silver moss (*Anomobryum julaceum*)	4.3	Volcanic substrates in chaparral and lower montane coniferous forest (2,510'- 4,200'). April-July	**Absent.** Plan Area is outside of the known elevational range and habitat type for this species.
Shasta County arnica *(Arnica venosa)*	4.2	In disturbed areas and roadcuts in cismontane woodland and lower montane coniferous forest (1,100'-4,890'). May- July	**Low.** Known to occur in the Shasta Dam quadrangle. Plan Area is lower elevation and only provides marginal habitat.
Depauperate milk-vetch *(Astragalus pauperculus)*	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils (150'–5,100'). March–June	**Low.** No occurrences or serpentinite soils. Plan Area only provides marginal habitat.
Watershield *(Brasenia schreberi)*	2B.3	Freshwater marshes swamps, and slow streams (100'–7,220'). April-October	**Low.** Occurrence near 5 miles. Plan Area provides marginal habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Sulphur Creek brodiaea *(Brodiaea matsonii)*	1B.1	Rocky, metamorphic amphibolite schist within cismontane woodland, streambanks, and meadows and seeps (640'-722'). May-June	**Low.** Occurrence with Sulphur Creek about 3 miles from Plan Area, however there is a lack of suitable habitat.
Thread-leaved beakseed *(Bulbostylis capillaris)*	4.2	Lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest (1,295'–6,810'). June-August	**Absent.** Plan Area is outside of the known elevational range and habitat type for this species.
Pink creamsacs *(Castilleja rubicundula var. rubicundula)*	1B.2	Serpentinite substrates in chaparral openings, cismontane woodland, meadows, seeps, and valley and foothill grassland (65'–2,985'). April–June	**Absent.** This species is a strict serpentine endemic, and there are no serpentine soils within or near the Plan Area.
Northern clarkia *(Clarkia borealis ssp. borealis)*	1B.3	Chaparral, cismontane, and lower montane coniferous forest, often in road cuts. (1,310'-5,135'). June-September.	**Low.** Plan Area is lower in elevation than known habitat, and it may only provide marginal habitat.
Silky cryptantha *(Cryptantha crinita)*	1B.2	Rocky volcanic flats, gravelly streambanks, gravel bars, generally foothill woodland, and valley and foothill grassland habitats (200'–3,985'). March–June	**Low.** Occurrence within 5 miles. Plan Area may provide marginal habitat.
Tripod buckwheat *(Eriogonum tripodum)*	4.2	Often serpentinite soils of chaparral and cismontane woodland (655'–5,250'). May–July	**Absent.** There are no serpentine soils nor suitable habitat within the Plan Area.
Shield-bracted monkeyflower (*Erythranthe glaucescens*)	4.3	Serpentine seeps and sometimes streambanks of chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (195'–4,070'). February-August	**Low.** The Plan Area is outside of the known range for this species but may provide marginal potential habitat.
Shasta limestone monkeyflower (*Erythranthe taylorii*)	1B.1	Carbonate crevices and rocky outcrops in cismontane woodland and lower montane coniferous forest (1,165'–3,215'). April– May	**Absent.** There are no serpentine soils or suitable habitat within the Plan Area. Occurs in higher elevations near Shasta Lake.
Shasta fawn lily (*Erythronium shastense*)	1B.2	Rocky, usually carbonate soils in cismontane woodland and lower montane coniferous forest (1,150'–3,345'). March–April	**Absent.** There are no serpentine soils nor suitable habitat within the Plan Area. Occurs in higher elevations near Shasta Lake.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Boggs Lake hedgehyssop (*Gratiola heterosepala*)	1B.2	Marshes, swamps, lake margins, and vernal pools (35'–7,790'). April-August	**Low.** Occurrence within 5 miles. Aquatic features may provide marginal habitat.
Siskiyou Iris (*Iris bracteata*)	3.3	Serpentinite substrates in broadleafed upland forest and lower montane coniferous forest. (590'-3,510'). May- June	**Absent.** Serpentine endemic and there are no serpentine soils within or near the Plan Area.
