APPENDIX D

Biological Technical Report

BIOLOGICAL TECHNICAL REPORT

PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT – PHASE TWO STANISLAUS COUNTY, CALIFORNIA

Project No. 1902-3511

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1.0 INTRODUCTION

Pacific Gas & Electric Company (PG&E) proposes to install a new 24-inch pipeline (L-215-1) to replace the existing R-687 L-215 San Joaquin River crossing to address shallow depth of burial and exposures on the existing pipeline crossing. The PG&E R-687 L-215 San Joaquin River Crossing Replacement Project (Project) will be completed in two phases. Phase One consists of installing and commissioning the new 24-inch crossing using a Horizontal Directional Drill (HDD). Phase Two will address the decommissioning of the existing 12-inch pipeline (L-215) at the San Joaquin River crossing.

The purpose of this Biological Technical Report is to detail the findings of the biological reconnaissance surveys conducted for Phase Two of the proposed Project in Stanislaus County, 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.

Following this introduction, there is a description of the proposed Project, followed by the methodology section, which describes field studies and analytical methods used to assess the Project site. The methodology section includes a review of literature concerning special-status species, sensitive habitats, and general biological conditions; and, a description of field reconnaissance methods. The environmental setting describes abiotic and biotic conditions at the Project site including climate, soils, typical habitats and associated plant and wildlife species, and special-status species reported in or near the Project area. A review of regulatory requirements is then provided, and the final section summarizes the anticipated impacts of Project implementation along with suggested mitigation measures to reduce Project impacts to less than significant levels.

A Biological Resources Assessment Report was prepared by Stantec for Phase One of the Project (Stantec, 2019b). The contents of this report focus on the biological resource assessment for Phase Two of the Project.

2.0 BACKGROUND

PG&E is proposing to address the exposure of natural gas pipeline L-215 at its crossing of the San Joaquin River. The Project objective is to replace the affected pipeline segment at a new location using HDD methods and to decommission the existing pipeline crossing. The Project would be conducted in two phases.

- Phase One consists of installing and commissioning the new 24-inch HDD crossing.
- Phase Two involves the decommissioning of the existing 12-inch pipeline crossing.

2.1 LOCATION

The Project site is located approximately four miles southeast of Patterson, California (Figure 1) within the *Crows Landing, California* United States Geological Survey (USGS) 7.5-Minute Series topographic quadrangle map. The Project crosses through Sections 35 and 36 of Township 5 South, Range 8 East; Sections 31 and 32 of Township 5 South, Range 9 East; Sections 1, 2, and 3 of Township 6 South, Range 8 East; and, Section 5 and 6 of Township 6 South, Range 9 East in Stanislaus County, California. Access to the Project areas on the west riverbank is near the cross streets of Prune Avenue and Paradise Avenue. The cross streets nearest the east bank Project access are South Carpenter Road and West Bradbury Road.

2.2 PROJECT DESCRIPTION

Phase One involves the installation and commissioning of a 24-inch pipeline using an approximately 7,200-foot-long HDD under the San Joaquin River. During Phase One, two bore pits will be dug, each measuring approximately 20 feet by 40 feet, for the entry and exit of the drill. On the western side of the San Joaquin River the bore pit will be located along Prune Avenue and will be used as the entry pit. The eastern bore pit will be located near the end of West Bradbury Road and will be the exit pit. From the western pit an approximately 415-foot-long open trench will be used to tie the new L-215-1 crossing into the existing L-215 line. At the eastern pit an approximately 365-foot-long open trench will be constructed for the same purpose. After the new crossing has been successfully tied-in, the existing crossing will be purged with inert gas and capped in preparation for Phase Two of the Project. Figure 2 provides an overview of Phase One and Phase Two work areas. This description of Phase One activities is provided for Project context; however, Phase One activities are not discussed further in this document. Refer to the Biological Resource Assessment Report for Phase One of the Project for additional details (Stantec, 2019b).

Phase Two decommissioning involves pigging and flushing the pipeline to remove any potential contaminants, filling certain pipeline segments with concrete slurry, and removal of other pipeline segments. The existing River crossing to be decommissioned in Phase Two is approximately 6,800 feet long and extends through a developed roadway (West Road Segment), a U.S. Army Corps of Engineers levee (ACOE levee) on the west side of the San Joaquin River (ACOE West Levee Segment), the active floodplain of the San Joaquin River (West Landing Segment), the low water channel of the San Joaquin River (Submerged Riverbed Crossing Segment), the east bank of the San Joaquin River (East Landing Segment), an agricultural levee (Agricultural Levee Segment), an ACOE levee on the east side of the San Joaquin River (ACOE

East Levee Segment), and an agricultural field west of South Carpenter Road (East Agricultural Field Segment). For planning purposes, the crossing is described in eight segments that correspond with the varying conditions specific to each pipeline segment. Figure 3 identifies the pipeline segments and work areas and notes the final disposition of each pipeline segment.

The first operation to be performed as part of Phase Two will be pigging and flushing of the existing pipeline to remove contaminants. All eight affected pipeline segments will be pigged and flushed. In preparation for pigging and flushing, the pipeline will be excavated on the west end at the corner of Prune Avenue and Paradise Avenue, as well as at the east end adjacent to Carpenter Road. Staging areas (west staging area and east staging area) will accommodate temporary tanks, piping, pumps, and other water handling equipment and provide the work space for pigging and flushing operations. The existing pipeline will be pigged until the flush water has less than 15 parts per million (ppm) total petroleum hydrocarbon (TPH). The operation is expected to require two pig runs and a total of approximately 90,000 gallons of water. Flush water generated by pigging and flushing operations will be fully contained within piping, valves and temporary tanks.

The decommissioning of the existing 12-inch pipeline involves installing cement slurry and abandonment in place for the following pipeline segments: West Road Segment, ACOE West Levee Segment, East Landing Segment, Agricultural Levee Segment, ACOE East Levee Segment, and East Agricultural Field Segment. Placement of cement slurry into the pipeline segments to be abandoned in place involves excavation on both ends of the segment and placement of a pre-calculated volume of cement to ensure that the pipeline segment is filled. Once the cement slurry has cured sufficiently (approximately 48 hours), the pipeline ends will be cut off using an oxy-acetylene torch, the ends will be capped, and the pipeline segment abandoned in place. Excavations will be backfilled, compacted, and returned to pre-Project contours. Work areas and excavation footprints associated with installation of the cement slurry are depicted on Figure 3.

The West Landing Segment and Submerged Riverbed Crossing Segment of the decommissioned pipeline will be removed entirely due to shallow depth of burial in some portions of these pipeline segments. The West Landing Pipe Segment has a depth of burial ranging from 1.5-feet to ten feet deep. This pipe segment will be removed using conventional terrestrial excavation equipment to expose the pipe. The pipeline will be cut and extracted using a hydraulic shear and grapple. At the shoreline, after submerged pipeline has been exposed, a winch will be used to pull the remaining pipe out of the western riverbank up onto the west landing.

The pipeline segment under the submerged riverbed has depth of burial ranging from exposed to approximately six feet of burial. The portion of this pipeline segment with at least three feet of water depth will be removed using a portable “sectional” barge that will be trucked in and assembled on the west bank of the San Joaquin River (Work Area 1). The sectional barge will be equipped with a crane and diving spread and anchored with spuds. The crane will be equipped with a submersible excavation pump to surgically excavate the buried sections of the submerged pipeline to expose it in preparation for removal. Hand jetting by divers is not anticipated but may be used if site conditions warrant. Portions of the pipeline buried near the western riverbank that are too shallow for underwater excavation methodologies will be exposed using terrestrial excavation equipment.

The east landing pipeline segment will be filled with cement slurry and partially abandoned in place and partially removed. After the submerged pipeline has been removed from the riverbed as close to the shoreline as possible, terrestrial construction equipment will pull the remaining pipe out of the eastern riverbank from the excavation used to install slurry. The excavation footprint will be situated at least five feet from the existing bank to minimize the disturbance and reduce impacts to the integrity of the existing riverbank to the extent feasible.

All recovered pipe will be cut into sections and loaded onto trucks to be removed from the site. A total of seven excavation areas will be required for completion of the Phase Two work (Figure 3). Five of these excavations will occur in developed or disturbed areas or agricultural lands. These excavations are necessary to access the pipeline for pigging and flushing, and installation of the cement slurry. Two excavation areas are required within the active floodplain and the banks of the San Joaquin River (Excavation B and C). These excavation areas are required for removal of the pipeline from the river crossing. Table 1 outlines the excavation footprints within each of the defined work areas. Figure 3 depicts the excavation areas and work areas associated with Phase Two work.

Table 1. R-687 L-215 San Joaquin River Crossing Replacement Project - Phase Two Excavation Footprints

Work Area	Excavation	Excavation Dimensions (ft)	Impact Area (ft^2)
West Staging Area	Excavation A Prune and Paradise Avenue	35 x 20	700
Work Area 1	Excavation B San Joaquin River West Landing	45 x 450	20,250
	Underwater Excavation Area	4 x 280	1,118
	Excavation C San Joaquin River East Landing	80 x 50	3,629
Work Area 2	Excavation D Agricultural Levee	24 x 24	576
Work Area 3	Excavation E Agricultural Levee	24 x 24	576
Work Area 4	Excavation F Agricultural Field	30 x 20	600
East Staging Area	Excavation G Agricultural Field	35 x 20	700

All excavation areas will be backfilled with excavated spoils and restored to pre-Project contours. Phase Two activities will result in a total disturbance footprint of approximately 9.47 acres and a total excavation footprint of approximately 0.61-acre. There are no permanent impacts associated with this Project.

Phase Two activities are planned for implementation during late summer/fall of 2021. Total duration of Project activities is expected to take approximately 62 days, with approximately 25 days of work in the river or on the riverbanks. Work within the San Joaquin River will be limited to July 1 to September 30 to coincide with the period that is least favorable for special-status fish occurrence. Work activities will generally be conducted Monday through Friday (occasionally Saturday) with approximately 10-12 hours per workday. Weekend work may occur, if necessary, to complete the Project within the defined seasonal constraints.

3.0 METHODOLOGY

3.1 LITERATURE REVIEW

Padre biologists reviewed available Project design information, Stanislaus County soil survey maps, National Wetland Inventory (NWI) Maps, the U.S. Geological Survey (USGS) 7.5-minute topographic map for the Crows Landing quadrangle, and other environmental documents. The California Natural Diversity Database (CNDDB) was queried for records of special-status species reported within a five-mile radius surrounding the Project site (California Department of Fish and Wildlife [CDFW], 2020). A list of federally listed Threatened and Endangered species was obtained from the U.S. Fish and Wildlife Service (USFWS), and is included under Appendix A (USFWS, 2020a). Special-status taxa that are known to exist or have the potential to exist on the Project site were also identified through a review of relevant literature (California Native Plant Society [CNPS], 2020; Zeiner et al., 1988; 1990a, b).

3.2 FIELD RECONNAISSANCE SURVEY

Reconnaissance-level field surveys for the purposes of site characterization and preliminary aquatic resources delineation were conducted by Padre biologists on January 17 and 23, 2020. A biological resources study area (study area) was identified prior to beginning field surveys. 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, 5, and 6. 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 (Baldwin et al., 2012), when possible. Field surveys were conducted in January when many of plant species onsite were dormant or unidentifiable due to the plant growing stage. Prior to the field surveys, the CNDDB query was reviewed to identify occurrences of special-status plant and animal species in the Project vicinity (Appendix B). 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.

4.0 ENVIRONMENTAL SETTING

4.1 GEOLOGY/GEOMORPHOLOGY

The Project is located within the Caswell Basin subsection of the Great Valley ecological section of California (Miles and Goudey, 1997). The Caswell Basin subsection occurs on the San Joaquin River just upstream of the Delta. The geomorphology of this subsection is nearly level floodplain and basin floors with elevational ranges of 10 to 60 feet above mean sea level (msl). Fluvial erosion and deposition are the main geomorphic processes in the subsection. Seven soil types that have been mapped by the Natural Resources Conservation Service (NRCS) are distributed across the Project site as described in Section 4.3 below.

The Project is located within the San Joaquin Valley subregion of the Great Valley California floristic region (Baldwin et al., 2012). The western portion of the Project site is located within a rural residential area. The floodplain of the western portion of the San Joaquin River Crossing is used for cattle grazing. The western floodplain below the Ordinary High-Water Mark (OHWM) consists of sandy terraces. The floodplain on the eastern portion of the San Joaquin River is not utilized for grazing. However, work areas, excavations, and staging areas located outside the floodplain on the east side of the San Joaquin River are located in disturbed areas along the agricultural levee and within irrigated agricultural crop land.

4.2 CLIMATE

The Project site is situated in Climate Zone 8, which includes cold-air basins of California's Central Valley (Clark, 1985). The site 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 Modesto, to the north, the average maximum temperature for the 110-year period between 1906 and 2016 was 74.6°F, with a range of 53.8° in January to 94.3° in July. The average minimum temperature was 48.4° with a range of 37.6° in January and 60.0° in July. The average annual precipitation is 12.21 inches with a range of 0.02 inch in July to 2.44 inches in January. No precipitation falls as snow within this area of California (Western Regional Climate Center, 2020).

4.3 SOILS

The soils in the Caswell Basin subsection soils are mostly poorly drained and some are moderately well and well drained. Soil temperature regimes are thermic. Soil moisture regimes are mostly aquic, and some are xeric.

Based on a review and analysis of the U.S. Department of Agriculture's Web Soil Survey for Stanislaus county (NRCS, 2020), the Project site is underlain by Dospalos-Bolfar complex (map unit symbol 170), Occidental, 0 to 2 percent slopes (map unit symbol 140), Weott, 0 to 2 percent slopes (map unit symbol 110), Bolfar-Columbia complex (246), Columbia loam, 0 to 1 percent slopes (CeA), Columbia soils, channeled, 0 to 8 percent slopes (CsB), Columbia fine sandy loam, channeled, partially drained, 0 to 2 percent slopes (153), Dinuba sandy loam, slightly

saline-alkali, 0 to 1 percent slopes (DwA), and Waukena sandy loam, slightly saline-alkali, 0 to 1 percent slopes (WdA). These soil mapping units are described below in Table 2.

Table 2. Soil Mapping Units and Characteristics at the PG&E R-687 L-215 San Joaquin River Crossing Replacement Project – Phase 2

Soil Mapping Unit (Taxonomic Class)	Location	Munsell Soil Color (by horizon)	Drainage Class[1]	PERM[2]	AWC[3]	Runoff[4]	ERD[5]	Hydric
Dospalos-Bolfar complex (170) (Fine, smectitic, calcareous, thermic Vertic Endoaquolls)	Western staging area	0-9" 10YR 4/1 dry 10YR 3/1 wet 9-24" 10YR8/1 dry 10YR 8/1 wet		2	3	4	1	Yes, in flood plains and basin floors
Bolfar-Columbia complex (246) (mixed, superactive, calcareous, thermic Cumulic Endoaquolls)	Western staging area	0-11" 10YR 4/1) dry 10YR 3/1 wet 11-25" 10YR 4/1 dry 10YR 2/1 wet 25-29" 5Y 4/2 dry 2.5Y 3/2 wet	6	3	4	3	1	Yes, in flood plains
Columbia loam, 0 to 1 percent slopes (CeA) (mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents)	Excavation Area D Excavation Area E Eastern Staging Area	0-11" 10YR 6/3) dry 10YR 4/3) wet 11-16" 10YR 6/3) dry 10YR 4/3 wet 16-23" 10YR 6/3) dry 10YR 4/3) we	5	5	3	3	1	Yes, in flood plains, basin floors, and depressions
Columbia soils, channeled, 0 to 8 percent slopes (CsB) (mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents)	SJ River Crossing Excavation Area D Eastern Staging Area Carpenter Road Staging Area	0-11" 10YR 6/3) dry 10YR 4/3) wet 11-16" 10YR 6/3) dry 10YR 4/3 wet 16-23" 10YR 6/3) dry 10YR 4/3) wet	5	5	3	5	1	Yes, in flood plains, and depressions
Columbia fine sandy loam, channeled, partially drained, o to 2 percent slopes (153) (mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents)	SJ River Crossing	0-11" 10YR 6/3) dry 10YR 4/3) wet 11-16" 10YR 6/3) dry 10YR 4/3 wet 16-23" 10YR 6/3) dry 10YR 4/3) wet	5	5	3	2	1	Yes, in flood plains

Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent slopes (DwA) (mixed, active, thermic Typic Haploxeralfs)	Carpenter Road Staging Area	0-8" 2.5Y 5/2 dry 2.5Y 3/2 wet 8-18" 10YR 6/2.5 dry 10YR 5/2.5 wet 18-28" 10YR 6/2.5 dry 10YR 5/2.5 wet	4	4-6	2	4	1	Yes, in depressions
Waukena sandy loam, slightly saline-alkali, 0 to 1 percent slopes (WdA) (mixed, superactive, thermic Typic Natrixeralfs)	Carpenter Road Staging Area	0-1" 10YR 6/1) dry 10YR 5/1 wet 1-10" 10YR 5/1 dry 10YR 4/1 wet 10-18" 2.5Y 6/4 dry 2.5Y 5/4 wet	4	1-2	3	5	1	Yes, in depressions

[1]Drainage Class
1 Excessively drained
2 Somewhat excessively drained
3 Well drained
4 Moderately well drained
5 Somewhat poorly drained
6 Poorly drained
7 Very poorly drained

[2]PERM (Permeability)
1 Very slow (< 0.06 inch)
2 Slow (0.06 to 0.2 inch)
3 Moderately slow (0.2 to 0.6 inch)
4 Moderate (0.6 to 2 inches)
5 Moderately rapid (2 to 6 inches)
6 Rapid (6 to 20 inches)
7 Very rapid (>20 inches)

[3]AWC (Available Water Capacity)
1 Very low (0 to 2.5 inches)
2 Low (2.5 to 5 inches)
3 Moderate (5 to 7.5 inches)
4 High (7.5 to 10 inches)
5 Very High (> 10 inches)

[4]Surface Runoff
1 Negligible
2 Very low
3 Low
4 Medium
5 High
6 Very high

[5]ERD (Effective Rooting Depth)
1 Very deep (> 60 inches)
2 Deep (40 to 60 inches)
3 Moderately deep (20 to 40 inches)
4 Shallow (10 to 20 inches)
5 Very shallow (< 10 inches)

4.4 WATER QUALITY

Water quality is an important factor in determining habitat suitability for special-status fish species, specifically salmonids. Water temperature in this portion of the San Joaquin River is typically too high to support salmonids during the late summer months, with water temperatures regularly exceeding 70° Fahrenheit (F) (21° Celsius [C]). Typically, salmonids prefer cool streams and rivers with a maximum temperature of 64° F (18°C). High water temperatures result in reduced levels of dissolved oxygen, which can impact growth and development of all life stages of salmonids. Salmon have been documented to have an avoidance response to unfavorable dissolved oxygen levels (Carter, 2005). Typical salmonid behavioral response when temperatures become too high is to go upstream to locations where conditions are more favorable.

Higher water temperatures routinely observed at the Crow's Landing station approximately 2.25 miles upstream of the Project site during summer months indicate inhospitable habitat conditions for salmonid species and a low likelihood of occurrence of salmonids at the Project location during summer months. These high water temperatures support the seasonal in-water work window of July 1 to September 30, intended for avoidance of listed fish species. Mean monthly water temperature data for the USGS Station on the San Joaquin River near Crows Landing is presented in Table 3.

Table 3. Water Temperature Data Recorded in the San Joaquin River Mean Monthly Water Temperature (1996-2019)

April	May	June	July	August	September	October
63.7°F (17.6°C)	68.7°F (20.4°C)	74.8°F (23.8°C)	78.6°F (25.9°C)	77°F (25°C)	72.5 °F (22.5°C)	64.2 °F (17.9°C)

Source: USGS San Joaquin River Near Crows Landing (Station #11274550)

4.5 HABITAT DESCRIPTIONS AND VEGETATION

The study area is located east of the town of Patterson. The surrounding area consists of agricultural land and rural residential development. A small rural residential development is located on the west side of the San Joaquin River and on the east side the land is predominantly agricultural row crops. An active flood plain is located along the San Joaquin River in the vicinity of the Project.

Six vegetation communities were identified onsite during field surveys (Figure 4). Along the San Joaquin River, Great Valley willow scrub is present in the lower terraces of the floodplain and Great Valley mixed riparian forests dominate the upper reaches of the floodplain. The portions of the study area along the agricultural levee between the excavation sites are primarily ruderal/disturbed communities created by human traffic and disturbance. The eastern reaches of the study area are dominated by agricultural land supporting annual crop species. At the staging area on the western side of the study area, a non-native grassland community was identified. 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. Below is a brief description of each vegetation community identified. Plant species lists are provided for the

Project in Appendix C. Vegetation Communities mapped within the study area are shown on Figure 4.

