Appendix A

New Appendix 3.4-6, Biological Technical Report for Proposed Mitigation Lands

LAS CAMAS SOLAR PROJECT

BIOLOGICAL TECHNICAL REPORT FOR PROPOSED MITIGATION LANDS

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Acronyms and Abbreviations

asl	above sea level
BBS	Breeding Bird Survey
BTR	biological technical report
CALVEG	Classification and Assessment with LANDSAT of Visible Ecological Groupings
CBC	Christmas bird count
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNRA	California Natural Resources Agency
ESA	Endangered Species Act
GPS	Global Positioning System
HCP	habitat conservation plan
I-5	Interstate 5
MW	megawatt
NWI	National Wetland Inventory
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
Resevoir	Los Banos Creek Reservoir
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1
Introduction

EDPR CA Solar Park III, LLC, a wholly owned subsidiary of EDPR CA Solar Park III, LLC, North America, LLC, is proposing to develop the Las Camas Solar Project in Merced County, California. The project, which would generate up to 200 megawatts (MW) of electricity, would consist of photovoltaic solar arrays, a substation, and associated infrastructure (e.g., roads, battery storage systems, electrical transmission lines) within a 1,279-acre permit area. Impacts from project development are anticipated to affect several species, including San Joaquin kit fox (*Vulpes macrotis mutica*; federal endangered, state threatened), Swainson's hawk (*Buteo swainsonii*; state threatened), burrowing owl (*Athene cunicularia*; state species of special concern), and tule elk (*Cervus canadensis nannodes*), a big-game species of conservation interest. Conservation easements are used as habitat-based compensatory mitigation strategies to mitigate impacts on listed species, in compliance with Section 10(a)(1)(B) of the Endangered Species Act (ESA) and Section 15370 of the California Environmental Quality Act (CEQA).

A draft habitat conservation plan (HCP) has been developed to assess the potential effects construction, operation, and decommissioning could have on San Joaquin kit fox and devise a conservation strategy that would avoid, minimize, and mitigate those effects to the maximum extent practicable. One of the biological goals and objectives of the HCP is to increase the quantity and quality of kit fox habitat that is under permanent protection in western Merced County.

This biological technical report (BTR) describes the baseline biological conditions and habitat suitability of a proposed conservation easement (i.e., mitigation site) to mitigate impacts in the project permit area. Specifically, this BTR describes historical and current land uses, vegetation communities, invasive plant or animal species, soil types, water features such as streams or wetlands, habitats of special-status and common species, observations of special-status species, species survey results, and development on the mitigation site, along with other threats to biological resources (California Department of Fish and Wildlife [CDFW] 2023). The BTR provides details regarding the baseline condition of the habitat as well as information regarding occurrences of San Joaquin kit fox, Swainson's hawk, burrowing owl, and tule elk. It also describes how the mitigation site would benefit conservation of these species.

Environmental Setting

The 2,586-acre mitigation site is located along the western edge of the San Joaquin Valley, within two broad ecoregions (Griffith et al. 2016). The eastern portion of the mitigation area is within the Westside Alluvial Fans and Terraces of the Central California Valley Ecoregion, which is characterized by annual grasslands and gently sloping terraces and alluvial fans. The western portion of the mitigation area is within the Eastern Hills of the Central California Foothills and Coastal Mountain Ecoregion, which is characterized by low, steep mountains and foothills on the eastern side of the Diablo Range.

Historically, the conversion of native habitats to agricultural uses focused on areas east of Interstate 5 (I-5), toward the central portion of the San Joaquin Valley (Elkind et al. 2016). Therefore, the areas on the periphery of the valley that were left untilled due to poor soils, arability, or other factors that precluded agriculture were most often used for ranching or left as open space or areas for other types of development (e.g., water projects). Urban development, exurban expansion, and solar energy

development have stretched into the periphery of the valley to accommodate growing populations and respond to California's renewable energy initiatives (e.g., Senate Bills 100 and 1020). In addition, concerns have emerged over climate change and its threat to a number of broad resources in the valley, including agricultural operations, ecosystems, and water resources (Fernandez-Bou et al. 2021).

The environmental setting within 5 miles of the mitigation site is mostly rural, with the nearest community, Los Banos (population of 47,044 in 2022), located 3.65 miles to the northeast at its nearest point. The 620-acre Los Banos Creek Reservoir (Reservoir), managed by California State Parks as a State Recreation Area, is directly adjacent to the mitigation site (Bureau of Reclamation and California Department of Parks and Recreation 2012). Two conservation easements that abut the mitigation site to the west and north are managed by CDFW as open grasslands and closed to the public (Figure 1) (California Natural Resources Agency [CNRA] 2023). The 443-acre Salt Creek Conservation Easement to the west was established in 1997 and 1999, and the 85-acre Los Banos Conservation Easement to the north was established in 1995. The 3,200-acre Agua Fria Multi-Species Conservation Area and Bank, located approximately 2 miles north of the mitigation site, provides credits for San Joaquin kit fox and burrowing owl. The 482-acre Arotzarena Kit Fox Preserve conservation easement connects the Aqua Fria Conservation Area to the Los Banos Creek Reservoir and is managed for the protection and support of San Joaquin kit fox habitat. I-5 borders 0.5 mile of the mitigation site in the northeast corner and divides the primary land uses in the area, with agriculture east of I-5 and livestock grazing west of I-5. Other land uses include the operational 200 MW Wright Solar Park, located approximately 1 mile north of the mitigation site, and the California Aqueduct, located 0.35 mile east at the nearest point. Approximately a dozen homes and several commercial businesses are located within 5 miles of the mitigation site.

CDFW lists continued cattle grazing, expanding urban development, and construction of the proposed Los Banos Grandes Reservoir as threats to special-status species within the mitigation site and 5-mile study area. Los Banos Grandes Reservoir is a proposed water storage and energy project that would be upstream from Los Banos Creek Reservoir. It was initially proposed in 1983 but remains undeveloped and awaiting funding (California Water Code Section 11255).

Mitigation Site Characteristics

The mitigation site encompasses 2,586 acres of privately owned land in western Merced County. Specifically, it is undeveloped open space, consisting nearly entirely of annual grasslands where livestock grazing is the primary land use. Trees and shrubs are absent from the majority of the mitigation site, occurring only along an approximately 59-acre wetland complex in the northeast corner, below the dam at the Reservoir. A historical borrow pit forms the extent of the wetland complex, which extends from the Reservoir spillway, along Los Banos Creek, through an I-5 underpass, to the California Aqueduct. The wetland complex is periodically inundated through water releases from the dam and seasonal precipitation. Annual average precipitation in the vicinity of the mitigation site is low (0.023 inch per year), with the largest rainfall events (more than 0.3 inch per day) between October and March (National Oceanic and Atmospheric Administration [NOAA] 2024). Several tributaries in the eastern half of the mitigation site lead to Salt Creek, which is located along the site's southern border. The elevation increases from approximately 200 feet above sea level (asl) at the eastern end of the mitigation site to 900 feet asl at the western end. The topography is characterized as flat to rolling but interrupted by relatively steeper terrain that forms terraces and incised drainages that lead to the Reservoir and Salt Creek. A steep escarpment along the southern

shore of the Reservoir follows the extent of the mitigation site. Several high-voltage (230- and 500-kilovolt) electrical transmission corridors and an underground pipeline bisect the mitigation site.

Chapter 2
Results

Desktop Assessment

A desktop assessment was conducted at the mitigation site to document biological resources and land uses, compile historical records of species occurrences, and evaluate landscape connectivity and the movement of special-status species. A desktop assessment of publicly available data from state and federal agencies was used to identify and describe biological resources and historical species occurrences within the mitigation site and a 5-mile radius (i.e., study area). Queries included results for all special-status wildlife species,[1] with particular attention to San Joaquin kit fox and Swainson's hawk and their preferred habitats. Queries for land cover, wetlands, and soils were limited to the mitigation site. The primary data sources used to describe habitat associations and map potential habitat for special-status species within the mitigation site are outlined below.

Species Occurrence, Distribution, and Connectivity

- Audubon Christmas Bird Count (CBC) (National Audubon Society 2020)
- Bird Observation Checklist and Hot Spots (eBird 2024)
- California Biogeographic Information and Observation System (CDFW 2024a)
- California Conservation Easement Database (CNRA 2023)
- California Natural Diversity Database (CNDDB) (CDFW 2024b).
- California Wildlife Habitat Relationships Databases (CDFW 2021)
- Critical Linkages: Bay Area & Beyond (Penrod et al. 2013)
- Information for Planning and Consultation (U.S. Fish and Wildlife Service [USFWS] 2024a)
- North American Breeding Bird Survey (U.S. Geological Survey [USGS] 2024)

Other Biological Resources

- Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) Existing Vegetation: Region 5 – Central Valley (U.S. Forest Service [USFS] 2019)
- National Wetlands Inventory (NWI) (USFWS 2024b).
- Web Soil Survey (Natural Resources Conservation Service [NRCS] 2022).

In addition to publicly available data, results from previous site-specific surveys of the mitigation site and immediate surroundings were reviewed and compiled. Previous surveys of the area included San Joaquin kit fox surveys (Constable et al. 2009), biological surveys for the Wright Solar Park (County of Merced 2014), and raptor nest surveys at the mitigation site (ICF 2022, 2023).

[1] Defined as any species that are legally protected under the federal ESA, California ESA, or other state, federal, and local regulations.

Field Surveys

Three types of field surveys were conducted at the mitigation site to evaluate biological resources. These included remote camera monitoring, raptor nest surveys, and a site reconnaissance survey.

Remote Camera Monitoring

Remote cameras were deployed in April 2024 at the mitigation site to photo document the presence of San Joaquin kit fox (USFWS 1999; Westall and Cypher 2017). Five cameras were secured 1 meter aboveground on metal t-posts in areas with low vegetation. Cameras were installed throughout the mitigation site along swales and drainages that funnel animal movement and serve as dispersal corridors (Westall and Cypher 2017). Two camera models were used, including Browning Dark Ops High-Definition Pro X and Browning Spec Ops Elite HP4, products of Browning Trail Cameras, Arncliffe, Australia. Cameras were motion activated and had an infrared flash to operate at night; cameras were set to three-photo bursts, high sensitivity, and continuous data captures. To attract fox, a long-distance scent lure (Caven's Gusto) was dripped in front of the camera. A three-ounce can of cat food was also placed in front of the camera to provide a novel object for defecation as well as an incentive to remain in the camera's field of view. Cameras were checked within 1 week following installation to ensure operation and swap digital data cards. Cameras remained in the field for 2 weeks, following the minimum recommendations from Westall and Cypher (2017). After deployment, photographs from each camera were inspected, and a list of all species detected by each camera was compiled.

Raptor Nest Surveys

Raptor nest surveys were conducted in spring 2022, 2023 and 2024 to document nest occupancy and potential nesting substrates within and immediately surrounding the mitigation site. In 2022 and 2023, the surveys focused on leased lands in the eastern half of the mitigation site. Six surveys were conducted by vehicle and on foot during two periods, as defined by the Swainson's Hawk Technical Advisory Committee (2000). In 2024, surveys occurred on all leased lands by vehicle and on foot and coincided with the site reconnaissance visit. During all surveys, areas with the highest potential to support raptor nests, including large trees, transmission towers, and rock outcrops along incised drainages, were scanned with the naked eye, binoculars, and a spotting scope to document nest occupancy. For each nest, a Global Positioning System (GPS) location was recorded. Nest occupancy was defined as occupied if evidence of nest tending, with eggs/fragments, nestlings, and/or an adult in incubating/brooding position, was present at the time of the survey or unoccupied if no evidence or characteristics of nest occupancy or nest tending were observed (Bird and Bildstein 2007).

Site Reconnaissance

Consistent with Stage 1 of CDFWs Habitat Management Land Acquisition process, site reconnaissance was conducted at the mitigation site in spring 2024 to document baseline conditions (CDFW 2023). Site reconnaissance evaluated vegetation communities for their suitability to support special-status wildlife species with potential to occur, with an emphasis on San Joaquin kit fox, Swainson's hawk, burrowing owl, and tule elk. Potential wildlife habitat evaluated included vegetation communities, unique topographic and geological features,

potential raptor nesting substrates, and habitat for prey populations. Potential NWI wetlands that were accessible from public roads were inspected, documenting the probable presence (or absence) of wetland vegetation. The predominant vegetative strata and dominant plant species were noted, along with the wetland hydrology (e.g., stream, pond, lake). While conducting the site reconnaissance, the biologist also noted all wildlife observations and dominant plant species. Representative photographs of the mitigation site are presented in Appendix C.

Chapter 3
Results

Desktop Assessment

The desktop assessment resulted in the discovery of numerous documents that described the ecological importance of western Merced County for a number of listed state and federal special-status species, including San Joaquin kit fox, burrowing owl, Swainson's hawk, and tule elk (Elkind et al. 2016; USFWS 2020, USFWS 2024). Large grasslands and reservoirs provide habitat and connectivity for species at the edge of the highly fragmented/modified San Joaquin Valley. Existing conservation easements and mitigation banks, as well as USFWS designated critical habitat, in the vicinity of the mitigation site are indicative of the unique landscape within this portion of the San Joaquin Valley.

California Natural Diversity Database

The CNDDB reported 119 records of special-status species and habitats within 5 miles of the mitigation site. Of these records, 29 records of San Joaquin kit fox, burrowing owl, and Swainson's hawk were located within 5 miles of the mitigation site (Figure 5). Two records of San Joaquin kit fox overlapped the mitigation site. A large area consisting of multiple observations (#145), dating back to the mid-1970s, overlaps the southern portion of the mitigation site, consisting of hundreds of burrows and observations. Multiple sightings of San Joaquin kit fox were documented at a remote camera station (Camera A) in spring 2024 that overlaps the polygon of the CNDDB record. The other kit fox record within the mitigation site (#587) consisted of a single vehicle-related fatality in 1999.

Land Cover

Based on a 2019 review of CALVEG, the dominant land cover type within the mitigation site is herbaceous, making up 99.6 percent of the total acreage (Table 3-1, Figure 2). The herbaceous land cover type is part of the annual grasses and forbs alliance characterized by species of exotic grasses, including species of wild oats (*Avena* spp.), various bromes (*Bromus* spp.), foxtail fescue (*Vulpia myuros*), and Kentucky bluegrass (*Poa pratensis*). Urban, which makes up 0.3 percent, is characterized by more than 50 percent non-vegetated cover along the electrical transmission corridor; barren was located along the exposed soils of Salt Creek.

Table 3-1. Land Cover Types at the Las Camas Mitigation Site, Merced County, California

Type	Acres	% Comp
Herbaceous	2,575.0	99.6
Urban	7.9	0.3
Barren [Rock/Soil/Sand]	3.4	0.1
Total	**2,586.3**	**100**

Wetlands

NWI data indicated approximately 32 acres of wetlands, representing less than 0.01 percent of the total mitigation site acreage (Table 3-2, Figure 3). The majority of wetlands occur as Riverine Wetland (72 percent), as found along the ephemeral drainages and swales throughout the mitigation site. Freshwater Emergent Wetland and Freshwater Pond make up approximately 8.9 acres of the wetland complex in the northeastern corner of the mitigation site, along Los Banos Creek. Open water in the mitigation site is limited to the northeastern wetland complex, which is fed by water releases from the Reservoir.