Red Bluff dwarf rush (*Juncus leiospermus var. leiospermus*)	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (115'–4,100'). March–June	**Low.** Occurrences within one mile (Just east of I-5), however the Plan Area habitat only marginally supports this species.
Northern clarkia *(Clarkia borealis ssp. borealis)*	1B.3	Chaparral, cismontane, and lower montane coniferous forest, often in road cuts. (1,310'-5,135'). June-September.	**Low.** Plan Area is lower in elevation than known habitat, and it may only provide marginal habitat.
Silky cryptantha *(Cryptantha crinita)*	1B.2	Rocky volcanic flats, gravelly streambanks, gravel bars, generally foothill woodland, and valley and foothill grassland habitats (200'–3,985'). March–June	**Low.** Occurrence within 5 miles. Plan Area may provide marginal habitat.
Tripod buckwheat *(Eriogonum tripodum)*	4.2	Often serpentinite soils of chaparral and cismontane woodland (655'–5,250'). May–July	**Absent.** There are no serpentine soils nor suitable habitat within the Plan Area.
Shield-bracted monkeyflower (*Erythranthe glaucescens*)	4.3	Serpentine seeps and sometimes streambanks of chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (195'–4,070'). February-August	**Low.** The Plan Area is outside of the known range for this species but may provide marginal potential habitat.
Shasta limestone monkeyflower (*Erythranthe taylorii*)	1B.1	Carbonate crevices and rocky outcrops in cismontane woodland and lower montane coniferous forest (1,165'–3,215'). April– May	**Absent.** There are no serpentine soils or suitable habitat within the Plan Area. Occurs in higher elevations near Shasta Lake.
Shasta fawn lily (*Erythronium shastense*)	1B.2	Rocky, usually carbonate soils in cismontane woodland and lower montane coniferous forest (1,150'–3,345'). March–April	**Absent.** There are no serpentine soils nor suitable habitat within the Plan Area. Occurs in higher elevations near Shasta Lake.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Boggs Lake hedgehyssop (*Gratiola heterosepala*)	1B.2	Marshes, swamps, lake margins, and vernal pools (35'–7,790'). April-August	**Low.** Occurrence within 5 miles. Aquatic features may provide marginal habitat.
Siskiyou Iris (*Iris bracteata*)	3.3	Serpentinite substrates in broadleafed upland forest and lower montane coniferous forest. (590'-3,510'). May- June	**Absent.** Serpentine endemic and there are no serpentine soils within or near the Plan Area.
Red Bluff dwarf rush (*Juncus leiospermus var. leiospermus*)	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (115'–4,100'). March–June	**Low.** Occurrences within one mile (Just east of I-5), however the Plan Area habitat only marginally supports this species.
Dubious pea (*Lathyrus sulphureus var. argillaceus*)	3	Cismontane woodland, lower montane coniferous forest and upper montane coniferous forest (490'–3,050'). April–May	**Low.** Occurrences within five miles, however the Plan Area habitat only marginally supports this species.
Legenere (*Legenere limosa*)	1B.1	Vernal pool endemic; seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (5'–2,885'). April–June	**Low.** Occurrences within five miles, however Plan Area habitat only marginally supports this species.
Broad-lobed leptosiphon (*Leptosiphon latisectus*)	4.3	Broadleafed upland forest and cismontane woodland (560'- 4,920'). April–June	**Low.** Occurrences within five miles, however the Plan Area habitat only marginally supports this species.
Bellinger's meadowfoam (*Limnanthes floccosa ssp. bellingeriana*)	1B.2	Mesic areas in cismontane woodland and meadows and seeps (950'–3,610'). April–June	**Low.** Occurrences within 5 miles; however, mesic areas in Plan Area only provides marginal habitat.
Woolly meadowfoam (*Limnanthes floccosa ssp. floccosa*)	4.2	Vernally mesic chaparral, cismontane woodland, valley and foothill grassland, and vernal pools (195'–4,380'). March– May	**Low.** Occurrences within 5 miles; however, mesic areas in Plan Area only provides marginal habitat.
