APPENDIX E

BIOLOGICAL TECHNICAL REPORT

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PACIFIC GAS & ELECTRIC
R-1385 DFM-0630 MERIDIAN SACRAMENTO RIVER CROSSING PIPELINE REPLACEMENT PROJECT
COLUSA AND SUTTER COUNTIES, CALIFORNIA

Project No. 2102-0081

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1.0 INTRODUCTION

Pacific Gas & Electric Company (PG&E) proposes to replace the Distribution Feeder Main (DFM-0630) pipeline crossing of the Sacramento River near the City of Meridian, California. The objective of the R-1385 DFM-0630 Meridian Sacramento River Crossing Replacement Project (Project) is to install a new four-inch diameter pipeline underneath the Sacramento River using horizontal directional drilling (HDD) techniques, tie-into the existing pipeline network, and then decommission the existing pipeline crossing. The pipeline replacement must be complete prior to December 31, 2022.

The purpose of this Biological Technical Report is to detail the findings of a desktop review and biological field surveys conducted for the proposed Project in Colusa and Sutter Counties, California. This technical report includes a review of pertinent literature, a review of regulatory requirements, results of reconnaissance field surveys, and a preliminary analysis of general impacts of Project implementation on biological resources.

2.0 BACKGROUND

PG&E is proposing to address the exposure of natural gas distribution feeder main pipeline DFM-0630 at its crossing of the Sacramento River. The Project objective is to replace the affected pipeline segment near the existing crossing location using HDD methods and to decommission the existing pipeline crossing. The Project would be conducted in two phases: the pipeline replacement phase and pipeline decommissioning phase.

- The pipeline replacement phase consists of installing and commissioning the new four-inch diameter HDD crossing.
- The pipeline decommissioning phase involves the decommissioning of the two existing three-inch diameter pipeline crossings and removal of the decommissioned pipeline from the river crossing.

2.1 LOCATION

The Project area is located on the northwestern side of Meridian, California within the *Meridian, California* United States Geological Survey (USGS) 7.5-Minute Series topographic quadrangle map (Figure 1). The Project area is in Section 13, Township 15 North, Range 1 West and occurs within both Colusa County and Sutter County, California (the Sacramento River is the county line). Access to the Project area on the west riverbank is from Alameda Court off Highway 20 near the Sacramento River bridge. The western portion of the Project area extends into the agricultural fields west of the west levee. The eastern portion of the Project area includes the eastern levee and near the intersection of North Meridian Road and Alameda Street and extends along Alameda Street to the east.

2.2 PROJECT DESCRIPTION

2.2.1 Pipeline Replacement

The proposed pipeline crossing replacement consists of installing a four-inch diameter pipeline using HDD methods, along with short sections of trench-installed pipe in terrestrial locations to tie-in to the existing pipeline network. The drilling rig will be set up on the east side of the river and the bore entry pit will be located in Alameda Street. Drilling will proceed from east to west, and the bore exit pit will be located in the agricultural field west of the river and west levee. The pipeline will be welded, coated, inspected and spike tested (a preliminary hydrotest) in a laydown area on the west side of the river. Once the HDD is complete and the new pipeline is fabricated, it will be pulled through the bore from west to east.

Pipe will be trench-installed from the HDD entrance and exit locations to the tie-in points, and the entire new section of pipeline, including both HDD and trench-installed segments, will be hydrotested in accordance with California Department of Transportation (Caltrans) and California State Lands Commission (CSLC) requirements prior to final tie-in and commissioning.

After completion of the HDD, the worksites would be restored once pipeline installation and commissioning have been completed, with any excavations backfilled and compacted to original contours. An overview of the pipeline replacement component of the Project is provided in Figure 2.

2.2.2 Pipeline Decommissioning

The existing crossing of DFM-0630 at the Sacramento River consists of two direct buried three-inch diameter natural gas pipelines extending approximately 250 feet in length from bank to bank. The entire pipeline segment involved in decommissioning includes a single three-inch diameter pipeline buried in the agricultural field west of the Sacramento River that extends up the landside slope of the west levee and across the levee crown to a concrete valve box at the top of the west levee. Inside the valve box, the pipeline branches into two three-inch pipelines that extend down the waterside slope of the west levee, across the river, and up the waterside slope of the east levee into a concrete valve box located near the top of the east levee. Inside the east levee valve box, the two pipelines merge into a single three-inch pipeline that extends across the levee crown and down the landside slope of the east levee into Meridian Road. The pipeline then turns to follow Meridian Road to the south.

The proposed decommissioning of the existing pipeline crossing involves pigging and flushing the pipelines to remove any potential contaminants prior to decommissioning and removal. Both of the existing three-inch pipelines that cross the river will be pigged and flushed from valve box to valve box, and the flush water will be tested to confirm that the total petroleum hydrocarbon (TPH) content is less than 15 parts per million (ppm).

Once pigging and flushing has been completed, the pipeline crossing will be removed in its entirety across the river from one valve box to the other. The concrete valve boxes will be removed, along with all portions of the pipeline within the levees to a point at least 10 feet past the landside toe of the levees. The pipeline segment in the agricultural field west of the western levee will be retired in place. An overview of the decommissioning component of the Project is provided in Figure 3.

3.0 METHODOLOGY

3.1 LITERATURE REVIEW

Biologists from Padre Associates (Padre) reviewed available Project design information, Colusa and Sutter County soil survey maps, National Wetland Inventory (NWI) Maps, the USGS 7.5-minute topographic map for the Meridian quadrangle, and other environmental documents. The California Natural Diversity Database (CNDDB) and California Department of Fish and Wildlife Biogeographic Information and Observation System (BIOS) were queried for records of special-status species reported within a five-mile radius surrounding the Project area (California Department of Fish and Wildlife [CDFW], 2021). A list of federally listed Threatened and Endangered species was obtained from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), and is included under Appendix A (USFWS, 2021; NMFS, 2021a). Listed species occurring within five miles of the site are depicted in Figure 6. Special-status taxa that are known to exist or have the potential to exist on the Project area were also identified through a review of relevant literature (California Native Plant Society [CNPS], 2021; Zeiner et al., 1988; 1990a, b).

Padre biologists also reviewed PG&E's Multiple Region Operations & Maintenance Habitat Conservation Plan (MRHCP) (ICF, 2020) for incorporation of Avoidance and Minimization Measures (AMMs) from the MRHCP for protection of covered species potentially impacted by the Project.

3.2 FIELD SURVEYS

Reconnaissance-level field surveys for the purposes of site characterization, biological surveys, and preliminary aquatic resources delineation were conducted by Padre biologists on March 17, 2021. A targeted elderberry shrub survey was conducted by Padre biologists on April 27, 2021, to coincide with the blooming window to ensure that all elderberry shrubs covered in dense grape vines, and difficult to locate during the non-blooming season, were detected. Supplemental surveys for identification of biological resources within an expanded study area were conducted on July 20, 2021. The biological resources study area (study area) included all biological resources that could potentially be impacted by the Project. The study area includes all temporary impact areas, staging areas, access routes, and the surrounding areas. Boundaries of the study area are depicted in Figures 4 and 5. Surveys of the study area were conducted to assess the potential for biological resources and to determine the likelihood of occurrence for special-status species and/or sensitive and regulated habitats on the site. Detection methods included direct observation with binoculars; examination and identification of tracks, scats, previous years nests, burrows/diggings, and carcasses/skeletal remains; and identification of vocalizations (calls and songs). No trapping or netting was performed during surveys. Plants not identified in the field were collected and returned to the lab for identification using standard taxonomic references, when possible (Baldwin et al., 2012). Prior to the field surveys, the CNDDB/BIOS query was reviewed to identify recorded occurrences of special-status plant and animal species in the Project vicinity (Appendix B). Special-status species occurring within five miles of the site are depicted in Figure 6. During the field surveys, vegetative cover types and significant habitat features, such as wetlands, potential nest trees, and potential dens or burrows, were noted. Lists of plants and wildlife associated with the various cover types were compiled and

are included in Appendix C and Appendix D. Site photographs taken during field surveys are provided in Figure 7.

4.0 ENVIRONMENTAL SETTING

4.1 GEOLOGY/GEOMORPHOLOGY

The Project area is located within the River Alluvium subsection of the Great Valley ecological section of California (Miles and Goudey, 1997). The River Alluvium subsection occurs on the alluvial plains and natural levees adjacent to the Sacramento and Feather Rivers. The geomorphology of this subsection is nearly level floodplains and very gently sloping levees although natural levees have been almost completely replaced with steep artificial levees. Elevations in this subsection range from about 25 to 150 feet above mean sea level (msl). Fluvial erosion and deposition are the main geomorphic processes in the subsection.

Two soil types that have been mapped by the Natural Resources Conservation Service (NRCS) are distributed across the Project area, as described in Section 4.3 below.

The Project is located within the Sacramento Valley subregion of the Great Valley California floristic region (Baldwin et al., 2012). The eastern portion of the Project area is located within a rural residential area of northwestern Meridian. Part of the western portion of the Project area is also located in rural residential and part is in agricultural land. The Project area crosses the Sacramento River which has a very narrow floodplain on both banks partially created by the steep artificial levees constructed on the river's banks.

4.2 CLIMATE

The Project area is situated in Climate Zone 8, which includes cold-air basins of California's Central Valley (Clark, 1985). The Project area has a climate that is strongly influenced by the Pacific Ocean. The climate is characterized by hot and sub-humid summers with low overnight temperatures with generally colder air flowing from adjacent zones in the coastal and Sierra foothills. Most of the rainfall occurs during the period from November through April.

In nearby Colusa, northwest of the Project area, the average maximum temperature for the 73-year period between 1948 and 2021 was 75.1°Farenheit (F), with a range of 54.2°F in January to 94.7°F in July. The average minimum temperature was 47.7°F with a range of 36.9°F in December and 59.3°F in July. The average annual precipitation is 15.62 inches with a range of 0.03 inch in July to 3.25 inches in January. No precipitation falls as snow within this area of California (Western Regional Climate Center, 2021).

4.3 SOILS

The soils in the River Alluvium subsection are mostly moderately well to somewhat poorly drained. Soil temperature regimes are thermic. Soil moisture regimes are mostly xeric. A thermic soil temperature regime refers to soils with a mean annual temperature that is 15° Celsius (C) or higher but lower than 22°C, and the difference between mean summer and mean winter soil temperatures is more than 5°C at a depth of 50 centimeters (cm) from the soil surface or at a densic, lithic, or paralithic contact, whichever is shallower. A xeric soil moisture regime refers to soil moisture that is dry in all parts for 45 or more consecutive days in the four months following summer solstice and moist in all parts for 45 or more consecutive days in the four months following winter solstice in six or more out of ten years.

Based on a review and analysis of the U.S. Department of Agriculture's Web Soil Survey for Colusa and Sutter Counties (NRCS, 2021), the Project area is underlain by Vina loam, silt loam substratum, 0 to 2 percent slopes, MLRA 17 (map unit symbol 171) and Columbia loam, 0 to 2 percent slopes (map unit symbol 122). These soil mapping units are described below.

4.3.1 Vina loam, silt loam substratum, 0 to 2 percent slopes, MLRA 17 (map unit symbol 171)

This soil mapping unit is a well-drained soil formed in alluvium derived from igneous, metamorphic, and sedimentary rock. Typically, the soil profile is described from 0 to 21 inches as loam, from 21 to 26 inches as fine sandy loam, from 26 to 46 inches as loam, and from 46 to 60 inches as silt loam. Depth to a restrictive feature is typically more than 80 inches. Depth to the water table is also typically greater than 80 inches. This mapping unit is classified as a non-hydric soil although it can have some hydric minor component. This soil mapping unit underlays the entire study area to the west of the Sacramento River.

4.3.2 Columbia loam, 0 to 2 percent slopes (map unit symbol 122)

This soil mapping unit is a somewhat poorly drained soil formed in mixed alluvium. Typically, the soil profile is described from 0 to 25 inches as loam and from 25 to 60 inches as stratified sand to loam. Depth to a restrictive feature is typically more than 80 inches. Depth to the water table is also typically between 36 and 60 inches. This mapping unit is classified as a hydric soil. This soil mapping unit underlays the entire study area to the east of the Sacramento River.

4.4 WATER QUALITY

Water quality and temperatures are important factors in determining habitat suitability for special-status fish species, particularly salmonids. The primary water quality concern for fish during in-water excavation is turbidity. Some fish survive better in turbid water while others, particularly visual predators, do better in clear water (Nobriga, 2008). Bell (1991) noted that salmon suffer more physical distress in turbid water than other species. Non-native carp and bullhead can thrive in waters rendered quite turbid by decaying vegetation and other organic material.

Harvey and White (2008) reported an overall reduced benthic feeding and drift feeding in juvenile cutthroat trout and coho salmon in an artificial stream as turbidity increased from 0 to 400 Nephelometric Turbidity Units (NTU). No change in feeding was observed at the 50 NTU level but declined by 15 percent in coho and 7 percent in cutthroat at 100 NTU. At 200 NTU, feeding declined precipitously by 92 percent in coho and 43 percent in cutthroat. Neither species fed at 400 NTU. Drift feeding was more adversely affected with increasing turbidities as salmonids rely on sight. Turbidity in the range of 50 to 100 NTU did not severely inhibit benthic feeding by juvenile salmonids, which was consistent with data reported by Gregory and Northcote (1993) for juvenile Chinook salmon at turbidities of 35, 70, and 150 NTU in aquaria studies. Chronic turbidity levels of 25 to 50 NTU are physiologically damaging to salmonids and turbidity levels over 50 NTU result in decreased feeding in salmonids (Sigler et al., 1984).

Higher flows associated with increased river stages can result in higher turbidity because of the high flow energies suspending sediments. Turbidity levels are higher in the middle reach of the Sacramento River in winter, probably because of riverine input. Water quality data from 2020 to 2021 at the Tisdale Middle Sacramento River monitoring station, report that turbidity levels can

range from 1.5 to 6.0 NTUs during fall and early winter, and spike to 8.0 to 23.1 NTUs, presumably during discrete high flow events in late-January through March (CDFW, 2021). In addition, historic data from the USGS station Sacramento River at Colusa (1977 to 1980) shows that historically turbidity is lower from May through November (72 to 97 milligrams per liter [mg/L] suspended sediment concentration) and increases between December and March (143 to 259 mg/L) (USGS, 2021).

Increases in turbidity associated with in-water excavation are expected to result in a turbidity plume in the area immediately surrounding the excavation, but typically settle out of the water column within a short distance downstream. Based on previous experience with similar projects, the increase in turbidity resulting from in-water excavation remain within the normal range for the highly variable turbidity levels that naturally occur in the Sacramento River.

Water temperature in this portion of the Sacramento River is often at the maximum temperature threshold for salmonids during the late summer months, with average water temperatures reaching 70° F (21° C) during the month of July (USGS, 2021). Typically, salmonids prefer cool streams and rivers with a maximum temperature of 68° F (20°C). Optimal thermal conditions for Chinook salmon adult migration is 50° to 68° F (10 to 20°C) and optimal thermal conditions for Chinook salmon juvenile rearing is 55° to 68° F (13 to 20°C), with lethal thermal conditions occurring at temperatures greater than 75° F (24°C) (McCullough, 1999).

A review of real time temperature data in the Sacramento River from the past five years at USGS station Sacramento River at Wilkins Slough near Grimes (station number 11390500), located approximately 10 miles downstream of the Project area indicates that water temperatures above 68°F are typical between June and August (USGS, 2021).

Higher water temperatures routinely observed at the Wilkins Slough station downstream of the Project area during summer months indicate the least favorable habitat conditions for salmonid species and a low likelihood of occurrence of salmonids at the Project location during summer months. High water temperatures in the summer further supports the seasonal aquatic work window of June 1 to October 31, identified for avoidance of listed fish species seasonal spawning migrations.

4.5 HABITAT DESCRIPTIONS AND VEGETATION

The study area is located on the northwestern edge of the town of Meridian and spans the Sacramento River. The surrounding area consists of annual grasslands, agricultural land, and rural residential development. Meridian is located on the east side of the Sacramento River along with an orchard. On the east side of the river, the land is predominantly agricultural row crops and an annual grassland that is part of a rural residence.

Seven vegetation communities were identified onsite during field surveys (Figure 4). The western portion of the study area has been highly altered for agricultural production and transitions into a maintained non-native grassland adjacent to the west levee. On the western side of the west levee, the study area expands into a small patch of Great Valley valley oak riparian forest. The levee to the west of the Sacramento River supports non-native grassland. Along the west bank of the Sacramento River, a narrow Great Valley mixed riparian forest is present above the low flow channel of the Sacramento River. On the east bank, above the low flow channel of the Sacramento River but below the limits of the active floodplain, a narrow Great

Valley willow scrub community was present. All portions of the study area located above the limits of the active floodplain on the east bank of the Sacramento River are highly disturbed and can be classified as ruderal/disturbed vegetation communities. Vegetation communities were determined based on species composition and the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), but were modified as needed to accurately describe the existing habitat observed onsite. A comprehensive plant species lists, compiled from survey efforts, is included in Appendix C. Vegetation Communities mapped within the study area are shown on Figure 4. Below is a brief description of the six vegetation communities mapped within the study area.

4.5.1 Agriculture

The agriculture community is not described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* because it is not a natural community. This community consists of land currently used in crop cultivation that is routinely disturbed by agricultural practices. This community was located in the furthest west reaches of the study area. At the time of spring surveys, this field was fallow or recently sowed, but no crop was present at the time of field surveys. During surveys conducted later in the summer, it was determined that the field is currently used to grow melons.

4.5.2 Great Valley Mixed Riparian Forest

The Great Valley mixed riparian forest community is dominated by broadleaved winter-deciduous trees that form in a fine-textured alluvium soil on the borders of river channels. This community often receives flooding from the adjacent river but not so often or severe as to cause significant losses to tree cover. Species that are characteristic of this community include Goodding's black willow, Fremont cottonwood, California box elder (*Acer negundo*), and California buttonwillow (*Cephalanthus occidentalis*).

Within the study area, this community was present on the west bank of the Sacramento River along reaches where the frequency of flooding was not so great as to prevent a mature forest from developing. The prominent trees in this community included arroyo willow (*Salix lasiolepis*), Oregon Ash (*Fraxinus latifolia*), California sycamore (*Platanus racemosa*), Fremont cottonwood, and valley oak (*Quercus lobata*). The understory of the Great Valley mixed riparian forest in the study area was largely composed of a dense cover of shrubs and vines with herbaceous cover in some areas. The dominant species that comprised the understory included California grape (*Vitis californica*), Himalayan blackberry (*Rubus armeniacus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), mugwort (*Artemisia douglasiana*), California rose (*Rosa californica*), and Bermuda buttercup (*Oxalis pes-caprae*).

4.5.3 Great Valley Valley Oak Riparian Forest

The Great Valley valley oak riparian forest community consists of broad-leafed, winter-deciduous trees that form a closed canopy. The dominant tree in this community type is the valley oak. This community is located on the highest reaches of floodplains of rivers in California's Sacramento and San Joaquin valleys where the community is less subject to physical disturbance from flooding. In addition to the dominance of valley oak trees in the canopy, other vegetation that are common in this community include Oregon ash, California sycamore, California rose, and blackberry (*Rubus* sp.).

Within the study area, this community was present on the west side of the Sacramento River at the toe of the landside slope of the levee within a remnant pocket of riparian vegetation. In this area, the community is entirely cut off from overland flood events from the Sacramento River by the levee, although it may still receive subsurface water from the river. This is atypical for traditional Great Valley valley oak riparian forests, which will occasionally receive overland flow during flood events. It is likely that the vegetation community present in the study area may be a relic riparian forest.

4.5.4 Great Valley Willow Scrub

The Great Valley willow scrub is a riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets dominated by several willow species (Holland 1986). The series is generally sub-mature, which is maintained by frequent heavy flooding and may transition into Great Valley riparian forests if undisturbed for several decades.

Within the study area, Great Valley willow scrub was present along the east bank of the Sacramento River within the active floodplain where it is susceptible to flooding. In this community, there was a significant coverage of willow shrubs that were difficult to identify because they had not yet leafed out for the season. Willow species commonly found within this community include arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and Pacific willow (*Salix lasiandra* var. *lasiandra*). Within the study area, this community also contained species that could be found in a mature Great Valley riparian forest including young California buttonwillows and California box elders (*Acer negundo*).

4.5.5 Non-Native Grassland

Non-native grasses dominate the grasslands in the Project area. Typical species include soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), hare barley (*Hordeum murinum* ssp. *leporinum*), Italian ryegrass (*Lolium multiflorum*), and wild oat (*Avena fatua*). Native grasses occur amongst the non-native grasses, including blue wild ryegrass (*Elymus glaucus*). Several non-native herbaceous plant species occur within this cover type including red-stemmed filaree (*Erodium cicutarium*), common mallow (*Malva neglecta*), and Italian thistle (*Carduus pycnocephalus*), as well as native herbaceous plant species including rancher's fireweed (*Amsinckia menziesii* var. *intermedia*).

In the study area, non-native grassland was mapped west of the Sacramento River on the west levee slopes and throughout the rural residential area adjacent to the agricultural field. Non-native annual grasses that were common in this area include hare barley, ripgut grass, wild oat, and rye grass (*Festuca perennis*). Annual forb species found in the grassland include black mustard (*Brassica nigra*), California burclover (*Medicago polymorpha*), redstem filaree, and vetch (*Vicia* sp.).

4.5.6 Riverine

The riverine community is not described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* because it is an open water aquatic community with limited vegetation. Within the study area, the Sacramento River flows from north to south. Within the area mapped as riverine, the channel is perennial and is largely devoid of any vegetation.