4.5.1 Agriculture

This community is not described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* because it is not a natural community. Within the study area there are several locations that consist of fields used for agriculture. On the west side of the study area, east of Prune Avenue, the site borders a field that was in alfalfa production. On the east side of the San Joaquin River, the Project site occurs within and adjacent to fields used to grow corn and other row crops. No jurisdictional aquatic resources were mapped within this cover type.

4.5.2 Great Valley Mixed Riparian Forest

This community is dominated by broadleaved winter-deciduous trees that form in a fine-textured alluvium soil on the borders of river channels. These communities often receive 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 cover type within the study area include Goodding's black willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), California box elder (*Acer negundo*), and California buttonwillow (*Cephalanthus occidentalis*). Within the study area, this community was present on the western floodplain of the San Joaquin River along reaches where the frequency of flooding was not so great as to prevent a mature forest from developing. For large portions of this community a sparse to dense herbaceous community was present beneath the canopy consisting of hydrophytes like cocklebur, rabbitsfoot grass (*Polypogon monspeliensis*), and curly dock (*Rumex crispus*). Within the Great Valley mixed riparian forest community, two different wetland types were mapped in the study area. Palustrine forested wetlands were present below the level of the OHWM and palustrine emergent wetlands were present in a depressional feature above the OHWM. The Great Valley mixed riparian forest was present both above and below the OHWM within the study area despite the species composition that was variable across the gradient.

4.5.3 Great Valley Willow Scrub

This cover type 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, this cover type was present along both the western and eastern banks of the San Joaquin River. On the west bank, the community was present on the lowest terrace of the active floodplain where it is most susceptible to flooding. This terrace was dominated by willow shrubs that were difficult to identify because they were dormant during winter surveys. Willow species commonly found within this cover type include arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and Pacific willow (*Salix lasiandra* var. *lasiandra*). On the eastern bank of the San Joaquin River, the Project site is positioned in a transitional boundary between a Great Valley mixed riparian forest and a Great valley willow scrub community. Within the study area and on the eastern shore of the river, the river is at an inflection point between east and west meanders. The eastern bank is positioned at the beginning of an inside turn and therefore the Project site is located in an area that receives more frequent flooding and more rapidly flowing waters than immediately across the river on the

western shore. This causes the willow scrub vegetation cover on the eastern bank to be less dense even though it is part of the same vegetation community.

On both sides of the San Joaquin River, the majority of Great Valley willow scrub cover type is located below the ordinary high-water mark. This cover type was mapped as a palustrine shrub-scrub wetland.

4.5.4 Non-Native Grassland

Non-native grasses that were introduced during European settlement dominate the non-native grassland cover type. These grasslands are annual species and often mixed into the grasslands are annual forbs that bloom during the springtime. In the study area, this vegetation community was mapped on the Western Staging Area, east of Prune Avenue. Non-native annual grasses that were common in this field include Bermuda grass (*Cynodon dactylon*), meadow barley (*Hordeum marinum* ssp. *gussoneanum*), and hare barley (*Hordeum murinum* ssp. *leporinum*). Annual forb species found in the grassland include black mustard (*Brassica nigra*), California burclover (*Medicago polymorpha*), redstem filaree (*Erodium cicutarium*), and shepherd's purse (*Capsella bursa-pastoris*). The non-native annual grassland within the study area was mapped as an upland.

4.5.5 Riverine

This 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 San Joaquin River traverses northwesterly through the Project site. Within the area mapped as riverine, the channel flows year-round and is devoid of any vegetation except for pioneer floating species like floating water primrose (*Ludwigia peploides*) and water hyacinth (*Eichhornia crassipes*) which will occasionally float by or be lodged on a piece of debris. The riverine cover type was mapped as a riverine lower perennial wetland and is classified as other waters of the U.S. below the OHWM.

4.5.6 Ruderal/Disturbed

This 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 vegetation was present in many locations, primarily along the levees and roadways. The species composition and cover density of this community varied significantly within the study area. On the western side of the San Joaquin River, this cover type was mapped along the roadway to the west of Work Area 1, on top of the ACOE West Levee, and intermixing slightly with the Great Valley mixed riparian forest where vehicle traffic has significantly disturbed the vegetative cover.

On the east side of the San Joaquin River, the ruderal/disturbed community was mapped along both the Agricultural Levee and the ACOE East Levee. On the Agricultural Levee, where Work Areas 2 and 3 are located, there are portions of the road that support dense patches of low growing annual grasses like soft chess (*Bromus hordeaceus*) and meadow barley. In the shoulder of the Agricultural Levee, there are linear sections of dense big saltbush (*Atriplex lentiformis*) growth. Big saltbush is a native shrub that provides valuable cover and foraging habitat to bird species but was mapped as part of the ruderal and disturbed cover type because of its occurrence along the roadway. The ACOE East Levee is much more barren than the Agricultural Levee with

no vegetation on the road's surface and disturbance-adapted species like cheeseweed (*Malva parviflora*) growing sparsely on the slopes.

This community was mapped as upland within all reaches of the study area.

4.6 WATERS AND WETLANDS

The Project site was examined for evidence of 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 during January 2020 for the Project site. 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, 2020).

During field survey efforts conducted in January 2020, Padre identified a total of 4.36 acres of Federal jurisdictional waters and wetlands, 4.36 acres of waters of the State, and 7.30 acres of stream features within the 18.58-acre study area. Activities within these delineated areas are regulated by the Federal government and/or the State of California.

The San Joaquin 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 San Joaquin 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 San Joaquin River is also regulated under Section 1600 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 are several wetland types and other waters present that are subject to federal and state jurisdiction. These different wetland types are defined both by their abiotic features such as water regime and topography as well as biotic factors like vegetation communities. The three wetland types found within the study area include palustrine emergent wetlands, palustrine scrub-shrub wetlands, and palustrine forested wetlands. Other Waters of the U.S. present in the study area are classified as lower perennial riverine wetlands (the San Joaquin River low flow channel). Wetland types were determined by their abiotic and biotic factors and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979). Below is a brief description of each wetland type and of the other waters present in the study area.

4.6.1 Lower Perennial Riverine (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 study area, the limits of the lower perennial riverine classification are therefore confined to just the low flow channel of the San Joaquin River. Within the riverine system classification there are four subsystems. These are tidal, lower perennial, upper perennial, and intermittent. Through the study area, the San Joaquin 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 wetlands.

In a riverine system, the limits of ACOE jurisdiction on waters of the U.S. are defined by the OHWM. See the Preliminary Federal Aquatic Resources Delineation Map (Figure 5) for the location of the OHWM on the San Joaquin River within the study area. A total of 1.01 acre of lower perennial riverine wetlands occur within the study area and are subject to ACOE, RWQCB, and CDFW jurisdiction (Figures 5 and 6).

4.6.2 Palustrine Emergent Wetland (Wetland)

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 ppt (Cowardin, 1979).

Within the study area, a palustrine emergent wetland was mapped within the Great valley mixed riparian forest vegetation community above the ordinary high-water line. This wetland was located in a depressional feature that would receive both groundwater and occasional flood water from the San Joaquin River, and likely collects rainfall from the levee drainage. This particular palustrine wetland is classified as an emergent wetland because it has greater than 30% aerial coverage of hydrophytic herbaceous plant species like cocklebur. Despite being mapped as part of the larger mosaic of a riparian forest vegetation community, the wetland feature itself was lacking growth and influence from trees or shrubs and is therefore an emergent wetland class. A total of 0.11 acre of palustrine emergent wetlands occur within the study area and are subject to ACOE, RWQCB, and CDFW jurisdiction (Figures 5 and 6).

4.6.3 Palustrine Scrub-Shrub Wetland (Wetland)

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.

Within the study area, palustrine scrub-shrub wetlands were present on the lowest and most exposed terraces of the San Joaquin River's active floodplain. On the west side, the scrub-shrub wetland has developed on a terrace that is approximately one to two feet higher in elevation than the low flow channel. This low terrace is therefore flooded with relatively high frequency which likely prevents the development of a forested wetland. On the east side of the San Joaquin River, the palustrine scrub-shrub wetland is located on a higher terrace approximately six feet above the low flow channel. However, this wetland is positioned on an inside turn at an inflection point between the east and west meanders of the San Joaquin River. This causes the eastern shore to receive frequent flooding and more rapidly flowing waters than immediately across the river on the western shore. As a result of this more aggressive flooding regime, a scrub-shrub wetland has developed on the higher eastern terrace in the place of a more mature and

disturbance intolerant wetland like palustrine forested wetland, which is present at the same elevation on the western shore.

Palustrine scrub-shrub wetlands were mapped within the Great Valley willow scrub community and occurred both above and below the OHWM within the study area. A total of 1.76 acre of palustrine scrub-shrub wetlands occur within the study area and are subject to ACOE, RWQCB, and CDFW jurisdiction (Figures 5 and 6).

4.6.4 Palustrine Forested Wetland (Wetland)

Palustrine forested wetlands share the same characteristics of other palustrine systems as described above but have a dominance of woody plants that are greater than 20 feet tall (trees). In the western United States, this wetland type is common on the fringes of river systems where higher 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 western side of the San Joaquin River in the second terrace of the active floodplain where violent and disruptive flooding is less common. A total of 1.49 acre of palustrine forested wetlands occur within the study area and are subject to ACOE, RWQCB, and CDFW jurisdiction (Figures 5 and 6).

4.7 WILDLIFE

Wildlife observed at the Project site was characteristic of the region and of the riverine and agricultural habitats. 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 site and surrounding area are discussed in Section 4.8 below.

The vegetation communities on the site 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 areas. Wildlife species observed and expected within the vegetative cover types present on the site are discussed below.

The open agricultural landscape found surrounding the Project site provides forage and for passerine birds and small mammals, such as California vole (*Microtus californicus*). These species, in turn, provide the prey base that attracts raptors such as red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and Swainson's hawk (*Buteo swainsoni)*. Agricultural production can increase insect populations that can also be prey for Swainson's hawk and egrets (*Ardea* sp*).* Within the Project site, potential nesting habitat is limited to sparse riparian tree cover along the San Joaquin River and street trees on the westside of the Project site; however, suitable nest trees that may support nesting Swainson's hawk or other raptors occur within 0.25-mile of the Project site.

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 species of special concern by the California Department of Fish and Wildlife (CDFW);
- A plant species that is on the California Native Plant Society's (CNPS) Rare Plant Ranking System as List 1 or 2; and/or
- Considered rare, threatened, or endangered under CEQA Guidelines 15380(d) as the species' survival is in jeopardy due to loss or change in habitat.

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 from USFWS (Consultation Code: 08ESMF00-2020-SLI-0837), a list of special-status species that have been reported within a five-mile radius surrounding the Project site has been compiled. Special-status species with occurrences within five miles of the site and that have the potential to occur in the vicinity of the Project site are listed in Table 4. Table 4 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 7.

An analysis of the likelihood of occurrence for each species was conducted on the basis of 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 annual grassland, or vernal pool is absent onsite. For the purpose of 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. Special-Status Species Occurring Within Five Miles of the Site and Considered for Potential Occurrence in the Vicinity of the PG&E R-687 L-215 San Joaquin River Crossing Replacement Project – Phase 2

Scientific Name	Common Name	Status[1]	Habitat	Probability of Occurrence
PLANTS				
Astragalus tener var. *tener*	Alkali milk-vetch	1B.2	Alkaline environments, valley and foothill grassland, and vernal pools. Blooms from March to June. 1 to 196 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #5) is from 2002 and is approximately 1.5 miles southeast.
Atriplex cordulata var. *cordulata*	Heartscale	1B.2	Chenopod scrub, valley and foothill grassland, meadows, alkaline flats and scalds in the Central Valley. Sandy soils. Found regionally in alkali grassland. Blooms from April to October. 1 to 490 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #12) is from 1965 and is approximately 1.5 miles southeast.
Atriplex depressa	Brittlescale	1B.2	Chenopod scrubs, meadows, seeps, playas, and vernal pool in alkaline soils. Blooms from April to October. 1 to 1,050 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #14) is from 1965 and is approximately 16 miles southeast.
Atriplex minuscula	Lesser saltscale	1B.1	Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy alkaline soils. Found locally in heavily alkaline grassland, with a white crust of soil salts. Blooms from May to October. 65 to 330 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #34) is from 1965 and is approximately 1.5 miles southeast.
Atriplex persistens	Vernal pool smallscale	1B.2	Alkaline vernal pools. Found regionally in northern claypan vernal pool. Blooms from June to October. 30 to 380 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #9) is from 1965 and is approximately 2 miles north.
Atriplex subtilis	Subtle orache	1B.2	Valley and foothill grassland. Blooms from June to September (sometimes into October). 130 to 330 ft.	**Absent.** The grasslands present in the study area are disturbed. No suitable habitat is present. Nearest recent occurrence (Occ. #29) is from 1936 and is approximately 9.5 miles east.

Blepharizonia plumosa	Big tarplant	1B.1	Usually in clayey soils in valley and foothill grasslands at elevations ranging from 100 to approximately 1,660 feet. Blooms from July to October.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #37) is from 2000 and is approximately 9 miles west.
Caulanthus lemmonii	Lemmon's jewelflower	List 1B.2	Pinyon and juniper woodlands as well as valley and foothill grasslands. Blooms from February to May. 260 to 5,200 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #33) is from 1938 and is approximately 9.5 miles northwest.
Chloropyron molle ssp. *hispidium*	Hispid bird's-beak	1B.1	Meadows, playas, valley and foothill grassland. In damp alkaline soils, especially meadows and sinks. Found regionally in a wetland with salt grass. Blooms from June to September. 30 to 510 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #19) is from 1986 and is approximately 14 miles south.
Eryngium racemosum	Delta button-celery	SE, 1B.1	Riparian scrub in vernally mesic clay depressions. Blooms from June to October. 10 to 100 ft.	**Absent.** Riparian scrub present in the study area has sandy soils and is frequently flooded with flowing water. Nearest recent occurrence (Occ. #5) is from 1985 and is approximately 1.5 miles southeast.
Eryngium spinosepalum	Spiny-sepaled button-celery	1B.2	Valley and foothill woodlands and vernal pools. Blooms from April to June. 260 to 3,200 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #104) is from 2015 and is approximately 8.8 miles southwest.
Eschscholzia rhombipetala	Diamond-petaled poppy	1B.1	Valley and foothill grassland habitat typically on alkaline soils. Blooms from March to April. 0 to 3,300 feet.	**Low.** Grassland habitat within the study area is disturbed and low quality. Species was not observed during rare plant surveys conducted by Stantec in 2019. Nearest occurrence (Occ. #2) is from 1980 and is approximately 9 miles west.
Extriplex joaquinana	San Joaquin spearscale	1B.2	Alkaline environments, chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands. Blooms from April to October. 1 to 2,740 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #52) is from 1989 and is approximately 13 miles south.

Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	1B.1	Coastal salt marshes and swamps, playas, and vernal pools. Blooms from February to June. 1 to 4,000 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #93) is from 2004 and is approximately 17 miles south.
Monardella leucocephala	Merced monardella	1A	Valley/foothill grasslands (sandy mesic soils). Blooms from May to August. 115 to 330 ft.	**Absent.** Grassland habitat within the study area is disturbed and poor quality. Species is believed to be extirpated from California. Nearest recent occurrence (Occ. #2) is from 1997 and is approximately 14 miles southeast
Navarretia prostrata	Prostrate vernal pool navarretia	1B.1	Mesic coastal scrub, meadows, seeps, valley/foothill grassland, vernal pools. Blooms from April to June. 50 to 3,940 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #25) is from 2002 and is approximately 14 miles south.
Navarretia nigelliformis ssp. *radians*	Shinning navarretia	List 1B.2	Cismontane woodlands, valley and foothill grasslands, and vernal pools. Blooms from April to July, sometimes as early as March. 210 to 3,280 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #82) is from 2015 and is approximately 8.5 miles southwest.
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT, SE, 1B.1	Vernal pools. Blooms from April to September. 30 to 2,480 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #12) is from 1987 and is approximately 18 miles east.
Puccinellia simplex	California alkali grass	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grasslands, and vernal pools. In alkaline and vernally mesic sinks, flats, and lake margins. Blooms from March to May. 1 to 3,050 ft.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #38) is from 1935 and is approximately 2.8 miles east.
Sagittaria sanfordii	Sanford's arrowhead	1B.2	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes and ditches. Blooms from May to October, sometimes into November. 0 to 2,000 ft.	**Absent.** The active floodplain of the San Joaquin River does not provide suitable habitat in the study area. Nearest recent occurrence (Occ. #53) is from 1948 and is approximately 9 miles south.

Sphenopholis obtusata	Prairie wedge grass	2B.2	Mesic cismontane woodlands as well as meadows and seeps. Blooms from April to July. 980 to 6,560 ft.	**Absent.** Poor quality habitat is present for this species within the study area. Species is not known to occur within the vicinity of the project. Nearest recent occurrence (Occ. #16) is from 1969 and is approximately 9.5 miles north.
INVERTEBRATES				
Branchinecta conservatio	Conservancy fairy shrimp	FE	Endemic to the grasslands of the northern two-thirds of the central valley; found in large, turbid pools. Regionally inhabits astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains and lasting until June.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #8) is from 1994 and is approximately 12 miles south.
Brachinecta longiantenna	Longhorn 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 site for this species. Nearest recent occurrence (Occ. #8) is from 2008 is approximately 9 miles south.
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 site for this species. Nearest recent occurrence (Occ. #799) is from 1998 is approximately 11 miles north.
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 broodwood.	**Low.** No blue elderberry shrubs were observed within 165 feet from Project site during biological surveys; however, surveys were completed during January when deciduous trees and shrubs were dormant. Nearest recent occurrence (Occ. #47) is from 2006 is approximately 15 miles east.
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Found in seasonally ponded habitats including vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, and ruts caused from vehicular traffic.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #52) is from 2008 is approximately 12 miles south.

FISH				
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.	**Absent.** The Project is outside of the species' range. Nearest recent occurrence (Occ. #16) is from 2008 is approximately 38 miles north.
Spirinchus thaleichthys	Longfin smelt	FC, CT, CSC	Occupies a variety of coastal waters including estuaries, bays, and rivers. During breeding, this species spawns in freshwater tributaries near the ocean.	**Absent.** The Project is outside of the species' range.
Oncorhynchus mykiss	Central Valley steelhead	FT	Sacramento and San Joaquin River systems, Sacramento-San Joaquin Delta, and San Francisco Bay	**High**. The species could be found in the vicinity of the Project site seasonally during migration to spawning habitat upstream of the site in the Merced River. Steelhead runs are less likely in the upper portion of the San Joaquin River above the Merced River. Additionally, habitat onsite is not suitable for spawning. Nearest recent occurrence (Occ. #25) is from 2013 is within the San Joaquin River.
Oncorhynchus tshawytscha	Central Valley fall-run Chinook salmon	CSC	Sacramento and San Joaquin River systems, Sacramento-San Joaquin Delta, and San Francisco Bay Preferred spawning grounds for Chinook salmon are in gravel areas of large rivers and tributaries	**High**. This population could be found in the vicinity of the Project site seasonally during migration to spawning habitat upstream of the site in the Merced River; however, Chinook salmon runs are less likely in the upper portion of the San Joaquin River. Aquatic habitat onsite is not suitable for spawning.
Oncorhynchus tshawytscha	Central Valley spring-run Chinook salmon	FT, CT	Sacramento and San Joaquin River systems, Sacramento-San Joaquin Delta, and San Francisco Bay Preferred spawning grounds for chinook salmon are in gravel areas of large rivers and tributaries	**High**. This is an experimental population and could be found in the vicinity of the Project site seasonally during migration to spawning habitat upstream of the site in the Merced River; however, Chinook salmon runs are less likely in the upper portion of the San Joaquin River. Habitat onsite is not suitable for spawning Nearest documented occurrence of the listed

				population is more than 50 miles north of the Project site. Designated as a non-essential experimental population pursuant to Section 10(j) of the FESA. Under 10(j) designation, a non-essential experimental population, both take prohibitions and consultation requirements are relaxed.
Mylopharodon conocephalus	Hardhead	CSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage.	**Low**. The Project is outside of the current range of the species. Nearest recent occurrence (Occ. #14) is from 2008 is approximately 9 miles north within the Tuolumne River. Species is also found within the Merced River that flows into the San Joaquin River upstream.
Lampetra ayresii	River lamprey	CSC	Need clean, gravelly riffles in permanent streams for spawning, while the ammocoetes require sandy backwaters or stream edges.	**Moderate**. The species could be found in the vicinity of the Project site; however, habitat onsite is not suitable for spawning.
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**. The species could be found in the vicinity of the Project site; however, habitat onsite is not suitable for spawning Nearest documented occurrence is more than 50 miles north of the project site.
Lavinia exilicauda exilicauda	Sacramento hitch	CSC	Hitch are most often found in slow warm water, including lakes and quiet stretches of rivers. Hitch are sometimes found in cool and clear, low-gradient streams, hiding among aquatic vegetation in sandy runs or pools.	**Moderate**. The species could be found in the vicinity of the Project site; however, habitat onsite is not suitable for spawning.
Lavinia symmetricus symmetricus	Central California roach	CSC	Found in small, warm streams, and are well adapted to intermittent waterways. May also be found in the main channels of some larger rivers.	**Low**. The species could be found in the vicinity of the Project site; however, the perennial nature of the river not preferred habitat for the species. Nearest recent occurrence (Occ. #1) is from 1999 is approximately 11 miles southwest within Crow Creek that flows into the San Joaquin River upstream of the Project.