Table 3-2. Wetlands Located in the Las Camas Mitigation Site, Merced County, California

Wetland Type	Acres	% Comp
Riverine Wetland	22.8	72.0
Freshwater Emergent Wetland	6.2	19.6
Freshwater Pond	2.7	8.4
Total	**31.7**	**100**

Soils

A National Cooperative Soil Survey custom soil report was produced for the mitigation site (NRCS 2024) (Appendix B). The soil report contains map units that delineate areas dominated by one or more major kinds of soil. Soils having profiles that are almost alike make up a soil series having horizons that are similar in composition, thickness, and arrangement. Soil complexes are two or more soil series that occur in such an intricate pattern that they cannot be shown separately on maps. Soil series are divided into soil phases that can differ in the texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. Most of the areas shown on the detailed soil maps are soil phases.

Soil characteristics in the mitigation site are indicative of moderate to deep well-drained soils on terraces and fan remnants found in the low foothills along the western edge of the San Joaquin Valley. Collectively, the Arburua loam soil series is the most predominant series (25 percent; 631 acres) in the mitigation area, consisting of well-drained, loamy soils that become increasing hard to dig into past 40 inches below the surface. The mitigation site is composed of 25 individual soil phases, of which Los Banos clay loam, 2 to 8 percent slope (13.4 percent); Wisflat-Rock outcrop-Arburua, 30 to 50 percent slope (12.9 percent); Arburua loam, 15 to 30 percent slope (11.9 percent); and San Timoteo-Wisflat sandy loams complex, 8 to 15 percent slope (10.4 percent), make up approximately 50 percent. Parent materials are typically derived from sandstone and shale. The land capability classifications of all soils are greater than Class IV, indicating the soils have low suitability for farmland. They are better suited for rangeland or wildlife habitat; however, 25 percent of the soils would be considered prime farmland if irrigated (Appendix B). Hydric soils that contain properties consistent with aquatic conditions make up approximately 8 percent (200 acres) and are found along Los Banos Creek and Salt Creek (Figure 4).

Regional Bird Data

The mitigation site's unique location in the western San Joaquin Valley, along the grassland foothills of the Diablo Mountains, before the expansive agricultural development of the valley and adjacent to a large perennial water source in an otherwise arid region, results in high bird and wildlife diversity. Long-term datasets from citizen science efforts reflect the bird diversity in the region and species that may also use the grassland and wetland habitats of the mitigation site. Incidental reporting at the Reservoir, a known birding hot spot in the region, reports 161 bird species over 16 years, including 21 special-status species listed or tracked by CDFW (Table 3-3) (eBird 2024). Special-status species documented at the Reservoir included grassland-associated species such as Swainson's hawk, loggerhead shrike, and grasshopper sparrow as well wetland-associated species such as tricolored blackbird. Standardized protocol surveys in the vicinity of the mitigation site recorded many of the same special-status species documented at the Reservoir. A USGS Breeding Bird Survey (BBS) route (Oro Loma #196), located 4 miles east at the nearest point, recorded 76 bird species over 6 years, including 10 special-status species (Table 3-3) (Sauer et al. 2022). The BBS survey route extends through the USFWS Grasslands Management Area, which contains habitats similar to those found on the mitigation site. An Audubon CBC survey area (Los Banos CALS), which overlaps the mitigation site, recorded 248 bird species over 45 years, including 25 special-status species, most of which (76 percent) were also recorded at the Reservoir (Table 3-3) (Audubon 2020). Long-term regional records of special-status bird species in habitats similar to those at the mitigation site indicate the potential for the mitigation site to provide nesting and foraging habitat for Swainson's hawk, burrowing owl, ferruginous hawk, grasshopper sparrow, tri-colored blackbird, and other species of CDFW conservation concern.

Table 3-3. Regional Bird Species Documented during Long-term Survey and Monitoring Programs within the Vicinity of the Mitigation Site, Merced County, California

Common Name	Scientific Name	CDFW Status[a]	LBCR[b]	BBS[b]	CBC[b]
American white pelican	*Pelecanus erythrorhynchos*	SSC	X		X
bald eagle	*Haliaeetus leucocephalus*	FP	X		X
Barrow's goldeneye	*Bucephala islandica*	SSC			X
burrowing owl	*Athene cunicularia*	SSC		X	X
cackling goose (Aleutian)	*Branta hutchinsii leucopareia*	WL			X
California gull	*Larus californicus*	WL	X	X	X
common loon	*Gavia immer*	SSC	X		X
Cooper's hawk	*Accipiter cooperii*	WL	X		X
double-crested cormorant	*Nannopterum auritum*	WL	X		X
ferruginous hawk	*Buteo regalis*	WL	X		X
golden eagle	*Aquila chrysaetos*	FP	X		X
grasshopper sparrow	*Ammodramus savannarum*	SSC	X		
loggerhead shrike	*Lanius ludovicianus*	SSC	X	X	X
long-billed curlew	*Numenius americanus*	WL	X	X	X
Merlin	*Falco columbarius*	WL	X		X
northern harrier	*Circus hudsonius*	SSC	X	X	X

Common Name	Scientific Name	CDFW Status[a]	LBCR[b]	BBS[b]	CBC[b]
Osprey	*Pandion haliaetus*	WL	X		X
prairie falcon	*Falco mexicanus*	WL	X		X
redhead	*Aythya americana*	SSC			X
short-eared owl	*Asio flammeus*	SSC			X
Swainson's Hawk	*Buteo swainsoni*	T	X	X	X
tricolored blackbird	*Agelaius tricolor*	T/SSC	X	X	X
white-faced ibis	*Plegadis chihi*	WL	X		X
white-tailed kite	*Elanus leucurus*	FP	X	X	X
yellow warbler	*Setophaga petechia*	SSC	X	X	X
yellow-headed blackbird	*Xanthocephalus xanthocephalus*	SSC	X	X	X

[a.] FP = Fully Protected; SSC = Species of Special Concern; T = Threatened; WL = Watch List; typically nesting and nesting colonies are protected (CDFW 2024c).

[b.] BBS = USGS Breeding Bird Survey (Sauer et al. 2022); CBC = Audubon Christmas Bird Count (Audubon 2020); LBCR = Los Banos Creek Reservoir (eBird 2024).

Wildlife Movement and Connectivity

A functional network of connected wildlands is essential to continued support of California's diverse natural communities in the face of human development and climate change. Corridors along drainages, valleys, and other features facilitate wildlife movement and connectivity between areas of suitable habitat; the corridors (e.g., linkages) and associated habitats are essential to population viability. Wildlife movement corridors and linkages that connect areas of suitable wildlife habitat are present within the mitigation site.

Multiple conservation planning initiatives modeled wildlife connectivity and movement in the San Joaquin Valley (Penrod et al. 2001; Spencer et al. 2010; Penrod et al. 2013; CDFW 2024). Models identified large areas of relatively natural habitat blocks that support native biodiversity (landscape blocks) and areas essential for ecological connectivity between them (linkages). Ecologically high-value areas within landscape blocks and linkages that lack formal protection but are essential to movement and connectivity were identified as part of the Critical Linkages Network. Although there is no definitive model to evaluate conservation planning opportunities for wildlife, various California assembly bills and pieces of legislation[2] have passed that require wildlife movement and habitat connectivity to be considered during permitting and land management actions.

A coalition of more than 125 organizations built upon previous modeling efforts to identify wildlife movement and habitat connectivity in the nine-county San Fransisco Bay Area and regions to the north and south to identify connectivity to the broader landscape (Penrod et al. 2013). Landscape blocks and linkages were modeled using a hierarchical framework that incorporated biological and human-built environments, including species-specific connectivity models for San Joaquin kit fox, tule elk, and burrowing owl. Potential cores and patches of breeding habitat were identified for each

[2] AB-2785 Wildlife Conservation: Habitat Connectivity (2008); AB-498 Wildlife Conservation: Wildlife Corridors (2015); AB-2087 Regional Conservation Investment Strategies (2016); CA Fish and Game Code §1930.5 (2021); SB-790 Wildlife Connectivity Actions: Compensatory Mitigation Credits (2021)

species. Potential breeding habitat was defined as an area that had a high habitat suitability ranking and was large enough to support breeding and other activities within the focal species' home range or territory. Potential breeding habitat was categorized in two size classes: 1) *potential core*, defined as a continuous area of suitable habitat large enough to sustain at least 50 individuals; potential cores are probably capable of supporting the species for several generations, and 2) *breeding patch*, defined as an area of suitable habitat large enough to support successful reproduction by a pair of individuals (perhaps more if home ranges overlap greatly) but smaller than a potential core area. Patches are useful to the species if they are linked through dispersal to other patches and core areas. Areas that did not meet the requirements for a potential core or breeding patch but still contributed to the landscape design were considered *less than patch*.

According to connectivity models, the mitigation site is located along the eastern edge of the Upper Inner Coast Range linkage, which is situated in the middle of the approximately 185-mile-long landscape block that connects the East Bay regional open space network to the north to the foothills of the Cholame Valley and Sunflower Valley in Monterey and Kings Counties to the south, respectively (Figure 6). Accordingly, movement corridors and linkages are oriented north/south to accommodate the topographic funnels of the Diablo Range, various valleys, and anthropogenic disturbances. The Upper Inner Coast Range linkage is the largest of the linkages (i.e., 1,500 square miles), and more than half of the area is enrolled in the Williamson Act rangeland program. The mitigation site is part of a Critical Linkages Network of privately managed lands that connect priority conservation habitat at the Simon Newman Ranch north of the mitigation site to lands south of the Reservoir (Penrod et al. 2013). The majority of the mitigation site has been identified as core connectivity habitat for San Joaquin kit fox that connects populations along the periphery of the San Joaquin Valley, and patch connectivity habitat for tule elk connecting foothill and coast range populations (Figure 6).

Roadways present barriers to wildlife movement and connectivity by fragmenting habitat; they also increase the likelihood of vehicle-related mortality (Lanman et al. 2022). State Route 152 and I-5 to the north and adjacent to the mitigation site are considered priority barriers to movement (Langner 2019; CDFW 2022). Underpasses, or undercrossings, beneath traffic infrastructure provide safe passage for wildlife and facilitate habitat connectivity. The concrete underpass along Los Banos Creek at the northeast corner of the mitigation site provides safe passage beneath I-5 and facilitates movement between the valley and foothill populations. Maintaining access to underpasses has been identified as a priority to reduce mortality and enhance habitat connectivity (CDFW 2022).

Field Surveys

Field surveys conducted at the mitigation site included remote camera monitoring to detect the presence of San Joaquin kit fox and other special-status species, multiple rounds of raptor nest surveys to document Swainson's hawk nest occupancy, and a site reconnaissance survey to evaluate the suitability of the habitat for species-status species (Table 3-4). Site visits to swap the camera data card and, in 2024, decommission the remote camera monitoring effort were concurrent with the raptor nest survey and site reconnaissance surveys.

Table 3-4. Biological Surveys Conducted at the Las Camas Mitigation Site, Merced County, California

Survey Type	Date Conducted
Remote Camera Monitoring	April 3– 17, 2024

Raptor Nest Survey	March 24, 30, 31, 2022 April 7, 12, 14, 2022 March 28, 30, 31, 2023 April 10, 12, 19, 2023 April 17, 2024
Site Reconnaissance Survey	April 3, 9, 17, 2024

Remote Camera Monitoring

Eleven species were photographed by the five remote camera stations throughout the mitigation site (Table 3-5). San Joaquin kit fox was documented by Camera A traveling along the electrical transmission corridor on April 4, 7, and 8. The fox was traveling mostly to the south along the corridor between 11:00 p.m. and 2:15 a.m. Several photographs documented the fox with a prey item in its jaws. Other species of special concern included American badger (*Taxidea taxus*), photographed by Camera D traversing the grassland adjacent to the Reservoir.

Table 3-5. Wildlife Detected on Remote Cameras Deployed at the Las Camas Mitigation Site, Merced County, California

		Camera ID				
Common Name	**Scientific Name**	**A**	**B**	**C**	**D**	**E**
American badger	*Taxidea taxus*				X	
bobcat	*Lynx rufus*			X	X	
common raven	*Corvus corax*	X			X	X
cottontail rabbit	*Sylvilagus* spp.		X	X		X
coyote	*Canis latrans*		X	X	X	
domesticated cattle	*Bos taurus*	X	X		X	X
feral hog	*Sus scrofa*		X	X		
jackrabbit spp.	*Lepus* spp.					X
mule deer	*Odocoileus hemionus*				X	
San Joaquin kit fox	*Vulpes macrotis*	X				
western meadowlark	*Sturnella neglecta*	X				X

Raptor Nest Surveys

Raptor nest surveys conducted in spring 2022 involved a comparatively smaller area in the eastern portion of the 2024 mitigation site and 0.5-mile buffer. Four occupied nests were documented along the Reservoir and Los Banos Creek, including nests for two great horned owls and two red-tailed hawks. The 2023 raptor nest survey documented three nests occupied by red-tailed hawk, Two of the nests were located outside the mitigation site and were occupied by red-tailed hawk in 2022; a third nest was located on a transmission tower in the northwest corner of the mitigation site but could not relocated in during 2024 surveys. The 2024 raptor nest survey documented two nests occupied by red-tailed hawk, five nests occupied by common raven, and six unoccupied nests that did not show signs of nesting during the current nesting season. The majority of nests were built on the top platforms of the electrical transmission towers that bisect the mitigation site. Trees that would be suitable for Swainson's hawk nesting are mostly absent from the mitigation site, except for gum (*Eucalyptus* spp.), western sycamore (*Platanus racemosa*), and Russian olive (*Elaeagnus angustifolia*) trees along Los Banos Creek. Burrows suitable for burrowing owls were found throughout the mitigation site; these consisted of burrows excavated by the numerous fossorial mammal species documented during the remote camera monitoring.

Site Reconnaissance

The site reconnaissance occurred over multiple days during the remote camera monitoring effort. Land cover types mapped by USFS (2019) were inconsistent with field conditions, particularly along Los Banos Creek where shrub scrub and aquatic habitats were present (Figure 7). Several fish-bearing water bodies were present along Los Banos Creek, which had cattails (*Typha* spp.), tules (*Schoenoplectus acutus*), and other aquatic vegetation lining its banks. Higher bird species richness was documented around the aquatic habitats of Los Banos Creek and the Reservoir. Swainson's hawk and bald eagle were observed separately as well as during antagonistic behaviors in the vicinity of the Reservoir, which indicates territory defense associated with nesting behavior.

Uplands habitats were consistent with the mapped land cover and included grasslands dominated by slim oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft brome (*B. hordeaceus*), cheat grass (*B. tectorum*), spreading alkaliweed (*Cressa truxillensis*), saltgrass (*Distichlis spicata*), wall barley (*Hordeum murinum*), and beardless wild rye (*Elymus triticoides*). Forbs included mustards (*Brassicus* spp.), storksbill filaree (*Erodium cicutarium*), perennial pepperwood (*Lepidium latifolium*), and western salsify (*Tragopogon dubius*). Incidental observations of special-status species during site visits included multiple observations of Swainson's hawk perched on the ground and flying and a herd of 11 male tule elk bedded down and grazing along Salt Creek (Figure 7). Sign of American badger, California ground squirrel, and coyote were observed throughout the mitigation site, which provides nest burrows for burrowing owls. Small mammal populations including colonies of California ground squirrels, jackrabbit and hare species were documented throughout the mitigation site and provide an important prey base for Swainson's hawk and San Joaquin kit fox.