4.5.7 Ruderal

The ruderal community is not described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* because it is not a natural community and is typically associated with human disturbance. In the study area, ruderal/disturbed cover types were present in several locations, primarily along roadways and throughout the Project areas on the east side of the Sacramento River and support a dominance of weedy herbaceous non-grass plant species. The species composition and cover density of this community varied significantly within the study area. On the west side of the Sacramento River, this cover type was only mapped along the gravel roadway located on top of the levee where very limited vegetation was present.

On the east side of the Sacramento River, the ruderal/disturbed community was mapped on the levee above the active floodplain and along Alameda Street. On the levee, low growing herbaceous species were growing on the partially exposed substrate including both disturbance-adapted species like redstem filaree as well as native forbs like miniature lupine (*Lupinus bicolor*).

A concrete lined agricultural ditch occurs north of Alameda Street, outside the study area; however, it is worth noting due to its proximity to the Project area. Water in the ditch is actively managed and supplied by the agricultural pump station for agricultural uses in the surrounding area. Along Alameda Street and the concrete lined agricultural ditch, any vegetation present was highly disturbed. Reaches of the ditch above the concrete had recently been excavated and the dredged material was placed along Alameda Street in a long flattened mound. On this mound of dredged material, there was no vegetation present. Vegetated portions of the ditch had a mix of herbaceous species consisting primarily of disturbance adapted weeds and grasses. Some of the species present along Alameda Avenue and the ditch include curly dock (*Rumex crispus*), cheeseweed (*Malva parviflora*), wild oat, hare barley, long-beaked storksbill (*Erodium botrys*), stinging nettle (*Urtica dioica*), sourclover (*Melilotus indicus*).

4.6 WATERS AND WETLANDS

The Project area was examined for evidence of potentially regulated habitats, such as waters and wetlands, under regulatory authority of the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. A Preliminary Aquatic Resource Delineation was conducted in March 2021 with additional surveys completed in July 2021. The Preliminary Aquatic Resource Delineation identified and delineated the geographic extent of Federal jurisdictional waters of the U.S. and wetlands and aquatic features under state jurisdiction (Padre, 2021).

During field survey efforts conducted in March and July 2021, Padre identified a total of 1.62 acres of Federal jurisdictional waters and wetlands, 1.62 acres of waters of the State, and 1.71 acres of stream features within the 8.46-acre study area. Activities within these delineated areas are regulated by the Federal government and/or the State of California (Figure 5).

The Sacramento River is a Navigable Waterway under Section 10 of the Rivers and Harbors Act of 1899 and a Water of the U.S. under Section 404 of the Clean Water Act (CWA) and is subject to ACOE jurisdiction. Adjacent lands meeting the three-parameter definition of a federal wetland are also ACOE jurisdictional under Section 404 of the CWA. The Sacramento River and adjacent wetlands also meet the definition of waters of the State defined within the Porter-Cologne Water Quality Control Act to include any surface water or groundwater, including

saline waters, within the boundaries of the State, and are regulated by the Regional Water Quality Control Board (RWQCB). The bed, bank, and riparian cover of the Sacramento River is also regulated under Sections 1600-1617 of the California Fish and Game Code administered by the CDFW, and jurisdiction extends to the top of bank or limits of riparian vegetation, whichever is greater.

Within the study area there were two wetland types and one deepwater habitat type both of which were defined as other waters of the U.S. under the Federal jurisdictional determination. Wetland types are defined both by their abiotic features such as water regime and topography as well as biotic factors like vegetation communities. The wetland types found within the study area were a palustrine scrub-shrub wetland and a palustrine forested wetland. Both wetland types were located below the ordinary high water mark (OHWM) and are therefore considered other waters of the U.S. Neither wetland type met the three parameters for consideration as a jurisdictional three-parameter wetland. Wetland types were determined by their abiotic and biotic factors and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979). In addition to these two vegetated areas, other waters of the U.S. present in the unvegetated portion of the study area are classified as lower perennial riverine wetlands (the Sacramento River low flow channel). Below is a brief description of each wetland type and of the deepwater habitat present in the study area.

4.6.1 Lower Perennial Riverine Waters (Waters of the U.S.)

Riverine waters are defined as aquatic resource features that are confined within a channel and lack a dominance of trees, shrubs, persistent emergent herbs, mosses, or lichens. Wetlands that occur on a river's floodplain are classified separately from the riverine system due to the presence of vegetation cover (Cowardin, 1979). Within the riverine system classification there are four subsystems. These are tidal, lower perennial, upper perennial, and intermittent. Within the study area, the Sacramento River is a lower perennial channel. This subsystem is characterized by its low gradient, perennial water flow, lack of tidal influence, and typically has sandy to muddy substrate. The existence of a well-developed floodplain is also characteristic of lower perennial riverine waters, though the floodplain is highly altered at this location because the river is confined by the levees.

In a riverine system, the limits of ACOE jurisdiction on waters of the U.S. are defined by the OHWM. See the Biological Resources Impact Map (Figure 5) for the location of the OHWM on the Sacramento River within the study area. A total of 1.17 acres of lower perennial riverine waters occur within the study area.

4.6.2 Palustrine Forested Wetland (Waters of the U.S.)

The palustrine classification of wetlands includes a wide variety of different wetland types. Wetlands commonly called ponds, prairies, fens, bogs, marshes, and swamps are all types of palustrine wetlands. In most circumstances, palustrine wetlands are dominated by persistent emergent herbs, shrubs, or trees and are found in non-tidal areas. Palustrine wetlands can occur in tidal wetlands if the salinity derived from the ocean is below 0.5 parts per thousand (ppt) (Cowardin, 1979).

Palustrine forested wetlands have a dominance of woody plants that are greater than 20 feet tall (trees) (Cowardin, 1979). In the western United States, this wetland type is common on

the fringes of river systems where higher soil moisture is present but frequent and violent flooding does not occur. Within the study area, this wetland type was part of the Great Valley mixed riparian forest vegetation community and was located on the west side of the Sacramento River. A total of 0.18 acres of palustrine forested wetlands occurs within the study area.

4.6.3 Palustrine Scrub-Shrub Wetland (Waters of the U.S.)

Palustrine scrub-shrub wetlands share the same characteristics of other palustrine systems as described above but have a dominance of woody plants that are less than 20 feet tall. Scrub-shrub wetlands often develop from adverse environmental conditions like flooding and erosion which prevent larger or older woody plants from developing. For this reason, a palustrine scrub-shrub wetland may be an early succession of a palustrine forested wetland and could develop into a forest given enough time to develop without adverse environmental conditions Cowardin, 1979.

Within the study area, palustrine scrub-shrub wetlands were present on the east bank of the Sacramento River in the active floodplain below the ordinary high water mark. Palustrine scrub-shrub wetlands were mapped within the Great Valley willow scrub vegetation community and occurred only below the ordinary high water mark within the study area. A total of 0.27 acres of palustrine scrub-shrub wetlands occur within the study area.

4.7 WILDLIFE

Wildlife observed within the Project area were characteristic of the region and of the riverine and agricultural habitats that occur onsite. A comprehensive list of wildlife species observed during the surveys are included in Appendix D. Special-status wildlife species (i.e., endangered, threatened, rare, or other special-status species) occurring, or potentially occurring, within the Project area and near vicinity are discussed in Section 4.8 below.

The vegetation communities on the Project area and surrounding area provide habitat for resident and migratory wildlife species. The composition, density, distribution, and physical characteristics of vegetative communities determine the diversity and abundance of wildlife species residing in the Project area. Wildlife species observed and expected within the vegetative cover types present in the Project area are discussed below.

The open agricultural landscape found in the western reaches of the Project area provides forage and cover for passerine birds and small mammals, such as white-crowned sparrow (*Zonotrichia leucophrys*), California ground squirrel (*Spermophilus beecheyi*), and California vole (*Microtus californicus*). These species, in turn, provide a portion of the prey base that attracts raptors such as red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus hudsonius*), and Swainson's hawk (*Buteo swainsoni)* as well as mammalian predators like coyote (*Canis latrans*). Agricultural production can increase insect populations that can also be prey for Swainson's hawk and egrets (*Ardea* sp*).*

In the eastern portion of the Project area, the rural residential community provides limited habitat diversity. However, there are several species that have adapted well to human disturbance including rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), European starling, Brewer's blackbird (*Euphagus cyanocephalus*), and raccoon (*Procyon lotor*) that are present.

The Sacramento River, which bisects the Project area, provides habitat for a wide variety of aquatic and terrestrial species that are closely tied to aquatic environment. A range of fish species may utilize the Sacramento River at the Project area including striped bass (*Morone saxatalis*), American shad (*Alisa sapidissima*), green sturgeon (*Acipenser medirostris*), and salmonid species (*Oncorhynchus* sp.). Terrestrial species that are closely tied to the water and prey upon fish species can include belted kingfisher (*Megaceryle alcyon*), Caspian tern (*Hydroprogne caspia*), double-crested cormorant (*Phalacrocorax auritus*), and North American river otter (*Lontra canadensis*). In addition, cliff swallows (*Petrochelidon pyrrhonota*) were observed foraging and tending to mud nests underneath the Highway 20 bridge located south of the Project area.

Within the Project area, there is limited nesting habitat that can be utilized by bird species. However, along the west bank of the Sacramento River, large riparian trees including California sycamore and Fremont cottonwood occur in tall enough stands to provide potential nesting habitat for large raptors .

4.8 SPECIAL-STATUS SPECIES

For the purposes of this Report, a special-status species is a plant or animal species that is:

- Listed as endangered, threatened, or a candidate species under the federal Endangered Species Act (FESA);
- Listed as endangered, threatened, or a candidate species under the California Endangered Species Act (CESA);
- Listed as a fully protected species or Species of Special Concern by the CDFW;
- A plant species that is on the CNPS's Rare Plant Ranking System as List 1 or 2; and/or
- Considered rare, threatened, or endangered under the California Environmental Quality Act (CEQA) Guidelines 15380(d) as the species' survival and reproduction in the wild are in immediate jeopardy, present in such small numbers throughout all or a significant portion of its range that it may become endangered, or likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

In addition, species protected by specific Federal or State regulation or local ordinances are considered special-status species.

Based on the literature review and species lists obtained from USFWS (IPaC Trust Resource Report) (Sacramento Office Consultation code: 08ESMF00-2021-SLI-1157) and from NMFS (NMFS, 2021a) for Meridian quadrangle, a list of special-status species that have been reported within a five-mile radius surrounding the Project area has been compiled. Special-status species included on the USFWS and NMFS species lists or with CNDDB occurrences within five miles of the Project area are evaluated for potential occurrence in Table 4-1. Table 4-1 also includes rationale for why certain species were excluded from further analysis in this document. Special-status species occurring within five miles of the Project are depicted in Figure 6.

An analysis of the likelihood of occurrence for each species was conducted based on species ranges, previous observations, contemporary sightings, and presence of suitable habitat elements. The Project may be located outside of the known range of some species, or within the geographic range for a certain species, but suitable habitat, such as vernal pools, is absent onsite. For this analysis, potential special-status species that occur in the general area of the Project, and for which the Project may provide habitat, are discussed in greater detail in Sections 4.8.1 and 4.8.2 below.

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
PLANTS				
Atriplex cordulata var. cordulata	Heartscale	1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps in alkaline flats and sandy soils.	**Absent**. Suitable soils and habitat are not present within the Project area. The nearest recent recorded occurrence is a 2002 CNDDB occurrence for which an exact location is unknown, but is mapped along Highway 20, three miles southeast of Colusa and just west of the Project area (CalFlora, 2021; CNDDB, 2021).
Hibiscus lasiocarpos var. *occidentalis*	Woolly rose-mallow	1B.2	Freshwater soaked riverbanks, marshes and swamps with low peat islands in sloughs or riprap levees.	**Low.** Low value habitat is present in Project area. The nearest recorded occurrence is from 1977 (CNDDB Occ. #5) and located approximately four miles northeast of the Project area where it was observed in an irrigation ditch, which has likely been disturbed since the time of the recorded observation.
Trichocornonis wrightii var. wrightii	Wright's trichocoronis	2B.1	Marshes and swamps, riparian forest, meadows and seeps, mud flats of vernal lakes and drying river beds.	**Absent.** Low value habitat is present in Project area. The nearest occurrence was documented in 1953 (Occ. #7) in a rice field approximately 9.5 miles south of the Project area.
INVERTEBRATES				
Branchinecta conservatio	Conservancy fairy shrimp	FE	The habitat characteristics typical of the pools that support the longhorn fairy shrimp are clear to turbid pools often in alkaline soils. These include clear-water depressions in sandstone outcroppings, grass-bottomed pools, and claypan pools.	**Absent.** No suitable habitat is present onsite or adjacent to the Project area for this species. Nearest recent recorded occurrence (Occ. #13) is from 2004 is approximately 21 miles northwest of the Project area in the Sacramento National Wildlife Refuge. No modeled habitat on or near site in MRHCP (ICF, 2020).

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Endemic to the grasslands of the central valley, central coast mountains and south coast mountains, in astatic rain-filled pools. Regionally inhabits small, clear-water sandstone depression pools and grassed swale, earth slump or basalt-flow depression pools.	**Absent.** No suitable habitat is present onsite or adjacent to the Project area for this species. Nearest recent recorded occurrence (Occ. #397) is from 2012 is approximately 3.5 miles northwest of the Project area at the Dolan Ranch Conservation Bank. No modeled habitat on or near site in MRHCP (ICF, 2020).
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Found in seasonally ponded habitats including vernal pools, swales, and ephemeral drainages. May occur in stock ponds, reservoirs, and ditches that provide suitable hydrologic conditions.	**Absent.** No suitable habitat is present onsite or adjacent to the Project area for this species. Nearest recent recorded occurrence (Occ. #168) is from 2012 is approximately 3.5 miles northwest of the Project area at the Dolan Ranch Conservation Bank. No modeled habitat on or near site in MRHCP (ICF, 2020).
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Occurrences of the VELB are primarily in the vicinity of moist valley oak woodlands associated with riparian corridors in the lower Sacramento River and upper San Joaquin River drainages (U.S. Fish and Wildlife Service, 1984). Elderberry plants are obligate hosts for the VELB, providing a source of food and brood wood.	**High.** VELB was not observed during biological surveys; however, two elderberry shrubs were mapped within the Project area and at least one shrub will need to be removed for completion of the Project. Nearest recent recorded occurrence of VELB (CNDDB Occ. #267) is from 2011 is approximately 2.5 miles southwest of the Project area. MRHCP modeled habitat for VELB occurs on the west bank of the Sacramento River at the Project location (ICF, 2020).
FISH				
Acipenser medirostris	Green sturgeon – Southern DPS	FT, CSC	Anadromous fish species found in near shore marine and estuarine environments from Alaska to Baja California, Mexico. Juveniles have been collected in the San Francisco Bay up to	**High.** Suitable migration habitat occurs at the Project area. Juvenile and adult green sturgeon have been recorded migrating up the Sacramento River to the remaining spawning grounds north of the Highway 162 bridge;

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
			the lower reaches of the Sacramento and San Joaquin Rivers. Green sturgeon depend on large rivers to spawn, typically in deep pools in large turbulent mainstem rivers. Spawning is documented in Sacramento River, but little is known about specific spawning locations.	however, the Project area is south of the species' known spawning range. Green sturgeon have been detected using biotelemetry at the Butte City Bridge and juveniles are annually observed at the Red Bluff fish passage monitoring station, suggesting that fish move through the Project area during migration to spawning habitat (NOAA, 2021).
Acipenser transmontanus	White Sturgeon	CSC	Spend most of their time in estuary habitat and migrate up the Sacramento and San Joaquin Rivers to spawn.	**High.** This species has been documented migrating through the Sacramento River between February and March; however, site does not provide suitable spawning habitat.
Entosphenus tridentata	Pacific lamprey	CSC	The adults live at least one to two years in the ocean and then return to fresh water to spawn. Require gravel for spawning.	**Moderate**. Pacific lamprey are known to occur in major river systems on the west coast, including the Sacramento and San Joaquin Rivers. The species could be found in the vicinity of the Project area; however, habitat onsite is not suitable for spawning.
Hypomesus transpacificus	Delta smelt	FT, SE	Endemic to the upper Sacramento/San Joaquin Delta, it mainly inhabits the freshwater-saltwater mixing zone of the estuary, except during its spawning season, when in moves into freshwater during the early spring months from March until May. The most upstream spawning location is confluence of the Sacramento and Feather Rivers at Verona Marine, Sutter County located downstream of the Project area (CDFG, 2012).	**Absent.** Suitable habitat is not present in Project area. Project area is outside of species current northern range. Nearest recorded occurrence is over 25 miles downstream of the Project area.

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
Lampetra ayresi	River lamprey	CSC	Lower Sacramento, San Joaquin, and Russian Rivers. Spawning may occur in gravelly riffles in permanent streams with sandy backwaters for ammocoetes.	**Moderate**. River lamprey is known to occur in the San Francisco Bay-Delta; however, detailed information on their distribution is lacking. Appears to be concentrated only in particular rivers, and only in the lower portions of large rivers. Nearest occurrences are reported north of the City of Sacramento in the Sacramento-Lower Thomas and Stone Corral Watersheds (CalFish, 2020). There is potential that this species could migrate through the Project area; however, habitat onsite is not suitable for spawning.
Mylopharodon conocephalus	Hardhead	CSC	Sacramento, San Joaquin, and Russian River habitats, side pools, and creeks/tributaries where clear, deep pools with sand-gravel-boulder bottoms occur with slow water velocity. Spawn where substrates include sand, gravel, and decomposed granite.	**Moderate.** This species could be found during seasonal migrations to upstream spawning tributaries. Nearest recorded occurrences (CNDDB Occ. # 19, 20, and 21) are 2007 occurrences located on the north fork of the Feather River approximately 55 miles northeast of the Project area.
Oncorhynchus mykiss irideus pop. 11	Central Valley DPS steelhead	FT	Sacramento and San Joaquin River systems, Sacramento-San Joaquin Delta, and San Francisco Bay	**High**. The species occurs in the Project area seasonally during migration to spawning habitat upstream of the Project area; however, habitat onsite is not suitable for spawning. The species was detected intermittently between late fall and early spring at the Tisdale Middle Sacramento Monitoring Station, approximately 10 miles downstream of the Project area (CDFW, 2021).
Oncorhynchus tshawytscha	Central Valley spring-run chinook salmon ESU	FT, ST	Sacramento River, Sacramento-San Joaquin Delta, and San Francisco Bay	**High.** The species occurs in the Project area seasonally during migration to spawning habitat upstream of the Project area. The species was detected at the Tisdale Middle Sacramento River Monitoring Station approximately 10 miles downstream of the Project area and its

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
				abundance peaks in March and April (CDFW, 2021).
	Central Valley fall-run chinook salmon ESU	CSC	Sacramento River, Sacramento-San Joaquin Delta, and San Francisco Bay	**High.** The species occurs in the Project area seasonally during migration to spawning habitat upstream of the Project area. The species was detected at the Tisdale Middle Sacramento Monitoring Station between January and May (CDFW, 2021).
Oncorhynchus tshawytscha	Sacramento winter-run chinook salmon ESU	FE, SE	Sacramento River, Sacramento-San Joaquin Delta, and San Francisco Bay	**High.** The species is known to occur in the Sacramento River and is likely to occur in the Project area during migration to spawning habitat upstream of the Project area. Habitat onsite is not suitable for spawning. The species was detected October through March at the Tisdale Middle Sacramento River monitoring station approximately 10 miles downstream from the Project area and their abundance peaks during December (CDFW, 2021).
Pogonichthys macrolepidotus	Sacramento splittail	CSC	Commonly occur in Sacramento River, Sacramento-San Joaquin Delta. Occasionally will migrate out to, and San Francisco and Pablo Bay during high flow years.	**High.** The species is known to occur in the Sacramento-Stone Corral Watershed (HUC 18020104 and is likely to occur during migration; however, habitat on site is not suitable for spawning.
AMPHIBIANS				
Ambystoma californiense	California tiger salamander	FT, ST	Occurs in grassland habitat. Needs underground refuges, especially ground squirrel burrows during summer and vernal pools or other seasonal water sources for breeding in winter.	**Absent. T**he Project area is outside the currently recognized range for the species. Nearest recent occurrence (Occ. #1085) is recorded near the Dunnigan Hills, approximately 19 miles southwest of the Project Area in Yolo County (CNDDB, 2021). No modeled habitat on or near site in MRHCP (ICF, 2020).

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
Rana draytonii	California red-legged frog	FT, CSC	Found in marshes, lakes, reservoirs, ponds, slow parts of streams, and other usually permanent water in lowlands, foothill woodlands and grasslands. Require areas with extensive emergent vegetation. High value habitats are deep-water ponds with dense stands of overhanging willows and a fringe of cattails.	**Absent.** Project area is known to be outside of species current range and no suitable habitat occurs in the Project area. Nearest recent recorded occurrence (Occ. #1657) is from 2013 is approximately 45 miles east in Yuba County. No modeled habitat on or near site in MRHCP (ICF, 2020).
REPTILES				
Emys marmorata	Western pond turtle	CSC	Ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and suitable upland habitat (sandy banks, grassy open fields) for egg laying	**Moderate.** Riverine habitat within the Project area provides potentially suitable habitat for the species. Basking habitat is present in the form of woody debris and logs and individuals may be able to access limited terrestrial habitat on the east bank. Upland nesting habitat in the Project area is extremely limited due to high level of human disturbance and limited access to terrestrial locations from the riverbanks at the Project area.
Thamnophis gigas	Giant gartersnake	FT, ST	Freshwater marshes and streams. Has adapted to drainage canals and irrigation ditches.	**Moderate.** The riverine aquatic habitat within the Project area provides atypical and marginal habitat elements for giant gartersnake. Levees on either side of the River provide marginal basking habitat and limited nearby upland refugia for protections from predators. There is no emergent wetland vegetation in the Sacramento River at this location to offer preferred foraging habitat. The west bank is steep and supports riparian cover making this area unsuitable for basking or dispersal.