Acipenser medirostris	Green sturgeon – Southern DPS	FT, CSC	Found in near shore marine and estuarine environments from Alaska to Baja California, Mexico. Southern DPS typically occurs south of the Eel River but has been documented in Humboldt Bay.	**Low.** The Project is outside of the species' s known range.
Acipenser transmontanus	White Sturgeon	CSC	Spend most of their time in estuary habitat and migrate up the San Joaquin River to spawn.	**Moderate.** This species has been documented in the San Joaquin River in the vicinity of the Project. Spawning has been documented downstream of the project site.
Pogonichthys macrolepidotus	Sacramento splittail	CSC	Sacramento splittail are freshwater species that are highly tolerant of brackish water. Shallow seasonally flooded vegetation is the preferred spawning substrate for the Sacramento splittail.	**Moderate**. The Project is outside of the species current range. A historic occurrence (Occ. #119) is from 1981 is approximately 2 miles upstream within the San Joaquin River.
AMPHIBIANS				
Ambystoma californiense	California tiger salamander	FT, ST	Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #119) is from 1992 is approximately 12 miles north.
Lithobates pipiens	Northern leopard frog	CSC	Inhabits grasslands, wet meadows, bogs, marshes, and reservoirs. Generally, prefers permanent water with abundant aquatic vegetation	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #6) is from 1976 is approximately 27 miles south.
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.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #61) is from 1993 is approximately 13 miles west.
Spea hammondii	Western spadefoot toad	CSC	Occurs primarily in grassland habitats; can be found in valley foothill hardwood woodlands. Vernal pools are essential for breeding and egg laying.	**Absent.** No suitable habitat is present onsite or adjacent to the Project site for this species. Nearest recent occurrence (Occ. #176) is from 1994 is approximately 8 miles west.

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 or grassy open fields) for egg laying.	**Moderate**. Habitat at the San Joaquin River crossing is not optimal habitat for resident western pond turtle; however, the species could disperse up and down river through the Project site. Nearest recent occurrence (Occ. #149) is from 1999 is approximately 4 miles east.
Gambelia sila	Blunt-nosed leopard lizard	FE SE, FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures.	**Absent.** There is no habitat to support this species on the Project site.
Thamnophis gigas	Giant garter snake	FT, ST	Freshwater marshes and streams. Has adapted to drainage canals and irrigation ditches.	**Low**. There is a lack of vegetated ditches with suitable upland habitat within and adjacent to the Project site. Nearest recent occurrence (Occ. #27) is from 1987 is approximately12 miles south.
BIRDS				
Accipiter cooperii	Cooper's hawk	WL	Breeds in forests and streamside trees where it can hunt its prey by ambush in the dense cover. Has also been known to forage in residential areas.	**Moderate.** This species could nest within trees within and adjacent to the Project site. Occurrences of this species are not typically reported within CNDDB.
Accipiter striatus	Sharp-shinned hawk	WL	Breeds in woodland habitat. Typically forages in areas of dense cover where it can ambush its prey.	**Moderate.** This species could nest within trees within and adjacent to the Project site. Occurrences of this species are not typically reported within CNDDB.
Agelaius tricolor	Tricolored blackbird	CT, CSC	Nesting colony requires open water, protected nesting substrate and foraging area with insect prey within a few km of the colony.	**Low** This species could forage in the vicinity of the Project site, but no nesting habitat occurs within or adjacent to the Project. There are 3 occurrences in the last 20 years within 5 miles of the Project site.

Buteo swainsoni	Swainson's hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**High** This species is likely to nest and forage within 0.5-mile of the Project site. There are 8 occurrences in the last 20 years within10 miles of the Project site. An active Swainson's hawk nest was observed along the ditch east of the west HDD work area in 2019 surveys (Stantec, 2019b).
Setophaga petechia	Yellow warbler	CSC, BCC	Usually found in riparian deciduous habitats of cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland. Gleans and hovers in upper canopy of deciduous trees and shrubs, feeding on insects and spiders.	**Moderate**. This species does not commonly nest in the San Joaquin Valley but is likely to occur during migration to nesting habitat in the coastal and sierra foothills. The species prefers riparian cover for nesting. Due to the relatively common nature of this species, occurrences are not typically reported within CNDDB.
Icteria virens	Yellow-breasted chat	CSC	Usually found in riparian deciduous habitats of cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland	**Moderate**. This is not a common San Joaquin Valley nesting bird; however, nesting has been documented along the San Joaquin River and the species prefers riparian cover for nesting. Occurrences of this species are reported within CNDDB.
Pandion haliaetus	Osprey	WL	Uses large trees, snags, and dead-topped trees in open forest habitats for cover and nesting	**Moderate.** This species could nest in trees within and adjacent to the Project site.
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.** This species could nest within trees on and adjacent to the Project site. Due to the relatively common nature of this species, occurrences are not typically reported within CNDDB.
Melospiza melodia	Song sparrow ("Modesto" population)	CSC	Resident of the north-central portion of the Central Valley.	**Low.** This species is known to occur north of Modesto and is unlikely to occur in the vicinity of the Project Occurrences of this species are not typically reported within CNDDB.

Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT, SE, BCC	During the summer breeding season, it can be rarely found in valley foothill and desert riparian habitats in California. Typically breeds in dense deciduous riparian vegetation.	**Low.** This species could occur in the vicinity of the Project during migration and dispersal but is unlikely to nest within the San Joaquin River at the Project location due to the lack of dense riparian vegetation. Nearest occurrence (Occ. #141) is from 1977 is approximately18 miles downstream on the San Joaquin River.
Lanius ludovicianus	Loggerhead shrike	CSC BCC	Open habitats like prairies and grasslands, with sparse perches	**Moderate.** This species is relatively common in the area and could use the Project area for foraging but is unlikely to nest within or adjacent to Project impact areas. Occurrences of this species are not typically reported within CNDDB.
Phalacrocorax auritus	Double-crested cormorant	WL	Found in a variety of aquatic habitats including coasts, lakes, rivers, and bays. Often nests in trees over water in large colonies but also breeds on sea cliffs and on the ground. The species sensitive listing status is due to its colonial nesting behavior known as “rookeries”. Rookeries are protected	**Low** Species common in the Project Area; however, no suitable nesting habitat present onsite or adjacent to the Project.
Eremophila alpestris actia	California horned lark	WL	Breeds and forages primarily in open habitats including prairies, fields, airports, golf courses and lake flats. Nests are built on the ground in these open habitats.	**Low.** This species is likely to occur in the vicinity of the Project during migration and could nest in the area. The species is likely to be done nesting when Project activities occur. Occurrences of this species are not typically reported within CNDDB.
Baeolophus inornatus	Oak titmouse	BCC	Primarily associated with oak and riparian woodlands.	**High.** This species was observed during January surveys and is likely to nest within large valley oak trees adjacent to the Project site.
Athene cunicularia	burrowing owl	CSC, BCC	Uses burrow sites in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	**Moderate.** There are suitable burrows present at the western staging area. No signs of burrowing owl were observed during January surveys. Nearest occurrence (Occ. #588) is from 2003 is approximately 6 miles west.

Circus cyaneus	Northern harrier	CSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Nests on ground near marsh edge or grassland. Preys mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish.	**Moderate.** Agricultural fields adjacent to the staging areas may support both foraging and nesting habitat for this species. The nearest known occurrence (Occ. # 7) of this species is 13 miles south of the Project area.
Vireo bellii pusillus	Least Bell's vireo	FE, SE, CSC	Breeds in low dense growth and occasionally chaparral, woodland edges, or scrub oaks.	**Low** Nearest occurrence (Occ. #318) is from 2009 is approximately12.5 miles downstream on the San Joaquin River. This occurrence is the only occurrence within the last 20 years within 30 miles of the Project. Due to the absence of occurrences for a high breeding site-fidelity species and the lack of suitable riparian scrub habitat onsite, it is unlikely the species will occur onsite.
MAMMALS				
Dipodomys nitratoides exilis	Fresno kangaroo rat	FE, SE	Historically found in grassland and chenopod scrub communities on the San Joaquin Valley floor from the Merced River to the north and Tulare Lake to the south.	**Absent.** No habitat is present at the Project site. The nearest known occurrence is more than 50 miles south of the Project.
Antrozous pallidus	Pallid bat	CSC	Typically inhabits grasslands, shrublands, woodlands, and coniferous forests in open, dry habitats that contain rocky areas for roosting. They are a year-round resident in most of their range and hibernate in winter near their summer roost. Day roosts are usually rock crevices, tree hollows, mines, caves and a variety of human-made structures. Tree roosting occurs in conifer snags, hollows of redwoods, and cavities in oaks.	**Low.** Tree canopy is not suitable at the Project site to support a maternal roost of this species. Nearest occurrence (Occ. #318) from 2009 is approximately 8 miles south along the Merced River.
Lasiurus blossevillii	Western red bat	CSC	Found primarily in cities and forests. Typically roosts in the foliage of trees and bushes.	**Low.** Suitable habitat is present along the San Joaquin River; however, tree canopy is not suitable at the Project site to support a maternal roost of this species. Nearest occurrence (Occ. #80) is from 1999 is approximately

				8 miles south along the Merced River.
Taxidea taxus	American badger	CSC	Most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. Need sufficient food, friable soils and open, uncultivated ground.	**Low.** An active ground squirrel colony was observed within the western staging area. Healthy ground squirrel colonies provide a prey base for American badger and indicate the presence of friable soil that badgers can burrow into. There was no sign (burrows, tracks, and scat) of badger observed. Nearest occurrence (Occ. #71) is from 1989 is approximately 9 miles west.
Vulpes macrotis mutica	San Joaquin kit fox	FE, ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing and suitable prey base.	**Low** Nearest occurrence (Occ. #206) is from 2004 is approximately 9 miles, just west of Interstate 5. Researchers have determined that the SJKF could be extirpated from the valley floor north of Santa Nella. This species or its sign (burrows, tracks, scat) were not observed during field surveys.

1 Status:
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
SE = California State Endangered
ST = California State Threatened
SC = California State Candidate
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
CRPR 3 = Plants about which more information is needed
CRPR 4 = Plants of limited distribution

4.8.1 Special-Status Plants

Habitat assessments and surveys for the Project were conducted on January 17 and 23, 2020 outside of the blooming season for most special-status plant species. Focused botanical surveys were conducted by Stantec in the same general area for Phase One of the Project (HDD component) on June 10 and 11, 2019 (Stantec 2019b). No special-status plant species were observed during these surveys and very limited suitable habitat was identified. Based on a lack of suitable habitat for most special-status species within the study area and negative results in the 2019 botanical surveys, no special-status plant species are expected to occur within the Project site.

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 at the Project site based on habitat availability and known locations of species within the vicinity of the Project site. Certain species, such as vernal pool species, listed in Table 4 above, may occur within the quadrangle and/or within five miles of the Project site. Based upon a thorough analyses of the Project site, 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 site is beyond the recorded geographic and/or elevational range for these species.

4.8.2.1 Pacific lamprey (*Entosphenus tridentatus*)

Pacific lamprey is a California species of concern that is found in nearly all 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 has the potential of occurring in the San Joaquin River at the Project site during migration but is unlikely to spawn in this area to the lack of suitable habitat. Species spawning season is from March through June, which is before planned in-water construction would occur. See Table 5 for migration and spawning periods for special-status fish species that may occur in the Project area.

Table 5. Migration and Spawning Periods of Special-Status Fish Species within the Project Area

Common Name			Migrating/Spawning Seasons											
Species	**Status**	**Occurrence Migration/ Spawning**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Anadromous Species														
Fall-run Chinook Salmon	SSC	High/None									XXXX	XXXX		
Spring-run Chinook Salmon	SSC/FT	High/None					XXXX	XXXX						
CV Steelhead	SE/FT	High/None		XXXX	XXXX								XXXX	
White Sturgeon	SSC/FT	Moderate/None			XXXX	XXXX	XXXX	XXXX						
River Lamprey	SSC	Moderate/None												
Pacific Lamprey	SSC	Moderate/None			XXXX	XXXX	XXXX	XXXX						
Resident Species														
Sacramento hitch	SSC	Moderate/Low												
Sacramento Splittail	SSC, FT	Moderate/Low	XXXX	XXXX	XXXX									

Status
SE = State Endangered
ST = State Threatened
SSC = California Species of Concern
FE = Federally Endangered
FT = Federally Threatened

XXXX Migration period through Project Site
XXXX Peak migration period
Spawning period
XXXX Peak spawning period
Overlap of migration and spawning periods

4.8.2.2 River lamprey (*Lampetra ayresi*)

River lamprey is a federal and 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 from the Russian River. 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 San Joaquin River within the study area during migration but is unlikely to spawn in this area due to the lack of suitable habitat. The species spawns from February through May, which is before planned in-water construction would occur (see Table 5).

4.8.2.3 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 5). 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).

Sacramento splittail spawn primarily downstream of the study area; however, spawning has been documented as far upstream as Salt Slough (25 miles upstream of the study area) where the presence of both adults and juveniles indicated successful spawning (Baxter, 2000). The San Joaquin River at the study area does not support submerged aquatic vegetation and the average water temperature of 76°F during summer months when in-water construction would occur is above the preferred temperature range of the species. Additionally, if the species does spawn upstream of the pipeline crossing, dispersing adults and young would likely have made their emigration downstream before planned in-water construction would occur.

4.8.2.4 Sacramento hitch (*Lavinia exilicauda exilicauda*)

The Sacramento hitch is a California species of special concern. Sacramento hitch are endemic to the Sacramento-San Joaquin River Basin (CDWR and USDIBR, 2017). Hitch occupy warm, low-elevation lakes, sloughs, and slow-moving stretches of rivers and clear, low-gradient

streams. Among native fishes, hitch have the highest temperature tolerances in the Central Valley. They can withstand water temperatures up to 100°F although they prefer temperatures of 81 to 84°F. Hitch also have moderate salinity tolerances and can be found in environments with salinities up to 9 parts per thousand (ppt) (Moyle, 2002). Hitch require clean, smaller gravel and temperatures of 57 to 64°F to spawn. Spawning migrations typically occur when water flows increase during spring, raising water levels in rivers, sloughs, ponds, reservoirs, watershed ditches, and riffles of lake tributaries. Hatching occurs within seven days between 59 to 72°F, and larvae take approximately four days to emerge. Soon after emergence they move into perennial water bodies where they grow within aquatic vegetation before moving into open water. This species could occur in the vicinity of the pipeline crossing throughout the year; however, suitable spawning and/or rearing habitat is not present within the study area.

4.8.2.5 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 between late February and early June when water temperatures range from 46 to 66 degrees Fahrenheit (Table 5). Telemetry studies have documented adult white sturgeon occurrences as far upstream as Patterson (USFWS, 2015). White sturgeon have been documented spawning on March 20 and May 14, 2012, approximately 10 miles downstream of the study area, near the Grayson Road Bridge (Jackson et al. 2016). This species could be found in the Project area when the water temperatures are cooler; however, the species is unlikely to spawn at the study area and the species is not likely to occur onsite in late summer when construction would occur due to the elevated water temperatures.

4.8.2.6 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 3-6 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 evolutionary significant units (ESU) based on similarity in life history, location, and genetic markers. The Central Valley spring-run and fall run ESU's have the potential to occur in and around the study area.

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 July with a peak in May and June. The spawning period is late August through late October. (Goals Project, 2000). The juvenile downstream emergence period is between

November and March with a 3 to 15-month freshwater residency period between November and January (Year-2), concluding with an estuarine emigration period between November and June.

In the San Joaquin River, spring-run Chinook salmon historically spawned as far as Mammoth Pool Reservoir, located on the San Joaquin River northeast of Fresno, where their upstream migration historically was blocked by a natural velocity barrier. The construction of Friant Dam blocked significant spawning habitat between Millerton Lake and Mammoth Pool Reservoir (Yoshiyama et al. 1996; CDWR and USDIBR, 2017). Historically, spring-run Chinook salmon juveniles likely used the San Joaquin River as a migration corridor and a rearing area due to the extensive floodplain habitat present. Based on data collected at the Yolo Bypass and Cosumnes River Floodplain, it is understood that increased growth rate occurs within floodplain habitat due to the abundant invertebrate prey present compared to that of the Sacramento River (Sommer et al. 2001; CDWR and USDIBR, 2017). By the 1950s, the entire run of spring-run Chinook salmon was extirpated from the San Joaquin River (Fry, 1961).

Due to the severely decimated population of Central Valley spring-run Chinook salmon, the San Joaquin River Restoration Program (SJRRP) helped initiate a reintroduction program. Reintroduced individuals are classified as a 10(j) non-essential experimental population under the FESA, which means that the unintentional take of Central Valley spring-run Chinook salmon in the experimental population area that is caused by otherwise lawful activities is excepted from the take prohibitions under section 9 of FESA. Examples of otherwise lawful activities include, but are not limited to, recreation, agriculture, municipal usage, flood control, water management, and other similar activities which are carried out in accordance with Federal, state, and local laws and regulations (NMFS, 2013).

This species is likely to be present within the Project area; however, due to a lack of data on the distribution of the newly reintroduced species, the timing of their potential presence in the study area is unknown.

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 7-13 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 generally spawn lower in the watersheds than spring-run Chinook salmon (CDFG, 1957). Fall-run Chinook salmon historically spawned in the main stem San Joaquin River upstream from the Merced River confluence near the town of Friant and in the main stem channels of the major tributaries (Yoshiyama et al. 1996). However, currently, they are limited to the Merced, Stanislaus, and Tuolumne Rivers where they spawn and rear downstream from mainstem dams (CDWR and USDIBR, 2017). Since the 1990's, CDFW has installed the Hills Ferry Barrier at the confluence of the Merced River and the San Joaquin River to prevent adult fall-run Chinook salmon from migrating farther up the mainstem of the San Joaquin River. The Hills Ferry Barrier is approximately seven miles upstream of the Project site. Water

temperatures during late summer months when in-water work would occur (July 1- September 30) are too warm for rearing fall run Chinook salmon and potential migrating Chinook are not likely to occur in the vicinity of the study area at the time of construction. The only tributary of the San Joaquin River that offers potential spawning habitat upstream of the study area is the Merced River. Other tributaries to the San Joaquin River, including the Tuolumne, Stanislaus, Calaveras, and Mokelumne Rivers offer potential spawning habitat downstream of the study area which would likely result in lower numbers of Chinook salmon migrating as far upstream as the Project site.

Based on guidance received from resource agency fish specialists in pre-application meetings, the in-water work associated with decommissioning and removal of the pipeline in the low flow channel of the San Joaquin River will occur during the in-water work window (July 1 to September 30). Based on recommendations from the National Marine Fisheries Service (NMFS), in-water construction will be prioritized for occurrence in the earlier part of the work window, and if feasible will be completed prior to September 15 (M. Gutierrez, pers. comm., 2019). This timeframe (July 1-September 15) corresponds to the warmest water temperatures of the year at the Project location and, therefore, the least favorable conditions for fish, particularly salmonids. The mean temperature during that timeframe is 76 degrees Fahrenheit, which is too warm for salmonids such as Chinook due to the reduction of dissolved oxygen (see Table 2 for mean monthly water temperature data near the Project site). Chinook smolts will likely have an avoidance response and will stay upstream of the Project where conditions are cooler and more favorable. Fall run Chinook adults migrating from the ocean will stay in nearshore waters until water temperatures become cooler before they start their journey upstream, typically beginning in October.

4.8.2.7 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 ESU and the Central California Coast 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 1-3 years before emigrating to the ocean. Steelhead eggs hatch in about 30 days at 51 degrees Fahrenheit (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.