Conclusion

Given existing habitat conditions, documented biological resources, and the geographic location of the mitigation site, acquisition of the conservation easement would provide a strategic and biological benefit. The mitigation site in context with broader conservation initiatives, including the Aqua Fria Multi-Species Conservation Bank, CDFW-managed easements, and the Reservoir, would add to the large block of undeveloped lands on the western edge of the San Joaquin Valley and be consistent with conservation initiatives set forth by county, state, and federal management plans, all of which describe the need for habitat conservation and broader landscape connectivity.

Chapter 4
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Figures

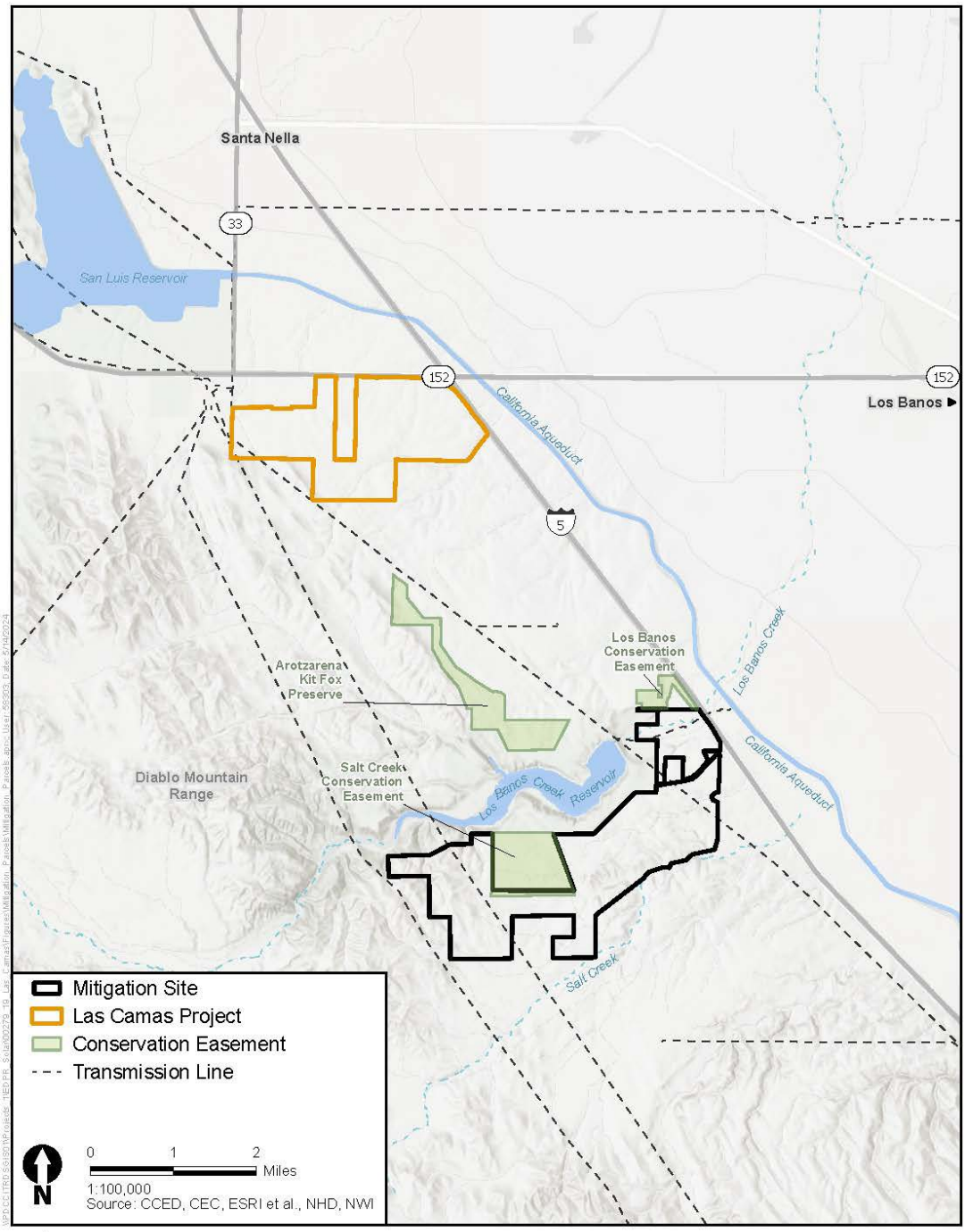

Figure 1
Vicinity Map

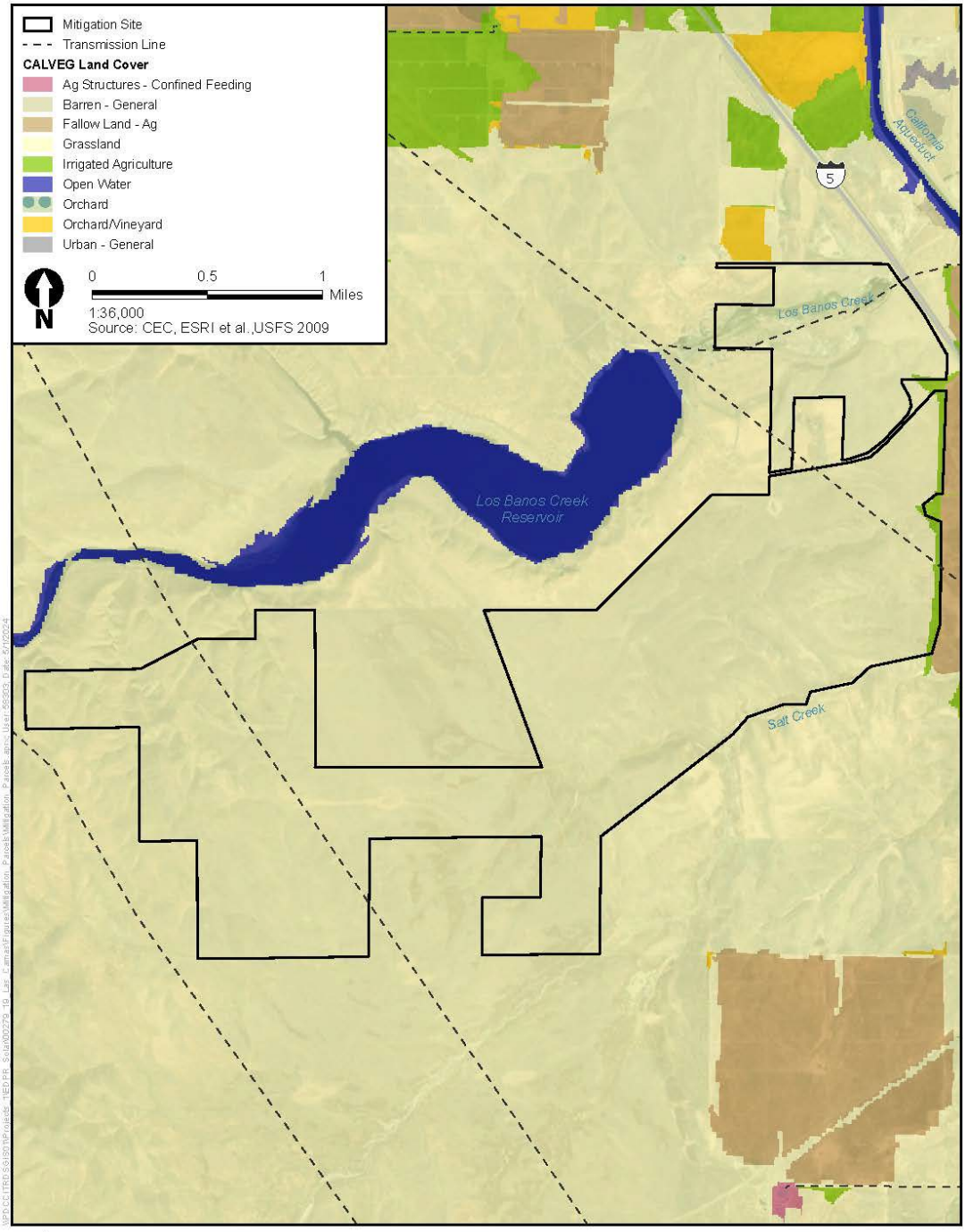

Figure 2
CALVEG Land Cover

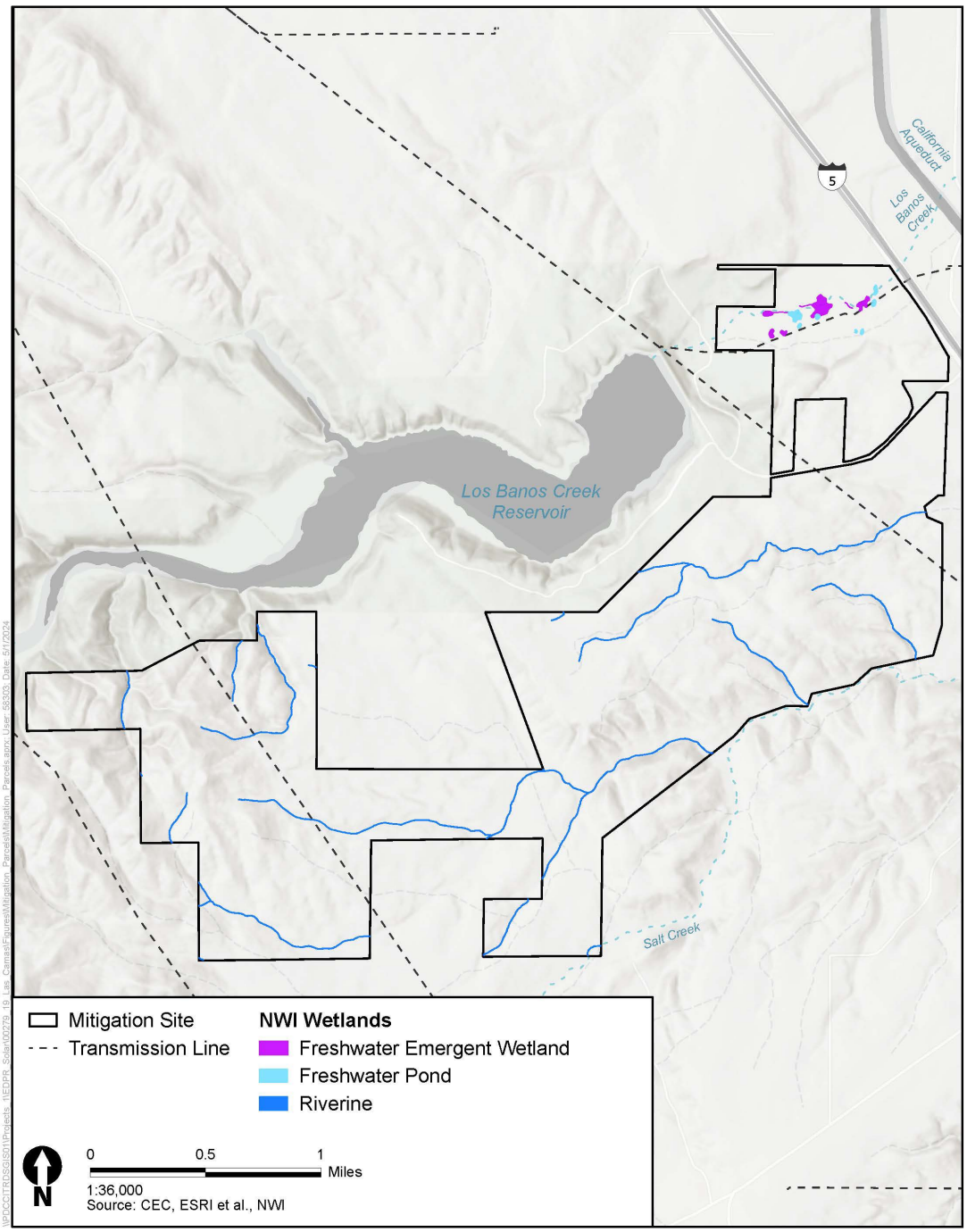

Figure 3
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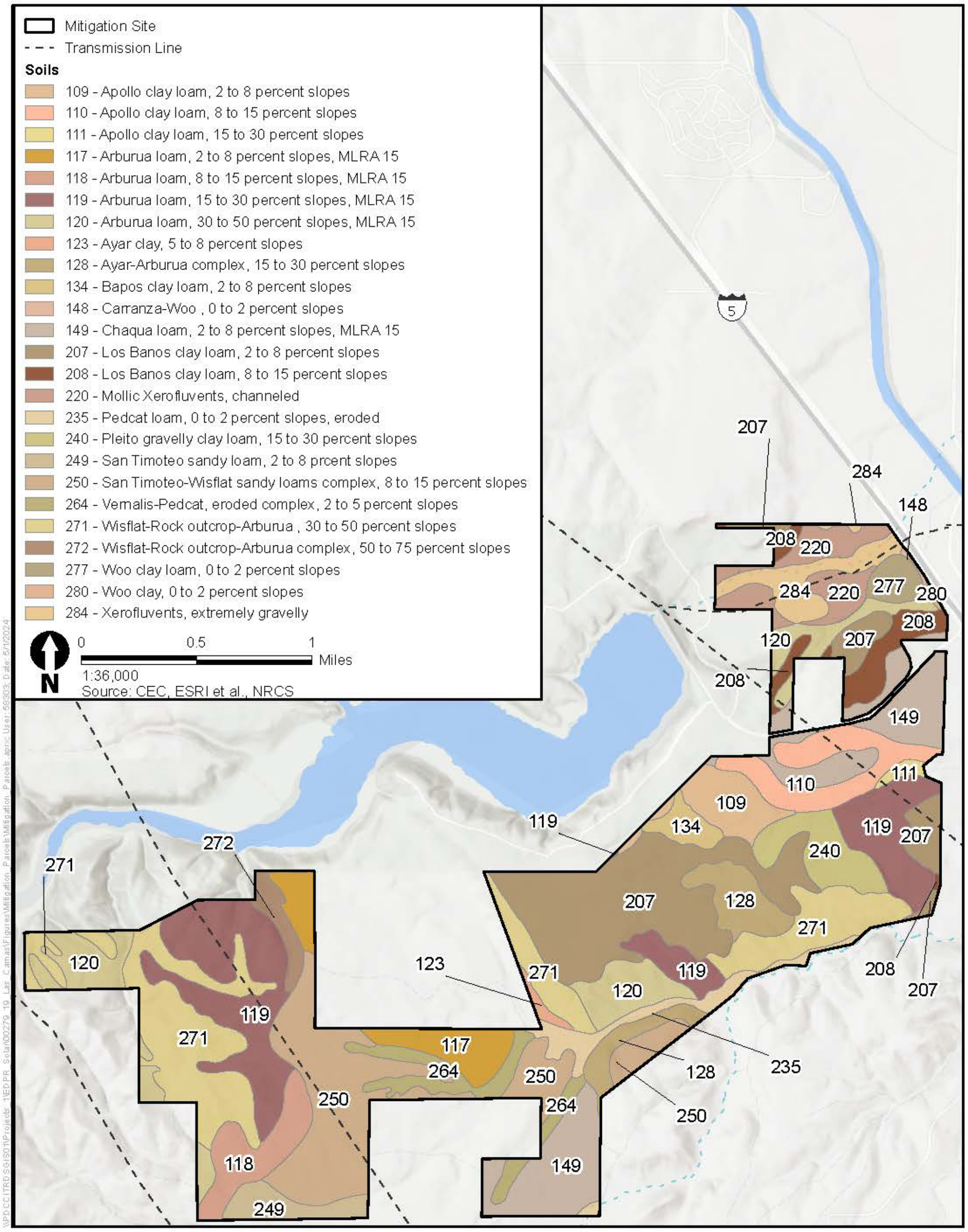