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
				Aquatic habitat within an irrigation ditch adjacent to the eastern Project area supports seasonal flows associated with agricultural irrigation. The ditch is concrete-lined and managed and cleared of vegetation on the banks on a regular basis. The adjacent agricultural land on west and east Project areas consist of pastureland and walnut orchards which does not provide suitable habitat. Rice is grown in the region and offers the most suitable giant gartersnake habitat in the area. The nearest rice fields are approximately 0.5-mile east of the Project area east of the town of Meridian. The nearest recorded occurrence is located about two miles south of the Project area and is a 2002 occurrence (CNDDB Occ. #218) along Buster Road. A more recent occurrence from 2015 occurs 2.5 miles southwest of the Project area on a levee road surrounded by irrigation ditches (Occ. #411). Several more occurrences are documented in the same proximity ranging from 1997 to 2015. These occurrences have restricted hydrologic connectivity to the Sacramento River (Occ. #223, #381). MRHCP modeled habitat for giant gartersnake occurs on the Sacramento River at the Project location (ICF, 2020).
BIRDS				

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
Agelaius tricolor	Tricolored blackbird	ST, CSC,	Breeding habitat is often found near a source of water and in a grassland, woodland, or agricultural cropland.	**Low**. Suitable nesting habitat is not present in the Project area; however, individuals may transit through the Project area. The nearest recorded occurrence (Occ. #112) is in the town of Meridian including the Project area but was last seen in 1935.
Antigone canadensis tabida	Greater sandhill crane	ST, FP	Nests in wetland habitats in northeastern California; winters in the Central Valley where it prefers grain fields within four miles of a shallow body of water used as a communal roost; Irrigated pasture used as loafing sites.	**Low**. Suitable nesting and roosting habitat is not present in the Project area; however, individuals may transit through the Project area in route to Gray Lodge Wildlife Management Aera colonial wintering roost. The nearest recent recorded occurrence (Occ. #530) is located at the Gray Lodge Wildlife Management Area approximately 14 miles northeast of the Project area.
Branta hutchinsii leucopareia	Cackling goose	FDL,	Winters on seasonally flooded wetlands and semi-permanent wetlands present in the Butte Sink. Forages on natural pasture or harvested grain fields. Loafs on still water including lakes, reservoirs, and ponds.	**Low**. Suitable winter foraging habitat occurs in pasture adjacent to Project area; however, riverine aquatic habitat is not suitable for loafing and Project area is outside of nesting range. Nearest recorded occurrence (Occ. #1) is from 1978 and is located approximately 1.2 miles southwest of the Project area within a cornfield. Geese are observed annually roosting in the Butte Sink area as well as historic records (Occ. #2 and #4 1978 and 1985), approximately 3.4 miles north of the Project area.
Buteo swainsoni	Swainson's hawk	ST,	Nests in riparian forests, remnant riparian trees, planted wind breaks, residential shade trees and solitary upland oaks.. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Present.** This species was observed during biological surveys and is likely to nest and forage within 0.5-mile of the Project area. Suitable nest trees occur on and immediately adjacent to the Project area. Nesting sites were documented in close proximity to the Project area. A 2004 nest occurrence (Occ.# 2087) was documented along Highway 20 approximately 1.4 miles west of the Project area. Historic nests

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
				on the Sacramento River within 0.2-miles of the site were recorded in 1986 (Occ. # 26 and #230) within tall cottonwood trees surrounded by riparian habitat. Nesting occurrences were not observed during 2021 surveys, but mating behavior was observed during March surveys and foraging individuals were observed during all survey efforts.
Circus hudsonius	Northern harrier	CSC	Forages and nests in freshwater and brackish marshes and their adjacent grasslands.	**Present.** Species was observed during surveys foraging in fields adjacent to the Project area. Suitable nesting habitat does not occur onsite due to the level of disturbance and lack of vegetation in terrestrial habitat within the study area, but suitable nesting habitat occurs in the area surrounding the Project area.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT, SE	Riparian forest nester, along broad, lower flood-bottoms of large rivers. Nest in riparian jungles of willow, often mixed with cottonwood, with a lower story of black berry, nettles, or wild grape.	**Moderate.** Suitable habitat for this species is present on site however riparian habitat is lacking preferred size and density for nesting. Nearest recorded occurrence is from 1976 (Occ. #140) and is located approximately 4 miles north of the Project area; however, a more recent observation (Occ. #27) was documented in 2013 near the town of Colusa, approximately 7 miles northwest of the Project area.
Elanus leucurus	White-tailed kite	FP	Rolling foothills / valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Forages over grasslands, marshes, and oak savannas close to isolated, dense-topped trees for nesting and perching.	**Moderate.** The species is relatively common in the Project area and suitable nesting habitat is present in the riparian habitat on the west bank of the Sacramento River.

Table 4-1. Special-Status Species Occurring Within Five Miles of the Project area and Considered for Potential Occurrence in the Vicinity of the PG&E R-1385 Sacramento River Crossing Pipeline Replacement Project

Scientific Name	Common Name	Status [1]	Habitat	Probability of Occurrence
Riparia riparia	Bank swallow	ST	Colonial nester which nests primarily in riparian and other lowland habitats. Requires vertical banks/sheer cliffs with fine-textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole.	**Moderate.** Suitable nesting habitat is not present within the Project area; however, species could forage onsite given proximity to nesting colony known to occur on the Sacramento River south of the Project area. Nearest recent occurrence (Occ. #220) is located 1.4 miles south of the Project area.
MAMMALS				
Lasiurus blossevillii	Western red bat	CSC	Roosts primarily in trees and prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Moderate.** Suitable roosting habitat in cottonwood and sycamore trees near Project area. Nearest recorded occurrence (Occ. #62) is from 1999 and is located approximately 3.2 miles northwest of the Project area within a similar riparian corridor along the Sacramento River. The Project does not involve the removal of trees that provide suitable habitat.

[1] Status:
FE = Federal Endangered
FC = Federal Candidate
SE = California State Endangered
ST = California State Threatened
FP = CDFW Fully Protected
CSC = California Species of Special Concern
BCC = USFWS Bird of Conservation Concern

CRPR 1B.1 = Threatened in California and elsewhere, seriously threatened in California
CRPR 1B.2 = Threatened in California and elsewhere, moderately threatened in California
CRPR 2B = Plants rare, threatened, or endangered in California but more common elsewhere

4.8.1 Special-Status Plants

The soil and habitats on the Project site do not provide suitable habitat for special-status plant species that occur within five miles of the Project area. Based on a lack of suitable habitat for special-status plant species within the study area, no special-status plant species are expected to occur within the Project area.

4.8.2 Special-Status Wildlife

This section includes a discussion of special-status wildlife species that are known to occur or have potential to occur within the Project area based on habitat availability and known locations of species within the vicinity of the Project area. Certain species, such as vernal pool invertebrate and amphibian species listed in Table 4-2 above, may occur within the quadrangle and/or within five miles of the Project area; however, based upon a thorough analysis of the Project area, these species were determined to be absent due to a lack of suitable habitat and, therefore, are not included in this section. Other species may have been eliminated from consideration because the Project area is beyond the recorded geographic and/or elevational range for these species.

4.8.2.1 Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Valley elderberry longhorn beetle (VELB) is a moderate-sized, brightly colored, and sexually dichromatic beetle that is a federally listed Threatened species. The range of the VELB extends throughout California's Central Valley and associated foothills from about the 3,000-foot elevation contour on the east and the watershed of the Central Valley on the west. Occurrences of the VELB are primarily in the vicinity of moist valley oak woodlands associated with riparian corridors in the lower Sacramento River and upper San Joaquin River drainages (USFWS, 1984). Blue elderberry plants are obligate hosts for the VELB, providing a source of food and broodwood. Because of the relatively large size of the VELB (0.5 to 1.0 inch), it is generally restricted to the larger branches and stems of older elderberry plants. Emergence holes are circular-to-slightly oval and usually 0.25 to 0.5-inch in diameter. Emergence holes are generally found on plants with branch and trunk girths with an average diameter of 3.3 inches with a range between 0.6 and 10.0 inches. Emergence holes have been found from a few inches above the ground up to ten feet, but over 70 percent are found are below four feet (Barr, 1991).

A targeted survey for blue elderberry shrubs was conducted by Padre biologists on April 27, 2021 to determine the extent of potentially suitable VELB habitat. Seven elderberry shrubs were identified onsite or within 165 feet of the Project area (Figure 5). VELB was not observed during biological surveys; however, two blue elderberry shrubs were mapped within the Project area and at least one blue elderberry shrub occurs on the existing pipeline alignment and will need to be removed during the decommissioning phase of the Project (Figure 5). The nearest recent recorded occurrence (CNDDB Occ. #267) is from 2011 is approximately 2.5 miles southwest of the Project area. In addition, VELB modeled habitat was identified by the PG&E MRHCP within the riparian corridor on the western side of the Sacramento River throughout the Project area (ICF, 2020).

4.8.2.2 Green sturgeon (*Acipenser medirostris*)

The green sturgeon is a federally listed Threatened species in the southern range or distinct population segment (DPS). It is also a California Species of Special Concern and a NMFS

Species of Concern. Green sturgeon is an anadromous species, but little is known about its biology because they are much less abundant than white sturgeon and regarded as inferior quality for consumption (Moyle, 2002). Juvenile green sturgeon have been collected in the San Francisco Bay up to the lower reaches of the Sacramento and San Joaquin rivers; however, spawning occurs in cool sections of the upper Sacramento River where there are deep, turbulent flows and clean, hard substrates. In the autumn, the post-spawning adults move back down the river and re-enter the ocean. After hatching, larvae and juveniles migrate downstream toward the Sacramento-San Joaquin Delta and estuary where they spend a few years maturing before the move out to the ocean. Green sturgeon can utilize high tide habitat; therefore, it could benefit the species to start or work during low tide. Green sturgeon have been detected using biotelemetry at the Butte City Bridge, approximately 22 miles north of the Project area. In addition, juveniles are annually observed at the Red Bluff fish passage monitoring station, suggesting that fish move through the Project area during migration to spawning habitat (NOAA, 2021). Green sturgeon have a high potential to occur within the Sacramento River in the Project area; however, the Project area does not provide spawning habitat. See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

The HDD pipeline replacement is planned to occur between July and December 2022, depending on the timing of regulatory permit issuance. No in-water construction will occur during HDD replacement of the pipeline. All in-water work associated with pipeline decommissioning and removal will be conducted following the HDD pipeline replacement, and during the seasonal aquatic work window of June 1 to October 31, which is an agency approved work window for avoidance and minimization of special-status fish species seasonal migrations and spawning periods. The seasonal work window may be modified based on conditions of permits issued by regulatory agencies.

Table 4-2. Migration and Spawning Periods of Special-Status Fish Species that Migrate through the Project Area

Species	Status	Occurrence Migration/ Spawning	Migrating/Spawning Seasons											
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Anadromous Species														
Central Valley (CV) Fall-run Chinook Salmon	CSC	High/None						M	M	M	O	PS	PS	S
CV Spring-run Chinook Salmon	CSC/FT	High/None			M	M	PM	PM	M	S	S	S		
Sacramento Winter-run Chinook Salmon	SE/FE	High/None	PM	PM	PM	O	S	PS	PS	S				M
CV Steelhead	SE/FT	High/None	PO	PO	O	S						M	M	O
Green Sturgeon	FT	Low/None			M	M	O	O	S					
White Sturgeon	CSC	Moderate/None	M	O	PO	PO	PS	PS						M
River Lamprey	CSC	Moderate/None	S	S	S	S						M	M	M
Pacific Lamprey	CSC	Moderate/None	M	M	O	O	O	O	M				M	M
Resident Species														
Sacramento splittail	CSC	Moderate/Low	PS	PS	PS	S	S	S	S				M	M
Hardhead	CSC	Moderate	S	S	S	S	S	S	S				M	M

Status:		
SE = State Endangered	M	Migration period (Potential occurrence in Project area)
ST = State Threatened	PM	Peak migration period
CSC = California Species of Special Concern	S	Spawning period (Spawning habitat upstream of Project area)
FE = Federally Endangered	PS	Peak spawning period
FT = Federally Threatened	O	Overlap of migration and spawning periods
	PO	Peak Overlap of migration and spawning periods

Sources: NMFS, 2014; Moyle, 2002; Goals Project, 2000. Yoshiyama et al. 1998.

4.8.2.3 White sturgeon (*Acipenser transmontanus*)

The white sturgeon is a California Species of Special Concern. White sturgeon have a marine distribution spanning from the Gulf of Alaska south to Mexico but a spawning distribution ranging only north of the San Joaquin River (McCabe and Tracy, 1994, and Jackson et al., 2016). Currently, spawning populations are known to occur in the San Joaquin, Sacramento, Fraser, and Columbia Rivers. In California, primary abundance is in the San Francisco Bay, with spawning occurring mainly in the Sacramento and Feather Rivers (Klimley et al., 2015). White sturgeon spend most of their lives in estuaries of large rivers, only moving into freshwater to spawn (Moyle, 2002). Sturgeon migrate upstream when they are ready to spawn in response to flow increases. Male white sturgeon are at least 10 to 12 years old before sexual maturity (Moyle, 2002). Spawning takes place upstream in the Sacramento River between late February and early June when water temperatures range from 46° to 66° F. White sturgeon have a high potential to occur within the Sacramento River in the Project area during their migration to spawn between February and April; however, the Project area does not provide suitable spawning habitat. See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

The HDD pipeline replacement is planned to occur between July and December 2022, depending on the timing of regulatory permit issuance. No in-water construction will occur during HDD replacement of the pipeline. All in-water work associated with pipeline decommissioning and removal will be conducted following the HDD pipeline replacement, and during the seasonal aquatic work window of June 1 to October 31, which is an agency approved work window for avoidance and minimization of special-status fish species seasonal migrations and spawning periods. The seasonal work window may be modified based on conditions of permits issued by regulatory agencies.

4.8.2.4 Central Valley steelhead (*Oncorhynchus mykiss irideus*)

Central Valley steelhead is a federally listed Threatened species. Steelhead have been separated into 14 ESUs. The California Central Valley evolutionary significant unit (ESU) could occur in the vicinity of the Project. Steelhead are an anadromous form of the rainbow trout native to the Pacific Ocean and coastal drainages. Steelhead and rainbow trout did not arise from two distinct evolutionary lines (Behnke, 1992). General factors influencing steelhead abundance include reduction in spawning, incubation, and rearing success due to barriers to passage, diversions, flow fluctuations, sub-optimal water temperature, and sedimentation of spawning habitat. Steelhead live the majority of their life cycle in the Pacific Ocean then migrate upstream to spawn between October and January. Spawning typically occurs between December and April. Steelhead are iteroparous and do not die after spawning and thus may spawn again the following year. Most naturally produced Central Valley steelhead rear in freshwater for one to three years before emigrating to the ocean. Steelhead eggs hatch in about 30 days at 51°F (Leitritz and Lewis 1980). Studies of Central Valley steelhead have shown that the population is polymorphic, where two-year-old non-anadromous males are breeding with anadromous females. The polymorphism in the Central Valley population is due to the extreme variation in rainfall and climate which can result in flashfloods and/or droughts lasting years. The species flexibility has allowed it to persist in the Central Valley through the additions of dams and reduction of accessible spawning grounds.

Steelhead were historically more widely distributed within the Sacramento River and its tributaries, but the construction of dams has restricted upstream migration. However, the mainstem of the Sacramento River and other low gradient portions of the river provide potential migration and juvenile rearing habitat, including in the vicinity of the study area. Steelhead were detected intermittently between late fall and early spring 2019 through 2020 at the Tisdale Middle Sacramento Monitoring Station, approximately ten miles downstream of the Project area (CDFW, 2021). However, Steelhead are unlikely to occur in the Project area location during the summer and early fall months when in-water work will occur due high water temperature and low dissolved oxygen. It is likely smolts or non-anadromous individuals would be located upstream of the Project area where the water temperature is cooler and within habitat providing vegetation and/or structure for individuals to seek refuge or riffles to provide increased dissolved oxygen. See Table 4-2 for migration and spawning periods for special-status fish species that may occur within the Sacramento River in the Project area.

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4.8.2.5 Chinook salmon (*Oncorhynchus tshawyscha*)

The Chinook salmon is an anadromous species spending most of its adult life in the ocean and then returning to freshwater streams to spawn. They spend three to six years maturing in the ocean before they migrate upstream to spawn. Adult Chinook salmon die after spawning. Juveniles spend from several months to over a year rearing in their natal streams before emigrating to the ocean. Preferred spawning grounds for Chinook salmon are in gravel areas of large rivers and tributaries (Goals Project, 2000). Chinook salmon have been separated into 17 distinct groups or ESU based on similarity in life history, location, and genetic markers and the Project is located within the Sacramento-Stone Corral Hydrologic Unit (18020104) identified within the Pacific Coast Salmon Fisheries Management Plan (PFMC,2014). The Central Valley spring- and fall-run, and Sacramento River winter-run ESU's have the potential to occur within the Sacramento River in the Project area during their migration to upstream spawning habitat and for juvenile rearing when habitat conditions are suitable.

Central Valley Spring-Run Chinook Salmon

The Central Valley spring-run Chinook salmon is a federally Threatened species and California Threatened species. Central Valley spring-run Chinook salmon migration period occurs from March through September with a peak in May and June (PFMC, 2014). The spawning period is late July through late October (NMFS, 2014). The juvenile downstream emergence period is between November and March with a three to 15-month freshwater residency period between November and January (Year-2), concluding with an estuarine emigration period between November and June.

Spring-run Chinook Salmon were historically the most abundant race in the Central Valley. Spring-run Chinook Salmon are detected at the Tisdale Middle Sacramento River Monitoring Station approximately ten miles downstream of the Project area and its abundance peaks in March and April (CDFW, 2021). Now only remnant runs remain in Butte, Mill, Deer Creeks, tributaries to the Sacramento River; the confluence of Butte Creek and the Sacramento River is located approximately four miles upstream of the Project area. In the mainstem Sacramento River and the Feather River, early-running Chinook Salmon occur, but there has been significant hybridization with fall run. Spring-run chinook are in higher abundance in waters near Butte Creek and the Project region between January and March and a low abundance in the region June through December (NMFS, 2014). See Table 4-2 for migration and spawning periods for special-status fish species that may occur within the Sacramento River in the Project area.

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Central Valley Fall-Run Chinook Salmon

The Central Valley fall-run Chinook salmon are a California Species of Special Concern. The migration period for fall and late-fall run Chinook salmon is August through April with peaks in September through October and December, respectively. Their spawning period is late September through late April with peaks in late October and early February, respectively (Goals Project, 2000). The juvenile downstream emergence period is between December and June with freshwater residency periods of 4 to 7 months between December and June for fall-run and seven to 13 months between April of year 1 and April of year-2 for late fall-run. The residency periods end with an estuarine emigration period between March and July for fall-run and between October and May for late fall-run (Goals Project, 2000).

Fall-run Chinook Salmon are currently the most abundant of the Central Valley races, contributing to large commercial and recreational fisheries in the ocean and popular sport fisheries in the freshwater streams. Fall-run Chinook Salmon are raised at five major Central Valley hatcheries which release more than 32 million smolts each year. The species was detected at the Tisdale Middle Sacramento Monitoring Station approximately 10 miles downstream of the Project area between January and May (CDFW, 2021). See Table 4-2 for migration and spawning periods for special-status fish species that may occur within the Sacramento River in the Project area.

The HDD pipeline replacement is planned to occur between July and December 2022, depending on the timing of regulatory permit issuance. No in-water construction will occur during HDD replacement of the pipeline. All in-water work associated with pipeline decommissioning and removal will be conducted following the HDD pipeline replacement, and during the seasonal aquatic work window of June 1 to October 31, which is an agency approved work window for avoidance and minimization of special-status fish species seasonal migrations and spawning

periods. The seasonal work window may be modified based on conditions of permits issued by regulatory agencies.

Sacramento Winter-Run Chinook Salmon

Sacramento River winter-run chinook salmon is a federally and state-listed Endangered species. Winter-run chinook salmon are anadromous species spending most of its adult life in the ocean and then returning to freshwater streams to spawn. Preferred spawning grounds for winter-run chinook salmon are in large rivers and tributaries (the Sacramento and San Joaquin rivers and tributaries) with deep water and large gravel (Goals Project, 2000). The migration period for winter-run chinook salmon is December through July with a peak in March. Spawning period is late April through early August with a peak in early June (Goals Project, 2000). The juvenile downstream emergence period is between July and October with a five to ten month freshwater residency period between July and April, concluding with an estuarine emigration period between November and May.