Like Chinook salmon, steelhead were likely more widely distributed within the San Joaquin River and its tributaries but the presence of dams upstream restricted upstream travel. Currently the species is isolated to the San Joaquin River mainstem and/or larger tributaries. However, the mainstem of the river and other low gradient portions of the river provide juvenile rearing, including in the vicinity of the study area. Steelhead will be present in the San Joaquin river system during construction; however, they are unlikely to occur in the study area location during the summer months when in-water work will occur (July 1 to September 30) due high water temperature and low dissolved oxygen. It is likely smolts or non-anadromous individuals would be located upstream of the site where the water temperature is cooler and there is either vegetation, and/or structure for individuals to seek refuge or riffles to provide increased dissolved oxygen. Based on guidance received from resource agency fish specialists in pre-application meetings, the in-water work associated with decommissioning and removal of the pipeline in the low flow channel of the San Joaquin River will occur during the in-water work window (July 1 to September 30). Based on recommendations from the NMFS, in-water construction will be prioritized for occurrence in the earlier part of the work window, and if feasible will be completed prior to September 15 (M. Gutierrez, pers. comm., 2019). This timeframe (July 1-September 15) corresponds to the warmest water temperatures of the year at the Project location and, therefore, the least favorable conditions for fish, particularly salmonids. The mean temperature during that timeframe is 76 degrees Fahrenheit, which is too warm for salmonids such as steelhead due to the reduction of dissolved oxygen (see Table 2 for mean monthly water temperature data near the Project site). Steelhead will likely have an avoidance response and will stay upstream of the Project where conditions are cooler and more favorable. Adults migrating from the ocean will stay in nearshore waters until water temperatures become cooler before they start their journey upstream, typically beginning in October.

4.8.2.8 Western pond turtle (*Emys marmorata*)

Western pond turtle (WPT) is a California species of special concern. The WPT occurs in open water habitats throughout much of California, although at much lower numbers and fewer localities than historical populations, especially in urban areas. WPT prefer slack or slow water habitats with dense stands of submergent or emergent vegetation for food and cover, and with abundant basking habitat. WPT 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 occurrence (Occ. #149) of WPT is from 1999 and is approximately four miles east of the study area (CDFW, 2020). This species was not observed during surveys conducted for the Project. The WPT could migrate through the study area but habitat onsite is not suitable for year-round residency due to the fast-flowing water and the lack of basking sites.

4.8.2.9 Osprey (*Pandion haliaetus*)

The osprey is on the CDWF Watch List. It occurs throughout California except in the deserts and Great Basin. It nests in large trees, snags, dead-topped trees, and on man-made structures in open forest in northern California from the Cascade Range to Marin County along the coast, and to the southern Sierra Nevada range. Nests are situated near ocean shores, bays, lakes, rivers, and large streams, which are required for foraging, primarily on fish. Osprey will also forage on mammals, birds, reptiles, and amphibians on occasion. Osprey breed from March to September. Suitable foraging habitat is present in the San Joaquin river and suitable nest trees occur within 500 feet of the study area.

4.8.2.10 Northern harrier (*Circus cyaneus*)

The northern harrier is a California Species of Special Concern that inhabits meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands, but is 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 (Shuford and Gardali, 2008). 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). A northern harrier was observed foraging within agricultural land immediately south of the San Joaquin River during field surveys. The nearest nesting occurrence (Occ. # 7) of this species is 13 miles south of the study area (CDFW, 2020). Suitable foraging and nesting habitat occurs in the vicinity of the study area.

4.8.2.11 White-tailed kite (*Elanus leucurus*)

The 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. The white-tailed kite’s range

extends 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). White-tailed kite were not observed during surveys; however, suitable nesting habitat occurs in the vicinity of the Project site.

4.8.2.12 Cooper's hawk (*Accipiter cooperii*)

Cooper's hawk was formerly a California Species of Special Concern; however, it was downgraded to the CDWF Watch List. This species typically breeds over much of California in forests, open woods, and streamside trees. They use additional habitats for hunting, including chaparral and other scrub communities (Shuford and Gardali, 2008). Cooper's hawks have been known to occur in residential or rural residential areas, where they can feed on passerine birds at bird feeders. Cooper's hawk was not observed during surveys; however, suitable nesting habitat occurs in the vicinity of the study area.

4.8.2.13 Sharp-shinned hawk (*Accipiter striatus*)

The sharp-shinned hawk is on the CDFW Watch List. This species typically builds nests within woodland habitat where they forage on small birds. Sharp-shinned hawks will also occasionally eat small mammals and insects. This species is a fairly common winter visitor and resident along coastal ridges foraging in woodland and semi-open habitats. Sharp-shinned hawk was not observed during surveys; however, suitable nesting habitat occurs in the vicinity of the study area.

4.8.2.14 Yellow warbler (*Setophaga petechia*)

The yellow warbler is a California Species of Special Concern and a Bird of Conservation Concern. This species is a common resident of riparian deciduous habitats of cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland. This bird gleans and hovers in upper canopy of deciduous trees and shrubs, feeding on insects and spiders (Shuford and Gardali, 2008). The breeding season for this species begins in mid-April and extends through early August with peak activity in June (Ficken and Ficken, 1966). This species is not a common San Joaquin Valley nesting bird; however, suitable nesting habitat is present along the San Joaquin River in the vicinity of the study area, and the species was observed within two miles of the site during the nesting season (Sullivan, et al. 2009).

4.8.2.15 Yellow-breasted chat (*Icteria virens*)

The yellow-breasted chat is a California Species of Special Concern. This species typically nests within low-mid elevation riparian streams and rivers of the coast and Sierra Nevada. The species is an uncommon breeder in the San Joaquin Valley but there have been recent nesting pairs recorded along riparian river corridors (Shuford and Gardali, 2008) The yellow-breasted chat inhabits riparian thickets of willow and other brushy tangles near watercourses for cover. The breeding season for this species begins in early May through early August with peak activity in June. Occurrences of the species are not typically recorded in the CNDDB. Riparian habitat at the pipeline removal location is suitable but not optimal.

4.8.2.16 Loggerhead shrike (*Lanius ludovicianus*)

The loggerhead shrike is a California Species of Special Concern and a Bird of Conservation Concern. The loggerhead shrike is a common resident and winter visitor in lowlands

and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon/juniper, juniper, desert riparian, and Joshua tree habitats. It eats large insects, small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. It often skewers prey on thorn, sharp twig, wire barb, or forces it into a crotch to feed on or to cache for feeding later. Loggerhead shrike nests are well concealed in shrubs or small trees (Shuford and Gardali, 2008). Suitable nesting habitat is present along the San Joaquin River in the vicinity of the study area and the species was observed within two miles of the study area during the nesting season (Sullivan, et al. 2009).

4.8.2.17 Oak titmouse (*Baeolophus inornatus*)

The oak titmouse is a Bird of Conservation Concern and a common resident of California primarily associated with oak and riparian woodlands. The species ranges from the Mexican border to Humboldt County. It roosts in cavities in trees or snags, and constructs nests in woodpecker holes and natural cavities. It eats insects and spiders, berries, acorns, and some seeds by foraging on twigs, branches, trunks, and occasionally on the ground. This species was observed during surveys in the species' non-breeding season. Suitable nesting habitat is present along the San Joaquin River in the vicinity of the study area and multiple observations of this species were made within two miles of the study area during the nesting season (Sullivan, et al. 2009).

4.8.2.18 Swainson's Hawk (*Buteo swainsoni*)

Swainson's Hawk is a California Threatened species and a Bird of Conservation Concern. This species 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).

In California, it usually arrives in March and April and leaves in September or October. 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.

An active Swainson's hawk nest was identified in riparian habitat along the ditch south of the Western Staging Area (and east of the Project's Phase One western HDD entry location) during surveys conducted by Stantec in 2019 for Phase One of the Project (Stantec, 2019b). The San Joaquin River riparian corridor offers plenty of suitable nesting trees for Swainson's hawks and adjacent agricultural land provides optimal foraging grounds. Surveys for decommissioning

and removal of the pipeline were conducted outside of breeding season; however, several previous years raptor nests were observed during surveys and locations recorded.

4.8.2.19 Burrowing owl (*Athene cuniculari*)

The burrowing owl is a California Species of Special Concern and a Bird of Conservation Concern. The burrowing owl is a small (9 to11 inches), long-legged owl that differs from other species of owls by its use of underground burrows and its diurnal activity pattern (Mallette and Gould, 1976). It is distributed from southern British Columbia to Tierra del Fuego in South America and occurs throughout California except in humid northwest coastal forests and high mountains (Zeiner et al., 1990). It's breeding range is dry, open short grass, treeless plains associated with burrowing mammals. Habitat often overlaps with human development, and the species can be found on golf courses, cemeteries, road rights-of-way, airports, vacant lots in residential areas, campuses, and fairgrounds (Haug et al., 1993).

Burrowing owls are semicolonial with five to six pairs per acre. The owls usually enlarge burrows excavated by ground squirrels or other fossorial species, but may excavate their own in soft, friable soils. The owls show a high level of site fidelity, and reuse burrows, but burrows may be used by different pairs in different years. Several burrows may be excavated with one used for nesting, while satellite burrows are used for escape, perching, and observation. They will also use pipes, culverts, debris piles, and nest boxes in areas where burrows are scarce. Burrows are generally surrounded by bare ground or short grass that affords unrestricted views. High perches and elevated areas with clear lines-of-sight, such as mounds, fences, or other structures, are used as for hunting and detecting predators including skunks, badgers, bobcats, coyotes, and barn owls.

The species was formerly common and locally abundant throughout much of California but has been in decline since the 1940's (Remsen, 1978). Reasons for their decline are related to habitat destruction through the conversion of grasslands and pasturelands to other agriculture crops, and the destruction of ground squirrel colonies by poisoning (Remsen, 1978). There is an extensive active ground squirrel colony with over 100 burrows present at the west staging area. No sign of burrowing owl was observed; however, dozens of burrows at this location would be suitable for burrowing owl inhabitation. Aside from the western staging area, very few burrows were observed within or adjacent to the study area. The nearest occurrence of burrowing owl (Occ. #588) from 2003 is approximately six miles west (CDFW, 2020).

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 San Joaquin River offers a seasonal and daily migrating corridor for mammals, reptiles, and birds. Mammals and reptiles present along the San Joaquin River likely use the riparian cover as a travel corridor regardless of the season. Birds such as warblers, hummingbirds, etc. migrate to higher elevations in the spring and lower elevations in the fall and the riparian habitat along the San Joaquin River offers shelter, forage, and water for migrating species traversing to the Sierra Nevada Range to nest. Additionally, Central Valley year-round residents make local migrations for foraging and/or nesting habitat along the San Joaquin River.

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 in order 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 evolutionarily significant unit (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 Services 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 Services to fully determine the project's potential effect on listed species. The Services 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 construction on the listed species are expected to be discountable (extremely unlikely to occur), insignificant (minimal impact without take), or beneficial; and

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 Eagle 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

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

The ACOE is responsible for the issuance of permits for the placement of dredged or fill material into WoUS pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the ACOE at 33 CFR 328.3(a)(3), WoUS 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.

The 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]).

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.

Immediately subsequent to issuance, the 2015 Clean Water Rule (Rule) was challenged in federal courts, and in October 2015, the Sixth Circuit Court of Appeals put a nationwide hold on the new Rule, reverting to the 1987 regulations and subsequent guidance for Approved Jurisdictional Determinations. In 2017, the ACOE and EPA published their intent to "review and rescind or revise" the 2015 Clean Water Rule, and the EPA asked the courts to suspend the case while the Rule was under review. In 2018 the EPA delayed the effective date of the 2015 Clean Water Rule for two years, and the Sixth Circuit Court lifted its stay of the Rule. A federal judge then issued a nationwide injunction on the administrative delay of the Clean Water Rule for failure to comply with the Administrative Procedure Act. Pursuant to the Court order, the 2015 Clean Water Rule remained in effect in 22 states, including California (U.S. Army Corps of Engineers, 2018). On December 11, 2018 the ACOE and EPA proposed a revised definition of waters of the U.S. This proposal was published in the Federal Register and entered a public review period that ended on April 15, 2019. On October 22, 2019, the EPA and Department of the Army published a final rule to repeal the 2015 Clean Water Rule reverting regulation back to the 1987 regulations and subsequent guidance for Approved Jurisdictional Determinations. The final rule became effective on December 23, 2019. 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 will become effective 60 days after publication in the Federal Register. Once effective, it will replace the rule published on October 22, 2019.

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

The ACOE is also responsible for authorizing work affecting navigable WoUS. Structures or work under or over a navigable WoUS is considered to have an impact on the navigable capacity of the waterbody (33 CFR 322.3[a]). The San Joaquin River is identified as a Section 10 waterway.

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 alternation proposed will not be injurious to the public interest and will not impair the usefulness of the Civil Works project. There are federal levees both east and west of the San Joaquin River (identified as ACOE West Levee and ACOE East Levee in Figures 2 through 6). A Section 408 review and permission is required for Phase One of the Project (HDD) but will not be required for Phase Two of the Project (decommissioning and removal) because the pipeline will be abandoned in place in the federal levees.

5.2 STATE

5.2.1 Special-Status Species

The CDFW administers a number of 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 (SSC) 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.

Therefore, the CDFW claims jurisdiction over the bed, bank, and channel of drainage features with regard to activities regulated under Section 1602 of the California Fish and Game Code. 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 were recently approved by the Office of Administrative Law. The Procedures will be implemented and will apply to all applications for discharge of dredged or fill material to waters of the state nine months after final approval by the Office of Administrative Law. The Procedures will take effect in May 2020.

5.3 LOCAL AND REGIONAL PLANS

5.3.1 Stanislaus County General Plan

The unincorporated lands of Stanislaus County fall under the jurisdiction of the County. The Conservation and Open Space Elements of the Stanislaus County General Plan contain goals and policies pertaining to biological resources of Stanislaus County (Stanislaus County, 2016). Goals and policies that are relevant to biological resources are included in this Section. Implementing Measures relevant to the Project are also included.

5.3.1.1 Goals: Encourage the protection and preservation of natural and scenic areas throughout the County.

Policy 1: Maintain the natural environment in areas dedicated as parks and open space.

Policy 2: Assure compatibility between natural areas and development.

IM -2. Review all development requests to ensure that sensitive areas (e.g., riparian habitats, vernal pools, rare plants) are left undisturbed or that mitigation measures

acceptable to appropriate state and federal agencies are included in the project. **Responsible Departments**: *Public Works, Planning, Planning Commission, Board of Supervisors*

Policy 3: Areas of sensitive wildlife habitat and plant life (e.g., vernal pools, riparian habitats, flyways and other waterfowl habitats, etc.) including those habitats and plant species listed by state or federal agencies shall be protected from development and/or disturbance.

IM-1. Review all development requests to ensure that sensitive areas (e.g., riparian habitats, vernal pools, rare plants, flyways, etc.) are left undisturbed or that mitigation measures acceptable to appropriate state and federal agencies are included in the project. **Responsible Departments**: *Planning, Planning Commission, Board of Supervisors capacity and aesthetics, consistent with state law.*

IM -2 In known sensitive areas, the State Department of Fish and Wildlife shall be notified as required by the California Native Plant Protection Act; the U.S. Fish and Wildlife Service also shall be notified. **Responsible Department**: *Planning*

IM -3. All discretionary projects that will potentially impact riparian habitat and/or vernal pools or other sensitive areas shall include mitigation measures for protecting that habitat. **Responsible Departments**: *Planning, Planning Commission, Board of Supervisors.*

Policy 4: Protect and enhance oak woodlands and other native hardwood habitat.

IM -1. Require all discretionary projects that will potentially impact oak woodlands and other native hardwood habitat, including but not limited to hardwood rangelands identified by the California Department of Forestry and Fire Protection, to include a management plan for the protection and enhancement of oak woodlands and other native hardwood habitat. **Responsible Departments**: *Planning, Planning Commission, Board of Supervisors*

IM -2. Consider adoption of a tree protection ordinance to promote conservation of native trees or trees with historic significance. **Responsible Departments**: *Planning, Planning Commission, Board of Supervisors*

5.3.1.2 Goal 2: Conserve water resources and protect water quality in the County.

Policy 6: Preserve natural vegetation to protect waterways from bank erosion and siltation.

IM -1. Development proposals and mining activities including, or in the vicinity of, waterways and/or wetlands shall be closely reviewed to ensure that destruction of riparian habitat and vegetation is minimized. This shall include referral to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, State Department of Fish and Wildlife, and the State Department of Conservation. **Responsible Departments**: *Public Works, Planning, Planning Commission, Board of Supervisors*

5.3.1.3 Goal 10: Protect fish and wildlife species of the County.

Policy 29: Habitats of rare and endangered fish and wildlife species, including special status wildlife and plants, shall be protected.

IM -1. The County shall utilize the California Environmental Quality Act (CEQA) process to ensure that development does not occur that would be detrimental to fish, plant life, or wildlife species. **Responsible Departments**: *Planning, Planning Commission, Board of Supervisors*

IM -2. The County shall utilize the California State Department of Fish and Wildlife's California Natural Diversity Data Base and the California's Native Plant Society plant lists as the primary sources of information on special status wildlife and plants. **Responsible Department**: *Planning*

IM -3 In known sensitive areas, the State Department of Fish and Wildlife shall be notified as required by the California Native Plant Protection Act; the U.S. Fish and Wildlife Service also shall be notified. **Responsible Department**: *Planning*

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 at the Project site will be entirely temporary. There will be a temporary loss of potential fish and wildlife habitat during decommissioning and removal of the pipeline. General construction will temporarily alter the natural movement and behavior of wildlife in the area of the Project. Construction may also result in indirect impacts that affect the quality of habitat on the Project site and in the Project area. Potential indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and temporary declines in air and water quality during construction.

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 pipeline excavation for 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. There will be no permeant impact to habitat as part of the Project. Temporary impacts associated with the Project include habitat disturbance, localized turbidity, and tree removal. Indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and temporary declines in air and water quality.

PG&E has an agency approved Habitat Conservation Plan (HCP) that provides a comprehensive framework for conserving sensitive habitats for protected species for PG&E Operations and Maintenance (O&M) activities in the San Joaquin Valley (Jones & Stokes, 2006). The PG&E San Joaquin Valley Habitat Conservation Plan (SJVHCP) was developed in collaboration with the USFWS and CDFW and was implemented in 2008. Special-status species-related impacts of the Project cannot be entirely covered by the SJVHCP because listed fish species that occur in the San Joaquin River at the Project site are not covered by the HCP and the need to conduct in-water work for successful completion of the Project will have the potential to impact those non-covered fish species. However, for consistency with the agency-approved PG&E SJVHCP, Avoidance and Minimization Measures (AMMs) outlined for species protection in the SJVHCP will be implemented by this Project to avoid and minimize impacts to special-status species that are covered by the SJVHCP. Consistent with implementation practices of the SJVHCP, AMM 1 through AMM 11 are implemented, where practicable, for all PG&E O&M Projects. These measures are considered to be practicable where physically possible and not conflicting with other regulatory obligations or safety considerations (Jones & Stokes, 2006). AMM 1 through AMM 11 from the PG&E SJVHCP will be implemented as part of the Project. Additional relevant species-specific AMMs from the SJVHCP are also included as part of the Project and are described individually below. The implementation of these measures was considered when analyzing the potential impacts of the Project and are outlined in Table 6.

Table 6. PG&E SJVHCP Avoidance and Minimization Measures 1 through 11 to be Implemented as part of the Project

Measure No.	Measure Description	Applicability for R-687 Project
AMM 1	Employees and contractors performing PG&E O&M activities will receive ongoing environmental education. Training will include review of environmental laws and guidelines that must be followed by all personnel to reduce or avoid effects on covered species during O&M activities.	Applicable
AMM 2	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.	Applicable
AMM 3	The development of new access and ROW roads by PG&E will be minimized and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.	N/A – No permanent new access roads will be necessary
AMM 4	Vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.	Applicable
AMM 5	Trash dumping, firearms, open fires (such as barbecues) not required by the PG&E O&M activity, hunting, and pets	Applicable

Measure No.	Measure Description	Applicability for R-687 Project
	(except for safety in remote locations) will be prohibited in O&M work activity sites.	
AMM 6	No vehicles will be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.	Applicable
AMM 7	During any reconstruction of existing overhead electric facilities in areas with a high risk of wildlife electrocution (e.g., nut/fruit orchards, riparian corridors, areas along canal or creek banks, PG&E's raptor concentration zone [RCZ]), PG&E will use insulated jumper wires and bird/animal guards for equipment insulator bushings or will construct lines to conform to the latest revision of PG&E's Bird and Wildlife Protection Standards.	N/A – no overhead electrical work involved
AMM 8	During fire season in designated State Responsibility Areas (SRAs), all motorized equipment will have federal or state approved spark arrestors; a backpack pump filled with water and a shovel will be carried on all vehicles; and fire-resistant mats and/or windscreens will be used when welding. In addition, during fire "red flag" conditions as determined by California Department of Forestry (CDF), welding will be curtailed, each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.	Applicable
AMM 9	Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, and habitat occupied by covered animal and plant species when PG&E O&M activities are the source of potential erosion problems.	Applicable

Measure No.	Measure Description	Applicability for R-687 Project
AMM 10	If an activity disturbs more than 0.25 acre in a grassland, and the landowner approves or it is within PG&E rights and standard practices, the area should be returned to pre-existing conditions and broadcast-seeded using a commercial seed mix. Seed mixtures/straw used for erosion control on projects of all sizes within grasslands will be certified weed-free. PG&E shall not broadcast-seed (or apply in other manner) any commercial seed or seed-mix to disturbance sites within other natural land-cover types, within any vernal pool community, or within occupied habitat for any plant covered-species.	Applicable
AMM 11	When routine PG&E O&M activities are conducted in an area of potential VELB habitat, a qualified individual will survey for the presence of elderberry plants within a minimum of 20 feet from the worksite. If elderberry plants have one or more stems measuring 1 inch or more in diameter at ground level are present, the qualified individual will flag those areas to avoid or minimize potential impacts on elderberry plants. If impacts (pruning/trimming, removal, ground disturbance or damage) are unavoidable or occur, then additional measures identified in the VELB conservation plan and compliance brochure will be implemented. The VELB compliance brochure must be carried in all vehicles performing PG&E O&M activities within the potential range of VELB.	Applicable

Note: When working in areas of natural vegetation, these avoidance and minimization measures (AMMs) will be implemented where practicable. SJVHCP AMM 1 through AMM 11 will be implemented for all PG&E O&M Activities.