Figure 4
NRCS Soils

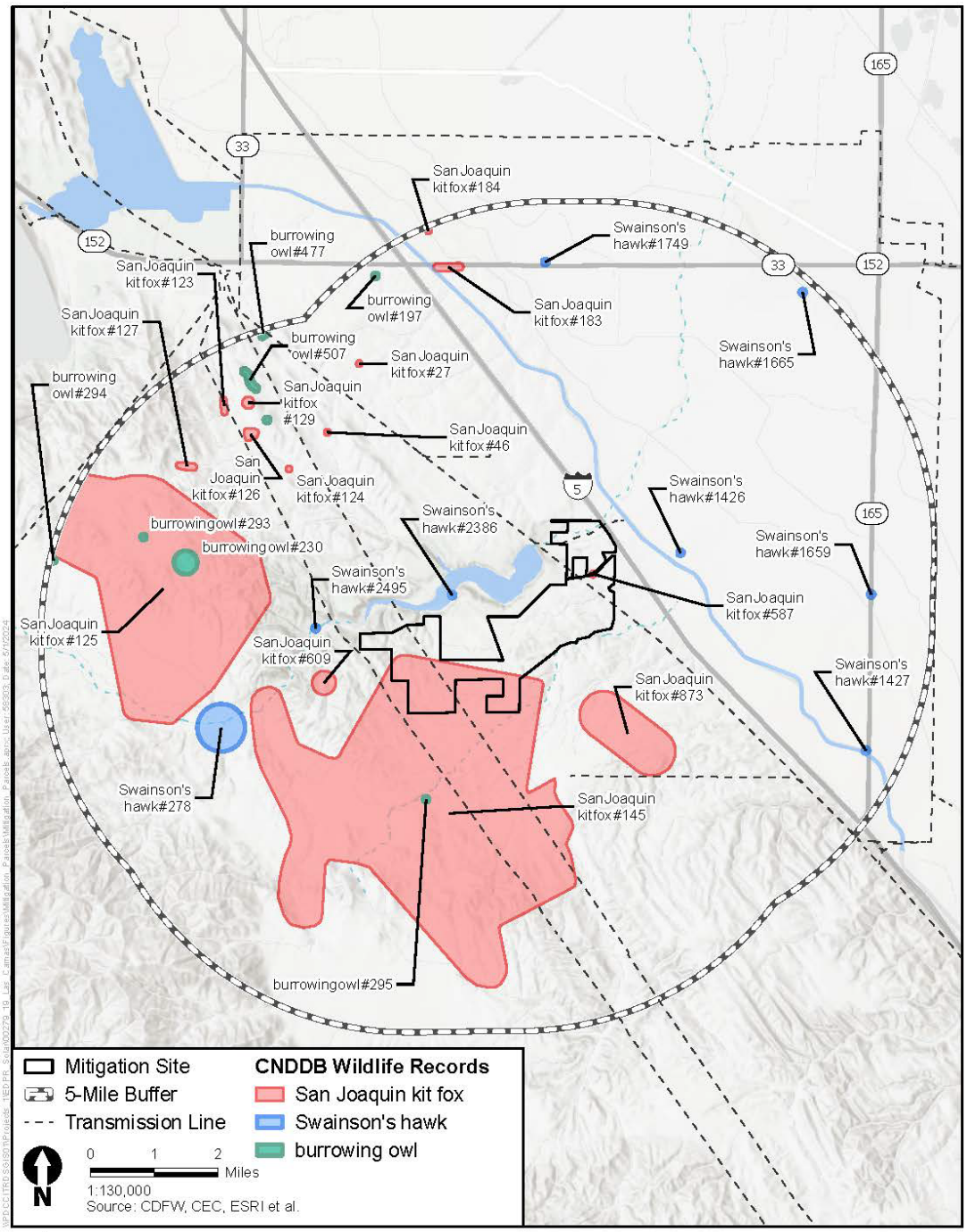

Figure 5
CNDDB Wildlife Records

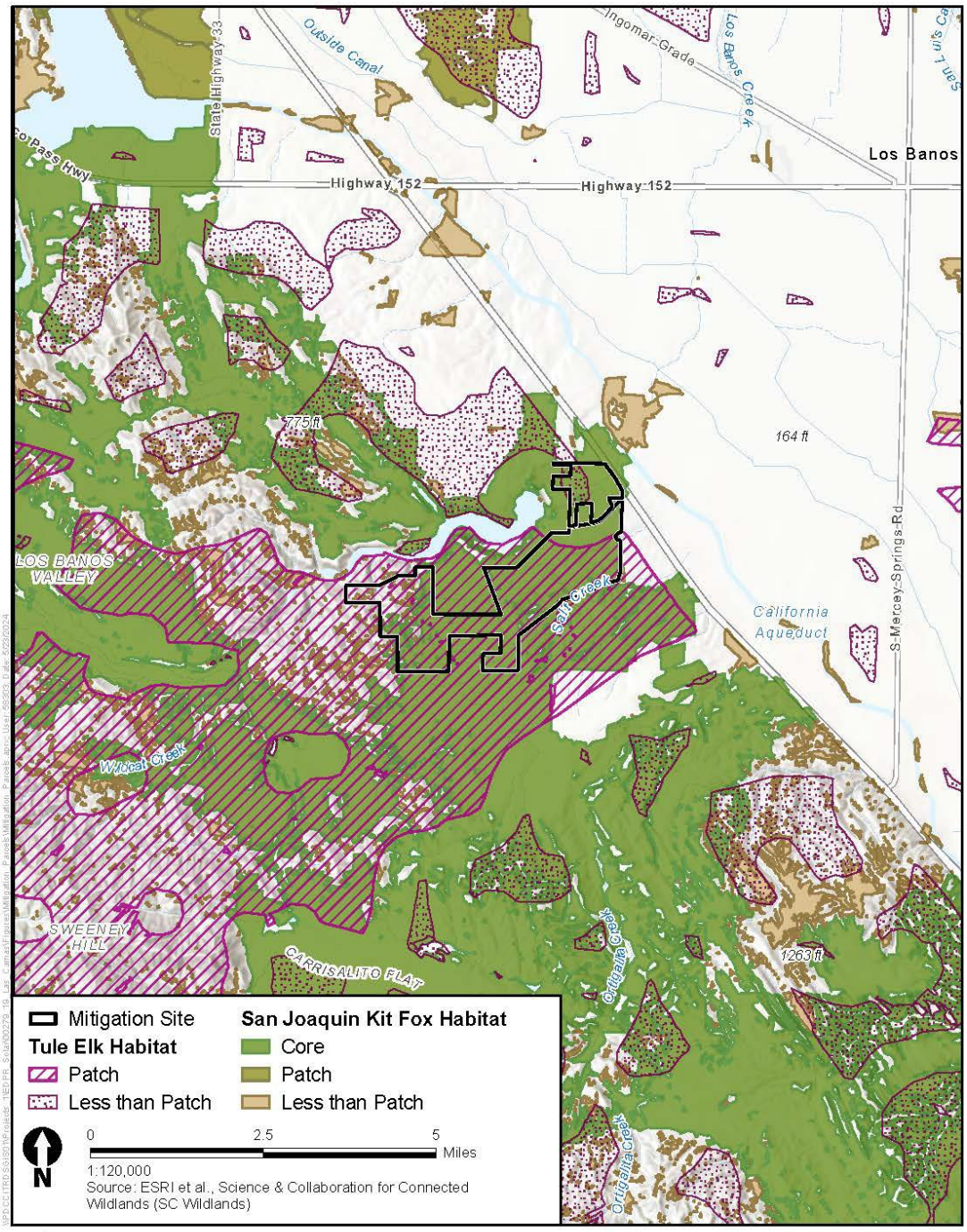

Figure 6
Movement and Connectivity

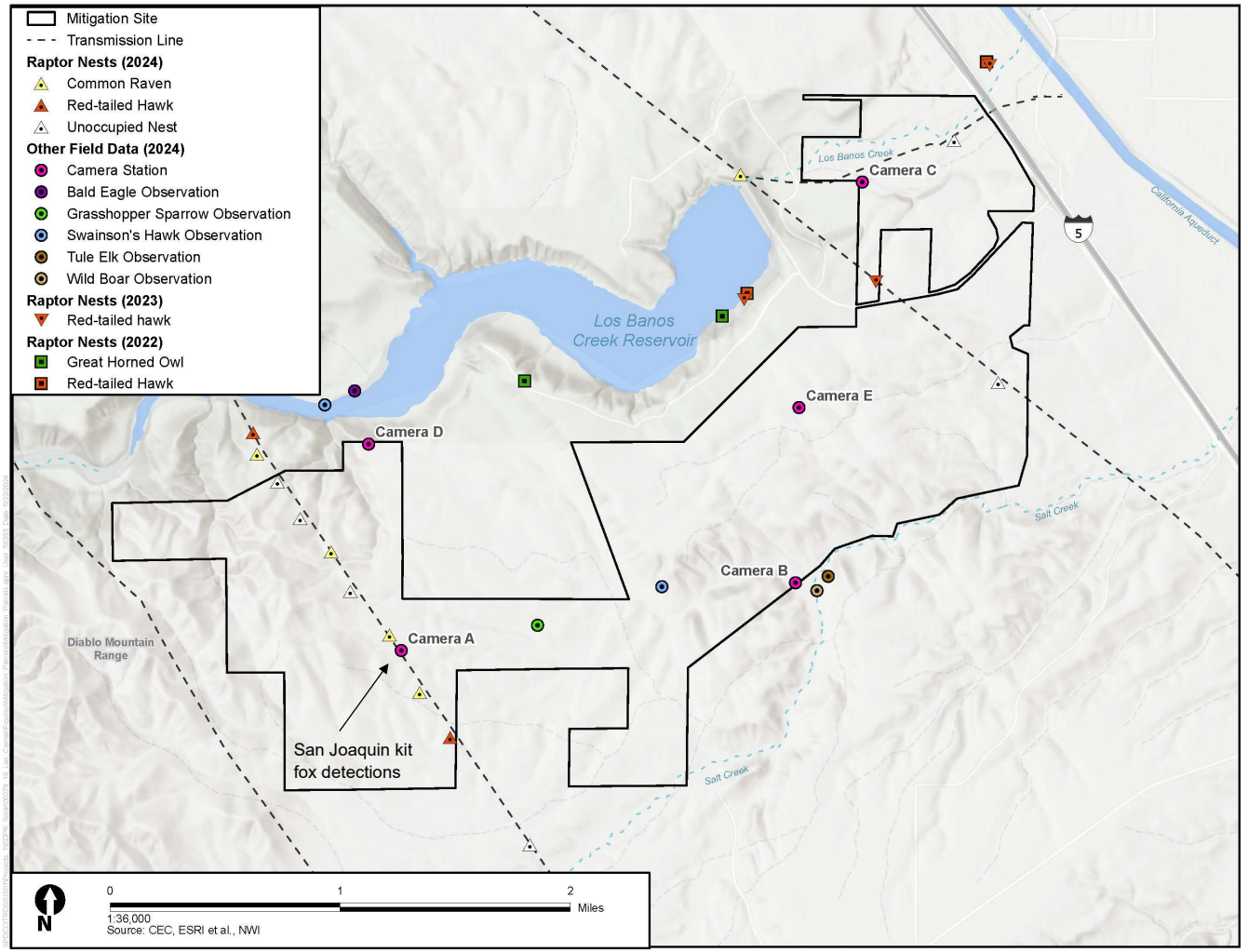

Figure 7
Field Survey Results

Appendix A
Wildlife Observed During Biological Surveys at the Proposed Mitigation Site

Appendix A. Wildlife Observed during Biological Surveys within the Las Camas Mitigation Site, Merced County, California

Common Name	Scientific Name
Birds	
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
bald eagle	*Haliaeetus leucocephalus*
black phoebe	*Sayornis nigricans*
black-necked stilt	*Himantopus mexicanus*
bufflehead	*Bucephala albeola*
cinnamon teal	*Anas cyanoptera*
common gallinule	*Gallinula galeata*
common goldeneye	*Bucephala clangula*
common raven	*Corvus corax*
European starling	*Sturnus vulgaris*
great blue heron	*Ardea herodias*
great egret	*Ardea alba*
great horned owl	*Bubo virginianus*
great-tailed grackle	*Quiscalus mexicanus*
horned lark	*Eremophila alpestris*
house sparrow	*Passer domesticus*
killdeer	*Charadrius vociferus*
mallard	*Anas platyrhynchos*
mourning dove	*Zenaida macroura*
pied-billed grebe	*Podilymbus podiceps*
red-tailed hawk	*Buteo jamaicensis*
red-winged blackbird	*Agelaius phoeniceus*
ruddy duck	*Oxyura jamaicensis*
Swainson's hawk	*Buteo swainsonii*
turkey vulture	*Cathartes aura*
western grebe	*Aechmophorus occidentalis*
western kingbird	*Tyrannus verticalis*
western meadowlark	*Sturnella neglecta*

Common Name	Scientific Name
Mammals	
American badger	*Taxidea taxus*
bobcat	*Lynx rufus*
California ground squirrel	*Otospermophilus beecheyi*
cottontail rabbit	*Sylvilagus* spp.
coyote	*Canis latrans*
feral hog	*Sus scrofa*
jackrabbit spp.	*Lepus* spp.
mule deer	*Odocoileus hemionus*
San Joaquin kit fox	*Vulpes macrotis*
tule elk	*Cervus canadensis nannodes*
Amphibians	
American bullfrog	*Lithobates catesbeianus*

Appendix B
NRCS Soils Data

Appendix B. Soils Capability Classes and Composition within the Las Camas Mitigation Site, Merced County, California

Map Unit	Map Unit Name	Capability Class	Total	Percent
111	Apollo clay loam, 15–30 percent slopes	6e	8.2	0.3%
109	Apollo clay loam, 2–8 percent slopes[a]	4e	62.3	2.4%
110	Apollo clay loam, 8–15 percent slopes	4e	92.2	3.6%
119	Arburua loam, 15–30 percent slopes	6e	308.1	11.9%
117	Arburua loam, 2–8 percent slopes	4e	83.2	3.2%
120	Arburua loam, 30–50 percent slopes	7e	164.8	6.4%
118	Arburua loam, 8–15 percent slopes	4e	74.8	2.9%
123	Ayar clay, 5–8 percent slopes[a]	4e	8.1	0.3%
128	Ayar-Arburua complex, 15–30 percent slopes	4e	88.3	3.4%
134	Bapos clay loam, 2–8 percent slopes	4e	25.9	1.0%
148	Carranza-Woo, 0–2 percent slopes	4s	2.4	0.1%
149	Chaqua loam, 2–8 percent slopes[a]	4e	223.1	8.6%
207	Los Banos clay loam, 2–8 percent slopes[a]	4e	347.4	13.4%
208	Los Banos clay loam, 8–15 percent slopes	4e	64.0	2.5%
220	Mollic Xerofluvents, channeled[b]	6w	84.9	3.3%
235	Pedcat loam, 0–2 percent slopes, eroded[b]	7w	52.0	2.0%
240	Pleito gravelly clay loam, 15–30 percent slopes	4e	68.3	2.6%
249	San Timoteo sandy loam, 2–8 percent slopes	4e	41.2	1.6%
250	San Timoteo-Wisflat sandy loams complex, 8–15 percent slopes	6e	268.8	10.4%
264	Vernalis-Pedcat, eroded complex, 2–5 percent slopes	4e	68.7	2.7%
271	Wisflat-Rock outcrop-Arburua, 30–50 percent slopes	7e	334.9	12.9%
272	Wisflat-Rock outcrop-Arburua complex, 50–75 percent slopes	7e	27.0	1.0%
277	Woo clay loam, 0–2 percent slopes	4s	25.7	1.0%
280	Woo clay, 0–2 percent slopes[a]	4c	1.7	0.1%
284	Xerofluvents, extremely gravelly[b]	6s	60.1	2.3%
		Total	**2,586.2**	**100.0%**

a. soils considered prime farmland, if irrigated;

b. hydric soil

Capability Class

- Class I soils have slight limitations that restrict their use.
- Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
- Class III soils have severe limitations that reduce the choice of plant or require special conservation practices, or both.
- Class IV soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
- Class V soils have little or no hazard or erosion, but they have other limitations, they are impractical to remove, and their use is limited mainly to pastureland, rangeland, forestland, or wildlife habitat.
- Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use mainly to pastureland, rangeland, forestland, or wildlife habitat.
- Class VII soils have very severe limitations that make them unsuited to cultivation and restrict their use mainly to rangeland, forestland, or wildlife habitat.
- Class VIII soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use mainly to recreation, wildlife habitat, water supply, or aesthetic purposes.

e = erosion, unless close-growing plant cover is maintained;

w = water in or on the soil interferes with plant growth or cultivation;

s = soil is limited mainly because it is shallow, droughty, or stony; and

c = chief limitation is climate that is very cold or very dry.