Sacramento winter-run chinook salmon spawn in the upper reaches of the Sacramento River in waters between the Keswick Dam and the Anderson-Cottonwood Irrigation District (ACID) Dam. Winter-run chinook salmon are immature when upstream migration begins and need to hold in suitable habitat for several months prior to migrating to spawning grounds. The maximum suitable water temperature reporting for holding winter-run chinook is 59° to 60° F (15° to 16° C). Water temperature in the lower Sacramento River near the Project area generally begins to exceed 60° F in May and averages 65° F during the in-water work window (June through October); therefore, it is unlikely that suitable holding habitat or rearing habitat exists within the middle Sacramento River, particularly in summer months (NMFS, 2014; USGS, 2021). The Sacramento River at the Project area is primarily used as a migration corridor for spawning adults. The species was detected October through March at the Tisdale Middle Sacramento River monitoring station approximately 10 miles downstream from the Project area and their abundance peaks during December (CDFW, 2021). The Delta Juvenile Fish Monitoring Program has reported that adult Sacramento winter-run chinook are in higher abundance in waters in the Sacramento River Basin between January and July, and juvenile winter-run salmon are likely to be migrating between Red Bluff and Knight Landing July through February. Adult and juvenile winter-run chinook salmon will be less abundant in the Project region between April and July (NMFS, 2014). See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

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4.8.2.6 River lamprey (*Lampetra ayresi*)

River lamprey is a California Species of Special Concern. Habitat requirements of spawning adults and ammocoetes have not been studied in California. Presumably, the adults need clean, gravelly riffles in permanent streams for spawning, while the ammocoetes require sandy backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 77°F (25°C). In California, they have been

recorded only from the lower Sacramento and San Joaquin Rivers (and tributaries including Stanislaus and Tuolumne Rivers) and from the Russian River. In the Sacramento River, river lamprey have been captured as far upstream as the Red Bluff Diversion Dam (USFWS, 2004). The river lamprey has become uncommon in California, and it is likely that the populations are declining because the Sacramento, San Joaquin, and Russian rivers and their tributaries have been severely altered by dams, diversions, pollution, and other factors (Moyle et al., 2015).

River lamprey has the potential to occur in the study area during migration but would not spawn in this area due to the lack of suitable spawning habitat. The species migration and spawning season is from October through April, which is outside the planned in-water construction window. Nearest recorded occurrences of the species are reported north of the City of Sacramento in the Sacramento- Lower Thomas and Stone Corral Watersheds (CalFish, 2021). There is potential that this species could migrate through the Project area. See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

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4.8.2.7 Pacific lamprey (*Entosphenus tridentatus*)

Pacific lamprey is a California Species of Special Concern that is found in many California streams entering the Pacific Ocean, unless blocked by barriers or low flows. The adults often start their spawning migration from the ocean into freshwater in the fall and can be seen moving upstream throughout the winter and early spring except during high water. In some rivers these migrations continue into late spring. Pacific lampreys construct nests for spawning. They dig shallow depressions in stream riffles by moving stones with their suctorial mouth. The eggs are deposited in the crevices of the rocky nest area, after which the adults die. The eggs hatch and the young lampreys burrow into the stream bottom, where they remain in a larval stage for three or four years. During this time, they feed on material they filter from the water and gradually change into miniature adults. At a length of about six inches, they move into the stream and migrate to the ocean (Moyle et al., 2015).

Pacific lamprey are known to occur in the Sacramento River. They could occur in the Project area during migration to spawning habitat; however, the Project area does not provide suitable spawning habitat. Species spawning season is from March through June, which is before planned in-water construction would occur. See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

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avoidance and minimization of special-status fish species seasonal migrations and spawning periods. The seasonal work window may be modified based on conditions of permits issued by regulatory agencies.

4.8.2.8 Sacramento splittail (*Pogonichthys macrolepidotus*).

The Sacramento splittail is a federally Threatened species and a California Species of Special Concern. The Sacramento splittail is endemic to lakes and rivers of the Central Valley but can tolerate moderate levels of salinity. The loss of floodplain and wetlands used for spawning, rearing, barriers within the migration areas, and foraging habitat is the primary reason for splittail decline (Goals Project, 2000). High flows and floodplain inundation are key factors in increasing splittail abundance. Sacramento splittail are most common in the brackish waters of Suisun Bay, Suisun Marsh, and the Sacramento-San Joaquin Delta; however, in wet years they occur within San Pablo and San Francisco Bays (Goals Project, 2000). Upstream spawning migration occurs from November through May and spawning occurs from April to July (see Table 4-4). Preferred spawning substrate consists of freshwater areas that support submerged vegetation within inundated floodplains. Flooded banks and inundated areas used for spawning are also preferred habitat for rearing and foraging. After spawning, most juveniles move downstream into shallow, productive bay and estuarine water in response to increased water flows (Moyle, 2002). Non-breeding splittail are found in temperatures up to 75°F (Young and Cech, 1996); however, juveniles and adults have optimal growth at 68°F, with negative physical responses above 84°F (California Department of Water Resources [CDWR] and U.S. Department of Interior Bureau of Reclamation [USDIBR], 2017; Young and Cech, 1995).

Splittail are known to occur in both the Sacramento and San Joaquin Rivers, and spawning can range from the lower Sacramento and San Joaquin Rivers down to Montezuma Slough (Wang, 1986). They are likely distributed much more widely in small creeks and marshes throughout the lower portions of the Estuary than known occurrences indicate (USFWS, 2010). The Sacramento River within the Project area is a deep waterway with as steep bank on the west side and levee on the east side and does not provide suitable shallow water or inundated floodplain spawning habitat for this species. See Table 4-2 for migration and spawning periods for special-status fish species that may occur in the Project area.

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4.8.2.9 Hardhead (*Mylopharodon conocephalus*)

Hardhead is a California Species of Special Concern. The hardhead is a freshwater fish native to California, with a distribution limited to the Sacramento-San Joaquin river system and the Russian River system. Within the river they are usually found near the surface of pools and side pools of creeks and rivers. Spawning occurs as early as May and June in the Sacramento River valley and may extend to August in the foothill regions of the upper San Joaquin River,

where they make upstream migrations into smaller tributary streams. Spawning substrate may include sand, gravel, and decomposed granite areas since most of the larvae were found there. Hardhead are bottom feeders that forage for benthic invertebrates and aquatic plant material in quiet water. Occasionally they will also feed on plankton and surface insects. Hardhead are always found in association with Sacramento squawfish and usually with Sacramento suckers (Moyle and Nichols, 1973). Nearest recorded occurrence of the species was recorded in 2007 in the Calaveras River just east of N. Shelton Rd., approximately 33 miles upstream of the confluence with the San Joaquin River and greater than 50 miles downstream from the Project area. It is likely that hardhead may be present in the Project area during their migration upstream; however, the Project area does not provide suitable spawning habitat.

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4.8.2.10 Western pond turtle (*Emys marmorata*)

Western pond turtle is a California Species of Special Concern. The western pond turtle occurs in open water habitats throughout much of California, although at much lower numbers and fewer localities than historical populations, especially in urban areas. western pond turtle prefer slack or slow water habitats with dense stands of submergent or emergent vegetation for food and cover, and with abundant basking habitat. western pond turtle are a semi-aquatic species inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities, but they require upland sites for nesting and over-wintering. Presence of nearby nesting sites and lack of exotic predators are also good habitat components (Bury, 1986).

The nearest recorded occurrence of western pond turtle (Occ. #1478) is from 2017 and is located approximately 7.3 miles northwest of the Project area. This occurrence is located on the Sacramento River, upstream of the Project area. The Sacramento River within the Project area provides both suitable foraging and basking habitat along the banks. Nesting habitat is not present in the Project area due to the high amount of human disturbance in terrestrial areas surrounding the river.

4.8.2.11 Giant gartersnake (*Thamnophis gigas*)

Giant gartersnake is a federally listed and California Threatened species found in emergent marsh habitats associated with waterways during spring and summer and hibernates in adjacent upland habitat during the winter. Due to extensive habitat loss, giant gartersnakes now inhabit remaining wetlands as well as highly modified habitats, such as agricultural areas. Active rice fields and their associated irrigations systems serve as an alternative habitat that is commonly used by giant gartersnake. These fields provide the habitat components typically required by giant gartersnake. Essential components of giant gartersnake habitat include:

- A fresh-water aquatic component with adequate water from early spring through fall to provide foraging habitat and cover.
- Emergent herbaceous wetland vegetation to provide foraging habitat, cover, and basking areas.
- An upland component near the aquatic habitat that can be used for thermoregulation, cover, and retreat.
- An upland refugia component at higher elevation sites that will serve as winter hibernacula and provide cover and refuge from flood waters (Hansen and Brode, 1980; USFWS, 1997).

The nearest recorded occurrence is located about two miles south of the Project area and is a 2002 occurrence (CNDDB Occ. # 218) along Buster Road. A more recent occurrence from 2015 occurs 2.5 miles southwest of the Project area on a levee road within agricultural fields surrounded by irrigation ditches (CNDDB Occ. #411). Several more occurrences are documented in the same proximity between 1997 and 2015 (Occ. #223, #381). These occurrences have restricted hydrologic connectivity to the Sacramento River and the Project area.

Both the west side and east side of the Sacramento River in the Project area are included as modeled habitat for giant gartersnake within the PG&E MRHCP. This segment of the Sacramento River does not provide traditionally suitable aquatic habitat for giant gartersnake because it is a deep waterway and GGS usually prefer slow moving or static water as a necessary component of suitable aquatic habitat (USFWS, 2017). However, recent survey data along a section of the San Joaquin River, near its junction with False River, observed several snakes basking on the waterside slope of the levee within the rip rap (Stillwater Sciences, 2017). These occurrences were located on a large waterway, but the location is relatively shallow, with sandbars, and supports submerged and emergent vegetation, unlike the Project area which is a large open water area with no submerged or emergent vegetation.

The riverine aquatic habitat within the Project area provides atypical and marginal habitat elements for giant gartersnake. Levees on either side of the river provide marginal basking habitat and limited nearby upland refugia for protection from predators. There is no emergent wetland vegetation in the Sacramento River at this location to offer preferred foraging habitat. In addition, the west bank is steep and supports riparian cover making this area unsuitable for basking or dispersal. Giant gartersnake have been documented utilizing rip rap on levees above flood levels on the San Joaquin River (Stillwater Sciences, 2017); however, the levees on the river at this location do not have rip rap armoring along the banks. The rock that has been placed over the pipeline alignment for protection of exposed pipe is small mounded rock and is cemented into place on the east levee.

Aquatic habitat within an irrigation ditch adjacent to the eastern Project area supports seasonal flows associated with agricultural irrigation. The ditch is concrete lined, and regularly maintained and cleared of vegetation on the banks.

The adjacent agricultural fields on the west and east sides of the Project area consists of pastureland and walnut orchards which does not provide suitable habitat for giant gartersnake. Rice is grown in the region and offers the most suitable giant gartersnake habitat in the area. The nearest rice fields are approximately 0.5-mile east of the Project area east of the town of Meridian.

Project implementation has the potential for short-term temporary impacts on giant gartersnake. Giant gartersnake is a covered species under the MRHCP. AMMs from the PG&E MRHCP will be implemented for avoidance and minimization of impact to giant gartersnake.

4.8.2.12 Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a California Threatened species that breeds in open habitats in western North America from Alaska south to Mexico. In California, it breeds mainly in the Central Valley, Klamath Basin, Northeastern Plateau, and Mojave Desert (CDFG, 1994). It winters primarily on the pampas of southern South America, Mexico, though a few overwinter in California, the southwestern U.S., and Florida. It is absent from most of its former range in California, where its population declined by more than 90 percent during the 1900's (CDFG, 1994).

Throughout its range in California's Central Valley, it usually arrives in March and April and leaves in September or October; however, there is a small population of Swainson's hawk that over-winters in the Sacramento-San Joaquin River Delta (Herzog, 1996). Loss of habitat is the major threat to this species in California. Residential and commercial development continues to replace Swainson's hawk habitat. Pesticides and herbicides are also a major threat, particularly on their wintering grounds. They are also sensitive to disturbance while nesting and may abandon nests if disturbed before the eggs hatch (CDFG, 2006).

This species forages in grassland or areas of sparse trees or shrubs, and often forages in agricultural areas in the Central Valley. It nests in the scattered trees within these habitats such as those along waterways. During the breeding season, it feeds primarily on small mammals and reptiles. During other seasons, large insects (especially grasshoppers) are the bulk of its diet.

The riparian habitat along waterways near the Project area offers suitable nesting trees for Swainson's hawks and adjacent agricultural land provides optimal foraging habitat. Based on observations of Swainson's hawk in the Project region during spring and summer surveys conducted for this Project, there is a high potential for Swainson's hawk nest occurrence within 0.5-mile of the Project area. Swainson's hawk nesting season generally begins in March and April when they start establishing nest territories and continues through August after the young have fledged the nest.

Surveys for decommissioning and removal of the pipeline were conducted during the early breeding season. A pair of Swainson's hawks were observed roosting and soaring in the Project area; however, no nest location was identified during field surveys. Suitable nest trees occur on and immediately adjacent to the Project area. Nesting sites have been documented near the Project area. A 2004 nest occurrence (CNDDB Occ. #2087) was documented along Highway 20 approximately 1.4 miles west of the Project area. Historic nests on the Sacramento River within 0.2-miles of the Project area were recorded in 1986 (Occ. # 26 and #230) within tall cottonwood trees in the riparian corridor. Nest occurrences were not identified during surveys for this Project, but mating behavior was observed during March surveys and foraging individuals were observed during all survey efforts. The HDD pipeline replacement project is expected to begin after mid-August and outside of Swainson's hawk nesting season. Pipeline decommissioning and removal activities will be completed in the seasonal aquatic work window (June 1 to October 31) for avoidance of special-status fish species and may coincide with the end of Swainson's hawk nesting season.

4.8.2.13 Northern Harrier (*Circus hudsonius*)

Northern harrier is a California Species of Special Concern. The Northern harrier inhabits meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. It forages mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish. Breeding occurs between April and September, with peak nesting in June and July. Destruction of wetland habitat, native grassland, and wet meadows, and the burning and plowing of nesting areas during early stages of the breeding cycle, are major reasons for the decline of this species (Remsen, 1978). Northern harrier was observed foraging during surveys for this Project. There are no recorded occurrences in the CNDDB within 5 miles of the Project area; however, the species is known to occur in the region and was observed during field surveys. There is no nesting habitat within the Project area; however, suitable foraging habitat occurs in adjacent lands.

4.8.2.14 Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

Western yellow-billed cuckoo is federally Threatened and California Endangered species. It is also a Bird of Conservation Concern. The yellow-billed cuckoo is an uncommon to rare summer breeder of valley foothill and desert riparian habitats in California. It nests in dense deciduous riparian thickets or forests with dense, low-level or understory foliage, adjacent to slow-moving rivers, backwaters, or seeps. Willow (*Salix* spp.) is usually a dominant tree, but in the Sacramento Valley, the species will nest in orchards. It feeds by gleaning large insects from foliage, but will sometimes preys on frogs or lizards, or feeds on fruit. The species departs California in fall for South America. Suitable habitat for this species is present on site however riparian habitat is lacking preferred size and density for yellow-billed cuckoo nesting. The nearest recorded occurrence is from 1976 (Occ. #140) and is located approximately four miles north of the Project area; however, a more recent observation (Occ. #27) was documented in 2013 near the town of Colusa in the Colusa Sacramento River State Recreation Area, approximately seven miles northwest of the Project area. Western yellow-billed cuckoo have the potential to migrate and forage in the Project area; however, it is unlikely the species would nest in riparian habitat in the Project area due to the lack of dense riparian forested habitat.

4.8.2.15 White-tailed kite (*Elanus leucurus*)

White-tailed kite is a California Fully Protected species. It is a small raptor with a total length of about 12 inches and is often identified from a distance by its hovering or “kiting” behavior while hunting. White-tailed kites predate mostly on voles and other diurnal mammals, but will occasionally prey on birds, insects, reptiles, and amphibians. It typically forages over open grasslands and emergent wetlands. White-tailed kites nest in dense foliage in treetops near grassy foothills, marshes, riparian woodland, savanna, and partially cleared fields. Preferred nesting trees include oak, willow, sycamores, or other tree stands. White-tailed kites range from western California and southwestern Oregon to southeastern Arizona, and along the Gulf Coast from Texas to Florida, and peninsular Florida (Wheeler and Clark, 1995). Although white-tailed kite was not observed during field surveys, it is known to occur in the area. Suitable foraging habitat is present throughout the terrestrial portions of the Project area and suitable nesting habitat is present in the riparian habitat on the west bank of the Sacramento River.

4.8.2.16 Bank Swallow (*Riparia riparia*)

Bank swallow is a California Threatened species. The bank swallow is the smallest swallow in California. It is a summer breeder that migrates south in the winter. It is a colonial breeder that excavates burrows in riverbanks and railroad and highway embankments. The banks are generally greater than three feet in height to preclude predators, and soils must be sufficiently friable to excavate. It currently ranges from central to northern California wherever suitable nesting habitat exists, with major colonies found along the Sacramento and Feather rivers. The bank swallow forages mostly on flying insects that it captures on the wing. The nearest recent occurrence (Occ. #220) is located 1.4 miles south of the Project area. Cliff swallows were observed foraging over the river and tending to mud nests beneath the Highway 20 bridge; however, bank swallows were not observed in the Project area. The western bank of the Sacramento River within the Project area is steep but is covered with California grape and blackberry vines limiting access to the cliff faces. The Project area does not provide sufficient areas of open mud banks for bank swallow nesting colony and no sign of bank swallow nesting cavities were observed. The east bank of the Sacramento River in the Project area is a levee with no open cliff face or suitable nesting habitat. Bank swallows have the potential to foraging and migrate through the Project area; however, they are unlikely to nest within the Project area.

4.8.2.17 Western red bat (*Lasiurus blossevillii*)

Western red bat is a California Species of Special Concern. The western red bat is locally common in some areas of California from Shasta County to the Mexican border and west of the Sierra Nevada. It winters in the western lowlands and coastal regions south of San Francisco Bay. It roosts in forest and woodland habitats from sea level to mixed conifer forest, but feeds over a variety of habitats including grasslands, shrublands. It roosts in trees and shrubs, primarily cottonwood and sycamore trees, adjacent to streams, fields, or urban areas. It makes relatively short migrations between summer and winter ranges, which occur between March through May in spring and September and October in autumn. The western red bat feeds on a variety of insects, but principal prey includes moths, crickets, beetles, and cicadas. Females bear two or three young per year from May through July. Suitable roosting habitat occurs within cottonwood and sycamore trees near Project area. The nearest occurrence is from 1999 and is located approximately 3.2 miles northwest of the Project area within a similar riparian corridor along the Sacramento River. Bats were not observed during field surveys; however, focused bat surveys were not conducted as part of this study. The Project does not involve the removal of trees that provide suitable habitat. The potential removal of vegetation will be limited and will not include large riparian trees; therefore, potential roosting habitat will not be impacted.

4.9 WILDLIFE CORRIDORS

Wildlife migration corridors are generally defined as connections between fragmented habitat patches that allow for physical and genetic exchange between otherwise isolated wildlife populations. Migration corridors may be local, such as those between foraging and nesting or denning areas, or they may be regional in extent. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. “Habitat linkages” are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife

migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

The middle reach of the Sacramento River, including the Project area, is centered between several protected and managed wildlife refuges including the Gray Lodge Wildlife Area and the Sacramento River, Delevan, Colusa and Sutter National Wildlife Refuges. The Sacramento River provides an important migration and dispersal corridor for mammals, reptiles, and birds to these refuges, particularly areas with contiguous riparian vegetation through a portion of the state that is majority agricultural land use. Mammals and reptiles present within the Project area likely use the upland agricultural and range lands as well as riparian cover as a travel corridor regardless of the season. Birds such as warblers, hummingbirds, etc. migrate to higher elevations in the spring of the adjacent Cortina Ridge and Sierra Nevada ranges, and lower elevations in the fall. The riparian habitat within the Project area offers shelter, forage, and water for migrating species traversing to the Sierra Nevada Range to nest. Resident species may make local migrations for foraging and/or nesting habitat along the river. Additionally, the Sacramento River provides seasonal migration habitat for anadromous and other native fish species moving upstream to spawning grounds and provide connections for resident fish species to other aquatic habitats within the watershed.

5.0 REGULATORY SETTING

5.1 FEDERAL

5.1.1 Special-Status Species

The Federal Endangered Species Act (FESA), administered by the USFWS and the NMFS (collectively referred hereafter as the "Services"), provides protection to species listed as Threatened (FT) or Endangered (FE), or proposed for listing as Threatened (PFT) or Endangered (PFE). The Services maintain lists of species that are neither formally listed nor proposed but could be listed in the future. These Federal candidate species (FC) include taxa for which substantial information on biological vulnerability and potential threats exists and are maintained to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Additionally, the FESA can protect a DPS of a species. The "Distinct Population Segment" is the smallest division of a taxonomic species that can be protected under the FESA. Three elements are considered in determining whether DPS is a factor as endangered or threatened under FESA. These elements are *discreteness* of the population segment in relation to the remainder of the species, the *significance* of the population segment to the species, and the population segment's *conservation status* in relation to FESA's standards for listing. If a DPS is determined to be discrete and significant, its evaluation for endangered or threatened status will be based on FESA's definitions of those terms and a review of the factors included in section 4(a) of the FESA.

With respect to salmonid DPS, the NMFS has developed a policy that applies only to species of salmonids native to the Pacific. Under the policy, Pacific salmon is considered a DPS if it represents an ESU of a biological species (NOAA, 1996). A species must meet two criteria to be considered a separate ESU: it must be substantially reproductively isolated from other conspecific population units; and it must represent an important component in the evolutionary legacy of the species.

Projects that will result in the "take" of a federally listed or proposed species (as defined by FESA Section 9) are required to consult with the Services. The objective of consultation is to determine whether the project will jeopardize the continued existence of a listed or proposed species, and to determine what mitigation measures will be required to avoid jeopardy. Consultations are conducted under Sections 7 or 10 of FESA depending on the involvement by the federal government.