The following analysis provides an assessment of potential impacts from the proposed Project components and includes the PG&E SJVHCP 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 portion of the decommissioning and removal of the R-687 pipeline crossing could impact special-status fish species if present at the Project site during construction. Construction will temporarily increase turbidity to the aquatic environment 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.

In-water work could temporarily deter fish movement in the area and preclude fish use of the river at the pipeline removal location for a short period of time.

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 San Joaquin River.

- 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 site, 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.
- Construction activities in surface water or on the banks of the San Joaquin River will be conducted within the agency approved aquatic work windows for avoidance of listed fish species (July 1 – September 30). This coincides with the timeframe when the aquatic work area is least likely to support listed fish species, specifically salmonids. At the recommendation of NMFS, in-water construction will be prioritized for occurrence in the earlier part of the work window, and if feasible, will be completed prior to September 15.
- 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.
- A Turbidity Monitoring Plan will be implemented during all in-water work to ensure that turbidity levels upstream and downstream of the Project site is compliant with regulatory requirements.

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

IMPACT BIO-2: Construction activities within and adjacent to the San Joaquin River could potentially impact aquatic special-status species such as WPT.

DISCUSSION: Based on the review of pertinent literature, the proximity to known occurrences, and site surveys, WPT have a moderate potential to occur within the San Joaquin River at the Project site. The species is unlikely to be a year-round resident as the site offers limited terrestrial and/or basking habitat; however, there are WPT occurrences from within the San Joaquin River in the general region, so movement up and downstream through the Project site is possible. The nearest occurrence (Occ. #149) of WPT is from 1999 and is approximately four miles east of the Project site in an irrigation ditch, not within the San Joaquin River (CDFW, 2020).

SJVHCP SPECIES-SPECIFIC AMM-17: Consistent with the PG&E SJVHCP, the following measure will be implemented for construction activities within and adjacent to

the San Joaquin River for protection of WPT and to reduce Project impacts to less than significant levels:

SJVHCP AMM-17: If suitable habitat for covered amphibians and reptiles is present and protocol-level surveys have not been conducted, a qualified biologist will conduct preconstruction surveys prior to PG&E O&M activities involving excavation. If necessary, barrier fencing will be constructed around the worksite to prevent reentry by the covered amphibians and reptiles. A qualified biologist will stake and flag an exclusion zone of 50 feet around the potentially occupied habitat. No monofilament plastic will be used for erosion control in the vicinity of special-status amphibians and reptiles. Barrier fencing will be removed upon completion of work. Crews will also inspect trenches left open for more than 24 hours for trapped amphibians and reptiles. A qualified biologist will be contacted before trapped amphibians or reptiles (excluding blunt nosed leopard lizard and limestone salamander) are moved to nearby suitable habitat.

BIO-2 IMPACT CATEGORY: Less than Significant with implementation of SJVHCP AMM-17.

IMPACT BIO-3: Ground-clearing, equipment staging, and construction activities could impact nesting burrowing owl.

DISCUSSION: The burrowing owl, a California Species of Special Concern and USFWS Bird of Conservation Concern, may occur in the Project vicinity. There is a large active ground squirrel colony within the western staging area that could provide potential nesting or non-breeding burrow habitat for burrowing owls. Adjacent agricultural land also provides suitable foraging habitat. No sign of burrowing owl was observed during surveys conducted in January 2020 and the nearest recorded occurrence is approximately six miles west of the Project site (CDFW, 2020).

Due to the presence of suitable burrows and known occurrences of burrowing owl in the area, there is the potential that construction or staging of equipment at this location could disrupt nesting activities if burrowing owls occur.

SJVHCP SPECIES-SPECIFIC AMM-18. Consistent with the PG&E SJVHCP, the following measure is required to reduce Project impacts to nesting occurrences of raptors and other special-status bird species to less than significant levels:

SJVHCP AMM-18: If western burrowing owls are present at the site, a qualified biologist will work with PG&E O&M staff to determine whether an exclusion zone of 160 feet during the non-nesting season and 250 feet during the nesting season can be established. If it cannot, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

BIO-3 IMPACT CATEGORY: Less than Significant with implementation of SJVHCP AMM-18.

IMPACT BIO-4: Ground-clearing and construction activities could impact nesting Swainson's hawk or white-tailed kite.

DISCUSSION: The state-threatened Swainson's hawk and CDFW fully protected white-tailed kite occurs in the Project vicinity and could nest in proximity to construction areas. There are two Swainson's hawk nesting occurrences within 0.5-mile of the Project site and two more within 1 mile of the site. Additionally, an active Swainson's hawk nest was identified along the ditch south of the Western Staging Area (and east of the Project's Phase One western HDD entry location) during surveys conducted by Stantec in 2019 for Phase One of the Project (Stantec, 2019b). Swainson's hawks generally forage within 10 miles of their nest tree, and more commonly within five miles; however, because the proposed Project is temporary in nature there would be no loss in foraging habitat. Due to the relatively common nature of this species, occurrences are not typically reported within CNDDB; however, this species could nest in proximity to the site because of the presence of suitable nesting habitat.

Because Swainson's hawk is a state-listed species and white-tailed kite is a fully protected species, and there are known nesting occurrences in the vicinity of the Project site, there is the potential that construction in proximity to Swainson's hawk and/or white-tailed kite nests could disrupt breeding activities. The following mitigation measure would reduce impacts to nesting Swainson's hawk or white-tailed kite resulting from Project construction.

SJVHCP SPECIES-SPECIFIC AMM-19. Consistent with the PG&E SJVHCP, the following measures are required to reduce Project impacts to nesting occurrences of Swainson's hawk or white-tailed kite to less than significant levels:

SJVHCP AMM-19: If a Swainson's hawk nest or white-tailed kite nest is known to be within 0.25 mile of a planned worksite, a qualified biologist will evaluate the effects of the planned PG&E O&M activity. If the biologist determines that the activity would disrupt nesting, a buffer and limited operation period (LOP) during the nesting season (March 15-June 30) will be implemented. Evaluations will be performed in consultation with the local CDFW representative.

BIO-4 IMPACT CATEGORY: Less than Significant with implementation of SJVHCP AMM-19.

IMPACT BIO-5. Tree 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, white-tailed kite, osprey, Cooper's hawk, and sharp-shinned hawk.

DISCUSSION: There are trees present throughout the biological study area that could provide nesting habitat for bird species protected by the MBTA or raptors and other special-status bird species. Tree 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".

SJVHCP SPECIES-SPECIFIC AMM-22: Consistent with the PG&E SJVHCP, the following measures are required to reduce Project impacts to nesting occurrences of raptors and MBTA protected bird species to less than significant levels:

SJVHCP AMM-22: All vegetation management activities will implement the nest protection program to avoid and minimize effects on Swainson's hawk, white-tailed kite, golden eagle, bald eagle, and other nesting birds. Additionally, trained pre-inspectors will use current data from CDFW and CNDDB and professional judgment to determine whether active Swainson's hawk, golden eagle, or bald eagle nests are located near proposed work. If pre-inspectors identify an active nest near a proposed work area, they will prescribe measures to avoid nest abandonment and other adverse effects to these species, including working the line another time of year, maintaining a 500-foot setback, or if the line is in need of emergency pruning, contacting the HCP Administrator.

BIO-5 IMPACT CATEGORY: Less than Significant with implementation of SJVHCP AMM-22.

IMPACT BIO-6: 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: Preliminary Aquatic Resource Delineations have been conducted for the Project to determine the geographic extent of federal and state regulatory jurisdiction (Padre, 2020). A total of 4.17 acres of temporary impact to federally jurisdictional waters and wetlands will occur as a result of the equipment access necessary and excavation for removal of segments of the decommissioned pipeline at the San Joaquin River crossing location. A total of 4.17 acres of waters of the State and 5.43 acres of CDFW stream features will also be temporarily impacted by the Project. Figure 5 depicts temporary impacts to federally jurisdictional waters and wetlands and Figure 6 depicts temporary impacts to state jurisdictional aquatic resources.

BIO-6 IMPACT CATEGORY: Potentially Significant Impact with Mitigation Required.

RECOMMENDED MITIGATION MEASURE – BIO-6:

- 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. Compensatory mitigation must be consistent with the regulatory agency standards pertaining to mitigation type, location, and ratios. PG&E has a Master Streambed Alteration Agreement with CDFW for PG&E O&M Projects in the SJVHCP Plan Area. If determined to be appropriate, this may be used to cover streambed impacts associated with the Project.
- Standard best management practices, such as the use of silt fencing and straw wattle, will be implemented within the disturbed area on each Project site to minimize erosion, increased turbidity, and sedimentation to the San Joaquin River or associated jurisdictional wetlands.

- After decommissioning and removal activities are complete, the Project site and all disturbed areas will be seeded or hydroseeded with a native seed mix appropriate for the region. Restoration within agricultural lands will involve seeding or other restoration consistent with landowner right-of-way agreements.

IMPACT BIO-7: Construction of the Project will result in the removal of riparian habitat on the San Joaquin River.

DISCUSSION: An approximately 100-foot wide corridor within the active floodplain of the San Joaquin River will need to be cleared of vegetation for equipment access and removal of the decommissioned pipeline at the river crossing location. This will involve removal of riparian habitat, primarily consisting of willow and cottonwood trees. No oak trees are planned for removal.

Stanislaus County does not have a tree ordinance; however, the Stanislaus County General Plan has a policy that provides for protection and management of riparian habitat. Specifically, Policy 3, Implementing Measure 3 (IM-3) states that all discretionary Projects that will impact riparian habitat shall include mitigation measure for protecting the habitat.

BIO-7 IMPACT CATEGORY: Potentially Significant Impact with Mitigation Required.

RECOMMENDED MITIGATION MEASURE – BIO-9: The following recommended mitigation measures would further reduce Project impacts from riparian habitat removal at the Project site:

- 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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8.2 PERSONAL COMMUNICATIONS

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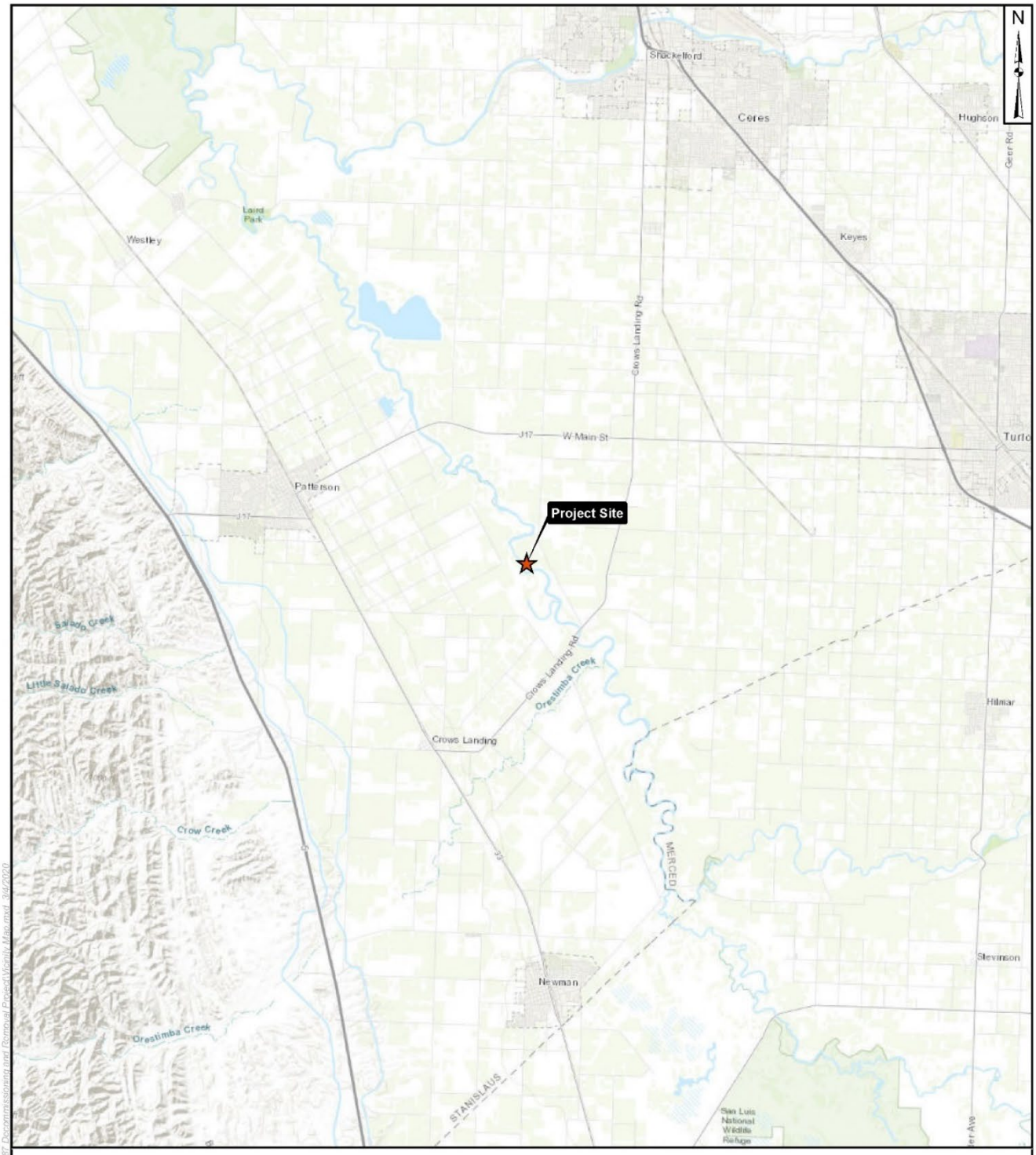
FIGURES



LEGEND:

★ Project Site Location

0 1.5 3

MILES

Source: Esri Online Topo Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: March 2020

VICINITY MAP

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Decommissioning and Removal Project\Vicinity Map.mxd 3/4/2020

LEGEND:

- Existing Pipeline to Remain as Customer Connection
- Existing Pipeline to be Decommissioned (Phase One)
- Replacement Pipeline Crossing (Phase One)
- Existing Pipeline to be Decommissioned (Phase Two)
- Horizontal Directional Drilling Work Area (Phase One)

0 500 1,000
FEET

Source: Esri Online Imagery Basemap, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Notes: This map was created for informational and display purposes only.

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STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: March 2020

PROJECT OVERVIEW

FIGURE 2

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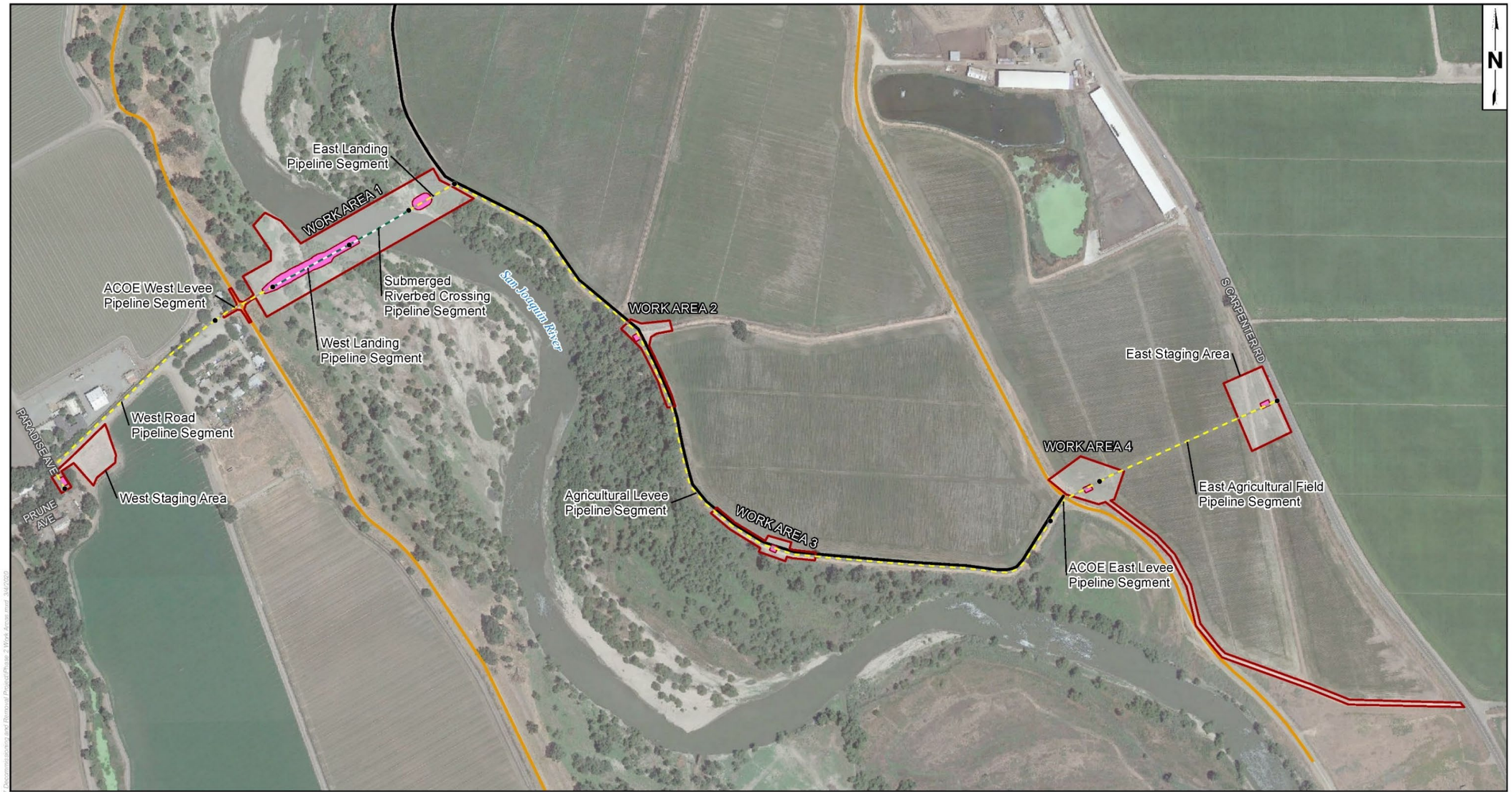
N
East Landing
Pipeline Segment
WORK AREA 1
ACOE West Levee
Pipeline Segment
Submerged
Riverbed Crossing
Pipeline Segment
West Landing
Pipeline Segment
San Joaquin River
WORK AREA 2
S CARPENTER RD
East Staging Area
PARADISE AVE
West Road
Pipeline Segment
WORK AREA 4
East Agricultural Field
Pipeline Segment
West Staging Area
PRUNE AVE
Agricultural Levee
Pipeline Segment
WORK AREA 3
ACOE East Levee
Pipeline Segment
LEGEND:
Pipe Segment Boundary
12-in Pipeline - Cement Filled and Abandonded in Place
12-in Pipeline Removed in Entirety
ACOE Levee
Agricultural Levee
Temporary Impact (Staging or Work) Area
Excavation Footprint
0
200
400
FEET
Source: Esri Online Imagery Basemap, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Notes: This map was created for informational and display purposes only.
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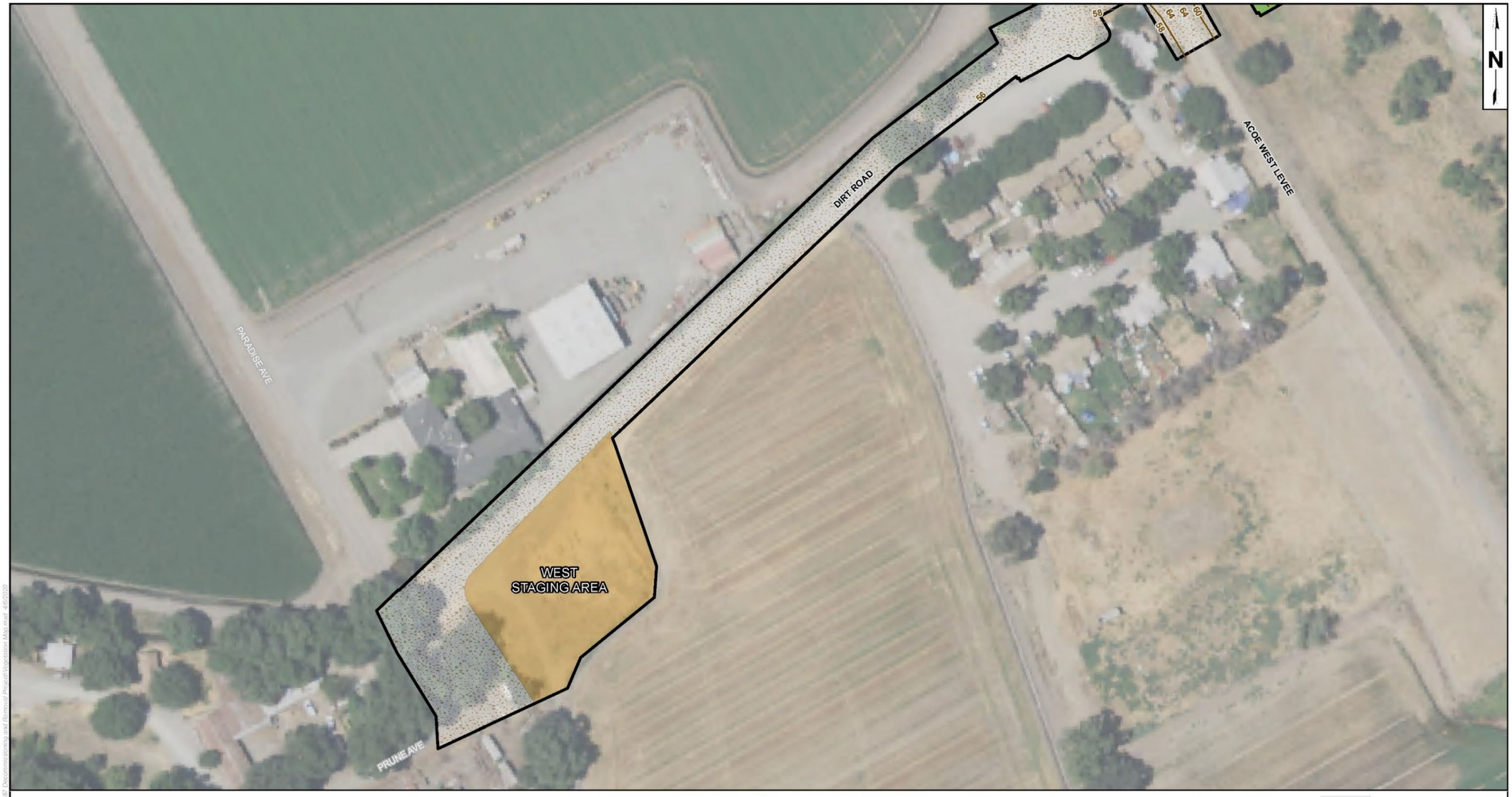
PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA
PROJECT NUMBER:
1902-3511
DATE:
March 2020
PHASE 2 WORK AREAS
FIGURE
3