Appendix C
Representative Photographs


29.47 inHg
48°F
04/08/2023 02:13AM 0000A


29.75 inHg
71°F
04/10/2024 07:28PM 0000C


29.81 inHg
35°F
04/06/2024 01:49AM CAMERA1
29.79 inHg
50°F
04/06/2024 08:41AM CAMERA1

Appendix B

Revised Draft SEIR Appendix 1-1, Proposed Draft HCP Avoidance and Minimization Measures

Revised Appendix 1-1
Las Camas Solar Project Proposed Draft Habitat Conservation Plan (HCP) Avoidance and Minimization Measures

The Habitat Conservation Plan (HCP) and state incidental take permit for the solar project is being prepared as part of the incidental take permit process in coordination with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). ~~The Draft HCP will be released for public review and comment by USFWS in accordance with Endangered Species Act (ESA) requirements.~~ This appendix lists the proposed avoidance and minimization measures that are anticipated to be included in the ~~Draft~~ HCP to avoid or minimize the taking of covered species. The primary focus of these measures is to avoid or minimize take of individual kit foxes (i.e., death, injury, or harm) and impacts on habitat, such as grassland areas that may be affected by covered activities. While substantial changes to these measures are not anticipated, it is noted that these measures are subject to change based on feedback from USFWS and CDFW.

Any changes to the HCP since publication of the Draft SEIR affecting any impact identified in ~~this~~ the Draft SEIR ~~will be~~ are identified and evaluated in the Final SEIR along with any required changes to mitigation measures identified in the Draft SEIR.

Project Design Features

The following measures will be incorporated into the design of the project to avoid and minimize impacts on San Joaquin kit fox.

- **PD-1**: Security fences installed on the perimeter of the solar facility shall be designed to enable passage of kit foxes and their prey, while impeding the passage of kit fox predators, such as coyotes and larger domestic dogs. All fencing will leave a 4- 6-inch opening between the fence mesh and the ground. The bottom of the fence fabric will be knuckled (wrapped back to form a smooth edge) to protect wildlife that pass under the fence. Where topography results in a ground to fence fabric gap that is larger than 4- to 6-inches (e.g., at drainages or transitions between flat and steep slopes), hog-wire fencing with 4 x 4-inch openings may be used to achieve permeability. Fences shall be monitored regularly to ensure that any damage or vandalism is quickly repaired.
- **PD-2**: Areas of the project site not permanently converted to infrastructure or roads shall be reseeded as grassland and managed (e.g., grazed or mowed) to allow annual grassland species and prey species to recolonize the project site.
- **PD-3**: Three underground utility easements remain open with a total area of approximately 92.79 acres have been identified to facilitate wildlife passage through the permit site (Figure 2-4).
- **PD-4**: Lighting would be used from dusk to dawn for the project substation to conform to National Electrical Safety Code (NESC) requirements and all applicable Merced County outdoor lighting codes. Other lighting requirements specifically designed to minimize effects on San Joaquin kit fox ~~shall also be implemented~~ will include:

- The number of lighting fixtures shall be limited to the minimum required for worker safety and site security.
- All illuminated areas not occupied on a continuous basis shall have switches to light the area only when it is occupied.
- All lighting shall be designed so that exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated, and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light sources are shielded to prevent light trespass outside the project boundary and neither the lamp nor the reflector interior surface would be visible from outside the footprint of the facilities. Narrow spectrum bulbs shall be used to limit the range of species affected by lighting. All lighting poles, fixtures, and hoods shall be of dark-colored material.
- Unless determined necessary by Merced County for safety or security reasons, any signs at the entry of the project site shall not be lit (reflective coating is acceptable).

General Avoidance and Minimization Measures

The following avoidance and minimization measures will be implemented when covered activities occur.

■ **GEN-1**: All employees, consultants, and contractors shall receive environmental training prior to their participation in construction activities. The avoidance and minimization measures will be outlined in the training. All personnel on the construction site shall follow these measures to avoid or reduce effects on covered species. The training shall include a printed handout (printed in both English and Spanish) that will be handed to all personnel. All employees and contractors will be required to sign a sign-in sheet indicating that they attended the training and understand the material presented. The handout will contain the following information.

- Descriptions of the San Joaquin kit fox (including photographs) and its habitat needs.
- A current report of the occurrences of the San Joaquin kit fox in the permit area.
- An explanation of the protected status of San Joaquin kit fox under the federal and state endangered species acts and legal obligations.
- Avoidance and minimization measures that shall be followed to reduce impacts on San Joaquin kit fox during project activities for which the personnel is engaged: construction, O&M, and/or decommissioning, and the penalties for not following the avoidance and mitigation measures.
- Instructions on the procedures that will be implemented if a San Joaquin kit fox is found onsite, including contact information of a biological monitor, USFWS, and CDFW personnel.

■ **GEN-2**: At least 30 days prior to the onset of ground-disturbing (i.e. any activity which requires removal or relocation of topsoil and/or subsoil) construction, O&M, or decommissioning activities, permittee will submit to the Service for approval the name(s) and credentials of a supervisory project biologist responsible for overseeing biological avoidance and minimization measures. If needed, the supervisory project biologist would oversee additional project biological monitors.

- **GEN-3**: At least one approved biological monitor will be required onsite while ground disturbing construction activity is occurring. Monitoring may cease once all ground disturbing construction activity has ceased.

- **GEN-4**: Biological monitors will have the authority to halt construction activities and shall do so in the following instances: 1) the monitor observes activities that may result in mortality or harm to covered or other listed species or 2) the monitor observes any of the avoidance and minimization measures described in this HCP are not being implemented. Work shall not resume until the situation has been rectified to the satisfaction of the supervisory project biologist. If a biological monitor orders a halt to construction activities, he or she shall immediately contact the supervisory project biologist for further instructions. As directed by the biological monitor, construction activities may resume elsewhere so long as those activities comply with all relevant avoidance and minimization measures described herein.

- **GEN-5**: All construction-related activities shall occur within designated work areas, including designated traffic and access routes.

- **GEN-6**: All construction activities shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise, except as described below. Sunrise and sunset times are established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located. Some discrete maintenance activities must occur when the facility is not generating power, at night. Those activities are authorized provided they follow all other applicable avoidance and minimization measures described herein.

- **GEN-7**: To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. Any covers that are installed will be able to be removed quickly by construction staff should the need arise. If covers require heavy equipment to lift them, some means of inspecting the inside of the hole shall be installed (e.g., Plexiglas windows) so that biological monitors can ensure no animals are trapped inside. Holes and trenches less than 2 feet deep may either be covered or be provided with escape ramps at a rate of one ramp every 100 feet. Escape ramps may be constructed of earth fill or wooden planks with a slope no steeper than 45 degrees. If wooden planks are used, perpendicular groves or rungs shall be provided to aid in traction. All holes and trenches, whether covered or uncovered, more than 2 feet deep shall be inspected prior to the start of the construction day, around midday, and at the end of each construction day as they are being covered for the night. These inspections shall occur whether or not work is occurring in that area. Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. Work shall not continue until trapped animals have moved out of or are removed from the open trench and relocated to a location outside of the active construction area.

- **GEN-8**: San Joaquin kit fox are attracted to den-like structures such as stored pipes. All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at the construction site for one or more overnight periods shall be closed off at both ends and thoroughly inspected before they are buried, capped, or otherwise used or moved in any way. If a kit fox is discovered in a pipe, that section of pipe shall not be moved until the kit fox is allowed to leave on its own volition or the USFWS and CDFW have been consulted.

- **GEN-9**: All materials staged on the project site that have the potential to attract denning kit fox shall be inspected thoroughly by the biological monitor daily and prior to being moved.

- **GEN-10**: Speed limits within the project site shall be limited to 15 miles per hour (mph) during the day. To the extent possible, night-time construction-related activity shall be minimized, but if work must be conducted at night, the speed limit shall be ~~and~~ 10 mph ~~at night~~. During construction, all project-related vehicles and equipment shall be restricted to established roads, construction areas, and designated staging areas.

- **GEN-11**: Food-related trash shall be disposed of in closed containers and removed from the project site at least once daily.

- **GEN-12**: Construction personnel will not be permitted to bring pets or firearms onto the project site. Firearms may be carried by authorized security personnel if deemed necessary during construction or operations, so long as security personnel attend all training required herein.

- **GEN-13**: Within 1 working day of finding a dead, sick, or injured covered species on the project site, the biologist shall notify the USFWS and CDFW orally and within 3 working days in writing. Notification in writing shall include the date, time, and location where the specimen was found and information about the conditions under which it was found.

- **GEN-14**: A map of the location of all observations of covered species observed during preconstruction surveys and during monitoring shall be prepared and submitted to the USFWS and CDFW. This information will also be submitted to the California Natural Diversity Database.

- **GEN-15**: A Revegetation Plan shall be prepared for the project in coordination with CDFW. Prior to project commercial operation date, all areas temporarily subject to ground disturbance, including staging areas, will be reseeded or otherwise treated using a CDFW-approved seed mixture to achieve a revegetated state according to the timelines outlined in the Revegetation Plan. The plan will be informed by and consistent with any requirements under the Stormwater Pollution Prevention Plan for the project.

- **GEN-16**: Rodenticide use on site is prohibited.

San Joaquin Kit Fox-Specific Avoidance and Minimization Measures

The following measures will be incorporated during construction, O&M, and decommissioning of the facility to avoid and minimize effects on San Joaquin kit fox. The guidelines described in U.S. Fish and Wildlife Service 2011, or the most recent version of these guidelines will be implemented, except as modified by other measures below.

- **SJKF-1**: A preconstruction survey shall be conducted before the beginning of ground disturbance, or any activity likely to affect San Joaquin kit fox. The survey may be targeted in specific areas of the project planned for ground disturbing activities, and multiple surveys may be conducted to align with construction phasing. The biologists shall conduct den searches by systematically walking transects through the project site. Transect distance will be based on the height of vegetation such that 100% visual coverage of the project site is achieved. If a potential or known den is found during the survey, the biologist will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. Dens will be classified into the den status categories defined by U.S. Fish and Wildlife Service (2011). A report of the preconstruction survey shall be submitted to the USFWS.

- **SJKF-2**: If potential San Joaquin kit fox den sites are located on the project site and within 200 feet of active construction, during or prior to ground disturbing activities, the status of the dens shall be evaluated and they shall be monitored by an approved biologist. The biologist will use an infrared

beam camera and track plates or powder, to determine if the den is currently being used. The camera and track plates will be placed at the burrow for a minimum of 5 consecutive days. Other signs of occupancy (e.g., scat, fur) will be searched for in and around the burrow and, if found, documented with photographs.

- **SJKF-3**: Construction activities shall be prohibited within exclusion zones around suitable burrows, based on their type. There would be an exception for vehicle traffic on roads that existed prior to discovery of the suitable burrow. The configuration of exclusion zones around San Joaquin kit fox dens should have the radius measured outward from the entrance or cluster of entrances, as follows.
    - *Potential den*: a 50-foot avoidance buffer will be used when kit fox occupation is expected but not confirmed.
    - *Known Den:* A 100-foot avoidance buffer shall be used if kit fox activity is observed. Flagging and/or stakes with flagging attached shall be installed between the work area and the known den site at a minimum distance of 100 feet from the den. The flagging shall be maintained until construction-related disturbances have ceased
    - *Natal/pupping den*: USFWS shall be contacted for technical advice to establish an appropriate buffer~~, but buffer shall be at least 100 feet and shall not exceed 200 feet~~.
- **SJKF-4**: When potential den sites are monitored as described above in measure SJKF-2, and it is determined that kit foxes are not using a den site, it will be demoted to the status of unoccupied burrow. Unoccupied burrows can be collapsed under the supervision of a biologist, provided no other listed species are inside, or they can be temporarily blocked with sandbags or similar methods, so that they do not become occupied during construction. This latter approach is preferred for unoccupied burrows that will not be excavated during construction activities.
- **SJKF-5**: The Applicant shall install artificial escape tunnels every 500 feet along the western boundary of the project fence and every 500 feet along each of the movement corridors inside of the project fence. The escape tunnels should be of similar design as those presented in Harrison et al. (2011).
- **SJKF-6**: The supervisory project biologist will be the contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The supervisory project biologist will be identified during the employee education program and their name and telephone number shall be provided to all project employees.
- **SJKF-7**: Immediately upon notification to the supervisory project biologist of an inadvertent killing, ~~or~~ injury, or entrapment to a San Joaquin kit fox, the supervisory project biologist will contact the CDFW State Dispatch at (916) 445-0045 and the USFWS, Endangered Species Division, Sacramento California at (916) 414-6600.

Appendix C

Take Avoidance Plan for the PG&E Substation Modifications for the Las Camas Solar Project

TAKE AVOIDANCE PLAN FOR THE PG&E SUBSTATION MODIFICATIONS FOR THE LAS CAMAS SOLAR PROJECT

PREPARED FOR:

EDPR CA SOLAR PARK III LLC
Mr. Patrick Cousineau
Environmental Project Manager
710 NW 14th Ave., Suite 250
Portland, OR 97209
971.219.6702

PREPARED BY:

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Sacramento, CA 95814
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July 2024

Contents

Introduction

EDPR CA Solar Park III LLC, a wholly owned subsidiary of EDPR Renewables North America, (Proponent) is planning to construct and operate the Las Camas Solar facility located in western Merced County. The solar facility would be connected to the electrical grid via an approximately 0.4-mile generation tie ("gen-tie") line to the existing PG&E Los Banos Substation located northwest of the solar development (Figure 1).