Baker's navarretia (*Navarretia leucocephala ssp. bakeri*)	1B.1	Vernal pools and mesic areas within Cismontane woodlands, lower montane coniferous forest, meadows and seeps, and valley and foothill grasslands (15'–5,710'). April–July	**Low.** Occurrences within 5 miles; however, mesic areas in Plan Area only provides marginal habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Shasta snow wreath (*Neviusia cliftonii*)	1B.2	Volcanic, sometimes carbonate, and often streambanks of cismontane woodland, lower montane coniferous forest, and riparian woodland. (985' – 1,935') April-June	**Low.** Occurrences within 5 miles; however, habitat in Plan Area only provides marginal habitat and generally outside the elevation range.
Slender Orcutt grass (*Orcuttia tenuis*)	FT, CE, 1B.1	Vernal pools, often gravelly (115'– 5,774'). May– September	**Low.** Occurrences within 5 miles; however, Plan Area only provides marginal habitat due to lack of vernal pools.
Ahart's paronychia (*Paronychia ahartii*)	1B.1	Well-drained rocky outcrops, often vernal pool edges, and volcanic upland of cismontane woodland, valley and foothill grassland, and vernal pools (100'1,675'). February-June	**Low.** Occurrences within 5 miles; however, Plan Area only provides marginal habitat.
Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)	2B.2	Assorted shallow freshwater marshes and swamps (1,210'–7,125'). July-September	**Low.** Occurrence within 5 miles. Plan Area is outside the known elevation, however aquatic resources provide some suitable habitat.
Sanford's arrowhead (*Sagittaria sanfordii*)	1B.2	Shallow marshes and freshwater swamps (0'– 2,135'). May-October	**Low.** Occurrence within 5 miles. Aquatic resources within the Plan Area provides marginal habitat.
Canyon Creek stonecrop (*Sedum paradisum ssp. paradisum*)	1B.3	Granitic, rocky substrates in broadleafed upland forest, chaparral, lower montane coniferous forest, and subalpine coniferous forest (985'– 6,235'). May– June	**Absent.** There are no granitic substrates nor suitable habitat documented within the Plan Area.
Redding checkerbloom (*Sidalcea celata*)	3	Cismontane woodland, sometimes on serpentine substrates (442'- 5,004'). April-August	**Low.** Plan Area does not have serpentine substrates and only provides marginal habitat.
Maverick clover (*Trifolium piorkowskii*)	1B.2	Volcanic clay, openings, and often streambanks of chaparral, cismontane woodland, lower montane coniferous forest, mesic valley and foothill grasslands, and vernal pools (525'- 2,230'). April–May	**Low.** Plan Area does not have volcanic clay or vernal pools and only provides marginal habitat.
Shasta huckleberry (*Vaccinium shastense ssp. Shastense)*	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, riparian forest, and subalpine coniferous forest. (325'- 1,220'). December - May	**Low.** Occurrence within 5 miles, most near Shasta. Aquatic resources within the Plan Area may provide marginal habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Oval-leaved viburnum (*Viburnum ellipticum*)	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest communities (705'–4,595'). May–June	**Low.** Plan Area may only provide marginal habitat.
Brazilian watermeal (*Wolffia brasiliensis*)	2B.3	Assorted shallow freshwater marshes and swamps (66'- 328'). April-December	**Low.** Occurrence within 5 miles in Shasta County. Aquatic resources within the Plan Area provides marginal habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Wildlife			
Invertebrates			
Crotch's bumble bee (*Bombus crotchii)*	SC	Many habitats in California and northwestern Baja California; most records from southern California.	**Low.** Plan area is at northern most portion of range, however, has not been documented within Shasta County.
Conservancy fairy shrimp (*Branchinecta conservatio*)	FE	Vernal pools/wetlands.	**Low.** There are no vernal pools documented within the plan area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools/wetlands.	**Low.** There are no vernal pools documented within the plan area.