Under Section 7, the USFWS and NMFS are authorized to issue Incidental Take Permits (ITP) for the take of a listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency. A Biological Assessment is usually required as part of the Section 7 consultation to provide sufficient information for the USFWS and NMFS to fully determine the Project's potential effect on listed species. The USFWS and NMFS must make one of three possible findings for each species potentially affected:

No effect: The proposed action will not affect the listed species or critical habitat;

Not likely to adversely affect: Effects of the proposed action on the listed species are expected to be discountable (extremely unlikely to occur), insignificant (minimal impact without take), or beneficial; or

Likely to adversely affect: An adverse effect may occur as a direct or indirect result of the proposed action, and the effect is not discountable, insignificant, or beneficial.

Section 10 consultation is conducted when there is no Federal involvement in a project except compliance with FESA.

The USFWS administers the Federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) and the Bald and Golden Eagle Protection Act (16 USC 668-688). The MBTA prevents the removal of trees, shrubs, and other structures containing active nests of migratory bird species that may result in the loss of eggs or nestlings. Adherence to construction windows either before the initiation of breeding activities or after young birds have fledged is a typical step to protect migratory birds and comply with the MBTA. The Bald Eagle and Golden Eagle Protection Act prohibits the taking or possession of bald and golden eagles, their eggs, or their nests without a permit from the USFWS.

5.1.2 Waters and Wetlands

ACOE and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredge and fill material into jurisdictional waters of the U.S. and wetlands under Section 404 of the Clean Water Act.

ACOE is responsible for the issuance of permits for the placement of dredged or fill material into waters of the U.S. pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the Corps at 33 CFR 328.3(a)(3), waters of the U.S. are those waters that are used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; interstate waters including interstate wetlands; and territorial seas.

ACOE asserts jurisdiction over traditional navigable waters (TNW) and adjacent wetlands. Under ACOE and EPA regulations, wetlands are defined as: “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

In non-tidal waters, the lateral extent of ACOE jurisdiction is determined by the OHWM which is defined as the: “…*line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*.” (33 CFR 328[e]).

In tidal areas, the ACOE’s jurisdiction under Section 404 extends to the high tide line (HTL), which, in the absence of actual data, is defined as:…”*a line of oil or scum along shore objects, a more or less continuous deposit of fine shells or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide*.”

Wetlands could also be regulated as waters of the U.S. if they were adjacent to jurisdictional waters (other than waters that are themselves wetlands). The ACOE's regulation concerning wetlands adjacent to jurisdictional waters is defined at 33 CFR 328.4(c)(4).

On June 29, 2015, the ACOE and EPA issued new definitions for waters/wetlands (U.S. Army Corps of Engineers and U.S. Environmental Protection Agency, 2015), intended to become effective on August 28, 2015. These regulatory definitions are known as the 2015 Clean Water Rule but were never fully implemented because of legal challenges.

In December 2018 the ACOE and EPA proposed a revised definition of waters of the U.S. that was published in the Federal Register in early 2019, and subsequently repealed the 2015 Clean Water Rule reverting regulation back to the 1986 regulations and subsequent guidance for Approved Jurisdictional Determinations. On January 23, 2020, the ACOE and EPA finalized the Navigable Waters Protection Rule to define waters of the U.S. and streamline the definition so that it includes four categories of jurisdictional waters, provides clear exclusions for features not regulated, and defines terms in the regulatory text. The Navigable Waters Protection Rule fulfills Executive Order 13788 and became effective on June 23, 2020.

The four clear categories of waters that are considered waters of the U.S. under the Navigable Waters Protection Rule include the following:

- Territorial seas and TNW;
- Perennial and intermittent tributaries that contribute surface flow, directly or through non-jurisdictional surface water features, to a TNW in a typical year;
- Lakes, ponds, and impoundments of jurisdictional waters; and
- Adjacent wetlands (wetlands that are physically touching, separated by natural feature, or separated by artificial feature with direct hydrologic surface water connection).

The Navigable Waters Protection Rule also outlines what aquatic features are not waters of the U.S. The most notable of these are groundwater, ephemeral features, many farm and roadside ditches, artificial lakes and ponds or water filled depressions excavated in upland, stormwater control and groundwater recharge features.

5.1.3 Section 10 of the Rivers and Harbors Act of 1899 (33USC 403)

In addition to Section 404, the ACOE regulates activities affecting "navigable waters of the United States" under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403). Navigable waters are defined as "…*those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce* (33 CFR 322.2[a])."

Structures or work under or over a navigable waters of the U.S. is considered to have an impact on the navigable capacity of the waterbody (33 CFR 322.3[a]). The Sacramento River, including the reach at the pipeline crossing location, is identified as a Section 10 waterway from the Bay-Delta north through the Central Valley to the Keswick Dam (near Redding). ACOE jurisdiction in Section 10 waterways is Mean High Water or Ordinary High Water Mark.

5.1.4 Section 14 of the Rivers and Harbors Act of 1899 (33USC 408)

The ACOE Civil Works Program is responsible for reviewing all Projects approvals that alter or occupy Civil Works projects. Section 408 provides that the ACOE may grant permission for another party to alter a Civil Works project upon a determination that the alternative proposed will not be injurious to the public interest and will not impair the usefulness of the Civil Works project. There are federal levees on both sides of the Sacramento River. A Section 408 review and permission will be required for the Project.

5.2 STATE

5.2.1 Special-Status Species

The CDFW administers several laws and programs designed to protect the state's fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA) (Fish and Game Code Section 2050), which regulates the listing and take of state endangered (SE) and threatened species (ST). Under Section 2081 of CESA, CDFW may authorize an incidental take permit allowing the otherwise unlawful take of a SE or ST species.

CDFW maintains lists of Candidate-Endangered species (SCE) and Candidate-Threatened species (SCT). These candidate species are afforded the same level of protection as listed species. CDFW designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species but may be added to official lists in the future. The SSC list is intended by CDFW as a management tool for consideration in future land use decisions.

Other State laws also protect wildlife and plants. Section 3511 of the California Fish and Game Code (F&G Code), for example, designates species that are afforded "Fully Protected" (FP) status. F&G Code Sections 4700 and 5515 assign the same status to specified mammals and fish. These statutes generally provide that specifically identified birds, mammals, and fish "or parts thereof may not be taken or possessed at any time and no provision of [the Fish and Game] code or any other law shall be construed to authorize the issuance of permits or licenses to take any Fully Protected [bird, mammal, or fish] and no permits or licenses heretofore issued shall have any force or effect" for any such purpose. For Fully Protected fish and mammals, the only exception to the take prohibition is that the Fish and Game Commission may authorize the collecting of such species "for necessary scientific research" (F&G Code, Sections 4700, 5515). With a proper permit, Fully Protected species may also be captured live and relocated "for the protection of livestock" (Section 3511). Section 3503.5 protects birds-of-prey (Falconiformes and Strigiformes), their eggs, and their nests. That statute provides that, "[I]t 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."

CDFW manages the California Native Plant Protection Act (CNPPA) of 1977 (F&G Code Section 1900, et seq.), which was enacted to identify, designate, and protect rare plants. In accordance with CDFW guidelines, all California Rare Plant Rank (CRPR) 1 (A and B), Rank 2 (A and B), Rank 3, and some Rank 4 plants are considered "rare" under the Act, and meet the definition of Rare or Endangered under the CEQA Guidelines §15125 and/or §15380. Potential

impacts to these species are considered during CEQA review of a proposed project. The CNPPA allows landowners, under most circumstances involving new development, to take rare plant species, provided that the owners first notify CDFW and give the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed (F&G Code Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way").

5.2.2 Waters and Wetlands

Pursuant to Section 1602 of the Fish and Game Code, a Lake or Streambed Alteration Agreement (LSAA) between the CDFW and state or local governmental agency, public utility, or private citizen is required before the initiation of a construction project that will: (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of a river, stream, or lake; (2) use materials from a streambed; or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. The CDFW has adopted the same wetland definition as the USFWS, classified by the presence of only one parameter; however, CDFW does not specifically regulate wetlands.

The Porter-Cologne Water Quality Control Act (CA Water Code §§ 13000-13999.10) mandates that waters of the State of California shall be protected. Current policy in California is that activities that may affect waters of the State shall be regulated to attain the highest quality. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. The Porter-Cologne Act establishes that the state assumes responsibility for implementing portions of the federal CWA, rather than operating separate state and Federal water pollution control programs in California. Consequently, the state is involved in activities such as setting water quality standards, issuing discharge permits, and operating grant programs. Pursuant to Section 401 of the Clean Water Act, the ACOE cannot issue a federal permit until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The authority to issue water quality certifications in the Project area is vested with the Central Valley Regional Water Quality Control Board (CVRWQCB).

In April 2019, the State Water Resources Control Board adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material (Procedures), for inclusion in the Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) wetland delineation procedures; 3) a wetland jurisdictional framework; and, 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures took effect in May 2020.

The new Procedures also include a State wetland definition. A State wetland is defined in the new Procedures as an aquatic feature that "…*under normal circumstances has continuous or recurrent saturation of the upper substrate caused by groundwater, shallow surface water, or both; duration of saturation sufficient to cause anaerobic conditions in the upper substrate; and, vegetation that is dominated by hydrophytes or lacks vegetation."*

If an aquatic feature meets the definition of a wetland it may be considered a waters of the State.

5.3 LOCAL AND REGIONAL PLANS

5.3.1 Sutter County General Plan

The unincorporated lands of Sutter County fall under the jurisdiction of the County. The Environmental Resources section of the Sutter County General Plan contain goals and policies pertaining to biological resources of Sutter County (Sutter County, 2011). Goals and policies that are relevant to biological resources are included in this Section.

5.3.1.1 Habitat Mitigation

Goal ER1: Support a comprehensive approach for the conservation, enhancement, and regulation of Sutter County's significant habitat and natural open space resources.

Policies: **ER 1.4 Resources Assessment**. Require discretionary development proposals that could potentially impact biological resources to conduct a biological resources assessment to determine if any resources will be adversely affected by the proposal and, if so, to identify appropriate measures to avoid or mitigate such impacts.

ER 1.6 Mitigation. Mitigate biological and open space effects that cannot be avoided in accordance with an applicable Habitat Conservation Plan or federal, state, and local regulations.

Goal ER2: Conserve, protect, and enhance Sutter County's significant natural wetland and riparian habitats.

Policies: **ER 2.1 No Net Loss**. Require new development to ensure no net loss of state and federally regulated wetlands, other waters of the United States (including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands), and associated functions and values through a combination of avoidance, restoration, and compensation.

ER 2.3 Minimize Surface Runoff. Minimize direct discharge of surface runoff into wetland areas and design new development in such a manner that pollutants and siltation will not significantly affect jurisdictional wetlands.

Goal ER3: Conserve, protect, and enhance Sutter County's varied wildlife and vegetation resources.

Policies: **ER 3.1 Special-Status Species**. Preserve special-status fish, wildlife, and plant species (e.g., rare, threatened, or endangered species) and habitats consistent with an applicable Habitat Conservation Plan or federal, state, and local regulations.

ER 3.2 Agency Coordination. Coordinate with federal, state, and local resource agencies (e.g., California Department of Fish and Game, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers) to protect special-status species.

ER 3.3 Fisheries. Support the preservation and re-establishment of fisheries in the rivers and streams within Sutter County.

ER 3.4 Waterfowl Resources. Preserve and protect waterfowl resources along the Pacific Flyway Migration Corridor.

ER 3.5 Wildlife Corridors. Preserve and enhance wildlife movement corridors between natural habitat areas to maintain biodiversity and prevent the creation of biological islands. Preserve contiguous habitat areas when possible.

ER 3.6 Natural Vegetation. Preserve important areas of natural vegetation and the ecological integrity of these habitats, where feasible, including but not limited to riparian, vernal pool, marshes, oak woodlands and annual grasslands.

ER 3.7 Oak Trees. Preserve native oak trees when possible, through the review of discretionary development projects and activities. Reduce the loss of oak trees through consideration of tree mitigation/replanting programs.

ER 3.8 Native Plant Use. Encourage the use of native and drought tolerant plant materials, including native tree species, in all public and private landscaping and revegetation projects.

Goal ER4: Conserve, protect, and enhance Sutter County's unique natural open space lands, drainages, floodplains and resources.

ER 4.3 River Corridors. Preserve the Sacramento, Feather, and Bear River corridors as important habitat, recreation and open space resources. Support efforts to increase public access and recreational uses along the County's river corridors.

5.3.2 Colusa County General Plan

The Conservation Element section of the Colusa County General Plan contain goals and policies pertaining to biological resources of Colusa County (Colusa County, 2011). Goals and policies that are relevant to biological resources are included in this Section.

Goal CON-1: Conserve and protect Colusa County's ecosystem.

- **Policy CON 1-7:** Conserve and enhance those biological communities that contribute to the County's rich biodiversity including, but not limited to, blue oak woodlands, annual grasslands, mixed chaparral, pine woodlands, wetlands, riparian areas, aquatic habitat, and agricultural lands.
- **Policy CON 1-8**: Conserve existing native vegetation where possible and integrate existing native vegetation into new development if appropriate.
- **Policy CON 1-9**: Avoid oak tree removal within oak woodland habitat to the greatest extend feasible through appropriate project design and building siting. If full avoidance is not possible, prioritize planting replacement tress on-stie over off-site locations.
- **Policy CON 1-11**: Project wetlands and riparian habitat areas from encroachment by development to the greatest extent feasible.

- **Policy CON 1-13**: Sensitive habitats include oak woodlands, wetlands, vernal pools, riparian areas, wildlife and fish migration corridors, native plant nursery sites, waters of the U.S. and other habitats designated by state and federal agencies and laws.
- **Policy CON 1-14**: Require any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Evaluations shall be carried out under the direction of the Colusa County Department of Planning and Building and consistent with applicable state and federal guidelines. Additional focused surveys shall be conducted during the appropriate season (e.g., nesting season, flowering season, etc.), if necessary.
- **Policy CON 1-15**: Require that impacts to wetlands and riparian habitat protected by State or federal regulations be avoided to the greatest extent feasible. If avoidance is not possible, fully mitigate impacts consistent with applicable local, state and federal requirements.
- **Policy CON 1-17:** All discretionary public and private projects that identify special-status species or sensitive habitats in a biological resource evaluation shall avoid impacts to special-status species and their habitat to the maximum extend feasible. Where impacts cannot be avoided, project shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) included but not limited to the following strategies:
    - Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specific of the species' needs;
    - Project design measures, such as clustering of structures or located project features to avoid known location of special-status species and/or sensitive habitats;
    - Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife**.**
    - Protection for habitat and the known locations of special-status species through adequate buffering or other means.
    - Provision of replacement habitat of like quantity and quality on- or off-site for special-status species.
    - Enhancement of existing special-status species habitat values through restoration and replanting of native plant species.
    - Provision of temporary or permanent buffers of adequate size (based on the specifics of the special-status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.

  - Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.
  - Monitoring of construction activities by a qualified biologist to avoid impacts to on-site special-status species.

- **Policy CON 1-18:** Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the following measures shall be implemented:
  - Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;
  - Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and
  - Employees shall be trained by a qualified biologist to identify and avoid protected species and habitat.
- **Policy CON 1-21:** Protect riparian habitat along the Sacramento River to maintain suitable habitat for anadromous fish species, including salmon and steelhead trout, and for native sportfishing species.
- **Policy CON 1-24:** If a proposed project may result in impacts to wetlands or other Waters of the U.S., require the project proponent to consult with the appropriate regulatory agency and implement all applicable permit requirements as a condition of project approval.

6.0 SIGNIFICANCE CRITERIA

The impact of the Project on biological resources was evaluated in terms of mandatory findings of significance at Section 15065 of CEQA and Appendix G of the State CEQA Guidelines (Governor's Office of Planning and Research, 2018). The various components of the Project were considered in association with site conditions and were evaluated against CEQA criteria and County General Plan policies pertaining to biological issues. In accordance with these CEQA Guidelines, a project will normally result in a significant impact if any of the following conditions would result from project implementation:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation, or by the CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site;
- Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and,
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

Additionally, the CEQA Guidelines Initial Study Land Use and Planning checklist notes that conflicts with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project should be considered during a project's environmental review.

7.0 PROJECT IMPACT ANALYSIS

Effects on biological resources in the Project area will be primarily temporary. There will be a temporary loss of potential fish and wildlife habitat during replacement, decommissioning, and removal of pipeline segments. General construction will temporarily alter the natural movement and behavior of wildlife in the Project area. Construction may also result in indirect impacts that affect the quality of habitat in the Project area. Temporary impacts will be restored to pre-project condition following completion of the Project. The only permanent impact includes the removal of one blue elderberry shrub, habitat for the valley elderberry longhorn beetle, a federally listed species.

7.1 IMPACT CATEGORIES

Short-term and long-term impacts are analyzed for the proposed Project. Each impact statement is classified as to the level of significance, based on the significance thresholds from Section 6.0, and the availability of measures to feasibly mitigate project effects. Impact categories include:

- **Significant Unavoidable Impact** is an adverse effect that cannot be mitigated. This category of impact is one for which a solution has not been formulated, either because of the limits of technical and/or scientific knowledge, or unfeasibility from a technical, economic, and/or political perspective. Under CEQA, a Significant Unavoidable impact would require a “finding of overriding consideration” by the Lead Agency to approve the project;
- **Significant Mitigable Impact** is an adverse environmental effect that can be mitigated to less than significant levels. Measures have been identified that can feasibly be implemented and will avoid the impact altogether by not taking a certain action or parts of an action; minimize impacts by limiting the degree or magnitude of the action and its implementation; rectify the impact by repairing, rehabilitating, or restoring the affected environment; or compensate for the impact by replacing or providing substitute resources or environments;
- **Less than Significant Impact** is an adverse environmental effect that is less than significant or has no identified impact. These impacts, while adverse, are not of a sufficient magnitude, intensity, or duration to disrupt the environment, and have no serious consequences. As a result, no mitigation is required; and
- **Beneficial Impacts** is an environment effect of the project that benefits or improves the environment and no mitigation is required.

7.2 IMPACTS TO BIOLOGICAL RESOURCES

Effects on biological resources include primarily temporary impacts associated with excavation for HDD pipeline replacement (pipeline replacement phase of the Project), pigging and flushing of the existing pipeline, installation of concrete slurry into sections of pipeline designated to be retired in place, and excavation and removal of segments of pipeline designated for removal (decommissioning phase of the Project). There will be no permanent impact to habitat as part of the Project. Temporary impacts associated with the Project include habitat disturbance,

localized turbidity, and vegetation removal. Indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and temporary declines in air and water quality. Removal of retired pipeline facilities from the waterway crossings may also result in a benefit to the watershed. Final decommissioning and removal of the pipeline crossing from the Sacramento River will eliminate exposed pipeline. Removal of the pipeline and associated debris from the riverbed will result in restored underwater habitat at these locations once the Project is complete.

PG&E has agency approved Habitat Conservation Plans (HCPs) that provide a comprehensive framework to conserve and protect federally listed species in support of a Federal incidental take permit for the covered species for PG&E Operations and Maintenance (O&M) activities in the San Joaquin Valley Region, Bay Area Region, and Multi-Regions (Sacramento Valley and Foothills, North Coast, and Central Coast) (Jones & Stokes, 2007; ICF, 2017; ICF, 2020). The R-1385 River Crossing Pipeline Replacement Project is located in Colusa and Sutter Counties, both of which are within the area covered by PG&E's Multi-Region Habitat Conservation Plan (MRHCP). The PG&E MRHCP was developed in collaboration with the USFWS and was implemented in 2020. The MRHCP is a model-based HCP, that incorporates the use of modeled habitat developed in collaboration with the USFWS for covered species. Modeled habitat is used as a tool to facilitate automatic screening of an impact area to determine covered species occupancy and apply HCP take coverage.

Listed fish species that occur in the Sacramento River in the Project area are not HCP covered species and the need to conduct in-water work for successful completion of the Project will have the potential to impact non-covered listed fish species; therefore, covered activities associated with this Project are not entirely covered by the HCPs. However, for consistency with the agency-approved PG&E HCPs, Field Protocols (FPs) and AMMs outlined for species protection in the MRHCP will be implemented by this Project because they are effective in reducing impacts to covered species. Consistent with implementation practices of the MRHCP, standard Field Protocols will be implemented, where practicable, for all PG&E Operation and Maintenance (O&M) Projects. These measures are considered to be practicable where physically possible and not conflicting with other regulatory obligations or safety considerations. Additional relevant species-specific AMMs from the MRHCP are also included as part of the Project and are described individually below. The AMMs are outlined in Table 7-1 and their implementation was considered when analyzing the potential impacts of the Project.

Table 7-1. PG&E MRHCP Field Protocols and Avoidance and Minimization Measures to be Implemented as Part of the Project

Field Protocols / AMMs	Measure Description
FP-01	Conduct annual training on habitat conservation plan requirements for employees and contractors performing covered activities in the Plan Area that are applicable to their job duties and work. Tailboard and site-specific training will also be conducted prior to commencing work.
FP-02	Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt).