Proponent will obtain Incidental take permits (ITPs) from the U.S. Fish and Wildlife Service and the California Fish Department of Fish and Wildlife for constructing the solar facility. Incidental take coverage will not be extended to the PG&E substation modification activities or included in the ITPs. PG&E will construct modifications to the existing Los Banos Substation to accommodate interconnection of the solar facility. The Proponent and PG&E are not seeking ITP coverage for the substation expansion because of the low-quality habitat that is present and because "take" in the form of direct mortality will be avoided. This avoidance plan (Plan) describes measures PG&E will implement to avoid direct mortality of state and federally listed species during construction of the PG&E substation modifications (Project).

The PG&E substation modification activities involves moving the existing fence line outward to the south and east on existing substation property, to accommodate the additional equipment required, including new electric equipment, circuit breakers, bus structures, 70-kilovolt disconnect switches, transformers, protective relaying, metering and control equipment, telemetering equipment, an electric grounding system, and underground conduits or trench systems. The area within the modified fence would be graveled and encompass an additional approximately 450,000 square feet (10.3 acres) of existing PG&E-owned substation property. Construction of the substation modifications is anticipated to occur in Fall 2024.

A field survey at the PG&E substation modification area (Survey Area) was conducted in April 2022. Land use is dominated by upland, non-native annual grassland habitat. The expansion area is located adjacent to the existing PG&E facility which is a graveled and paved facility with frequent human disturbance. A truck stop and housing development are located less than 500 feet east of the substation area and add additional human disturbance and domestic pets that reduce the suitability of the habitat in the substation expansion areas to support special status species.

No special-status species, or sign of special-status species, were observed within the Survey Area during the reconnaissance survey. Numerous California ground squirrel (*Otospermophilus beecheyi*) burrows were observed in the Project area during the survey. The Survey Area did not contain any burrows in 2022 that appeared to be utilized by San Joaquin kit fox (*Vulpes macrotis mutica,* FE/ST) (e.g., 5-8 inch openings displaying dirt berms and/or matted vegetation adjacent to entrances, kit fox tacks, scat, or prey remains) or burrowing owl (*Athene cunicularia,* SSC) (e.g., 4-6 inch openings displaying whitewash, feathers, prey remains, or pellets). However, due to known CNDDB occurrences of both species near the Survey Area, both species may utilize Survey Area for dispersal and foraging. Since the survey was conducted two years ago, the area has the potential to have burrows that may meet the size criteria to be considered potential denning habitat for San Joaquin kit fox (SJKF). The Survey Area is considered the northern extent of the SJKF's current range.

Kangaroo rat (*Dipodomys* spp.) burrows (e.g., relatively small openings with evidence of tracks or scat) were absent from the Survey Area. The blunt-nosed leopard lizard (*Gambelia silus*, FE/FP)

habitat within the Survey Area was marginal, since low, drought-tolerant shrubs were absent. Blunt-nosed leopard lizards were not included in this Plan due to the species range mostly occurring to the south, lack of recent records within 5 miles of the Project, and marginal upland habitat in the region to support this species. Swainson's hawk (*Buteo swainsoni,* ST) nesting habitat (e.g., large, mature trees) was absent from the Survey Area, but potential foraging habitat (e.g., annual grassland with rodent prey base) is present throughout the Survey Area and there is a known nesting occurrence located approximately 0.3 miles east of the Survey Area. California tiger salamanders (*Ambystoma californiense)* were not included in this Plan because suitable breeding habitat within 1.24-miles of the Project is not present, and 2-year protocol-level sampling of potential breeding habitat has not resulted in confirmed species presence.

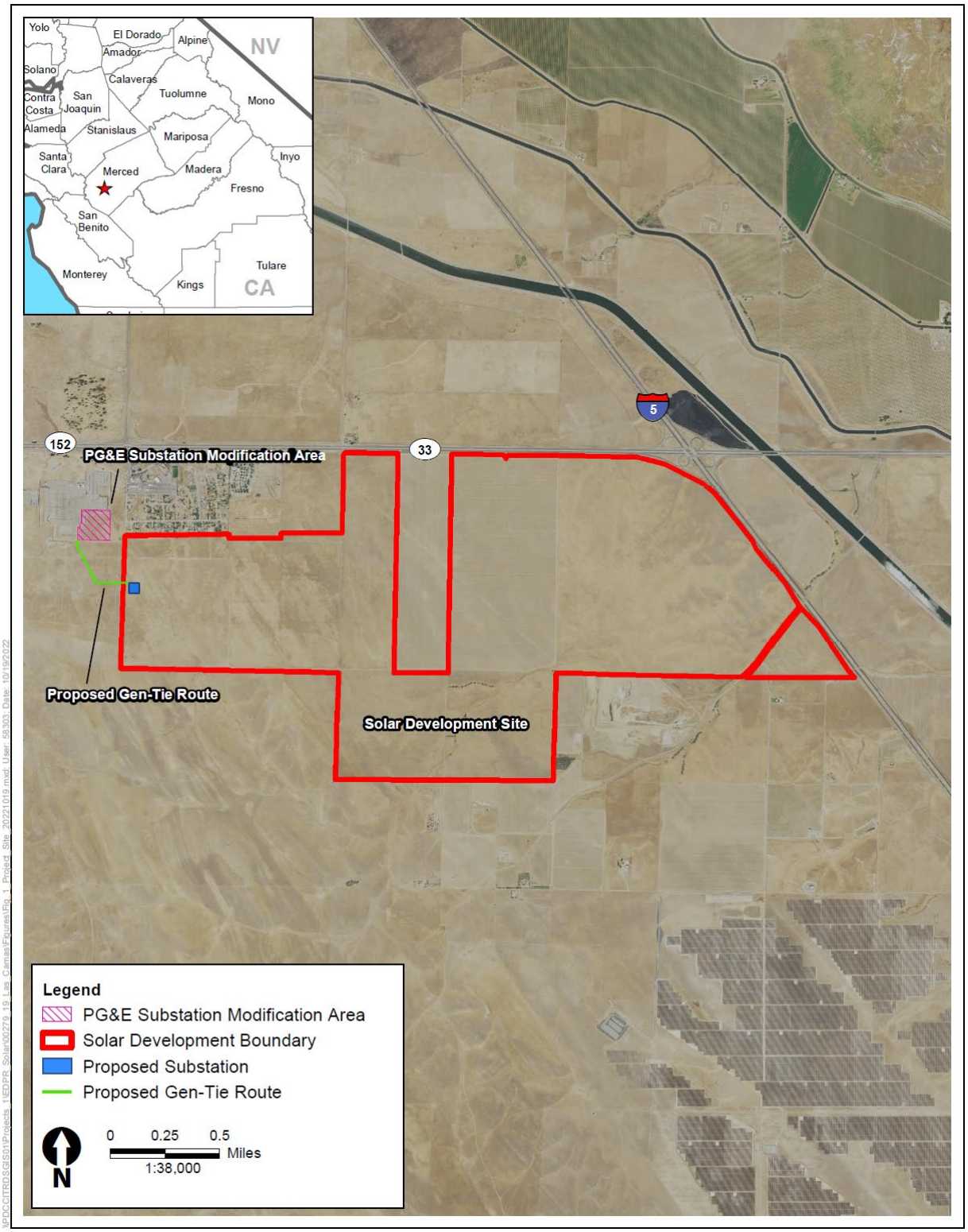


Figure 1. Project Site

The measures identified in this Plan have been used in agency consultation and CEQA compliance for the Las Camas solar project for SJKF and burrowing owl. This Plan is intended to address the following activities which, without Plan implementation, could result in injury or mortality to individuals of SJKF and burrowing owls:

- Clearing, grubbing, and grading the entire expansion site.
- Vehicular traffic which has the potential to strike individual SJKF or collapse burrows with SJKF and burrowing owls.
- Operation of construction equipment which could directly harm or disturb individual SJKF and burrowing owls.
- Trenching and digging during construction which could entrap SJKF if present.
- Trash management which has the potential to attract predators (coyotes, red foxes, or domestic dogs).
- Accidental spills of fuels, lubricants, or industrial chemicals that could directly or indirectly poison SJKF and burrowing owls or their prey.

To avoid injury or mortality to SJKF and burrowing owls from these activities, the following measures will be implemented prior to and during substation modifications activities.

Avoidance Measures and Species Survey Requirements

1. Prior to starting work at the Project, all construction personnel associated with the Project will attend a worker education training program, conducted by a qualified biologist, to train the personnel on the natural history of the SJKF and western burrowing owl, and all avoidance measures and best management practices. A species fact sheet will be developed prior to the training and will be distributed to all personnel that attend the training.
2. As described in the USFWS guidelines, the preconstruction survey for SJKF at the Project will be conducted no less than 14 days and no more than 30 days before the beginning of ground disturbance, or any activity likely to affect SJKF. The biologists will conduct den searches by systematically walking transects through the area proposed for disturbance and a buffer area of 200-feet. Transect distance should be based on the height of vegetation such that 100% visual coverage of the surveyed area is achieved. If a potential den is found during the survey, the biologists will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. A potential den is defined as any subterranean hole within the species range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a SJKF. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g. coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for SJKF use. The biologists will also determine the status of the dens and map the features. Dens will be classified using criteria defined by USFWS' 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit guidance document (Seemeasure #6 for additional information).
3. Based on the results of the den search survey, the biologist will commence den monitoring. Den monitoring will occur for a minimum of four consecutive days to determine occupancy status. Potential dens will be monitored using a tack medium at the den entrance and with remote

cameras placed at the den entrance to capture any use of the den by SJKF. If, after four days of monitoring and no activity has been detected, the den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately., If any den initially considered to be a potential den is determined to be currently or previously used by a SJKF then all construction activities shall cease, and the USFWS and CDFW shall be notified immediately.

4. Upon the completion of the burrow monitoring effort, grading of the site and exclusion fencing would be installed around the Project such that the habitat would no longer be present and no SJKF would be able to enter the site. Temporary exclusion fencing or the permanent perimeter wall may be installed. A qualified biologist would be present during the fence installation and site grading. If the security wall is installed prior to grubbing and grading the site, the biologist will monitor the installation of the fence. Once the security wall is installed the site will not be accessible to SJKF and monitoring at the expansion site will no longer be required.
5. After completion of grading activities, all temporary exclusion fencing (until installation of the security wall is complete) at the Project will be inspected daily by trained construction staff. Any damage to the fencing will be repaired immediately such that no SJKF can enter the expansion site.
6. Exclusion zones will be established around potential and known dens outside the direct impact of the substation expansion area. The exclusion zones will include:
    - Potential den – 50 feet
    - Known den – 100 feet
    - Natal/Pupping den (occupied and unoccupied) – USFWS must be contacted.
7. Conduct a burrowing owl survey no less than 14 days prior to grubbing and grading the site.
8. Grubbing and grading the substation expansion area will occur outside the breeding season for burrowing owls.
9. Install one-way doors to passively remove any occupied nonbreeding, burrowing owls from the substation expansion area prior to grubbing and grading the site. Monitor the one-way doors for 48 hours.

Avoidance Measures During Construction

The following measures will be incorporated during substation modification to avoid effects on SJKF and burrowing owl.

1. Qualified biological monitor(s) will be onsite during all construction activities during installation of the exclusion fencing and grading.
2. During construction, the qualified biologist will have the authority to order a halt to construction activities in the following instances: (1) a biological monitor observes activities have caused or are likely to cause mortality or harm to a listed species, or (2) a biological monitor observes any of the avoidance measures described in this avoidance plan are not being implemented properly. Construction will resume when either the listed species moves out of harm's way on its own or the avoidance and minimization measures that are not being implemented properly are rectified.

3. Vehicles will not exceed a speed limit of 15 miles per hour (mph). All project-related vehicles and equipment will be restricted to established roads, construction areas, and established staging areas.
4. If any state or federally listed wildlife is found in the work area during construction the animal will be allowed to move outside of the work area on its own. Biologists will not be allowed to trap or move the listed species offsite.
5. SJKF are attracted to den-like structures such as pipes. All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at the construction site (outside the exclusion fence area) for one or more overnight periods shall be thoroughly inspected before they are buried, capped, or otherwise used or moved in any way. If a SJKF is discovered in a pipe, that section of pipe shall not be moved until the SJKF is allowed to leave unimpeded.
6. Construction activities would be prohibited or greatly restricted within exclusion zones around suitable SJKF dens, based on their type that are located outside the substation expansion area. The configuration of exclusion zones around SJKF dens should have the radius measured outward from the entrance or cluster of entrances.
    - Potential den – 50 feet.
    - Known den – 100 feet.
7. Anyone who operates a motor vehicle or heavy equipment in the Project area prior to exclusion fencing being in place will check for listed species underneath parked vehicles/equipment before each use. If a listed species is found underneath a parked vehicle, the vehicle operator will contact the monitoring biologist immediately prior to moving the vehicle. The listed species will be allowed to move out of harm's way on their own prior to moving the vehicle.
8. To reduce attracting SJKF and increasing the presence of predators, trash will be disposed of in closed/covered containers.
9. No pets or firearms will be permitted on the project site.
10. Rodenticides will not be used on the project site.
11. Fueling of equipment will take place off-site or in the substation expansion area. Equipment will be checked for leaks prior to operation and repaired as necessary. Spill kits will be available to respond to potential and actual spills in accordance with the stormwater pollution prevention plan (SWPPP) and Spill Prevention, Control, and Countermeasure Plan.
12. Project, erosion, and sediment control best management practices will be implemented through the SWPPP.
13. No monofilament plastic will be used for erosion control.
14. Hazardous materials will be properly stored and disposed of. All spills of hazardous materials will be immediately cleaned, and any contaminated soil will be properly collected and disposed of at a licensed facility.

Summary Memorandum and Documenting Take

After the temporary exclusionary fencing or permanent perimeter wall has been installed, the designated biologist will prepare a memorandum that summarizes the findings of the survey work

and adherence to avoidance and minimization measures. Pre- during- and post-construction photos will be taken at representative locations within the substation expansion area.

If a listed species is found dead or injured on the Project, the designated biologist should be contacted immediately. The biologist will be the contact for any employee or contractor who might inadvertently kill or injure a listed species or who finds a dead, injured, or trapped listed species. The contact information for the designated biologist will be provided during environmental training and their name and phone number will be provided in the environmental handout. Upon such incident or finding, construction activities at the Project site would stop and the biologist will immediately contact PG&E and the Project Proponent who will contact USFWS and/or CDFW (one or both agencies would be notified depending upon the listing status of the animal) by telephone. The Sacramento USFWS office and/or CDFW will be notified in writing within 3 working days of the accidental death or injury of a listed species during project-related activities. Written notification to the agencies would include the date, time, and location of the incident, and any other pertinent information.

Appendix D

Adequacy of Biological Surveys for the Las Camas Solar Project Memo

Memorandum

To:	Patrick Cousineau, EDP Renewables
From:	Steve Avery Principal Wildlife Biologist, ICF
Date:	September 26, 2024
Re:	**Adequacy of Biological Surveys for the Las Camas Solar Project**

The Las Camas Solar Project (Project) proposes to develop an approximately 1,741-acre site situated on unincorporated land in western Merced County, California. During the public review process of the Project's Draft Subsequent Environmental Impact Report (SEIR; ICF 2024), the Project received comments from the California Department of Fish and Wildlife and California Native Plant Society regarding whether the biological surveys that were conducted for the Project were sufficient to determine species presence/absence at and use of the Project site. Special-status species including Crotch's bumble bee (*Bombus crotchii*), California tiger salamander (*Ambystoma californiense*), blunt-nosed leopard lizard (*Gambelia sila*), and burrowing owl (*Athene cunicularia*) in particular were named in the comments as species requiring additional focused surveys. Refer to Chapter 3, *Response to Comments*, in the Final SEIR (in preparation) for the full comment letters and responses.