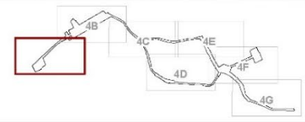
LEGEND:

- Contour Line (5 ft)
- Contour Line (1 ft)
- Study Area Boundary

Vegetation Communities

- Great Valley Mixed Riparian Forest
- Non-Native Grassland
- Ruderal / Disturbed

MAP EXTENT:



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Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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STANISLAUS COUNTY, CA

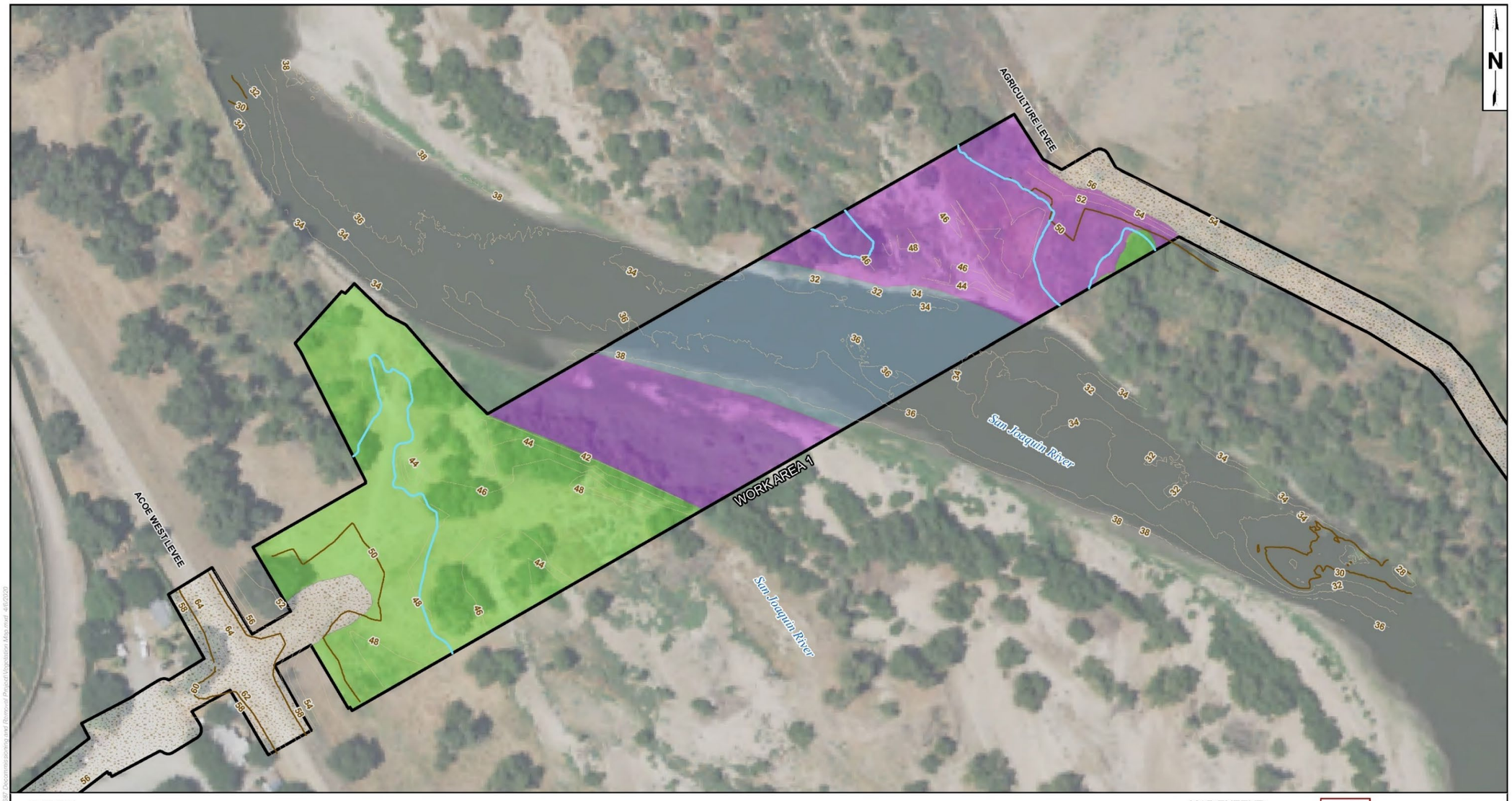
PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4A

Z:\GIS Projects\GIS Maps\Map Project\PG&E R-687 Decommissioning and Removal Project\Vegetation Map.mxd 4/6/2020



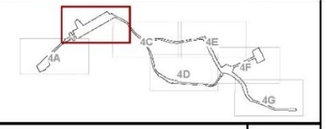
LEGEND:

- Ordinary High Water Mark
- Contour Line (5 ft)
- Contour Line (1 ft)
- Study Area Boundary

Vegetation Communities

- Great Valley Mixed Riparian Forest
- Great Valley Willow Scrub
- Riverine
- Ruderal / Disturbed

MAP EXTENT:



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Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4B

Z:\GIS Projects\GIS Map Files\PG&E R-687 Decommissioning and Removal Project\Vegetation Map.mxd 4/6/2020

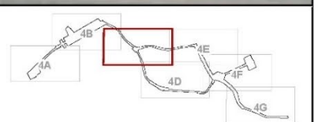
LEGEND:

- Contour Line (5 ft)
- Contour Line (1 ft)
- Study Area Boundary

Vegetation Communities

- Agriculture
- Great Valley Mixed Riparian Forest
- Ruderal / Disturbed

MAP EXTENT:



0 50 100
FEET

Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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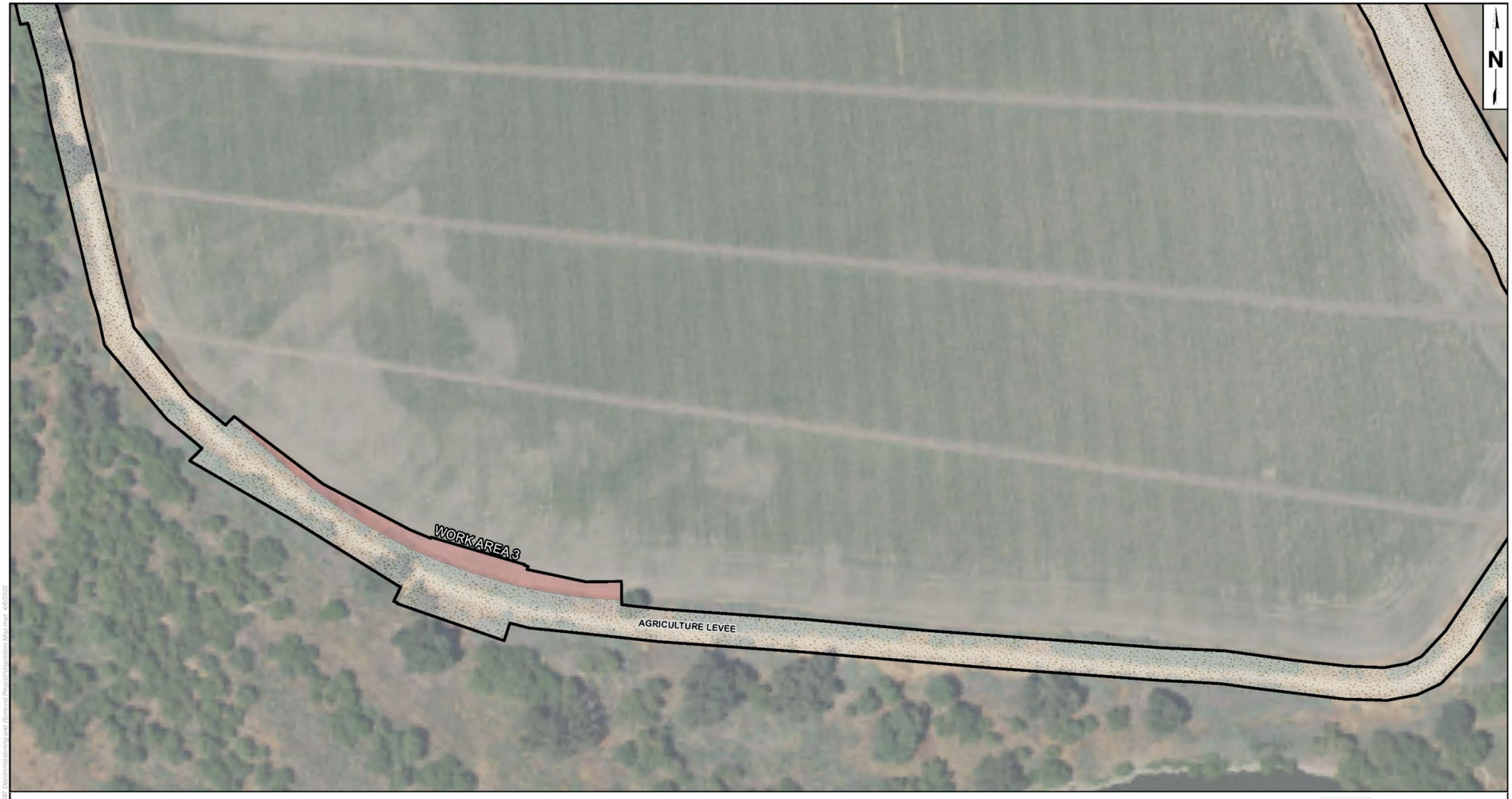
PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4C

P:\GIS Projects\PG&E Valley Power\MXD\Fig 4C Vegetation Map.mxd 4/7/2020



LEGEND:

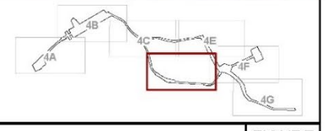
Study Area Boundary

Vegetation Communities

Agriculture

Ruderal / Disturbed

MAP EXTENT:



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FEET

Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4D

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Decommissioning and Removal Project\Vegetation Map.mxd 4/6/2020

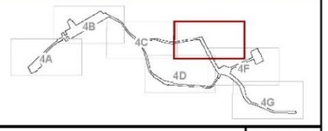
LEGEND:

Study Area Boundary

Vegetation Communities

Ruderal / Disturbed

MAP EXTENT:



0 50 100
FEET

Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4E

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Decommissioning and Removal Project\Vegetation Map.mxd, 4/6/2020

LEGEND:

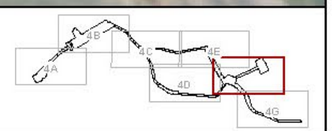
Study Area Boundary

Vegetation Communities

Agriculture

Ruderal / Disturbed

MAP EXTENT:



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FEET

Source: NAIP Imagery 2018, Stantec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4F

E:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Documentation and Planning Project\Projects Maps.mxd 4/6/2020

LEGEND:

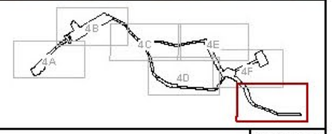
Study Area Boundary

Vegetation Communities

Agriculture

Ruderal / Disturbed

MAP EXTENT:



0 50 100

FEET

Source: NAIP Imagery 2016, Station 2014, Longitude 123 2020
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Notes: This map was created for informational and display purposes only.

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PROJECT NAME:
PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

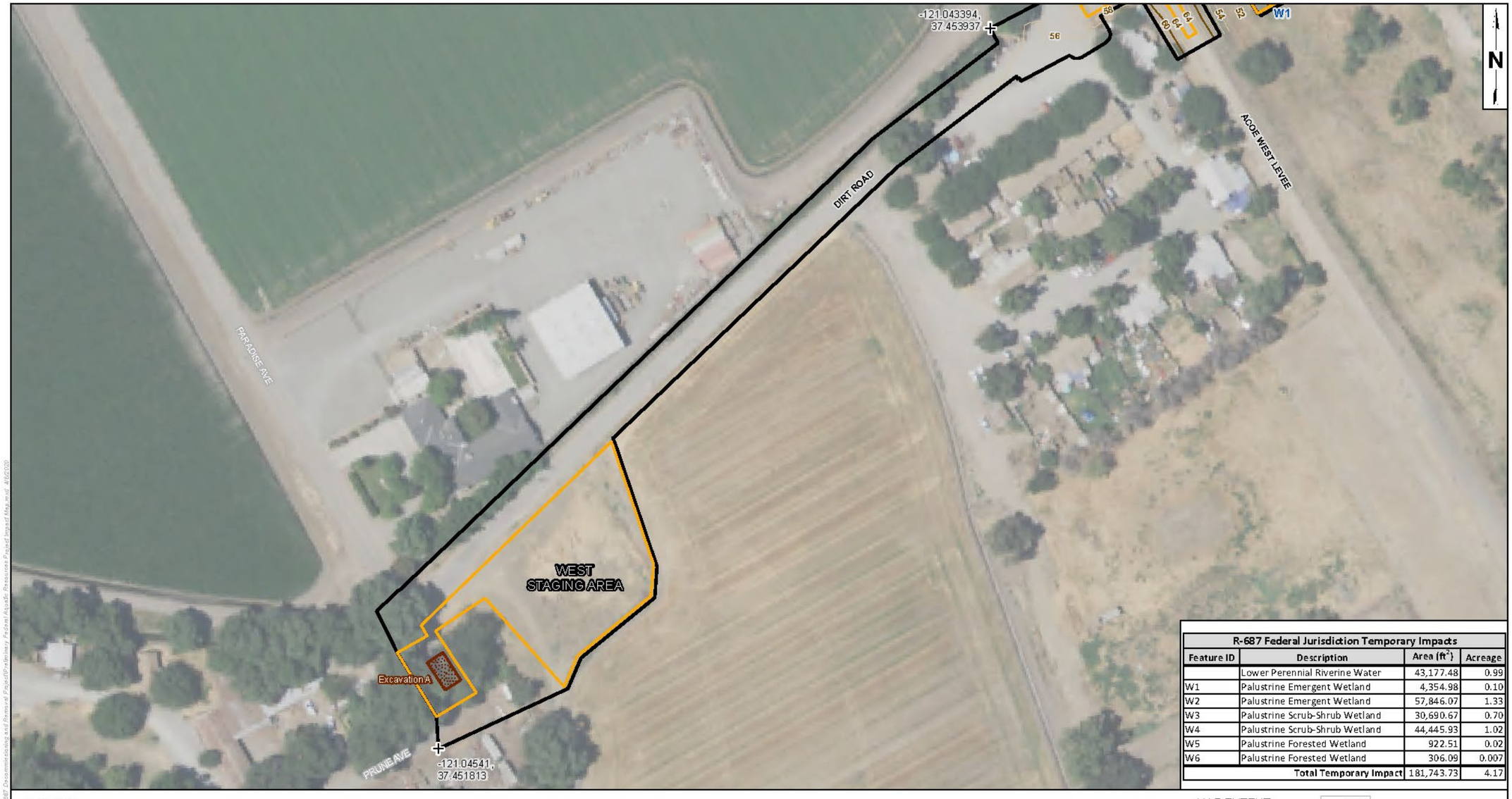
PROJECT NUMBER: 1902-3511

DATE: April 2020

VEGETATION MAP

FIGURE 4G

Z:\GIS Projects\GIS Maps\Maps Projects\PG&E R-687 Decommissioning and Removal Project\Vegs\Vegs_Map.mxd 4/6/2020



R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:

0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Site loc 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

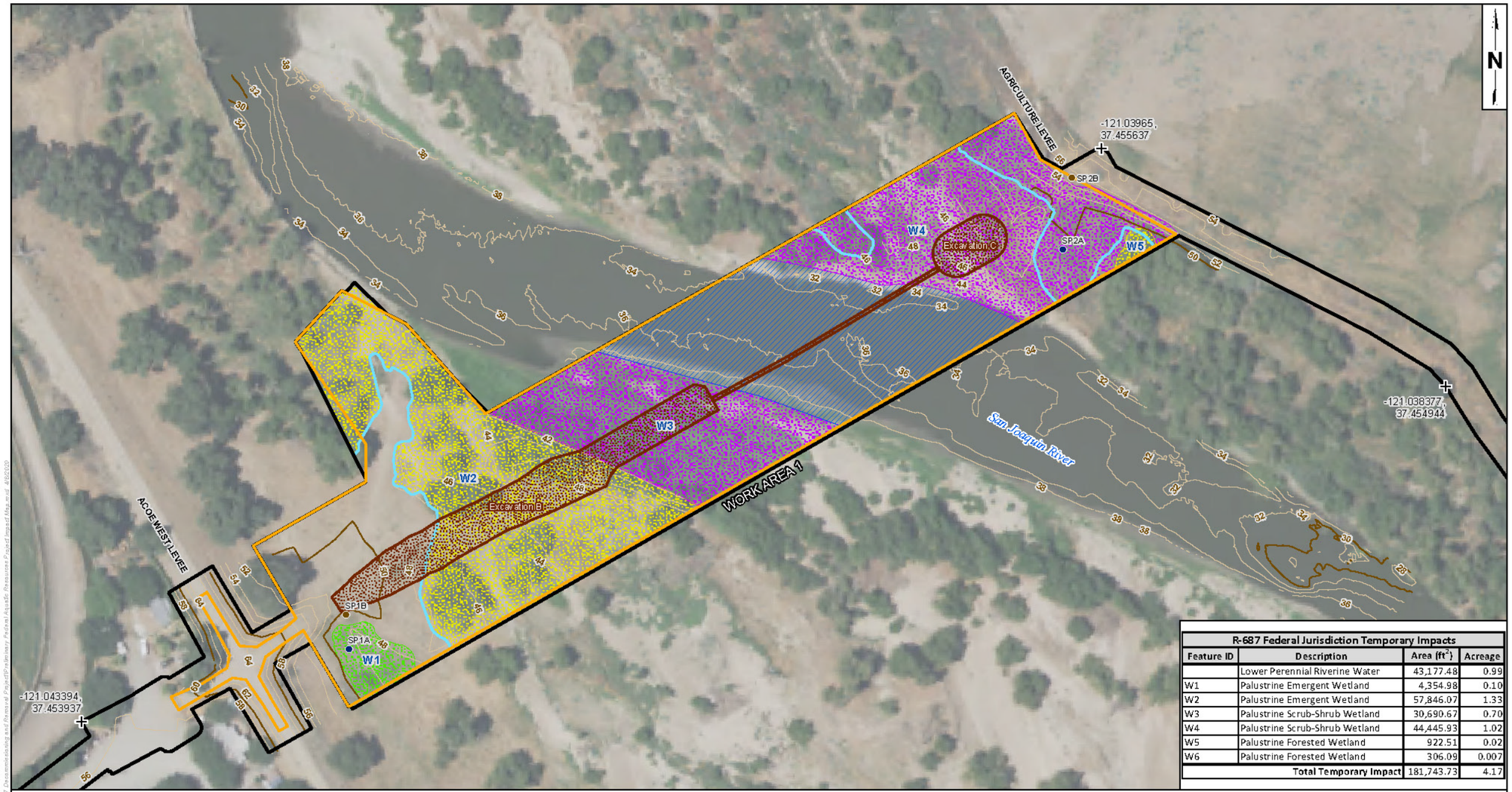
PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5A