Table 7-1. PG&E MRHCP Field Protocols and Avoidance and Minimization Measures to be Implemented as Part of the Project

Field Protocols / AMMs	Measure Description
FP-03	Use existing access and ROW roads. Minimize the development of new access and ROW roads, including clearing and blading for temporary vehicle access in areas of natural vegetation.
FP-04	Route off-road access paths and site work sites to minimize impacts on plants, shrubs, and trees, small mammal burrows, and unique natural features (e.g., rock outcrops).
FP-06	Minimize potential for covered species to become trapped, injured, or killed in pipes, culverts, or under materials or equipment. Inspect pipes and culverts wide enough to be entered by a covered species that could inhabit the area where pipes are stored for wildlife species prior to moving pipes and culverts. Contact a biologist if a covered species or other federally-listed species is suspected or discovered.
FP-07	Vehicle speeds on unpaved roads will not exceed 15 miles per hour.
FP-08	Prohibit trash dumping, firearms, open fires (such as barbecues), hunting, and pets (except for safety in remote locations) at work sites.
FP-10	Minimize the covered activity footprint and minimize the amount of time spent at a work site to reduce the potential for take of species.
FP-11	Utilize standard erosion and sediment control BMPs (pursuant to the most current version of PG&E's *Stormwater Field Manual for Construction Best Management Practices*) to prevent construction site runoff into waterways.
FP-12	Stockpile soil within established work site boundaries and locate stockpiles so as not to enter water bodies, stormwater inlets, other standing bodies of water. Cover stockpiled soil prior to precipitation events.
FP-13	Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife is not trapped. Field crews will not handle covered species. If any covered wildlife species is found, work will stop and a biologist will be notified. A biologist with appropriate take permits will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.
FP-14	If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew will revegetate the area with a commercial "weed free" seed mix. (Except in suitable habitat for Mount Hermon June beetle, Ohlone tiger beetle and Zyante band-winged grasshopper.)
FP-15	Prohibit vehicular and equipment refueling within 250 feet of the edge of wetlands, streams, or waterways. If refueling must be conducted closer to wetlands, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. Maintain spill prevention and cleanup equipment in refueling areas.
FP-16	Maintain a buffer of 250 feet from the edge of wetlands, ponds, or riparian areas. If maintaining the buffer is not practicable because the covered activity footprint is within the buffered area, other measures as prescribed by the biologist or the HCP administrator to minimize impacts such as flagging access routes or paths, requiring foot access, restricting work until the dry season, or requiring a biological monitor during the activity.
FP-17	Directionally fall trees away from an exclusion zone, if an exclusion zone has been defined. If this is not practicable, remove the tree in sections. Avoid damage to adjacent trees to the

Table 7-1. PG&E MRHCP Field Protocols and Avoidance and Minimization Measures to be Implemented as Part of the Project

Field Protocols / AMMs	Measure Description
	extent practicable. Avoid removal of snags and conifers with basal hollows, crown deformities, and/or limbs more than 6 inches in diameter.
FP-18	Nests with eggs and/or chicks will be avoided: contact a biologist or the Avian Protection Program Manager for further guidance. Work will be stopped until the crew can obtain clarification from a biologist or the Avian Protection Program Manager on how to proceed.
FP-19	Inspect and maintain exclusion fencing installed to exclude species from work areas.
VELB-1	All personnel, including PG&E employees and contractors, who are likely to encounter elderberry plants or valley elderberry longhorn beetle, especially during vegetation management activities, are required to receive training on valley elderberry longhorn beetle. When covered ground-disturbing activities will be implemented within 20 feet of elderberry, a qualified individual will identify a work exclusion zone (i.e., 5–20 feet of the dripline of all elderberry shrubs), with pin flagging or other appropriate means, within which ground disturbance, tree felling, and equipment and vehicle operation will be avoided or minimized. Except for cut stump treatment of removed trees (non-elderberry), herbicides will not be used within this zone. When performing vegetation maintenance work in compliance with Public Resources Code Sections 4291–4293, pruning, rather than removal of elderberry plants, will be performed where feasible.
GGS-1	Conduct work during the active season (May 1–October 1) to the extent practicable. A biologist will conduct a survey and identify where exclusion fencing is needed. If needed, a solid exclusion fence will be installed around the perimeter of work sites and will be inspected weekly. Burrows and other refuge habitat will be avoided to the extent practicable. If work will be conducted during the inactive period (October 2–April 30) then PG&E will conduct preparation work during the snake's active period to make construction areas ready for work during the inactive season. Preparation work includes, at a minimum, adding baserock to access roads and work sites, grading access roads and work sites, and installing work zone exclusion fencing. If giant gartersnakes are encountered during construction activities, snakes will be allowed to move away from construction or a biologist will follow USFWS handling protocols and move snakes to the nearest appropriate habitat out of harm's way.
Wetland-2	Identify wetlands, ponds, and riparian areas and establish and maintain a buffer of 50 feet around wetlands, ponds, and riparian areas. If maintaining the buffer is not practicable because the work sites are within any part of the buffered area, the field crew will implement other measures as prescribed by the biologist to minimize habitat impacts. These measures may include flagging access, requiring foot access, restricting work until the dry season, or requiring a biological monitor during the activity. Activities must maintain the hydrology necessary to support the wetland, pond, or riparian area (inclusive of downstream).

The following analysis provides an assessment of potential impacts from the proposed Project activities and includes the appropriate PG&E MRHCPs FPs and AMMs, Project-specific applicant proposed AMMs, and/or prescribed mitigation measures to reduce impacts to special-status species or other biological resources to a level of less than significant.

IMPACT BIO-1: The in-water work associated with decommissioning and removal of the R-1385 pipeline from the waterways could impact special-status fish species, if present, in the Project area during decommissioning activities.

DISCUSSION: In-water work will temporarily increase turbidity to the aquatic environment immediately surrounding the pipeline removal location. Increases in turbidity can result in physical effects that adversely affect habitat and temporary suspension of sediments, organic matter, or contaminated constituents contained within the sediments could be introduced into the water column. Large-scale increases of organic matter within a water column, usually associated with fine sediments, such as silts and clays, can increase dissolved nutrient concentrations, resulting in increased algal blooms or decrease dissolved oxygen when the suspended sediments are anoxic or have a high chemical oxygen demand. The use of a turbidity curtain, if determined to be necessary, may be deployed at the in-water work sites to minimize the effects of increased turbidity to surrounding areas.

In-water work and the installation of a turbidity curtain, if determined to be necessary, could temporarily prevent fish movement and preclude fish use of the aquatic habitat at the discrete in-water work location for a short period of time. The use of a turbidity curtain, if determined to be necessary, may be deployed at specific in-water work sites to minimize the effects of increased turbidity to surrounding areas.

A Turbidity Monitoring Plan will be developed for the Project, which will include provisions for monitoring turbidity during underwater excavation and other project activities that have the potential to increase turbidity. Turbidity curtains may be used if turbidity monitoring indicates that turbidity levels would exceed permitted thresholds, and site conditions, such as strong currents, at the time of construction do not make their use infeasible; however, given the depth of water and strong currents typical of the Sacramento River, the feasibility of turbidity curtain use may be limited to specific locations where turbidity curtain use is practical.

PROJECT-SPECIFIC APPLICANT PROPOSED AMMs: The applicant has proposed Project-specific AMMs to reduce the potential for impact to special-status fish species and has incorporated them into the Project design. The following measures will be implemented during construction activities involving work in or on the banks of the Sacramento River.

a. An environmental training program will be developed and presented by a qualified biologist. All contractors and employees involved with the Project will be required to attend the training program. At a minimum, the program will cover special-status species that could occur on the Project area, their distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and required Project avoidance, minimization, and mitigation measures.

b. Construction activities in surface water or on the banks of the waterways will be conducted within the agency approved aquatic work windows for avoidance of listed fish species at this location (June 1 to October 31). This coincides with the timeframe when the aquatic work area is least likely to support special-status fish species based on seasonal migration and spawning.

c. A qualified biological monitor will be present to monitor project activities during all in-water work and initial ground disturbance that has the potential to impact

special-status species.

d. A Turbidity Monitoring Plan will be implemented during all in-water work to ensure that turbidity levels upstream and downstream of the Project area are compliant with regulatory requirements.

e. Turbidity curtains, if determined to be necessary and feasible, will be installed around the in-water work area prior to work in surface waters. The feasibility of use of turbidity curtain will be determined based on site-specific conditions at the time of construction (water depth, currents, etc.) and the need for use of a turbidity curtain will be based on the results of the turbidity monitoring program.

BIO-1 IMPACT CATEGORY: Less than Significant with implementation of Applicant Proposed AMMs.

***IMPACT BIO-2*:** Completion of the Project could potentially impact the VELB due to the presence of blue elderberry shrubs on the west bank of the Sacramento River, specifically within the existing pipeline right-of-way. Removal of vegetation, including blue elderberry shrubs, will be necessary for decommissioning and removal of the pipeline.

DISCUSSION: There are two elderberry shrubs within the study area boundary, one of which occurs in the existing pipeline right-of-way, and within the planned excavation area for removal of the decommissioned pipeline (Figure 5). Completion of the pipeline decommissioning phase of the Project will require removal of one blue elderberry shrub. The shrub had stems greater than one inch in diameter and would be considered potential VELB habitat located within riparian habitat. Access to the base of the shrub for a stem count and emergence hole survey was limited at the time of surveys due to the extent of Himalayan blackberry and California grape vines that occur at this location, and extensive vegetation removal would have been necessary to properly count the stems, potentially impacting the VELB or its habitat.

The VELB is a covered species under the PG&E MRHCP and the west bank of the Sacramento River is modeled habitat for the VELB. The MRHCP provides distinctions between temporary and permanent impacts that accommodates shrub accounting and annual mitigation based on impacts on the VELB habitat, species life history, and past discussions with USFWS regarding impacts (ICF, 2020). The MRHCP provides a consistent ability to track and mitigate impacts on VELB by using the following definitions:

- **Permanent Impact on VELB Habitat**. Any covered activity that results in removal of an entire elderberry shrub with at least one stem greater than 1-inch diameter at ground level will be counted as a permanent impact on one shrub.
- **Temporary Impact on VELB Habitat**. Any covered activity that results in pruning of one or more elderberry shrub stems greater than 1-inch diameter at ground level, where pruning is at 6-feet or below in height, when the plant is left in place will be counted as a temporary impact. Any covered activity that results in pruning of elderberry shrub stems, regardless of stem diameter, beyond 6 feet above

ground level during the months of March through May, when adult VELB is most likely to be present will also be counted as a temporary impact.

MRHCP covered activities that result in permanent or temporary impacts to the VELB will be overseen by a qualified individual, who will also make stem size determinations and collect other relevant information pertaining to the facility involved, location, and date of the impact. All permanent and temporary impacts will be tracked at the shrub level in PG&E's existing VELB database. Once the vegetation is recommended for removal and removal crews are scheduled, the impacts on elderberry shrubs are noted as completed. The VELB database is used to track the location, date, and type of elderberry shrub impact and will generate an annual summary of impacts, which will be included in the MRHCP annual report for the purposes of tracking impact and mitigation within the MRHCP (ICF, 2020). The accounting methodology used in the MRHCP for impacts on VELB habitat is based on the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS, 2017).

MRHCP SPECIES-SPECIFIC AMMs: This Project would result in permanent impact to VELB habitat and use of the MRHCP for impact assessment and accounting, implementation of appropriate field protocols and species-specific AMMs, and compensatory mitigation will reduce Project impacts to less than significant levels. The Field Protocols are identified in Table 7-1 and MRHCP species-specific AMM is outlined below.

MRHCP VELB-1: All personnel, including PG&E employees and contractors, who are likely to encounter elderberry plants or valley elderberry longhorn beetle, especially during vegetation management activities, are required to receive training on valley elderberry longhorn beetle. When covered ground-disturbing activities will be implemented within 20 feet of elderberry, a qualified individual will identify a work exclusion zone (i.e., five to 20 feet of the dripline of all elderberry shrubs), with pin flagging or other appropriate means, within which ground disturbance, tree felling, and equipment and vehicle operation will be avoided or minimized. Except for cut stump treatment of removed trees (non-elderberry), herbicides will not be used within this zone. When performing vegetation maintenance work in compliance with Public Resources Code Sections 4291–4293, pruning, rather than removal of elderberry plants, will be performed where feasible.

Permanent impact associated with shrub removal for this Project will be overseen and documented by a qualified individual in compliance with the MRHCP and the *Valley Elderberry Longhorn Beetle Habitat Impact Report Field Form* and included in the MRHCP annual report for the purposes of impact and mitigation tracking. Compensatory mitigation is provided for permanent impacts to the VELB in accordance with the MRHCP Conservation Strategies.

BIO-2 IMPACT CATEGORY: Less than Significant with implementation of MRHCP VELB-1, standard MRHCP Field Protocols, and MRHCP Conservation Strategies.

IMPACT BIO-3: Construction activities within and adjacent to the Sacramento River, could potentially impact aquatic species such as western pond turtle.

DISCUSSION: Based on the review of pertinent literature, the proximity to known occurrences, and biological surveys conducted for this Project, western pond turtle has a moderate potential for occurrence on the Sacramento River. Implementation of the Project will result in short-term temporary impacts to western pond turtle. However, no permanent impact or loss of habitat will occur as a result of the Project.

APPLICANT PROPOSED AMMs: The applicant has proposed the following AMMs in combination with the Field Protocols identified in Table 7-1 to reduce the potential for impact to western pond turtle to reduce Project impact to less than significant levels:

a. A qualified biologist will conduct pre-construction surveys for western pond turtle 48 hours prior to ground disturbance to ensure that individuals are not present in the work area.

b. Prior to ground disturbance activities, a barrier, such as wildlife exclusion fencing, will be placed around open excavations to prevent western pond turtle from entering excavations and becoming entrapped.

c. A qualified biological monitor will be present to monitor project activities during all in-water work and initial ground disturbance that has the potential to impact special-status species. If western pond turtle is observed within the work area during construction, the biologist will relocate western pond turtles the shortest distance possible to a location that contains suitable habitat and will not be affected by activities.

BIO-3 IMPACT CATEGORY: Less than Significant with implementation of Applicant proposed AMMs and standard MRHCP Field Protocols.

IMPACT BIO-4: Construction activities within and adjacent to the Sacramento River could potentially impact aquatic species such as giant gartersnake.

DISCUSSION: Based on the review of pertinent literature, the proximity to known occurrences, and biological surveys conducted for this Project, giant gartersnake has a moderate likelihood of occurrence. The giant gartersnake is a covered species under the PG&E MRHCP and the Sacramento River is modeled habitat for the giant gartersnake. Implementation of the Project may result in short-term temporary impacts to the giant gartersnake but not result in permanent impacts or loss of habitat. Implementation of AMMs from the MRHCP will further reduce the potential for impact to giant gartersnake.

MRHCP SPECIES-SPECIFIC AMMs: Consistent with the PG&E MRHCP, the following measures will be implemented during construction activities for protection of giant gartersnake. These measures in combination with the Field Protocols identified in Table 7-1 will reduce Project impacts to less than significant levels:

MRHCP GGS-1: Conduct work during the active season (May 1 to October 1) to the extent practicable. A biologist will conduct a survey and identify where exclusion fencing is needed. If needed, a solid exclusion fence will be installed around the perimeter of work sites and will be inspected weekly. Burrows and other refuge habitat will be avoided to the extent practicable.

If work will be conducted during the inactive period (October 2 to April 30) then PG&E will conduct preparation work during the snake's active period to make construction areas ready for work during the inactive season. Preparation work can include, at a minimum, adding baserock to access roads and work sites, grading access roads and work sites, and installing work zone exclusion fencing.

If giant gartersnakes are encountered during construction activities, snakes will be allowed to move away from construction or a biologist will follow USFWS handling protocols and move snakes to the nearest appropriate habitat out of harm's way.

BIO-4 IMPACT CATEGORY: Less than Significant with implementation of MRHCP GGS-1 and standard MRHCP Field Protocols.

***IMPACT BIO-5*:** Vegetation removal and construction activities associated with pipeline replacement or pipeline decommissioning and removal could impact nesting Swainson's hawk.

DISCUSSION: The State-threatened Swainson's hawk occurs in the Project vicinity and could nest in proximity to construction areas. Nest occurrences were not identified during surveys for this Project, but Swainson's hawk mating behavior was observed during March surveys and foraging individuals were observed during all survey efforts. There are known nesting occurrences of Swainson's hawk within 0.5-mile of the Project area and it is possible that active nests could occur in proximity to construction activities. Terrestrial impacts will occur to annual grassland, agricultural fields, and riparian habitat in the west work area, all of which provide suitable Swainson's hawk nesting and foraging habitat; however, terrestrial impacts will be short term and temporary and would not result in permanent impacts or loss of foraging habitat. Vegetation removal within riparian habitat on the west bank of the Sacramento River for the decommissioning component of the Project is limited to shrubs and small trees that would not be considered suitable nest trees for Swainson's hawk; however large valley oaks, cottonwoods, and sycamore trees within the adjoining riparian corridor would be considered suitable nesting habitat.

Because Swainson's hawk is a State-listed species, there are known nesting occurrences in the vicinity of the Project area, and there is suitable nesting and foraging habitat in proximity to the Project area, there is the potential that construction near Swainson's hawk nesting areas could disrupt breeding activities.

The following mitigation measure would reduce risk of impacting nesting Swainson's hawks during Project construction.

RECOMMENDED MITIGATION MEASURE - MM BIO-5. The following measures are recommended to reduce Project impacts to nesting occurrences of Swainson's hawk to less than significant levels:

a. For Project activities occurring outside Swainson's hawk nesting season (approx. mid-August to mid-March), impacts to Swainson's hawks would be avoided and no additional mitigation would be required.

b. For Project activities occurring within Swainson's hawk nesting season

(approx. mid-March to mid-August), a qualified biologist shall conduct a pre-construction Swainson's hawk survey. If active Swainson's hawk nests are identified near the Project area, based on nest protection buffers outlined in PG&E's Nesting Bird Management Plan the following will be implemented as appropriate:

i. Postpone high disturbance Project activities within 0.25-mile of the nest until after the young have fledged and are no longer dependent on the nest tree. Project activities with low or medium disturbance factors may continue with PG&E biologist recommendations based on site specific conditions and measures implemented to minimize impact.

ii. If it is not possible to postpone high disturbance Project activities that may cause nest abandonment or forced fledging within the nest protection buffer, high disturbance construction activities may proceed with CDFW approval and monitoring of the nest by a qualified raptor biologist during construction. If signs of distress are observed, the monitoring biologist will have the authority to stop construction work. If the nest is abandoned due to Project-related disturbance, but the nestlings are still alive, they will be taken to a licensed wildlife rehabilitator.

iii. Seek opportunities to minimize noise and human disturbance levels in proximity to active nests by implementing such methods and procedures as off-site material fabrication, visual and noise screening, or other options as determined to be effective and appropriate by the PG&E biologist.

BIO-5 IMPACT CATEGORY: Less than Significant with implementation of MM BIO-5.

IMPACT BIO-6. Vegetation removal or ground-clearing activities could impact bird species protected under the Migratory Bird Treaty Act (MBTA) or raptors or other special-status bird species such as northern harrier or white-tailed kite.

DISCUSSION: Vegetation present within the study area could provide nesting habitat for bird species protected by the MBTA or raptors and other special-status bird species. Vegetation removal or ground-clearing activities could potentially impact nesting birds that are protected under the Federal MBTA of 1918 (16 USC 703-711) and Fish and Game codes (Sections 3503, 3503.5, and 3800). The laws and regulations prohibit the take, possession, or destruction of birds, their nests, or eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort could be considered a "take".

PROJECT-SPECIFIC APPLICANT PROPOSED AMMs: The applicant has proposed Project-specific AMMs to reduce the potential for impact to raptors and other special-status bird species to reduce project impact to less than significant levels:

a. To the extent possible, schedule vegetation removal and ground-clearing activities prior to the initiation of nesting activity (March) or after fledging (August). If vegetation is determined to need to be trimmed, removed, or mowed during nesting season, a pre-construction survey will be completed prior to work.

b. Conduct pre-construction surveys between March 1 and August 1 in potential nesting habitat within 350 feet of the Project area to identify nest sites. If an active raptor or passerine bird nest is identified, an appropriate species-specific nest protection buffer will be identified based on PG&E's Nesting Bird Management Plan and site-specific conditions. Construction activities that have potential to cause nest abandonment, as determined by the PG&E biologist, will be prohibited within the established buffer zones until the young have fledged unless risk of abandonment can be adequately mitigated through implementation of alternate measures (e.g., visual/noise screening).

BIO-6 IMPACT CATEGORY: Less than Significant with implementation of Applicant proposed AMMs.

IMPACT BIO-7: The Project will result in temporary impacts to aquatic resources (waters of the U.S. and wetlands) regulated by the ACOE under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The Project will also result in temporary impacts to aquatic resources regulated by the Central Valley RWQCB under Section 401 of the Clean Water Act and CDFW under Section 1600 of the California Fish and Game Code.

DISCUSSION: A Preliminary Aquatic Resource Delineation has been conducted for the Project to determine the geographic extent of Federal and State regulatory jurisdiction (Padre, 2021). Up to 0.09-acre of temporary disturbance to federally jurisdictional waters and wetlands may occur because of the proposed removal of the decommissioned pipeline from the Sacramento River. Up to 0.09-acre of waters of the State and 0.11-acre of CDFW stream features may also be temporarily impacted by the Project. Figure 5 depicts temporary impacts to aquatic resources.

RECOMMENDED MITIGATION MEASURE – MM BIO-7:

- PG&E shall obtain all necessary permits for impacts to jurisdictional aquatic resources from the ACOE, CVRWQCB, and CDFW prior to Project implementation. The Project must comply with all permit conditions.
- Standard best management practices, such as the use of silt fencing and non-monofilament straw wattle, will be implemented within the disturbance footprints at each terrestrial excavation location to minimize erosion, increased turbidity, and sedimentation to the waters and wetlands.
- After decommissioning and removal activities are complete, the banks and levee disturbance areas will be restored to pre-project contours and condition. Levee disturbance areas will be restored consistent with Central Valley Flood Protection Board and Local Maintaining Agency requirements and encroachment permits issued for the Project. Impacts to the banks of the Sacramento River will be restored to pre-existing condition. A Site Restoration Plan will be developed that will include the restoration of emergent wetland habitat removed for completion of the Project.