Vernal pool tadpole shrimp (Lepidurus packardi)	FE	Vernal pools/wetlands.	**Low.** There are no vernal pools documented within the plan area.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Elderberry shrubs within riparian habitat.	**Moderate.** Occurrences within one mile and just outside the Plan Area on the east side of the Sacramento River watershed at the Turtle Bay East fishing access.
Amphibians & Reptiles			
Northwestern pond turtle *(Actinemys marmorata)*	PT, SSC	Ponds, streams, detention basins, and irrigation ditches. Requires basking sites and upland habitats up to 0.5 km from water for egg laying.	**High.** Occurrences within one mile and historically within the Plan Area. Kutras Lake and adjacent ponds provide suitable habitat.
Shasta salamander *(Hydromantes shastae)*	ST	Moist caves, rock cracks, cliff faces, and vertical cavern walls associated with limestone outcrops in mixed Douglas fir, pine, and oak forests.	**Low.** Plan Area only provides marginal habitat suitable for this species.
Western spadefoot *(Spea hammondii)*	PT, SSC	Vernal pools, swales, wetlands, and adjacent grasslands.	**Low.** Occurrences within 5 miles of the Plan Area, however, only provides marginal suitable for habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Foothill yellow-legged frog - population 1 North Coast Distinct Population Segment (DPS) (*Rana boylii*)	SSC	Stream edges with rocky substrate mostly free of sediments with interstitial spaces to allow for predator avoidance. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. Adults, primarily males, will gather along mainstem rivers during spring to breed.	**Moderate.** Occurrences within five miles of Plan Area and provides suitable habitat.
Fish			
Green sturgeon Southern DPS (*Acipenser medirostris*)	FT	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.	**High.** Suitable habitat occurs within the Plan Area in the Sacramento River and adjacent waterways.
White sturgeon (*Acipenser transmontanus*)	SSC	Large rivers and associated estuaries. White Sturgeon in the Sacramento-San Joaquin system represent the southernmost spawning population.	**Low.** Suitable habitat occurs within the Plan Area in the Sacramento River and adjacent waterways, but they are not expected to occur as far north as the Plan Area.
Pacific lamprey (*Entosphenus tridentatus*)	SSC	Anadromous; undammed streams rivers, streams, and creeks with gravel spawning substrates.	**Low.** Suitable habitat occurs within the Plan Area in the Sacramento River. However, they are not present on the IPaC list, and there are no CNDDB records of them occurring in or near the Plan Area.
River lamprey (*Lampetra ayresi*)	SSC	Clean, gravelly riffles in permanent streams for spawning, while ammocoetes require sandy to silty backwaters or stream edges in which to bury themselves.	**Low.** Suitable habitat occurs within the Plan Area in the Sacramento River. However, they are not present on the IPaC list, and there are no CNDDB records of them occurring in or near the Plan Area.
Western brook lamprey (*Lampetra richardsoni*)	SSC	Clear, cold, water in little disturbed watersheds, as well as clean gravel near cover (boulders, riparian vegetation, logs, etc.) for spawning.	**Low.** Suitable habitat occurs within the Plan Area in the Sacramento River. However, they are not present on the IPaC list, and there are no CNDDB records of them occurring in or near the Plan Area.
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)	FT, ST	Fast-flowing, well-oxygenated rivers and streams	**Present.** Known to occur in the Sacramento River and tributaries. Suitable habitat occurs within the Plan Area.
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT, ST	Undammed rivers, streams, creeks.	**Present.** Known to occur in the Sacramento River and tributaries. Suitable habitat occurs within the Plan Area.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Chinook salmon (Central Valley fall/late-fall-run ESU) (*Oncorhynchus tshawytscha*)	SSC	Undammed rivers, streams, creeks.	**Present.** Known to occur in the Sacramento River and tributaries. Suitable habitat occurs within the Plan Area.
Chinook salmon (Sacramento River winter-run ESU) (*Oncorhynchus tshawytscha*)	FE, SE	Undammed rivers, streams, creeks.	**Present.** Known to occur in the Sacramento River and tributaries. Suitable habitat occurs within the Plan Area.