Z:\GIS Projects\GIS MapFiles Projects\PG&E R-687 Documents\Images and Powerpoint Figures\Preliminary Federal Aquatic Resources Project Impact Map.mxd 4/6/2020



R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:

0 50 100
FEET
1 inch = 100 feet

Source: Esri Cantre Imagery Basemap, Sirs Inc 2019, Longitude 123 2020
Coordinate System: NAD 1983 CORS96 State Plane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5B

R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

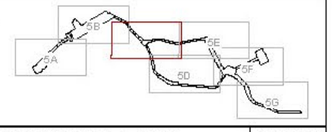
LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sinclec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

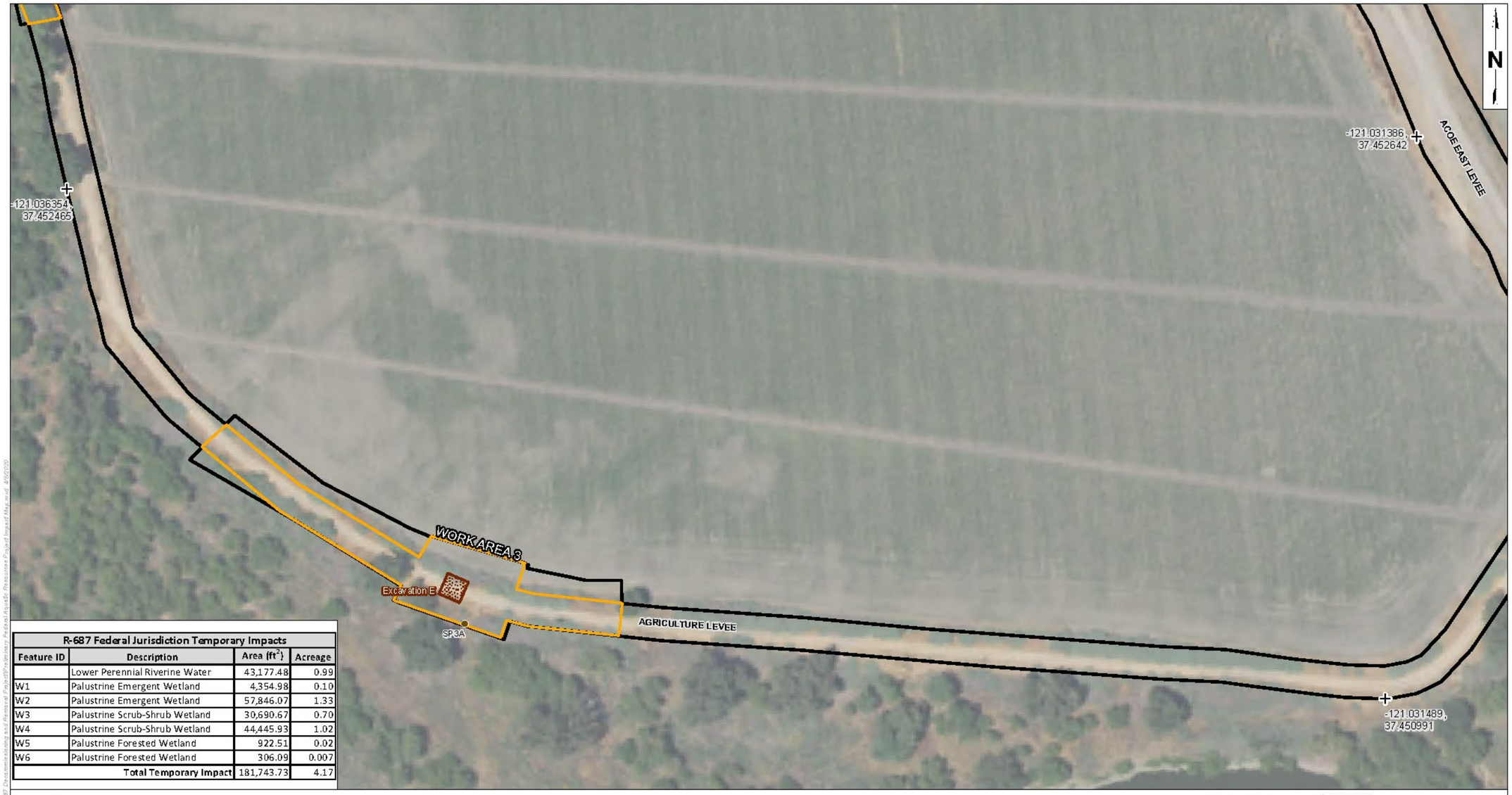
PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5C

2020 Project\GIS Maps\Map Projects\PG&E R-687 Documents\Living and Permit Project\Project\Preliminary Project Aquatic Resources Project Impact Map.mxd 4/6/2020



R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:

0 50 100 FEET

1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sinclair 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 State Plane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5D

Z:\GIS Projects\GIS Maps\Maps Prepared\PG&E R-687 Decommissioning and Removal Permit\Preliminary Federal Aquatic Resources Project Impact Map.mxd 4/8/2020

R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

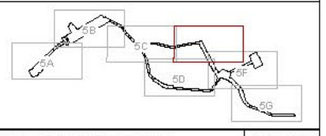
LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sinclinc 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS 96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5E

Z:\GIS Projects\GIS Maps\Map Packet\PG&E R-687 Decommissioning and Removal Project\Preliminary Federal Aquatic Resources Project Impact Map.mxd 4/8/2020

R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft^2)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

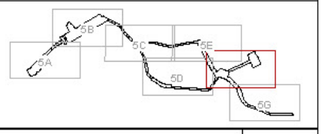
LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5F

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Decommissioning and Removal Project\Preliminary Federal Aquatic Resources Project Impact Map.mxd 4/8/2020

R-687 Federal Jurisdiction Temporary Impacts			
Feature ID	Description	Area (ft²)	Acreage
	Lower Perennial Riverine Water	43,177.48	0.99
W1	Palustrine Emergent Wetland	4,354.98	0.10
W2	Palustrine Emergent Wetland	57,846.07	1.33
W3	Palustrine Scrub-Shrub Wetland	30,690.67	0.70
W4	Palustrine Scrub-Shrub Wetland	44,445.93	1.02
W5	Palustrine Forested Wetland	922.51	0.02
W6	Palustrine Forested Wetland	306.09	0.007
	Total Temporary Impact	181,743.73	4.17

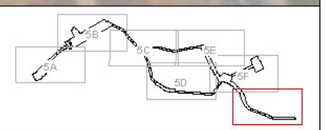
LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)

Waters of the U.S. (4.36 ac)

- Lower Perennial Riverine Water (1.01 ac)
- Palustrine Emergent Wetland (0.11 ac)
- Palustrine Forested Wetland (1.49 ac)
- Palustrine Scrub-Shrub Wetland (1.76 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

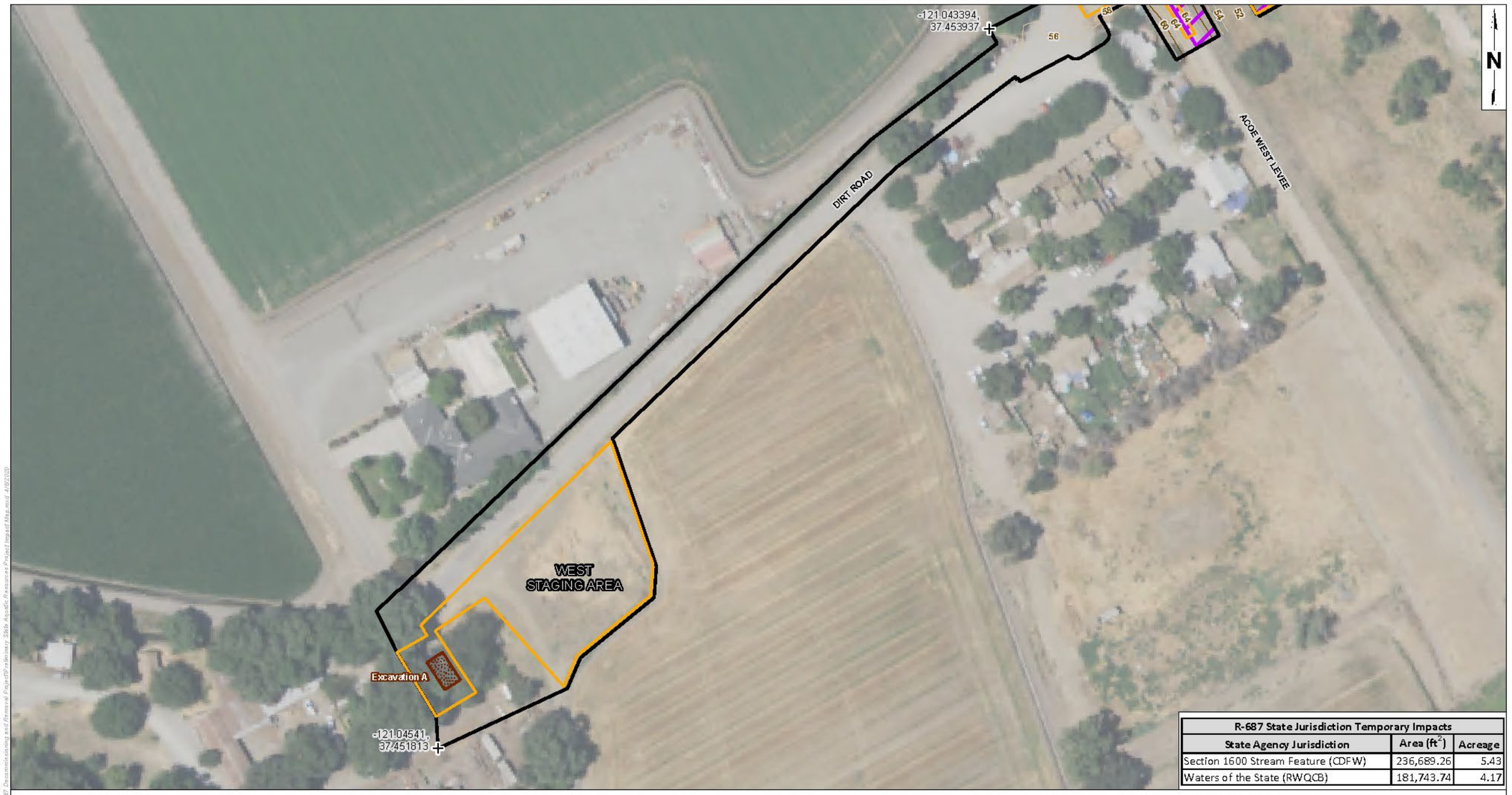
PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY FEDERAL AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 5G

Z:\GIS Projects\GIS Maps\Map Projects\PGE R-687 Documentation and Support Data\Baseline Report\ArcGIS Resources Project\Impact Map.mxd 4/9/2020

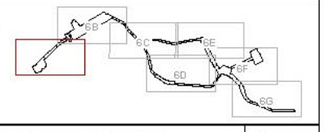


R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitinc 2019, Longitude1 23 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

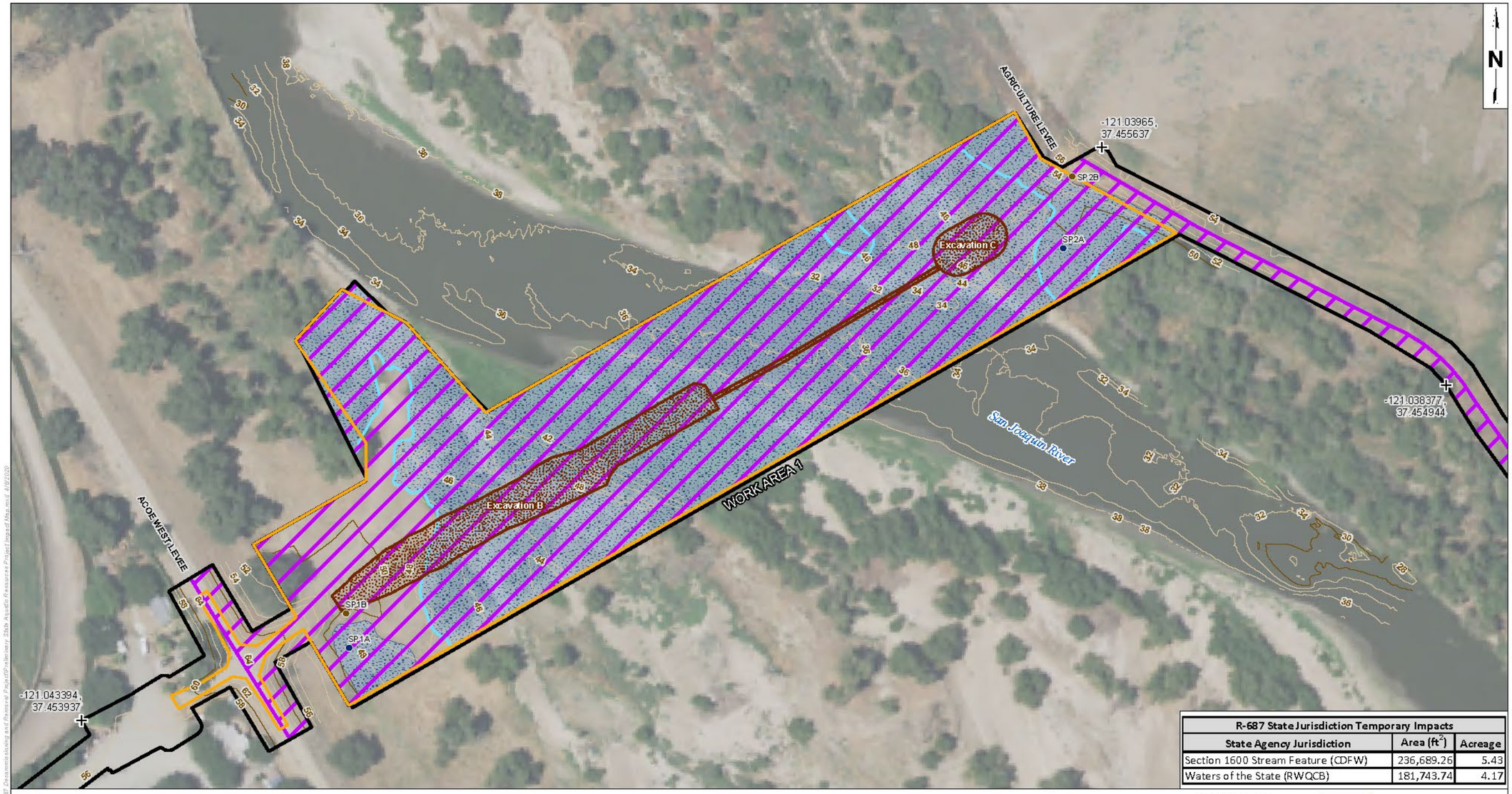
PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6A

Z:\GIS Projects\GIS Maps\Maps\PG&E R-687 Documentation and Permits\4 Project\Project Map.mxd 4/8/2020

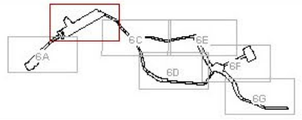


R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sinclair 2016, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

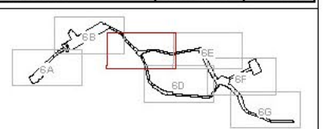
FIGURE 6B

R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

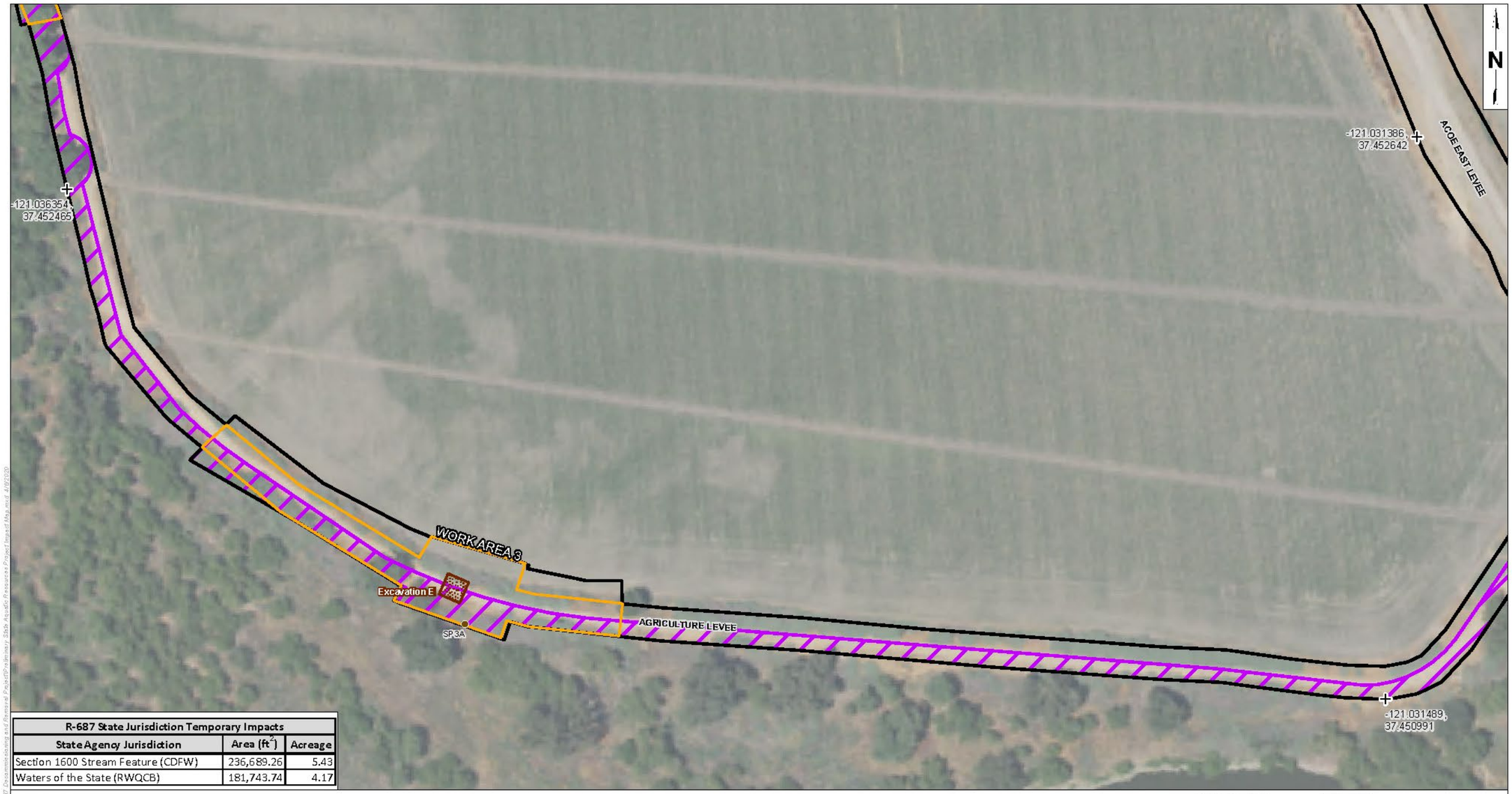
PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6C

Z:\GIS Projects\GIS Maps\Map Projects\PG&E R-687 Decommissioning and Removal Project\Preliminary State Aquatic Resources Project Impact Map.mxd 4/8/2020



R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft²)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:

0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
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PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6D

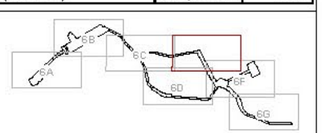
ESRI Prepared/GIS/MapFiles/PG&E R-687 Documents/Permit Package/Preliminary State Aquatic Resources Project Impact Map.mxd 4/9/2020

R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Stantec 2019, Longitude13 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E R-687 L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT, PHASE 2
STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6E

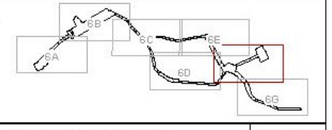
G:\GIS Projects\GIS Maps\Maps Folder\PG&E R-687 Documents\Regional Project\Project Drawings\06b Aquatic Resource Project Impact Map.mxd 4/9/2020

R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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STANISLAUS COUNTY, CA

PROJECT NUMBER: 1902-3511

DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6F

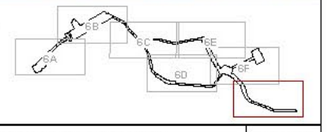
Z:\GIS Projects\GIS Maps\May Projects\PG&E R-687 Documents\Living and Rivers of Projects\Pre-Refinery State Aquatic Resources Project Impact Map.mxd 4/9/2020

R-687 State Jurisdiction Temporary Impacts		
State Agency Jurisdiction	Area (ft^2)	Acreage
Section 1600 Stream Feature (CDFW)	236,689.26	5.43
Waters of the State (RWQCB)	181,743.74	4.17

LEGEND:

- Control Point
- Upland Sample Plot Location
- Wetland Sample Plot Location
- Ordinary High Water Mark
- Total Excavation Area (0.61 ac)
- Total Temporary Impact Area (9.47 ac)
- Study Area Boundary (18.58 ac)
- Section 1600 Stream Feature - California Department of Fish & Wildlife (7.30 ac)
- Waters of the State - Regional Water Quality Control Board (4.36 ac)

MAP EXTENT:



0 50 100
FEET
1 inch = 100 feet

Source: Esri Online Imagery Basemap, Sitelec 2019, Longitude123 2020
Coordinate System: NAD 1983 CORS96 StatePlane California III FIPS 0403 Ft US
Notes: This map was created for informational and display purposes only.