BIO-7 IMPACT CATEGORY: Less than Significant with implementation of MM BIO-7.

IMPACT BIO-8: Construction of the Project will result in the removal of riparian habitat on the west bank of the Sacramento River.

DISCUSSION: A narrow band of riparian vegetation occurs along the west bank of the Sacramento River at the pipeline crossing location. Vegetation, primarily consisting of shrubs and small trees, will need to be cleared for equipment access and removal of the decommissioned pipeline on the west bank of the Sacramento River. Due to historic vegetation management within the pipeline right-of-way, trees and shrubs within the excavation footprint identified for decommissioning activities on the west bank are generally small. One small tree will also need to be removed from the east bank. Tree removal will include riparian species such as boxelder, Northern California black walnut, and blue elderberry. No oak trees occur within the excavation footprint or are planned for removal.

Colusa County does not have a tree ordinance; however, the Colusa County General Plan has policies that provide for protection and management of riparian habitat and oak woodland habitat. Specifically, Policy CON 1-15 requires that impacts to wetlands and riparian habitat protected by State or Federal regulations be avoided to the greatest extent feasible. If avoidance is not possible, fully mitigate impacts consistent with applicable local, State and Federal requirements.

Sutter County does not have a tree ordinance; however, the Sutter County General Plan has policies that provide for protection and management of natural vegetation and oak trees. Specifically, Policy ER 3.6 requires preservation of important areas of natural vegetation and the ecological integrity of these habitats, where feasible, including but not limited to riparian, vernal pool, marsh, oak woodlands and annual grasslands and Policy ER 3.7 requires the preservation of oak trees when possible, through the review of discretionary development projects and activities and the reduction of oak tree losses through consideration of tee mitigation and replanting programs.

RECOMMENDED MITIGATION MEASURE – BIO-8: The following recommended mitigation measures would further reduce Project impacts from riparian habitat removal at the Project area:

- A Site Restoration Plan will be developed that will include the replacement of riparian habitat removed for completion of the Project.

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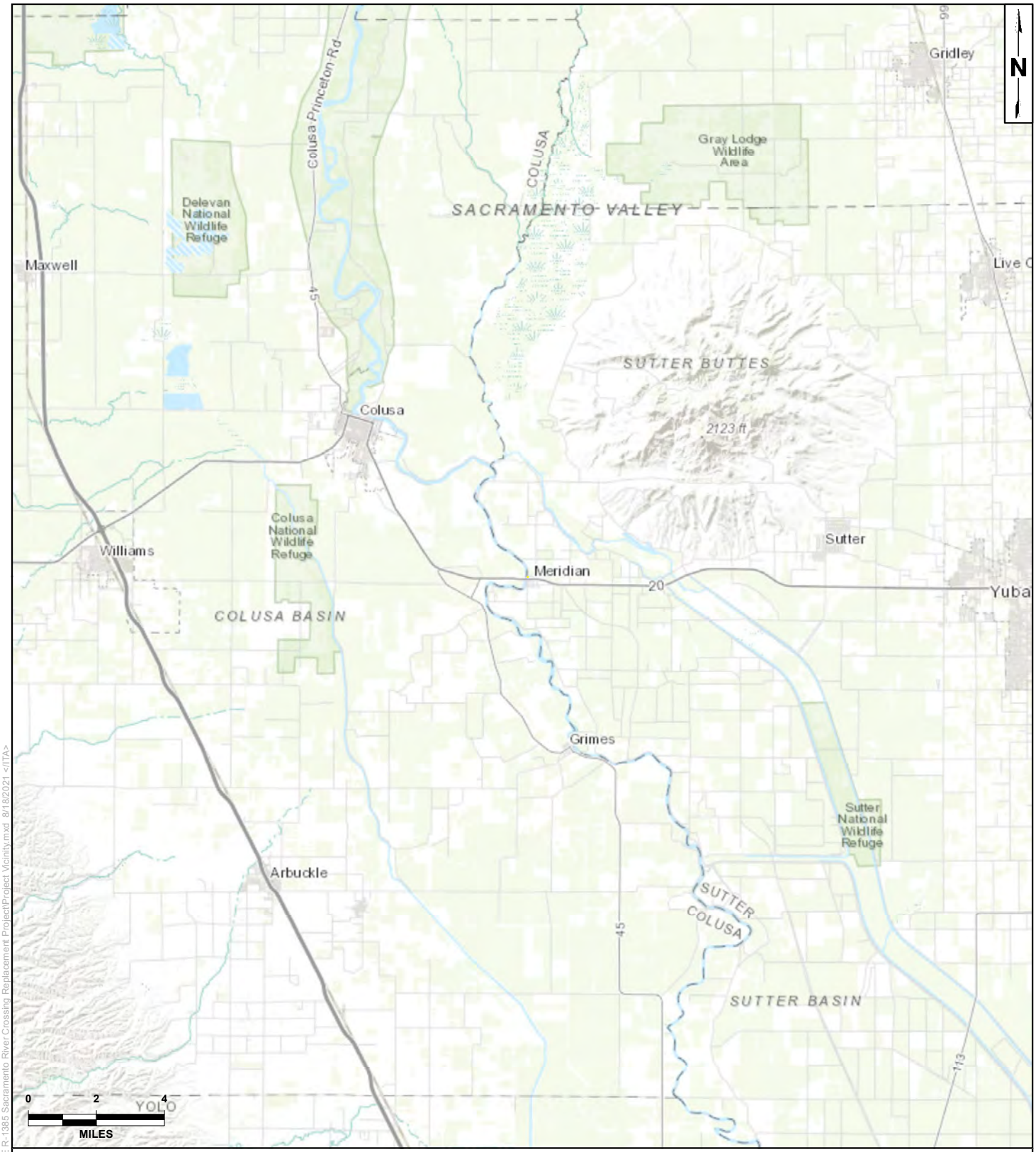
FIGURES



LEGEND:

Project Location

MAP EXTENT:

Source: Esri Online Topo Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

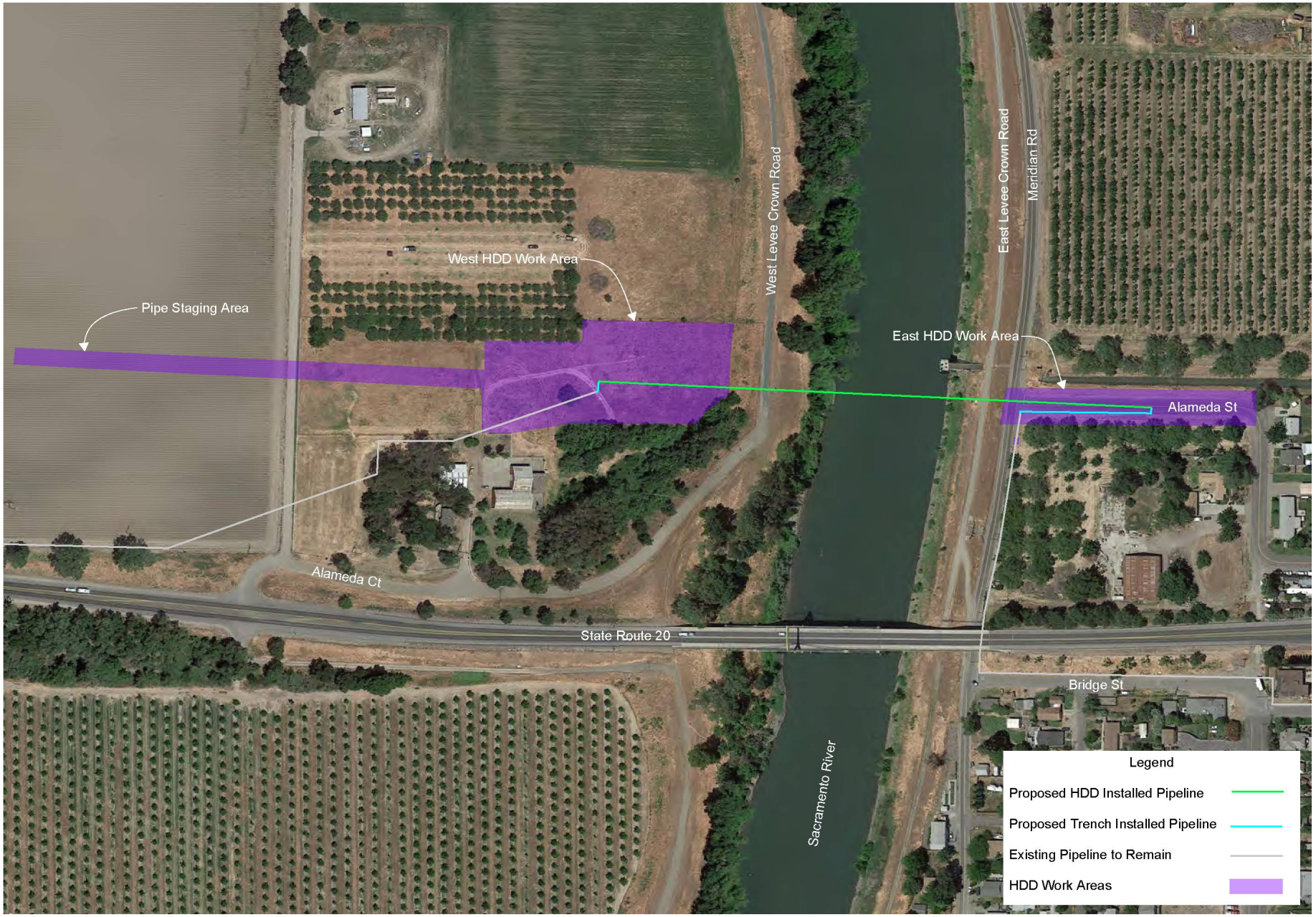
PROJECT NAME: PG&E R-1385 SACRAMENTO RIVER CROSSING REPLACEMENT PROJECT COLUSA AND SUTTER COUNTIES, CA

PROJECT NUMBER: 2102-0081

DATE: August 2021

PROJECT VICINITY MAP

FIGURE 1



Source: Longitude 123, Inc.
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-1385 SACRAMENTO RIVER CROSSING REPLACEMENT PROJECT COLUSA AND SUTTER COUNTIES, CA

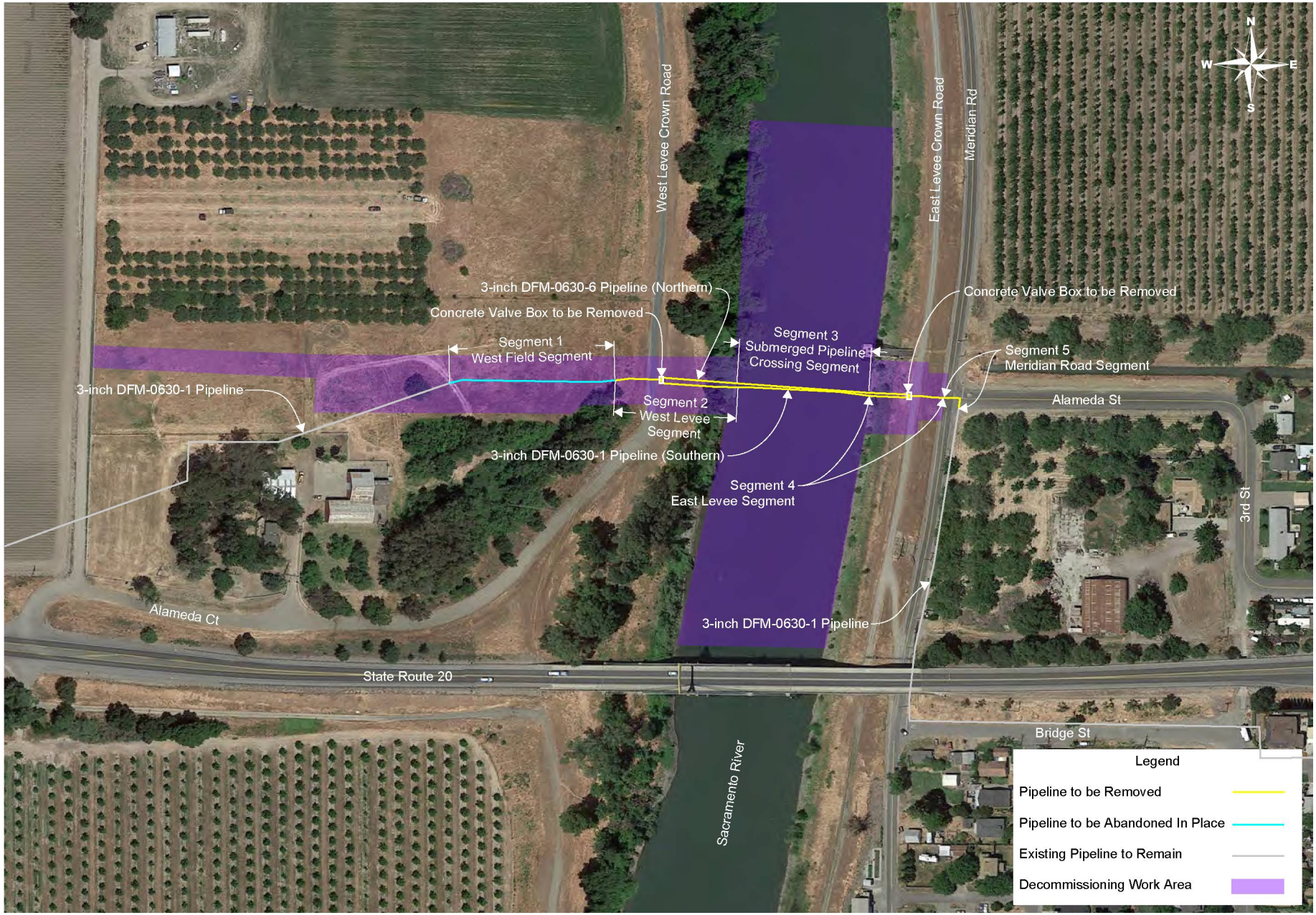
PROJECT NUMBER: 2102-0081

DATE: August 2021

HDD PROJECT OVERVIEW

FIGURE 2

Z:\GIS Projects\GIS Maps\Map Project\PG&E R-1385 Sacramento River Crossing Replacement Project\HDD Project Overview.mxd 8/31/2021



Source: Longitude 123, Inc.
Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-1385 SACRAMENTO RIVER CROSSING REPLACEMENT PROJECT COLUSA AND SUTTER COUNTIES, CA

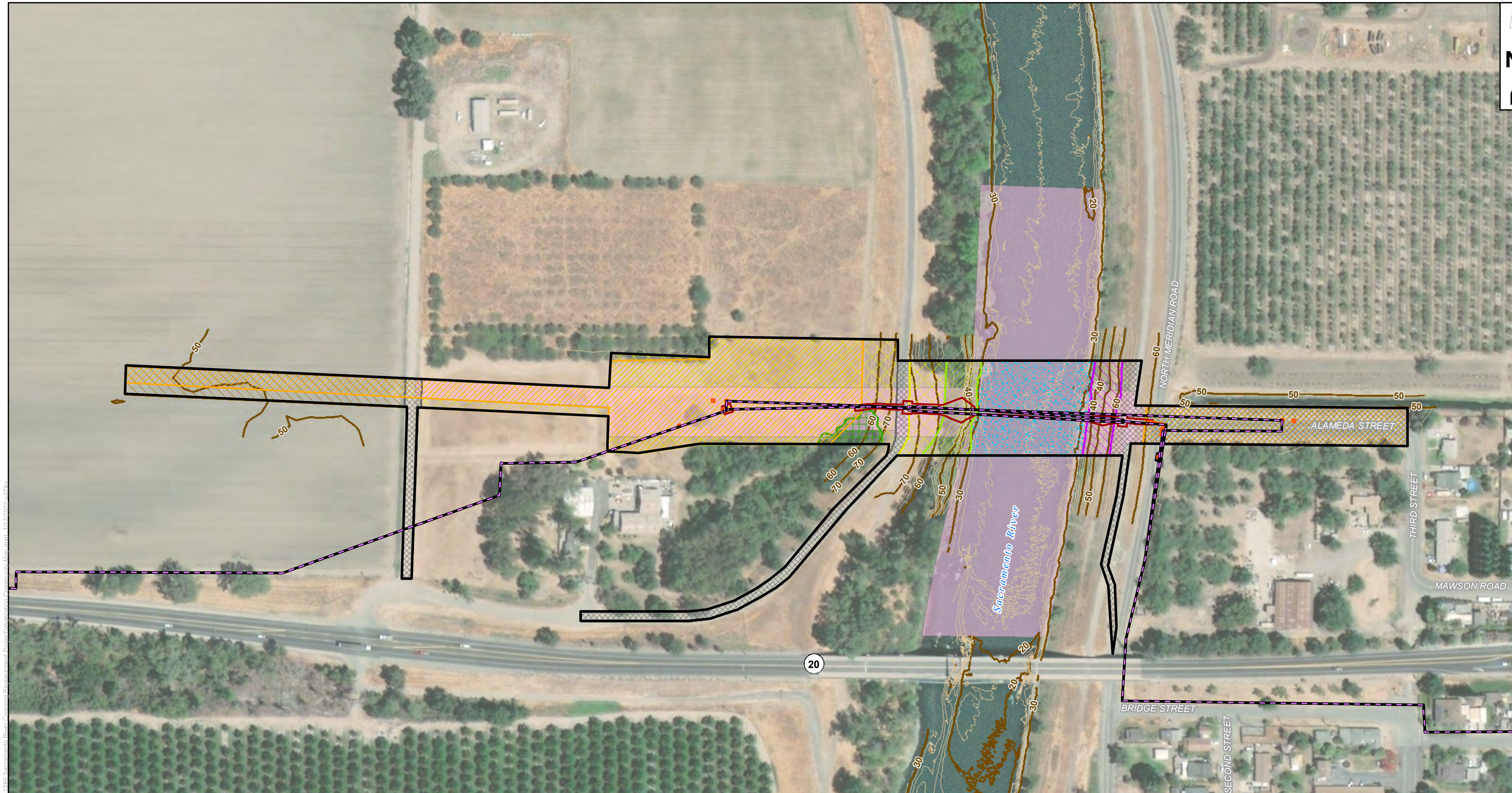
PROJECT NUMBER: 2102-0081

DATE: August 2021

DECOMMISSIONING PROJECT OVERVIEW

FIGURE 3

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-1385 Sacramento River Crossing Replacement Project\Decommissioning Project Overview.mxd (8/31/2021)



LEGEND:

- SWIP-176
- Study Area

Vegetation Communities

- Agriculture
- Great Valley Mixed Riparian Forest
- Great Valley Valley Oak Riparian Forest
- Great Valley Will Scrub
- Non-native Grassland
- Riverine
- Ruderal / Disturbed

Impact Areas

- Excavation - Decommissioning (0.21 ac)
- Excavation - HDD (0.01 ac)

Work Areas

- HDD Work Area - Temporary Impact (4.46 ac)
- Decommissioning Area - Temporary Impact (8.17 ac)

MAP EXTENT:

0 100 200
FEET

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

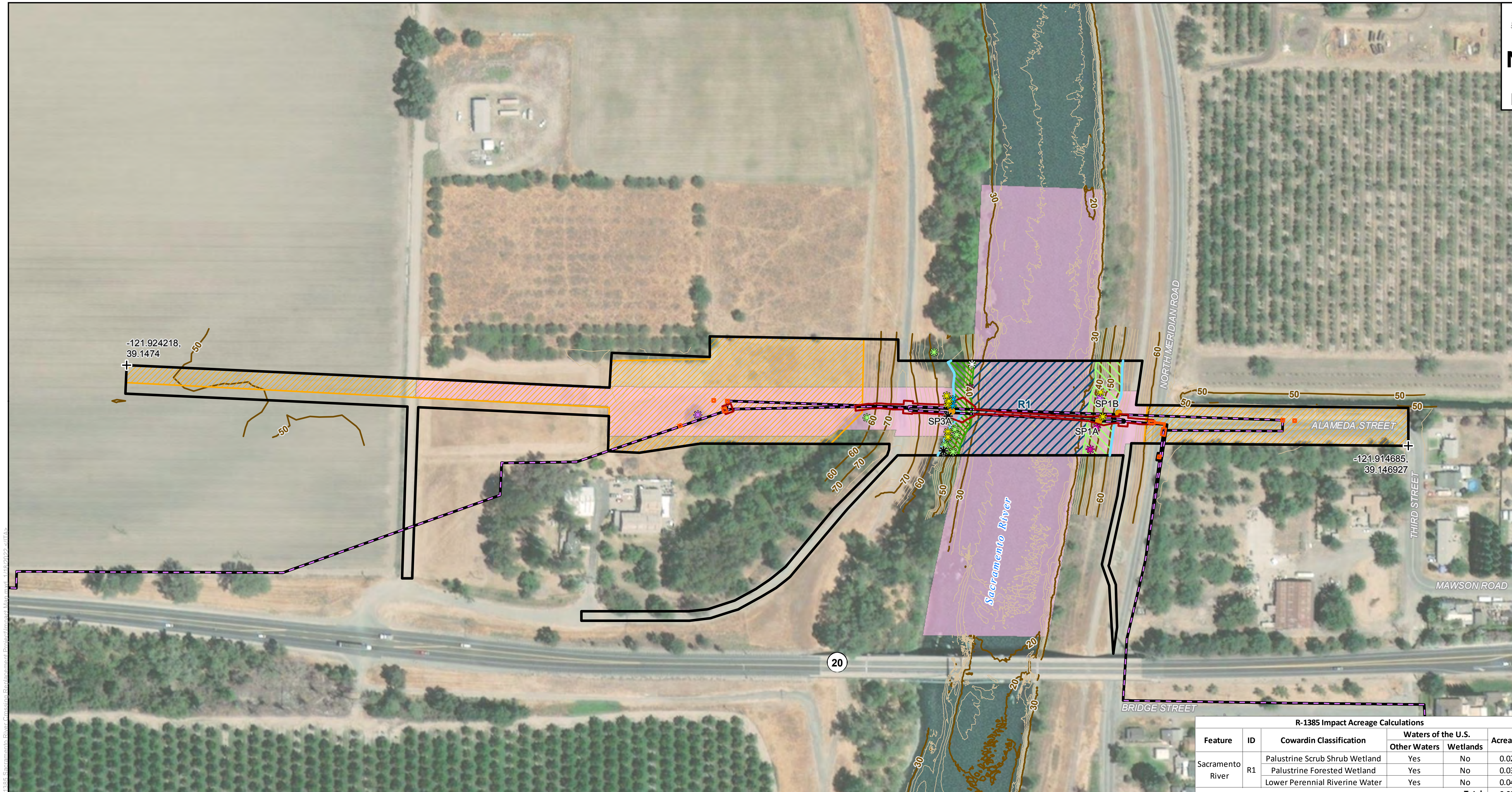
PROJECT NAME: PG&E R-1385 SACRAMENTO RIVER CROSSING REPLACEMENT PROJECT COLUSA AND SUTTER COUNTIES, CA