As discussed within Chapter 3.4, *Biological Resources*, of the Project's Draft SEIR (ICF 2024), the Project site has a history of disturbance and is composed primarily of fallowed agricultural land that has become nonnative annual grassland with minimal plant diversity and a dense coverage generally throughout the site. In addition, portions of the site are undergoing continuing disturbance through grazing and dryland farming. Habitat suitability, including the presence of certain habitat components needed to meet a species' life history needs, and the potential for special-status wildlife to occur at the site, was assessed during Project field surveys. In addition to extensive Project botanical and aquatic resources surveys, the following wildlife surveys were conducted by ICF biologists between 2019 and 2023:

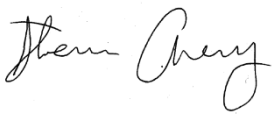
- General wildlife habitat assessment and potential for species occurrence surveys (2019)

- Protocol-level/formal habitat assessment for California red-legged frog and California tiger salamander (2019; field surveys and California tiger salamander assessment updated in 2022)
- 2-year protocol-level aquatic surveys for California tiger salamander (2023 and 2024)
- Protocol-level Swainson's hawk breeding surveys (2022 and 2023)

Surveys were conducted over multiple days across various years, seasons, and environmental conditions. The California tiger salamander and Swainson's hawk surveys were conducted multiple times within each season, providing the biologists with abundant opportunities to observe wildlife use of the Project site and the habitats found within the site. We do not recommend additional surveys to inform the analysis in the SEIR.

Data from the field surveys, in addition to the literature review conducted for the SEIR, which combine to provide an accurate picture of baseline conditions at the Project site, informed the analysis for each special-status species that was evaluated. Refer to Chapter 3.4, *Biological Resources*, of the Project's Draft SEIR (ICF 2024) for the literature review references, and for the results of each species' analysis. The historical and ongoing disturbance of the site in combination with the lack of species-specific habitat features (e.g., density of grass coverage and lack of exposed ground with abundant burrows or burrow surrogates), lack of nearby and/or recent occurrences, and negative surveys results for California tiger salamander, led to the conclusion that the site provided only marginal or unsuitable habitat for many of the special-status wildlife that might occur at the site.

Sincerely,



Steve Avery
Principal Wildlife Biologist

References

ICF. 2024. *Las Camas Solar Project Draft Subsequent Environmental Impact Report*. SCH: 2021080196. Draft. May. (ICF 104366.) Sacramento, CA. Prepared for County of Merced, Merced, CA.

Appendix E

2024 California Tiger Salamander Habitat Assessment

Memorandum

To:	Patrick Cousineau, EDP Renewables North America LLC
From:	Sean O'Brien, Senior Biologist, ICF
Date:	July 17, 2024
Re:	**Results of 2024 Aquatic Surveys for Larval California Tiger Salamander at the Las Camas Solar Development Project in Merced County, California (USFWS # RP-Las Camas Solar-2023-0301)**

Introduction

ICF was contracted to conduct aquatic surveys for the federally and state listed California tiger salamander (CTS, *Ambystoma californiense*) larvae at the Las Camas Solar Development Project (project) in Merced County (USFWS # RP-Las Camas Solar-2023-0301). The project proponent, EDPR CA Solar Park III LLC a wholly owned subsidiary of EDP Renewables, North America LLC, is proposing a solar development on the approximately 1,751-acre site. The project is located on the San Luis Dam and Volta U.S. Geological Survey 7.5-minute quadrangles (Attachment A). The approximate center of the project is Universal Transverse Mercator [UTM] Easting: 679142.51, UTM Northing: 4101436.37, UTM Zone: 10S.

Ten potential breeding habitats for CTS were previously identified within 1.24-miles of the proposed project area (Attachment B) (ICF 2023a). All habitats are artificial in nature and consist of stock ponds formed by placing berms within ephemeral drainages and topographic lows adjacent to or within roads. All 10 habitats were surveyed in 2023 when they were inundated during the above average 2022/2023 rainfall year (ICF 2023b). The purpose of the 2024 surveys is to determine if California tiger salamander is present in the vicinity of the project (i.e., within 1.24 miles) to inform environmental documents and avoidance and minimization measures. The remainder of this report discusses the methods and results of 2024 aquatic surveys for CTS larvae in the vicinity of the project area.

Methods

On March 6, 2024, ICF senior biologist Sean O'Brien submitted a request for authorization to the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to conduct aquatic surveys for CTS at 10 potential breeding habitats. Mr. O'Brien received approval to conduct surveys from USFWS on March 12, 2024 (Attachment C). Aquatic surveys for CTS larvae were conducted in accordance with ICF Jones & Stokes permit # TE-795934-14 and Ms. Jennifer Hale's (formerly Haire) Memorandum of Understanding and scientific collecting permit

(#005452/SC-200960001-21267-001), on which Mr. O'Brien is listed as an independent researcher (Attachment B) (USFWS # RP-Las Camas Solar-2023-0301). Surveys followed the methodology in USFWS and CDFW's (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander*.

Surveys for larval California tiger salamanders were conducted by Mr. O'Brien and ICF wildlife biologist Andrew Manning on March 19, April 11, and May 7, 2024. CTS larvae sampling was conducted with either a seine or dipnets dependent on the sampled habitat's hydroperiod (inundation depth and duration). Dipnets were used in habitats that did not pond enough water to use seines or when vegetation was over abundant. The seine was 10 feet wide and 4 feet tall with 1/8-inch diameter mesh and were fitted with floats at the top and weights at the bottom (with the net bottom contacting the sediments and the net top at the water surface), which assists in keeping the net open. Habitats were sufficiently dipnetted and/or seined to detect CTS larvae presence while minimizing disturbance to the habitat and the risk of injuring larvae while sampling. After each seining and/or dipnetting event, the net was quickly viewed for organisms. Presence and abundance data were recorded for all observed amphibians and aquatic invertebrates captured while sampling. All captured organisms were quickly returned to the habitat from which they were collected after identification and enumeration.

Water depths (maximum and average [in inches]), water temperature (degrees Fahrenheit; °F), water turbidity (clear, tea colored, milky), and sampling method (seine or dipnet) of each habitat were recorded on standardized field data forms. Water depths were measured using net handles marked with one-inch increments and water temperature was measured using a digital thermometer. The approximate percent of the habitat sampled (by volume) using either seines or dipnets was also recorded. Information from the standardized field data forms was entered into Microsoft Excel spreadsheets (Attachment D). Additionally, representative photographs were taken of the monitored habitats and the species observed (Attachment E).

Results

Only two of the habitats surveyed (Aq.1 and Aq. 6a) were inundated during all survey visits. The other eight habitats do not inundate for sufficient durations to support CTS breeding (i.e., 10 weeks of continuous inundation) during average or below average rainfall years.

The larvae of Sierran treefrog (*Pseudacris sierra*), a non-special status species, was observed during the aquatic surveys. No CTS larvae were observed. Aquatic survey data is provided in Attachment D. Representative photographs of the habitats sampled and species observed are provided in Attachment E.

Discussion

The 2023/2024 wet-season was an overall above average rainfall year for the project vicinity (National Oceanic and Atmospheric Administration [NOAA] 2024), with approximately 108% of average rainfall (9.87 inches of rainfall during the 2023/2024 wet-season versus 9.15 inches of

rainfall during average wet-seasons). Thus, the 2024 aquatic surveys for larval CTS were conducted during a year that met the minimum of 70% of average wet-season rainfall requirement in USFWS and CDFW's (2003) guidance. There was sufficient precipitation in the project vicinity to allow for the successful detection of CTS larvae, if present. The absence of CTS larvae during 2023 (ICF 2023b) and 2024 indicates that the project does not support CTS during above average or average rainfall years.

For comparison to a reference site, CTS larvae were detected at the nearby Westervelt Ecological Services Dutchman Creek Conservation Bank (approximate center coordinates [WGS84] of CTS detection: 37.178362°, -120.397718° located approximately 32 miles to the northeast of the project on January 17 and 31, February 22, March 13 and 15, April 17 and 24, and May 16, 2024 (Marks pers. comm.). This information supports the conclusion that CTS larvae would have been detectable in the project vicinity if they were present.

REFERENCES

ICF. 2023a. *Biological Resources Evaluation for the Las Camas Solar Development Project*. Prepared for: EDPR CA Solar Park III LLC. Prepared by: ICF. Dated: February 2023.

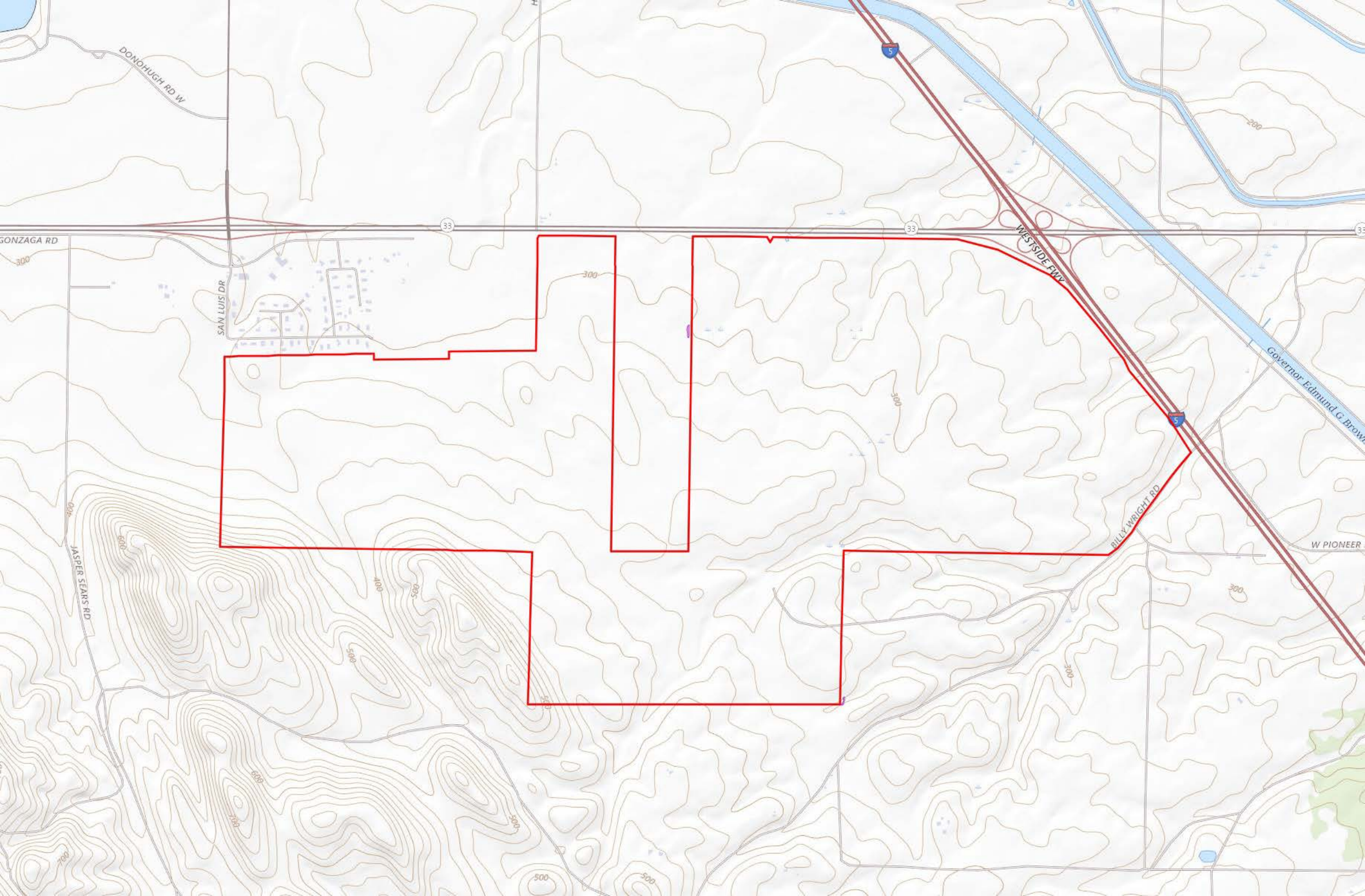
ICF. 2023b. Aquatic Surveys for Larval California Tiger Salamander at the Las Camas Solar Development Project in Merced County, California (USFWS # RP-Las Camas Solar-2023-0301). 33 pp. Dated: May 26, 2023.

National Oceanic and Atmospheric Administration. 2024. California Nevada River Forecast Center. Monthly Precipitation Summary Water Year 2024. Data from Los Banos Weather Station. Available online: https://www.cnrfc.noaa.gov/monthly_precip.php

U.S. Fish and Wildlife and California Department of Fish and Wildlife. 2003. Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander. 11pp. Dated: October 2003.

Marks, Charlotte. Senior Ecologist. Westervelt Ecological Services. Sacramento, CA. May 21, 2024—Email with Sean O'Brien, ICF regarding California tiger salamander observations.