Central California roach (*Hesperoleucus symmetricus symmetricus*)	SSC	Small streams, intermittent watercourses; mid-elevation streams in the Sierra Nevada foothills and in lower reaches of some San Francisco Bay streams but they may also be found in the main channels of some rivers	**Low.** Suitable habitat occurs within the Plan Area in the Sacramento River. However, they are not present on the IPaC list, and there are not CNDDB records of them occurring in or near the Plan Area.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Sacramento hitch (*Lavinia exilicauda exilicauda*)	SSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes and reservoirs. In streams they are generally found in pools or runs among aquatic vegetation, although small individuals will also use riffles.	**Low.** Plan Area may only provide marginal habitat.
Hardhead (*Mylopharodon conocephalus*)	SSC	Streams at low to mid elevations in the Sacramento-San Joaquin and Russian River drainages.	**Moderate.** Suitable habitat occurs within the Plan Area in the Sacramento River.
Sacramento splittail (*Pogonichthys macrolepidotus*)	SSC	San Francisco bay estuary. Spawns in upstream floodplains and backwater sloughs.	**Low.** Plan Area may only provide marginal habitat.
Riffle sculpin (*Cottus gulosus*)		Permanent, cool, headwater streams where riffles and rocky substrates predominate	**Moderate.** Suitable habitat occurs within the Plan Area in the Sacramento River.
Birds			
Tricolored blackbird (*Agelaius tricolor*)	ST, SSC	Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, and fiddleneck	**High.** Documented in vicinity. Suitable habitat occurs within or near the Plan Area**.**
Golden eagle *(Aquila chrysaetos)*	CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and tall human-made structures.	**Moderate.** Suitable habitat occurs within the Plan Area.
Bald eagle (*Haliaeetus leucocephalus*)	SE, CFP	Nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands.	**Present.** Known to occur in Turtle Bay Park Bird Sanctuary. Suitable nesting habitat occurs within the Plan Area.
Long-eared owl *(Asio otus)*	SSC	Nests in open forests, riparian woodland, conifer forests, dense vegetation adjacent to grasslands, shrublands or other open communities.	**Moderate.** Suitable habitat occurs within the Plan Area.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Olive-sided flycatcher (*Contopus cooperi*)	SSC	Nests in montane and northern coniferous forests, in forest openings, forest edges, semi-open forest stands. Breeding habitat is primarily late-successional conifer forests and mid-to high elevations.	**Moderate.** Documented in vicinity. Suitable habitat occurs within or near the Plan Area, however marginal breeding habitat**.**
Yellow-breasted chat (*Icteria virens*)	SSC	Riparian woodland/scrub with dense undergrowth.	**High.** Documented in vicinity. Suitable habitat occurs within the Plan Area**.**
Purple martin *(Progne subis)*	SSC	Lakes and ponds. Forage over towns, cities, parks, open fields, dunes, streams, wet meadows, beaver ponds, and other open areas.	**Moderate.** Suitable habitat occurs within the Plan Area.
Osprey *(Pandion haliaetus)*	WL	Shallow water where fish are plentiful, including rivers, lakes, reservoirs, lagoons, swamps, and marshes.	**High.** Documented in vicinity. Suitable habitat occurs within the Plan Area**.**
Bank swallow *(Riparia riparia)*	ST	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts.	**High.** Documented in vicinity and historically within the Plan Area. Suitable habitat occurs within or near the Plan Area**.**
Yellow Warbler (*Setophaga petechia*)	SSC	Riparian corridors, often dominated with an overstory of mature cottonwoods, western sycamores, a midstory willow, and a dense shrub understory.	**Present.** Observed in Turtle Bay Park Bird Sanctuary. Suitable nesting habitat occurs within the Plan Area.
Mammals			
Pallid bat *(Antrozous pallidus)*	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (WBWG 2020).	**Moderate.** CNDDB occurrences within five miles of the Plan Area and suitable habitat occurs.