PROJECT NUMBER: 2102-0081

DATE: January 2022

VEGETATION COMMUNITY MAP

FIGURE 4



R-1385 Impact Acreage Calculations					
Feature	ID	Cowardin Classification	Waters of the U.S.		Acreage
			Other Waters	Wetlands	
Sacramento River	R1	Palustrine Scrub Shrub Wetland	Yes	No	0.02
		Palustrine Forested Wetland	Yes	No	0.03
		Lower Perennial Riverine Water	Yes	No	0.04
				Total:	**0.09**

LEGEND:

- Black walnut (*Juglans hindsii*)
- Box elder (*Acer negundo*)
- California buttonwillow (*Cephalanthus occidentalis*)
- Fremont cottonwood (*Populus fremontii*)
- Blue elderberry (*Sambucus nigra ssp. caerulea*)
- English walnut (*Juglans regia*)
- Valley oak (*Quercus lobata*)
- Goodding's black willow (Salix gooddingii)
- Control Point
- Upland Sample Plot
- OHWM
- Gas Transmission Line
- Study Area (8.46 ac)

Cowardin Classification
- Lower Perennial Riverine Water (1.17 ac)
- Palustrine Forested Wetland (0.18 ac)
- Palustrine Scrub-Shrub Wetland (0.27 ac)

Impact Areas
- Excavation - Decommissioning (0.21 ac)
- Excavation - HDD(0.01 ac)

Work Areas
- HDDW ork Area - Temporary Impact (4.46 ac)
- Decommissioning Area - Temporary Impact (8.17 ac)

0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap, County of Sutter
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-1385 SACRAMENTO RIVER CROSSING REPLACEMENT PROJECT COLUSA ANDS UTTER COUNTIES, CA

PROJECT NUMBER: 2102-0081

DATE: January 2022

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 5

Figure 6 – Special Status Species Occurrences:

CNDDB Geospatial Data is Confidential - Figure available upon request.

Photograph A. View of concrete lined agricultural ditch located along Alameda Street outside of the study area, but adjacent to the proposed HDD work area. View east (photograph taken 3/17/21).	
Photograph B. View of marks created by excavation/dredging along the concrete lined agricultural ditch. The flattened pile of dredge spoils can be seen along the top of the bank View southeast (photograph taken 3/17/21).	

Photograph C. View of landside slope of the east levee and Alameda Street. This is the proposed location of the East HDD work area. Concrete lined ditch is located adjacent to the north and a walnut orchard is adjacent to the south. View east (photograph taken 2/24/21).	
Photograph D. View across the Sacramento River toward the west bank from the top of the levee on the east bank. View west (photograph taken 3/17/21).	

Photograph E. View of low flow channel of the Sacramento River. The large cobble substrate that can be seen in the photo is only present at the pipeline crossing location. View south (photograph taken 3/17/21).	
Photograph F. View of Great Valley willow scrub vegetation community located on the levee on the east bank of the Sacramento River. This community was classified as a palustrine scrub-shrub wetland and is located below the ordinary high water mark of the Sacramento River. View northeast (photograph taken 3/17/21).	

Photograph G. View of Great Valley mixed riparian forest located on the west bank of the Sacramento River. Swainson's hawks were observed perching on these trees during the survey. View north. (photograph taken 3/17/21).	
Photograph H. View of elderberry shrub found in the Great Valley mixed riparian forest located within the pipeline alignment on the west bank of the Sacramento River. The shrub was covered in California grape and Himalayan blackberry vines. View north. (photograph taken 3/17/21).	

Photograph I. View of a dark morph Swainson's hawk observed perching on top of a California sycamore tree on the west side of the Sacramento River north of the project area. View north (photograph taken 3/17/21).	
Photograph J. View of the back side of the levee on the west side of the Sacramento River. The vegetation community present on the majority of the levee is classified as a non-native grassland. View north (photograph taken 3/17/21).	

Photograph K. View across the non-native grassland community in the western portion of the Project area. The west levee of the Sacramento River can be seen in the distance. View east. (photograph taken 3/17/21).	
Photograph L. View from the western end of the pipe staging area located in an agricultural field that was barren at the time of surveys in March and growing melon crops during summer surveys. View east. (photograph taken 3/17/21).	

APPENDIX A

USFWS AND NMFS SPECIES LISTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: March 02, 2021
Consultation Code: 08ESMF00-2021-SLI-1157
Event Code: 08ESMF00-2021-E-03374
Project Name: R-1358 Pipeline Replacement and Removal Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2021-SLI-1157
Event Code: 08ESMF00-2021-E-03374
Project Name: R-1358 Pipeline Replacement and Removal Project
Project Type: OIL OR GAS
Project Description: PG&E proposes to replace an existing natural gas line beneath the Sacramento River using HDD methods and remove the existing section of pipe from the Sacramento River.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.14675845,-121.91971568155353,14z

Counties: Colusa and Sutter counties, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/7850

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/8246

Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/2246

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX B

CNDDB QUERY RESULTS

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: BIOS selection

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	40 50	955 S:2	0	0	0	0	0	2	2	0	2	0	0
Antigone canadensis tabida greater sandhill crane	G5T5 S2	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected USFS_S-Sensitive	50 50	605 S:1	0	0	0	0	0	1	1	0	1	0	0
Atriplex cordulata var. cordulata heartscale	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	50 50	66 S:1	0	0	0	0	0	1	0	1	1	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	45 45	791 S:1	1	0	0	0	0	0	0	1	1	0	0
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	G5T3 S3	Delisted None	CDFW_WL-Watch List	45 52	19 S:3	0	0	0	0	0	3	3	0	3	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	30 50	2535 S:22	0	0	0	0	0	22	8	14	22	0	0
Coccyzus americanus occidentalis western yellow-billed cuckoo	G5T2T3 S1	Threatened Endangered	BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	45 45	165 S:1	0	0	0	0	0	1	1	0	1	0	0
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2 S3	Threatened None		40 60	271 S:4	0	1	0	0	0	3	2	2	4	0	0
Gonidea angulata western ridged mussel	G3 S1S2	None None		40 40	157 S:1	0	0	0	0	1	0	1	0	0	1	0
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	G2 S2.1	None None		45 50	56 S:3	1	1	1	0	0	0	3	0	3	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Great Valley Mixed Riparian Forest	G2	None		40	68	1	2	0	0	0	0	3	0	3	0	0
Great Valley Mixed Riparian Forest	S2.2	None		50	S:3											
Great Valley Willow Scrub	G3	None		55	18	1	0	0	0	0	0	1	0	1	0	0
Great Valley Willow Scrub	S3.2	None		55	S:1											
Hibiscus lasiocarpos var. occidentalis	G5T3	None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	40	173	0	0	0	0	0	3	3	0	3	0	0
woolly rose-mallow	S3	None		60	S:3											
Lasiurus blossevillii	G4	None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	50	128	0	0	0	0	0	1	1	0	1	0	0
western red bat	S3	None		50	S:1											
Lasiurus cinereus	G3G4	None	IUCN_LC-Least Concern WBWG_M-Medium Priority	50	238	0	0	0	0	0	1	1	0	1	0	0
hoary bat	S4	None		50	S:1											
Lepidurus packardi	G4	Endangered	IUCN_EN-Endangered	45	324	1	0	0	0	0	0	0	1	1	0	0
vernal pool tadpole shrimp	S3S4	None		45	S:1											
Linderiella occidentalis	G2G3	None	IUCN_NT-Near Threatened	49	508	1	0	0	0	0	0	0	1	1	0	0
California linderiella	S2S3	None		49	S:1											
Myotis yumanensis	G5	None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	50	265	0	0	0	0	0	1	1	0	1	0	0
Yuma myotis	S4	None		50	S:1											
Northern Hardpan Vernal Pool	G3	None		45	126	0	0	0	0	0	1	1	0	1	0	0
Northern Hardpan Vernal Pool	S3.1	None		45	S:1											
Oncorhynchus mykiss irideus pop. 11	G5T2Q	Threatened	AFS_TH-Threatened		31	0	0	0	0	0	2	0	2	2	0	0
steelhead - Central Valley DPS	S2	None			S:2											
Perognathus inornatus	G2G3	None	BLM_S-Sensitive IUCN_LC-Least Concern		127	0	0	0	0	0	1	1	0	1	0	0
San Joaquin pocket mouse	S2S3	None			S:1											

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	30 52	298 S:9	0	2	0	0	0	7	4	5	9	0	0
Thamnophis gigas giant gartersnake	G2 S2	Threatened Threatened	IUCN_VU-Vulnerable	35 50	366 S:7	0	0	0	0	0	7	2	5	7	0	0
Trichocoronis wrightii var. wrightii Wright's trichocoronis	G4T3 S1	None None	Rare Plant Rank - 2B.1	40 40	12 S:1	0	0	0	0	0	1	1	0	1	0	0

APPENDIX C

PLANT SPECIES OBSERVED

Plant Species Observed at the R-1385 DFM-0630 Meridian Sacramento River Crossing Pipeline Replacement Project Area

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Sensitivity / Listing Status
ADOXACEAE (Muskroot Family)					
Blue elderberry	*Sambucus nigra* ssp. *caerulea*	S	FACU	N	
ANACARDIACEAE (Sumac or Cashew Family)					
Poison oak	*Toxicodendron diversilobum*	S	FACU	N	
ASTERACEAE (Sunflower Family)					
Western ragweed	*Ambrosia psilostachya*	H	FACU	N	
Mugwort	*Artemisia douglasiana*	H	FAC	N	
Weedy cudweed	*Pseudognaphalium luteoalbum*	H	FAC	I	
Common groundsel	*Senecio vulgaris*	H	FACU	I	
Milk thistle	*Silybum marianum*	H	NL	I	
Soliva	*Soliva sessilis*	H	FACU	I	
Common sow thistle	*Sonchus oleraceus*	H	UPL	I	
Cocklebur	*Xanthium strumarium*	H	FAC	N	
BORAGINACEAE (Borage Family)					
Common fiddleneck	*Amsinckia menziesii*	H	NL	N	
BRASSICACEAE (Mustard Family)					
Black mustard	*Brassica nigra*	H	NL	I	
Peppergrass	*Lepidium* sp.	H			
Radish	*Raphanus sativus*	H	NL	I	
CARYOPHYLLACEAE (Pink Family)					
Common chickweed	*Stellaria media*	H	FACU	I	
CONVOLVULACEAE (Morning-Glory Family)					
Bindweed	*Convolvulus arvensis*	H	NL	I	
CUCURBITACEAE (Gourd Family)					
California man-root	*Marah fabacea*	H	NL	N	
EUPHORBIACEAE (Spurge Family)					
Turkey mullein	*Croton setiger*	H	NL	N	
FABACEAE (Legume Family)					
Miniature lupine	*Lupinus bicolor*	H	NL	N	
California burclover	*Medicago polymorpha*	H	FACU	I	
White sweetclover	*Melilotus albus*	H	NL	I	
Sourclover	*Melilotus indicus*	H	FACU	I	
Vetch	*Vicia* sp.	H			
FAGACEAE (Oak Family)					
Valley oak	*Quercus lobata*	T	FACU	N	
GERANIACEAE (Geranium Family)					
Long-beaked storksbill	*Erodium botrys*	H	FACU	I	
Redstem filaree	*Erodium cicutarium*	H	NL	I	
Geranium	*Geranium* sp.	H			
Cut-leaf geranium	*Geranium dissectum*	H	NL	I	
Dove's-foot geranium	*Geranium molle*	H	NL	I	
MALVACEAE (Mallow Family)					
Cheeseweed	*Malva parviflora*	H	NL	I	
MORACEAE (Mulberry Family)					

Plant Species Observed at the R-1385 DFM-0630 Meridian Sacramento River Crossing Pipeline Replacement Project Area

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Sensitivity / Listing Status
White mulberry	*Morus alba*	T	FACU	I	
MYRSINACEAE (Myrsine Family)					
Scarlet pimpernel	*Lysimachia arvensis*	H	FAC	I	
OLEACEAE (Olive Family)					
Oregon ash	*Fraxinus latifolia*	T	FACW	N	
Hairy willow herb	*Epilobium ciliatum*	H	FACW	N	
OXALIDACEAE (Oxalis Family)					
Bermuda buttercup	*Oxalis pes-caprae*	H	NL	I	
PLATANACEAE (Sycamore Family)					
Western sycamore	*Platanus racemosa*	T	FAC	N	
POLYGONACEAE (Buckwheat Family)					
Curly dock	*Rumex crispus*	H	FAC	I	
ROSACEAE (Rose Family)					
Almond	*Prunus dulcis*	T	NL	I	
California rose	*Rosa californica*	S	FAC	N	
Himalayan blackberry	*Rubus armeniacus*	V	FAC	I	
RUBIACEAE (Madder Family)					
California button willow	*Cephalanthus occidentalis*	S	OBL	N	
Goose grass	*Galium aparine*	H	FACU	N	
SALICACEAE (Willow Family)					
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	T	NL	N	
Narrow-leaved willow	*Salix exigua*	S	FACW	N	
Goodding's black willow	*Salix gooddingii*	T	FACW	N	
SAPINDACEAE (Soapberry Family)					
California box-elder	*Acer negundo*	T	FACW	N	
Stinging nettle	*Urtica dioica*	H	FACW	N	
VERBENACEAE (Vervain Family)					
Verbena	*Verbena lasiostachys*	H	FAC	N	
VITACEAE (Grape Family)					
California wild grape	*Vitis californica*	V	FACU	N	
ARACEAE (Arum Family)					
Duckweed	*Lemna minuta*	H	OBL	N	
CYPERACEAE (Sedge Family)					
Sedge	*Carex* sp.	H			
JUNCACEAE (Rush Family)					
Rush	*Juncus* sp.	H			
POACEAE (Grass Family)					
Silver hairgrass	*Aira caryophyllea*	G	NL	I	
Wild oat	*Avena fatua*	G	NL	I	
Rescue grass	*Bromus catharticus*	G	NL	I	
Ripgut grass	*Bromus diandrus*	G	NL	I	
Bermuda grass	*Cynodon dactylon*	G	FACU	I	
Rye grass	*Festuca perennis*	G	FAC	I	

Plant Species Observed at the R-1385 DFM-0630 Meridian Sacramento River Crossing Pipeline Replacement Project Area

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Sensitivity / Listing Status
Hare barley	*Hordeum murinum* ssp. *leporinum*	G	FACU	I	
Johnson grass	*Sorghum halepense*	G	FACU	I	

Wetland Indicator Status

OBL = Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW = Facultative wetland species, usually found in wetlands (67-99% probability)
FAC = Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU = Facultative upland species, not usually found in wetlands (1-33% probability)
UPL = Upland species, almost never found in wetlands (<1% probability)
NI = No indicator has been assigned due to a lack of information to determine indicator status
NL = Not listed, assumed upland species

Sensitivity / Listing Status

FE = Federal Endangered FT = Federal Threatened FC = Federal Candidate SE = California State Endangered ST = California State Threatened	1B.1 = Threatened in California and elsewhere, seriously threatened in California 1B.2 = Threatened in California and elsewhere, moderately threatened in California 2B = Plants rare, threatened, or endangered in California but more common elsewhere 3 = Plants about which more information is needed 4 = Plants of limited distribution

Growth Habit	Native Status
G = Grass H = Herb S = Shrub T = Tree	N = Native I = Introduced

APPENDIX D

WILDLIFE SPECIES OBSERVED

Wildlife Species Observed at the R-1385 DFM-0630 Meridian Sacramento River Crossing Pipeline Replacement Project Area

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
REPTILES		
PHRYNOSOMATIDAE (spiny lizards)		
Western Fence Lizard	*Sceloporus occidentalis*	
BIRDS		
ANATIDAE (Ducks, Geese, and Swans)		
Snow Goose	*Chen caerulescens*	M
COLUMBIDAE (Pigeons and Doves)		
Rock Pigeon	*Columba livia*	
Eurasian Collared-Dove	*Streptopelia decaocto*	M
Mourning Dove	*Zenaida macroura*	M
TROCHILIDAE (Hummingbirds)		
Anna's Hummingbird	*Calypte anna*	M
CHARADRIIDAE (Lapwings and Plovers)		
Killdeer	*Charadrius vociferus*	M
PHALACROCORACIDAE (Cormorants)		
Double-crested Cormorant	*Phalacrocorax auritus*	M, WL
PELECANIDAE (Pelicans)		
American White Pelican	*Pelecanus erythrorhynchos*	M, CSC
ARDEIDAE (Bitterns, Herons, and Allies)		M
Great Blue Heron	*Ardea herodias*	M
Great Egret	*Ardea alba*	M
CATHARTIDAE (New World Vultures)		
Turkey Vulture	*Cathartes aura*	M
ACCIPITRIDAE (Hawks, Kites, Eagles, and Allies)		
Northern Harrier	*Circus hudsonius*	M, CSC
Red-shouldered Hawk	*Buteo lineatus*	M
Swainson's Hawk	*Buteo swainsoni*	M, ST, BCC
Red-tailed Hawk	*Buteo jamaicensis*	M
ALCEDINIDAE (Kingfishers)		
Belted Kingfisher	*Megaceryle alcyon*	M
PICIDAE (Woodpeckers and Allies)		
Nuttall's Woodpecker	*Picoides nuttallii*	M
Northern Flicker	*Colaptes auratus*	M
TYRANNIDAE (Tyrant Flycatchers)		
Black Phoebe	*Sayornis nigricans*	M
CORVIDAE (Jays and Crows)		
Californa Scrub-Jay	*Aphelocoma californica*	M
American Crow	*Corvus brachyrhynchos*	M
Common Raven	*Corvus corax*	M
HIRUNDINIDAE (Swallows)		
Cliff Swallow	*Petrochelidon pyrrhonota*	M
PARIDAE (Chickadees and Titmice)		
Oak Titmouse	*Baeolophus inornatus*	M, BCC
TROGLODYTIDAE (Wrens)		

Wildlife Species Observed at the R-1385 DFM-0630 Meridian Sacramento River Crossing Pipeline Replacement Project Area

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
Bewick's Wren	*Thryomanes bewickii*	M
REGULIDAE (Kinglets)		
Ruby-crowned Kinglet	*Regulus calendula*	M
TURDIDAE (Thrushes)		
American Robin	*Turdus migratorius*	M
STURNIDAE (Starlings)		
European Starling	*Sturnus vulgaris*	
PASSERIDAE (Old World Sparrows)		
House Sparrow	*Passer domesticus*	
FRINGILLIDAE (Fringilline and Cardueline Finches and Allies)		
House Finch	*Haemorhous mexicanus*	M
Lesser Goldfinch	*Spinus psaltria*	M
American Goldfinch	*Spinus tristis*	M
PARULIDAE (Wood-Warblers)		
Yellow-rumped Warbler	*Setophaga coronata*	M
EMBERIZIDAE (Emberizids)		
Song Sparrow	*Melospiza melodia*	M
White-crowned Sparrow	*Zonotrichia leucophrys*	M
Golden-crowned Sparrow	*Zonotrichia atricapilla*	M
ICTERIDAE (Blackbirds)		
Red-winged Blackbird	*Agelaius phoeniceus*	M
Brewer's Blackbird	*Euphagus cyanocephalus*	M
MAMMALS		
LEPORIDAE (Rabbits and Hares)		
Brush Rabbit	*Sylvilagus bachmani*	
GEOMYIDAE (Pocket Gophers)		
Botta's Pocket Gopher	*Thomomys bottae*	
CANIDAE (Foxes, Wolves, and Relatives)		
Coyote	*Canis latrans*	
PROCYONIDAE (Raccoons and Relatives)		
Raccoon	*Procyon lotor*	
MUSTELIDAE (Weasels, Badgers, and Relatives)		
Striped Skunk	*Mephitis mephitis*	
CERVIDAE (Deer, Elk, and Relatives)		
Black-tailed Deer	*Odocoileus hemionus*	

Sensitivity / Listing Status[1]	
M = Protected under the federal Migratory Bird Treaty Act (MBTA) FE = Federally Endangered FT = Federally Threatened FDL = Federally Delisted FSS = Forest Service Sensitive SE = California State Endangered	ST = California State Threatened CSC = California Species of Special Concern FP = California Fully Protected Species BCC = USFWS Birds of Conservation Concern WL = CDFW Watch List