Attachment A: Las Camas Solar Development Project Location on USGS Topographic Map (Project Boundary shown in Red)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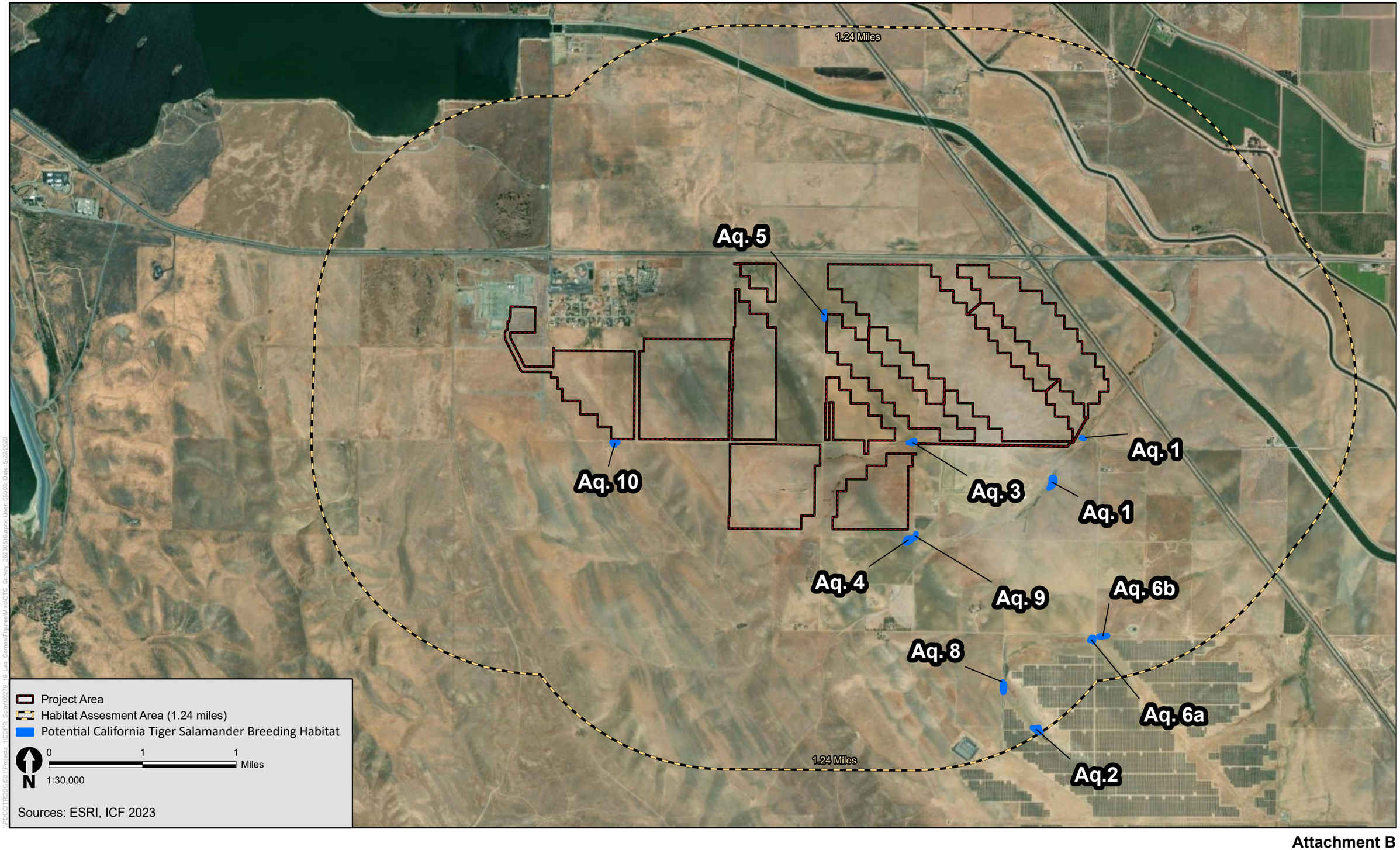
Attachment B: California Tiger Salamander Potential Aquatic Breeding Habitat within 1.24-Miles of the Project



Attachment B
California Tiger Salamander Occurrence Records and Potential Aquatic Breeding Habitat Within 1.24 Miles of the Project

Attachment C: USFWS Authorization

From:	SFWO Permits, FW8
To:	O"Brien, Sean; Garcia, Justin@Wildlife
Cc:	Cole, Patricia; Kong, Lauren M; Patterson, Laura@Wildlife; Sinclair, Crystal@Wildlife; Avery, Steve; Hale, Jennifer
Subject:	Re: [EXTERNAL] RE: Survey Request, RP-Las Camas Solar-2023-0301 , Wet CTS, # TE-795934-14
Date:	Tuesday, March 12, 2024 2:45:22 PM
Attachments:	image001.png image002.png

Sean O'Brien,
By this email message, you are authorized to conduct aquatic California tiger salamander surveys, as specified in your March 6, 2024 email request, per the conditions of recovery permits (795934-14). Surveys will be conducted at the Las Camas Solar Development Project in Merced County, CA. Please remember to carry a copy of your permit while doing the work and to follow the terms and conditions therein. This authorization does not include access to the property which must be arranged with the landowner or manager. Please let us know if the activities are not performed as authorized, or if they are done by a different permittee under a separate authorization.

Please send survey reports with the reference # RP-Las Camas Solar-2024-0312 to FW8_SFWO_Permits@fws.gov. Reports for vernal pool branchiopod surveys are due in 90 days. Reports for all other species are due in 45 days, unless otherwise specified in your permit. Reports should include, at minimum:

1. The reference number to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization,
2. A copy of this email,
3. The names of all persons involved in each activity and their recovery permit numbers, if applicable,
4. A U.S. Geological Survey topographic map (1:24,000 scale or larger scale) depicting the location of the project site, survey area, and location(s) of species in as precise a manner as possible.
5. All other information required in the 45/90 Day Survey Report section of your permit.

Thank you,

Lauren

10(a)(1)(A) Recovery Permitting | **Sacramento Fish and Wildlife Office**
Pacific Southwest Region | U.S. Fish and Wildlife Service

Helpful Links: ePermits | Pacific Southwest Recovery Permitting | Minimum Qualifications | Survey Protocols | Vernal Pool Branchiopod Practical Exams

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From: O'Brien, Sean <Sean.O'Brien@icf.com>
Sent: Wednesday, March 6, 2024 8:37 AM
To: SFWO Permits, FW8 <FW8_SFWO_Permits@fws.gov>; Garcia, Justin@Wildlife <Justin.Garcia@wildlife.ca.gov>
Cc: Cole, Patricia <Patricia_Cole@fws.gov>; Kong, Lauren M <lauren_kong@fws.gov>; Patterson, Laura@Wildlife <laura.patterson@wildlife.ca.gov>; Sinclair, Crystal@Wildlife <Crystal.Sinclair@wildlife.ca.gov>; Avery, Steve <Steve.Avery@icf.com>; Hale, Jennifer <Jennifer.Hale@icf.com>
Subject: [EXTERNAL] RE: Survey Request, RP-Las Camas Solar-2023-0301 , Wet CTS, # TE-795934-14

Hello USFWS Recovery Permit Coordinator and Mr. Garcia,

Please see attached request for approval to commence aquatic surveys for California tiger salamander for the Las Camas Solar Development Project in Merced County, California under ICF Jones & Stokes permit # TE-795934-14 and Ms. Hale' s Memorandum of Understanding (MOU) associated with her scientific collecting permit (#005452/SC-200960001-21267-001).

No California tiger salamanders were found during last year's (2023) aquatic surveys (USFWS # RP-Las Camas Solar-2023-0301). ICF intends to re-survey potential California tiger salamander breeding habitats in 2024.

We would like to conduct the first survey in mid-March, therefore would appreciate an expedited response. If you have any questions, please let us know.

We appreciate your consideration,

Sean O'Brien, M.S. | Senior Biologist | Sean.O'Brien@icf.com | Mobile 916.626.2247
ICF | 980 9th Street Suite #1200, Sacramento, CA 95814 |

From: Kong, Lauren M <lauren_kong@fws.gov> **On Behalf Of** SFWO Permits, FW8
Sent: Wednesday, March 1, 2023 11:25 AM
To: O'Brien, Sean <Sean.O'Brien@icf.com>
Cc: Cole, Patricia <Patricia_Cole@fws.gov>; Kong, Lauren M <lauren_kong@fws.gov>
Subject: Survey Notification Approval, RP-Las Camas Solar-2023-0301 , Wet CTS

Sean O'Brien,

By this email message, you are authorized to conduct aquatic California tiger salamander surveys as specified in your February 16, 2023 email request, per the conditions of your recovery permit (TE-795934-13.2). Surveys will be conducted at the Las Camas Solar Development Project in Merced County, CA. Please remember to carry a copy of your permit while doing the work and to follow the terms and conditions therein. This authorization does not include access to the property which must be arranged with the landowner or manager. Please let us know if the activities are not performed as authorized, or if they are done by a different permittee under a separate authorization.

Please send survey reports with the reference # RP-Las Camas Solar-2023-0301 to FW8_SFWO_Permits@fws.gov and the San Joaquin Valley Division Supervisor, Patricia Cole (patricia_cole@fws.gov). Reports for vernal pool branchiopod surveys are due in 90 days. Reports for all other species are due in 45 days. Reports should include, at minimum:

1. The reference number to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization,
2. A copy of this authorization letter,
3. The names of all persons involved in each activity and their recovery permit numbers, if applicable,
4. A U.S. Geological Survey topographic map (1:24,000 scale) depicting the location of the project site, survey area, and location(s) of species in as precise a manner as possible.
5. All other information required in the 45/90 Day Survey Report section of your permit.

Thank you,

Lauren

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10(a)(1)(A) Recovery Permitting
Sacramento Fish and Wildlife Office | USFWS
Pacific Southwest Recovery Permitting
Survey Protocols | Minimum Qualifications

notifications, reports, and permit inquiries to this email address: FW8_SFWO_Permits@fws.gov.

Attachment D: CTS Aquatic Survey Data Forms

Attachment D: 2024 Las Camas Aquatic Surveys for CTS Larvae (Round 1)

Date: 03/18/2024

Weather: Cloud Cover: 15%, Air Temperature: 63°F

Surveyors: Sean O'Brien, Andrew Manning

Habitat No.	Habitat Measurements						Species Relative Abundances[2]				
	Water Turbidity[1]	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	Sierra treefrog larvae	Backswimmers	Midge larvae	Predaceous diving beetle	Water boatmen
Aq. 1	TC	58	36	24	S/D	100	NC	C	NC	NC	C
Aq. 2	-	-	-	-	-	-					
Aq. 3	-	-	-	-	-	-					
Aq. 4	-	-	-	-	-	-					
Aq. 5	-	-	-	-	-	-					
Aq. 6a	TC	59	26	16	S/D	100	C	VC	R	NC	C
Aq. 6b	-	-	-	-	-	-					
Aq. 7	-	-	-	-	-	-					
Aq. 8	-	-	-	-	-	-					
Aq. 9	-	-	-	-	-	-					
Aq. 10	-	-	-	-	-	-					

[1]C = Clear, TC = Tea Colored, M = Milky

[2]R = rare (≤2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment D: 2024 Las Camas Aquatic Surveys for CTS Larvae (Round 2)

Date: 04/11/2024

Weather: Cloud Cover: 15%, Air Temperature: 74°F

Surveyors: Sean O'Brien, Andrew Manning

Habitat No.	Habitat Measurements						Species Relative Abundances[2]				
	Water Turbidity[1]	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	Sierra treefrog larvae	Backswimmers	Midge larvae	Predaceous diving beetle	Water boatmen
Aq. 1	TC	66	32	22	S/D	100	C	C	NC	NC	C
Aq. 2	-	-	-	-	-	-					
Aq. 3	-	-	-	-	-	-					
Aq. 4	-	-	-	-	-	-					
Aq. 5	-	-	-	-	-	-					
Aq. 6a	M	68	24	14	S/D	100	VC	VC	NC	NC	NC
Aq. 6b	-	-	-	-	-	-					
Aq. 7	-	-	-	-	-	-					
Aq. 8	-	-	-	-	-	-					
Aq. 9	-	-	-	-	-	-					
Aq. 10	-	-	-	-	-	-					

[1]C = Clear, TC = Tea Colored, M = Milky

[2]R = rare (≤2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment D: 2024 Las Camas Aquatic Surveys for CTS Larvae (Round 3)

Date: 05/7/2024

Weather: Cloud Cover: 0%, Air Temperature: 75°F

Surveyors: Sean O'Brien, Andrew Manning

Habitat No.	Habitat Measurements						Species Relative Abundances[2]				
	Water Turbidity[1]	Water Temperature (°F)	Maximum Depth (in)	Average Depth (in)	S=Seine, D=Dipnet	Percent of Habitat Sampled	Sierra treefrog larvae	Backswimmers	Midge larvae	Predaceous diving beetle	Water boatmen
Aq. 1	TC	67	30	20	S/D	100	VC	A	NC	NC	NC
Aq. 2	-	-	-	-	-	-					
Aq. 3	-	-	-	-	-	-					
Aq. 4	-	-	-	-	-	-					
Aq. 5	-	-	-	-	-	-					
Aq. 6a	M	69	20	12	S/D	100	VC	A	NC	NC	NC
Aq. 6b	-	-	-	-	-	-					
Aq. 7	-	-	-	-	-	-					
Aq. 8	-	-	-	-	-	-					
Aq. 9	-	-	-	-	-	-					
Aq. 10	-	-	-	-	-	-					

[1]C = Clear, TC = Tea Colored, M = Milky

[2]R = rare (≤2 individuals), NC = not common (3-10 individuals), C = common (11-50 individuals), VC = very common (51 -100 individuals), A = abundant (100+ individuals)

"-" = Dry or less than 0.5 inches of ponding water at the time of sampling

Attachment E: Representative Photographs

Photograph of Aq. 1 taken facing southwest on March 18, 2024 (1st survey round).

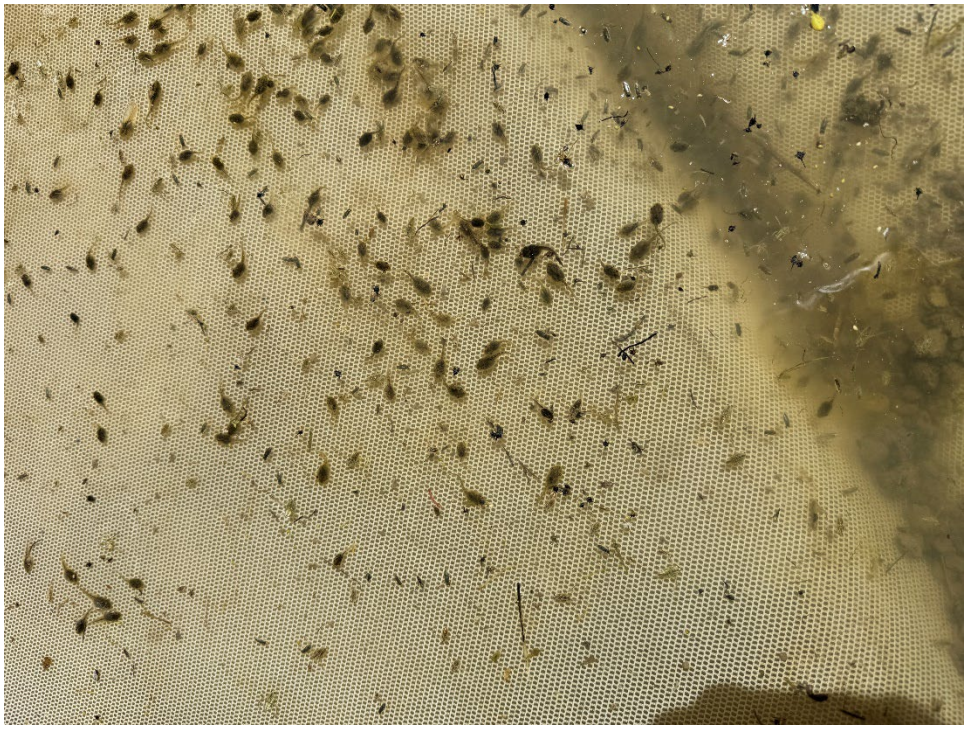
Photograph of Sierran treefrog (*Pseudacris sierra*) larvae observed in Aq. 1 on March 18, 2024 (1st survey round).

Photograph of Aq. 6a taken facing southwest on March 18, 2024 (1st survey round).

Photograph of Sierran treefrog (*Pseudacris sierra*) adult observed in Aq. 6a on March 18, 2024 (1st survey round).

Photograph of Aq. 1 taken facing southwest on April 11, 2024 (2nd survey round).

Photograph of Aq. 6a taken facing southwest on April 11, 2024 (2nd survey round).



Photograph of Sierran treefrog (*Pseudacris sierra*) larvae observed in Aq. 6a on April 11, 2024 (2nd survey round).

Photograph of Aq. 1 taken facing southwest on May 7, 2024 (3rd survey round).

Photograph of Sierran treefrog (*Pseudacris sierra*) larvae observed in Aq. 1 on May 7, 2024 (3rd survey round).

Photograph of Aq. 6a taken facing southwest on May 7, 2024 (3rd survey round).