Northern California ringtail (*Bassariscus astutus raptor*)	CFP	Riparian habitats/forests and in brush stands of low to middle elevations in close association with rocky areas. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests.	**Low.** Unprocessed CNDDB occurrence in the Shasta Dam Quade. Plan Area may be too low in typical elevation and only provides marginal habitat.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Townsend's big-eared bat *(Corynorhinus townsendii)*	SSC	Caves, mines, buildings, rock crevices, trees.	**Moderate.** CNDDB occurrences within five miles of the Plan Area and suitable habitat occurs.
Spotted bat *(Euderma maculatum)*	SSC	Roost in cracks, crevices, and caves, usually high in fractured rock cliffs. Found in desert, subalpine meadows, desert-scrub, pinyon juniper woodland, ponderosa pine, mixed conifer forest, canyon bottoms, rims of cliffs, riparian areas, fields, and open pastures (WBWG 2020).	**Moderate.** CNDDB occurrence within five miles of the Plan Area and suitable habitat occurs.
Silver-haired bat *(Lasionycteris noctivagans)*	S3, CNDDB	Maternity roosts occur in natural hollows and bird-excavated cavities or under loose bark of larger snags. May hibernate in trees, rock crevices, sloughing bark, or in wood piles, mines, caves, or buildings. Prefers forest, north temperate zone conifer and mixed conifer/hardwood forests, but may occur in more xeric habitats in winter and during migration (WBWG 2020).	**High.** CNDDB occurrence within one mile of the Plan Area and three within five miles and suitable habitat occurs.
Western red bat *(Lasiurus blossevillii)*	SSC	Roosts in foliage of trees or shrubs; day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2020).	**Moderate.** CNDDB occurrences within five miles of the Plan Area and suitable habitat occurs.
Hoary bat *(Lasiurus cinerus)*	SSC	Dense foliage of medium to large trees; roost primarily in foliage of both coniferous and deciduous trees. Roosts are usually at the edge of a clearing. Some unusual roosting situations have been reported in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a driftwood plank, and clinging to the side of a building (WBWG 2020).	**Moderate.** CNDDB occurrence within five miles of the Plan Area and suitable habitat occurs.
Yuma myotis *(Myotis yumanensis)*	CNDDB	Usually associated with permanent sources of water, typically rivers and streams; occurs in riparian, arid scrublands and deserts, and forests; roosts in bridges, buildings, cliff crevices, caves, mines, and trees (WBWG 2020).	**Moderate.** CNDDB occurrences within five miles of the Plan Area and suitable habitat occurs.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Species	Status	Habitat / Requirements	Potential to Occur
Fisher - Northern California/Southern Oregon DPS *(Pekania pennanti)*	SSC	Forested areas, with a large tree canopy cover that contain a mix of conifer and California black oak trees.	**Low.** Documented in the Shasta Dam Quade. Plan Area may provide marginal habitat, however this species is not expected to occur in the Plan Area.

Sources: CNDDB 2023, CNPS 2023, iNaturalist 2023, eBird 2023.

Table 2: Special-Status Species with the Potential to Occur in the Redding Riverfront

Listing Status and Potential to Occur Descriptions		
FE = Listed as endangered under the Federal Endangered Species Act. FT = Listed as threatened under the Federal ESA. PT = Proposed threatened under the Federal ESA. SSA = Species Status Assessment California SE = Listed as endangered under the California ESA. ST = Listed as threatened under the California Endangered Species Act. SC = Candidate under the California Endangered Species Act. SSC = Listed as a species of special concern in California. CFP = Listed as fully protected in California CNDDB = Species tracked by the CNDDB S3 = Vulnerable in California	California Rare Plant Rank (CRPR) 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere 2 = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere 0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat 0.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) 0.3 = Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known). 4 = Limited distribution.	Absent. Plan Area does not contain suitable habitat to support the species and not expected to occur. Low. Plan Area only provides marginal or low-quality habitat to support species. No records of occurrence within one mile radius of the project. Moderate Potential. The CNDDB records the species outside of the plan area, but within a 5-mile radius, and suitable habitat is present. High Potential: There are CNDDB records of the species within one mile of the plan area and suitable habitat is present. Present: There are recent CNDDB records (within ten years) of the species in the plan area. Species is known to occur within the Plan Area.