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STANISLAUS COUNTY, CA

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DATE: April 2020

PRELIMINARY STATE AQUATIC RESOURCES PROJECT IMPACT MAP

FIGURE 6G

Z:\GIS Projects\GIS Maps\Maps\Projects\PGE R-687 Decommissioning and Removal Project\Preliminary State Aquatic Resources Project Impact Map.mxd 4/8/2020

Figure 7 – Special Status Species Occurrences:

CNDDB Geospatial Data is Confidential - Figure available upon request.

Photograph A. View of large ground squirrel burrow colony at the West Staging (Northwest view). Photograph taken 1/17/20.	
Photograph B. View of old raptor nest located on the eastern side of the San Joaquin River (South view). Photograph taken 1/17/20.	

Figure 8
Site Photographs
PG&E R-687 L-215 San Joaquin River Crossing Replacement Project – Phase Two

Photograph C. View of the non-native grassland located at the West Staging Area (West view). Photograph taken 1/17/20.	
Photograph D. View of the Great Valley mixed riparian forest community located on the west shore of the San Joaquin River in Work Area 1 (West view). Photograph taken 1/17/20.	

Photograph E. View of the Great Valley willow scrub vegetation community located on the west bank of the San Joaquin River in Work Area 1 (Southeast view). Photograph taken 1/23/20.	
Photograph F. View of the San Joaquin River water crossing in Work Area 1 looking from the west shore to the east (Northeast view). Photograph taken 1/23/20.	

Photograph G. View of the San Joaquin River water crossing in Work Area 1 looking from the east shore to the west (Southwest view). Photograph taken 1/23/20.	
Photograph H. View of the Great Valley willow scrub vegetation community located on the east shore of the San Joaquin River in Work Area 1 (West view). Photograph taken 1/23/20.	

Photograph I. View of the ruderal/disturbed community located at Work Area 2 (West view). Photograph taken 1/23/20.	
Photograph J. View of the ruderal/disturbed community located at Work Area 3 (West view). Photograph taken 1/23/20.	

Photograph K. View of the agriculture community located at Work Area 4 (West view). Photograph taken 1/23/20.	
Photograph L. View of the agriculture community located at the East Staging Area (North view). Photograph taken 1/23/20.	

APPENDIX A

USFWS SPECIES LIST

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:
Consultation Code: 08ESMF00-2020-SLI-0837
Event Code: 08ESMF00-2020-E-02637
Project Name: PG&E R-687 Decommissioning Project

January 22, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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: 08ESMF00-2020-SLI-0837

Event Code: 08ESMF00-2020-E-02637

Project Name: PG&E R-687 Decommissioning Project

Project Type: OIL OR GAS

Project Description: Decommissioning will include pigging and flushing of the pipeline to remove contaminants, filling specific
pipeline segments with concrete slurry and removal of pipeline segments.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.45377284480257N121.04390906550378W

Counties: Stanislaus, CA

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.

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
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*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf

California Tiger Salamander *Ambystoma californiense*	Threatened

Population: U.S.A. (Central CA DPS)
There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
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. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7850
Habitat assessment guidelines:
https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
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	G2G3 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	40 190	955 S:9	0	0	0	0	3	6	6	3	6	3	0
Astragalus tener var. tener alkali milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.2	55 55	65 S:1	0	0	0	0	1	0	1	0	0	0	1
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	1	0	1	0	0	0	1
Atriplex minuscula lesser saltscale	G2 S2	None None	Rare Plant Rank - 1B.1		52 S:1	0	0	0	0	0	1	1	0	1	0	0
Atriplex persistens vernal pool smallscale	G2 S2	None None	Rare Plant Rank - 1B.2	55 55	41 S:1	0	0	0	0	1	0	1	0	0	1	0
Bombus crotchii Crotch bumble bee	G3G4 S1S2	None Candidate Endangered		100 100	234 S:1	0	0	0	0	0	1	1	0	1	0	0
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	G5T3 S3	Delisted None	CDFW_WL-Watch List	50 50	19 S:2	0	0	0	0	0	2	2	0	2	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	35 55	2518 S:6	1	0	0	0	0	5	6	0	6	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	60 60	1385 S:1	0	1	0	0	0	0	1	0	1	0	0
Eryngium racemosum Delta button-celery	G1 S1	None Endangered	Rare Plant Rank - 1B.1	50 50	26 S:1	0	0	0	0	1	0	1	0	0	1	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.
Falco mexicanus	G5	None	CDFW_WL-Watch List	1,000	460	1	0	0	0	0	0	1	0	1	0	0
prairie falcon	S4	None	IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	1,000	S:1											
Oncorhynchus mykiss irideus pop. 11	G5T2Q	Threatened	AFS_TH-Threatened		31	0	0	0	1	0	0	0	1	1	0	0
steelhead - Central Valley DPS	S2	None			S:1											
Pogonichthys macrolepidotus	GNR	None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_EN-Endangered	40	15	0	0	0	0	0	1	1	0	1	0	0
Sacramento splittail	S3	None		40	S:1											
Puccinellia simplex	G3	None	Rare Plant Rank - 1B.2	60	80	0	0	0	0	1	0	1	0	0	0	1
California alkali grass	S2	None		60	S:1											

APPENDIX C

PLANT SPECIES OBSERVED AT THE PG&E R-687 PROJECT SITE

Plant Species Observed at the R-687 L-215 San Joaquin River Crossing Replacement – Phase Two Project Site

Common Name/Family	*Scientific Name*	Growth Habit[1]	Wetland Indicator Status[2]	Native Status[3]	Source[4]	Sensitivity / Listing Status[4]
ANACARDIACEAE (Sumac or Cashew Family)						
Pistache	*Pistacia* sp.	T	NL	I	2	
Poison oak	*Toxicodendron diversilobum*	S	FACU	N	2	
APIACEAE (Carrot Family)						
Poison hemlock	*Conium maculatum*	H	FACW	I	1, 2	
APOCYNACEAE (Dogbane Family)						
Oleander	*Nerium oleander*	S	NL	I	2	
ASTERACEAE (Sunflower Family)						
Mugwort	*Artemisia douglasiana*	H	FAC	N	1	
Italian thistle	*Carduus pycnocephalus* ssp. *pycnocephalus*	H	NL	I	2	
Slender flowered thistle	*Carduus tenuiflorus*	H	NL	I	1, 2	
Yellow star-thistle	*Centaurea solstitialis*	H	NL	I	2	
Common spikeweed	*Centromadia pungens*	H	FAC	N	2	
Chicory	*Cichorium intybus*	H	FACU	I	2	
Canada thistle	*Cirsium arvense*	H	FACU	I	1	
Flax-leaved horseweed	*Erigeron bonariensis*	H	FACU	I	1, 2	
Gumplant	*Grindelia camporum*	H	FACW	N	1	
Common sunflower	*Helianthus annuus*	H	FACU	N	1	
Bristly ox-tongue	*Helminthotheca echioides*	H	FAC	I	1	
Telegraph weed	*Heterotheca grandiflora*	H	NL	N	1	
Prickly lettuce	*Lactuca serriola*	H	FACU	I	1, 2	
Valley mayweed	*Matricaria occidentalis*	H	FACW	N	2	
Milk thistle	*Silybum marianum*	H	NL	I	1, 2	
Common sow thistle	*Sonchus oleraceus*	H	UPL	I	1	
Common dandelion	*Taraxacum officinale*	H	FACU	I	2	
Spiny cocklebur	*Xanthium spinosum*	H	FACU	I	1	
Cocklebur	*Xanthium strumarium*	H	FAC	N	1	
BORAGINACEAE (Borage Family)						
Common phacelia	*Phacelia distans*	H	NL	N	2	
BRASSICACEAE (Mustard Family)						
Black mustard	*Brassica nigra*	H	NL	I	1, 2	
Field mustard	*Brassica rapa*	H	FUPL	I	2	
Shepard's purse	*Capsella bursa-pastoris*	H	FACU	I	1	
Mediterranean mustard	*Hirschfeldia incana*	H	NL	I	1, 2	
Bog yellow-cress	*Rorippa palustris* ssp. *palustris*	H	OBL	N	1	
CHENOPODIACEAE (Goosefoot Family)						
Big saltbush	*Atriplex lentiforis*	S	FAC	N	1, 2	
Lamb's quarters	*Chenopodium album*	H	FACU	I	1, 2	
Russian thistle	*Salsola tragus*	H	FACU	I	1	

Common Name/Family	*Scientific Name*	Growth Habit[1]	Wetland Indicator Status[2]	Native Status[3]	Source[4]	Sensitivity / Listing Status[4]
CONVOLVULACEAE (Morning-Glory Family)						
Bindweed	*Convolvulus arvensis*	H	NL	I	2	
EUPHORBIACEAE (Spurge Family)						
Turkey mullein	*Croton setiger*	H	NL	N	1, 2	
FABACEAE (Legume Family)						
Perennial sweet pea	*Lathyrus latifolius*	H	NL	I	2	
California burclover	*Medicago polymorpha*	H	FACU	I	1, 2	
Alfalfa	*Medicago sativa*	H	UPL	I	2	
Vetch	*Vicia* sp.	H			1	
FAGACEAE (Oak Family)						
Valley oak	*Quercus lobata*	T	FACU	N	1, 2	
GERANIACEAE (Geranium Family)						
Redstem filaree	*Erodium cicutarium*	H	NL	I	1, 2	
Dove's-foot geranium	*Geranium molle*	H	NL	I	1	
MALVACEAE (Mallow Family)						
Cheeseweed	*Malva parviflora*	H	NL	I	1, 2	
MYRSINACEAE (Myrsine Family)						
Scarlet pimpernel	*Lysimachia arvensis*	H	FAC	I	1, 2	
MYRTACEAE (Myrtle Family)						
Blue gum	*Eucalyptus globulus*	T	NL	I	2	
OLEACEAE (Olive Family)						
Oregon ash	*Fraxinus latifolia*	T	FACW	N	2	
ONAGRACEAE (Evening Primrose Family)						
Floating water primrose	*Ludwigia peploides*	H	OBL	I	1, 2	
POLYGONACEAE (Buckwheat Family)						
Willow weed	*Persicaria lapathifolia*	H	FACW	N	1	
Curly dock	*Rumex crispus*	H	FAC	I	1, 2	
PORTULACACEAE (Purslane Family)						
Common purslane	*Portulaca oleracea*	H	FAC	I	2	
ROSACEAE (Rose Family)						
Almond	*Prunus dulcis*	T	NL	I	1, 2	
Himalayan blackberry	*Rubus armeniacus*	V	FAC	I	2	
California blackberry	*Rubus ursinus*	V	FAC	N	1, 2	
RUBIACEAE (Madder Family)						
Bedstraw	*Galium* sp.	H			1	
California button willow	*Cephalanthus occidentalis*	S	OBL	N	1, 2	
SALICACEAE (Willow Family)						
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	T	NL	N	1, 2	
Willow	*Salix* sp.	T	OBL		1, 2	
Gooding's black willow	*Salix goodingii*	T	FACW	N	1	
SAPINDACEAE (Soapberry Family)						

Common Name/Family	*Scientific Name*	Growth Habit[1]	Wetland Indicator Status[2]	Native Status[3]	Source[4]	Sensitivity / Listing Status[4]
California box-elder	*Acer negundo*	T	FACW	N	1, 2	
SOLANACEAE (Nightshade Family)						
Jimsonweed	*Datura wrightii*	H	UPL	N	1, 2	
Many flowered tobacco	*Nicotiana acuminata* var. *multiflora*	H	NL	I	1, 2	
Tree tobacco	*Nicotiana glauca*	T	FAC	I	1, 2	
Common nightshade	*Solanum americanum*	H	FACU	N	1	
URTICACEAE (Nettle Family)						
Stinging nettle	*Urtica dioica*	H	FACW	N	1, 2	
Dwarf nettle	*Urtica urens*	H	NL	I	1	
VISCACEAE (Mistletoe Family)						
American mistletoe	*Phoradendron leucarpum*	H	NL	N	1	
ARACEAE (Arum Family)						
Least duckweed	*Lemna minuta*	H	OBL	N	2	
ARECACEAE (Palm Family)						
California fan palm	*Washingtonia filifera*	T	FAC	N	1, 2	
CYPERACEAE (Sedge Family)						
Variable flatsedge	*Cyperus difformis*	H	OBL	I	1, 2	
Tall cyperus	*Cyperus eragrostis*	H	FACW	N	1	
JUNCACEAE (Rush Family)						
Lamp rush	*Juncus effusus*	H	FACW	N	2	
POACEAE (Grass Family)						
Ripgut grass	*Bromus diandrus*	G	NL	I	1, 2	
Soft chess	*Bromus hordeaceus*	G	FACU	I	1, 2	
Bermuda grass	*Cynodon dactylon*	G	FACU	I	1, 2	
Hairy crab grass	*Digitaria sanguinalis*	G	FACU	I	2	
Medusa head	*Elymus caput-medusae*	G	NL	I	2	
Squirreltail	*Elymus elymoides*	G	FACU	N	2	
Quack grass	*Elymus repens*	G	FAC	I	2	
Rattail sixweeks grass	*Festuca myuros*	G	FACU	I	2	
Foxtail barley	*Hordeum jubatum* ssp. *jubatum*	G	FAC	N	2	
Mediterranean barley	*Hordeum marinum* ssp. *gussoneanum*	G	FAC	I	1, 2	
Hare barley	*Hordeum murinum* ssp. *leporinum*	G	FACU	I	1, 2	
Dallis grass	*Paspalum dilatatum*	G	FAC	I	2	
Lemmon's canary grass	*Phalaris lemmonii*	G	FACW	N	2	
Annual blue grass	*Poa annua*	G	FAC	I	1	
Rabbitfoot grass	*Polypogon monspeliensis*	G	FACW	I	1	
Rye	*Secale cereale*	G	NL	I	1, 2	
Johnson grass	*Sorghum halepense*	G	FACU	I	1, 2	
Cultivated corn	*Zea mays*	G	NL	I	1, 2	
PONTEDERIACEAE (Pickerel-Weed Family)						
Water hyacinth	*Eichhornia crassipes*	H	OBL	I	1	
TYPHACEAE (Cattail Family)						
Narrow-leaved cattail	*Typha angustifolia*	H	OBL	I	2	

Wetland Indicator Status[2]
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[4]

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

Source[4]	Growth Habit[1]	Native Status[3]
1 = Padre Observed (January 2020 Surveys) 2 = Stantec Observed (June 2019 Surveys)	G = Grass H = Herb S = Shrub T = Tree	N = Native I = Introduced

APPENDIX D

WILDLIFE SPECIES OBSERVED AT THE PG&E R-687 PROJECT SITE

Wildlife Species Observed at the R-687 L-215 San Joaquin River Crossing Replacement Project – Phase Two Site

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
	FISH	
CYPRINIDAE (Minnows and Carp)		
Carp	*Cyprinus carpio*	
POECILIIDAE (Poeciliids)		
Western Mosquitofish	*Gambusia affinis*	
	AMPHIBIANS	
RANIDAE (True Frogs)		
American Bullfrog	*Lithobates catesbeianus*	
	BIRDS	
ANATIDAE (Ducks, Geese, and Swans)		
Greater White-fronted Goose	*Anser albifrons*	M
Snow Goose	*Chen caerulescens*	M
Canada Goose	*Branta canadensis*	M
ODONTOPHORIDAE (New World Quail)		
California Quail	*Callipepla californica*	
COLUMBIDAE (Pigeons and Doves)		
Eurasian Collared-Dove	*Streptopelia decaocto*	M
Mourning Dove	*Zenaida macroura*	M
TROCHILIDAE (Hummingbirds)		
Black-chinned Hummingbird	*Archilochus alexandri*	M
GRUIDAE (Cranes)		
Sandhill Crane	*Antigone canadensis*	M
CHARADRIIDAE (Lapwings and Plovers)		
Killdeer	*Charadrius vociferus*	M
PHALACROCORACIDAE (Cormorants)		
Double-crested Cormorant	*Phalacrocorax auritus*	M, WL
ARDEIDAE (Bitterns, Herons, and Allies)		M
Great Blue Heron	*Ardea herodias*	M
Great Egret	*Ardea alba*	M
Snowy Egret	*Egretta thula*	M
CATHARTIDAE (New World Vultures)		
Turkey Vulture	*Cathartes aura*	M
ACCIPITRIDAE (Hawks, Kites, Eagles, and Allies)		
Northern Harrier	*Circus cyaneus*	M, CSC
Red-shouldered Hawk	*Buteo lineatus*	M
Red-tailed Hawk	*Buteo jamaicensis*	M
ALCEDINIDAE (Kingfishers)		
Belted Kingfisher	*Megaceryle alcyon*	M
PICIDAE (Woodpeckers and Allies)		
Acorn Woodpecker	*Melanerpes formicivorus*	M
Hairy Woodpecker	*Picoides villosus*	M
Northern Flicker	*Colaptes auratus*	M
FALCONIDAE (Caracaras and Falcons)		
American Kestrel	*Falco sparverius*	M
TYRANNIDAE (Tyrant Flycatchers)		
Black Phoebe	*Sayornis nigricans*	M

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
CORVIDAE (Jays and Crows)		
Western Scrub-Jay	*Aphelocoma californica*	M
American Crow	*Corvus brachyrhynchos*	M
PARIDAE (Chickadees and Titmice)		
Oak Titmouse	*Baeolophus inornatus*	M, BCC
AEGITHALIDAE (Bushtits)		
Bushtit	*Psaltriparus minimus*	M
TROGLODYTIDAE (Wrens)		
Pacific Wren	*Troglodytes pacificus*	M
REGULIDAE (Kinglets)		
Ruby-crowned Kinglet	*Regulus calendula*	M
TURDIDAE (Thrushes)		
Western Bluebird	*Sialia mexicana*	M
American Robin	*Turdus migratorius*	M
MIMIDAE (Mockingbirds and Thrashers)		
Northern Mockingbird	*Mimus polyglottos*	M
STURNIDAE (Starlings)		
European Starling	*Sturnus vulgaris*	
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)		
Spotted Towhee	*Pipilo maculatus*	M
Savannah Sparrow	*Passerculus sandwichensis*	M
White-crowned Sparrow	*Zonotrichia leucophrys*	M
Dark-eyed Junco	*Junco hyemalis*	M
ICTERIDAE (Blackbirds)		
Western Meadowlark	*Sturnella neglecta*	M
	MAMMALS	
SCIURIDAE (Chipmunks, Squirrels, and Marmots)		
California Ground Squirrel	*Spermophilus beecheyi*	
GEOMYIDAE (Pocket Gophers)		
Botta's Pocket Gopher	*Thomomys bottae*	
CASTORIDAE (Beavers)		
American Beaver	*Castor canadensis*	
CRICETIDAE (Deer Mice, Voles, and Relatives)		
Vole	*Microtus* sp.	
CANIDAE (Foxes, Wolves, and Relatives)		
Coyote	*Canis latrans*	
PROCYONIDAE (Raccoons and Relatives)		
Raccoon	*Procyon lotor*	
MUSTELIDAE (Weasels, Badgers, and Relatives)		

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
North American River Otter	*Lontra canadensis*	
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