BUREAU OF RECLAMATION

San Luis Water District Los Banos Creek Detention Reservoir Storage Program

CGB-EA-2023-021
Draft Environmental Assessment/Initial Study and Mitigated Negative Declaration

U.S. Department of the Interior

January 2024

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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1 Introduction

This Environmental Assessment (EA)/Initial Study (IS) was jointly prepared by the Bureau of Reclamation (Reclamation) as the lead Federal agency and San Luis Water District (SLWD or District) as the lead State agency to satisfy the requirements of both the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The document addresses potential environmental impacts of the SLWD's proposed Los Banos Creek Detention Reservoir Storage Program (Proposed Project). Reclamation's Federal discretionary actions (Proposed Action) associated with the Proposed Project include the following:

- Funding through the Community Action Authorization pursuant to Public Law 117-103.
- Authorization for the installation, maintenance and operation of new facilities within Reclamation right-of-way that would allow the storage of non-Los Banos Creek (LBC) water in the federally-owned Los Banos Creek Detention Reservoir (LBCDR or Reservoir).
- Facilitation of any applicable State Water Resources Control Board (SWRCB) action(s) to allow Central Valley Project (CVP) and other water sources not from LBC to be stored in the LBCDR.
- Water acquisition/exchange agreement for Central Valley Project Improvement Act (CVPIA) Incremental Level 4/Level 2 Refuge water supplies between Reclamation and the Project Participants.
- Execution of a San Joaquin River Exchange Contractors Water Authority (SJRECWA or Exchange Contractors) exchange/transfer agreement with Project Participants.

1.1 Background/Project Overview

The Los Banos Creek Detention Dam (LBCDD or Dam) and Reservoir are federally-owned and State-operated facilities that were constructed jointly by Reclamation and the California Department of Water Resources (DWR) as part of the San Luis Unit of the CVP to provide flood control protection to the San Luis Canal/California Aqueduct. Because of its proximity, the LBCDR also provides flood protection to the City of Los Banos. The California Department of Parks and Recreation (DPR) operates the public recreational facilities at LBCDR. The Dam and Reservoir are located approximately six miles southwest of the City of Los Banos. The Dam became operational in 1962 and the Reservoir has a maximum storage of 34,562 acre-feet (AF). The LBCDR is currently operated near or below the United States Army Corps of Engineers (USACE) winter period conservation pool of 20,562 AF of storage, though summer operations allow storage of 34,562 AF as authorized by the USACE guidance manual. Maintaining LBCDR storage at 20,562 AF throughout the summer and fall promotes significant evaporation of natural inflow, which otherwise would be available for downstream groundwater replenishment and

riparian use. Prior to construction of the Dam, the aquifers along the LBC received significantly more recharge from LBC flows. Appendix A shows the location of LBCDR in relation to Los Banos and the San Luis Canal. Additionally, Appendix A shows the storage curve of the Project. Currently, the Dam is strictly operated as a flood control facility during the late fall and winter months. A group of local agencies (Project Participants) propose to operate the LBCDD in the spring to route natural LBC flows to riparian lands downstream of the facility, making space available for storage. (See Appendix A) The Project Participants would then make water available for delivery into the LBCDR by using conserved water, groundwater, recovered tailwater, or water stored in the Meyers Water Bank in lieu of surface water from San Luis Reservoir (pursuant to existing Water Transfer Programs, see Appendix B, Document B-2, Document B-5 and Document B-6, which provide details regarding the Project Participant water supplies). This water would be conveyed into the available storage space in the spring and early summer. Operations would be within USACE operating rules for the facilities at the Reservoir. Stored water would be returned to the Project Participants through LBCDD in the summer or fall to meet irrigation or habitat water demands. The Project Participants consist of the SLWD, Grassland Water District (GWD), and the member agencies of the SJRECWA, which consist of Central California Irrigation District (CCID), San Luis Canal Company, Firebaugh Canal Water District, and the Columbia Canal Company.

This Proposed Action/Project would have numerous benefits including:

- Improved water supply management and reliability.
- Development of additional Incremental Level 4 (IL4) CVPIA refuge water supply, up to 2,666 AF/year.
- Increased flood control protection to downstream facilities, including communities, wetlands and infrastructure.
- Increased access to the LBCDR recreational facilities during most flood release scenarios and during low Reservoir operations.
- Increased recreational opportunities at LBCDR, along LBC and in CVPIA Refuges with a IL4 component.
- Environmental enhancements at LBCDR, along LBC, and CVPIA refuges, which would provide support to wildlife in the area, such as migratory birds and giant garter snake.
- Rural/Disadvantaged Community water supply, flood control and water quality improvements, specifically for the population in and around Los Banos.

1.1.1 Previous Project

As a first step, a proof-of-concept project was temporarily implemented in the fall of 2020. This previous project used existing SLWD pumping stations 8 and 9 to lift CVP water from the San Luis Canal into a temporary above-ground pipeline placed along the existing SLWD Lateral 9 distribution alignment. The above-ground pipeline conveyed Project Participant water allowed under a Temporary Point of Diversion Authorization from the State Water Resources Control Board (SWRCB) to the discharge point in the LBCDR from October 12, 2020, to November 30, 2020. The release of stored water was utilized for groundwater recharge via the LBC. Water was also conveyed into the Delta-Mendota Canal (DMC) for beneficial use by the Project Participants. The temporary pipeline was removed on December 7, 2020, after the 2020 Project deliveries into the Reservoir were complete.

A Temporary Water Rights Petition containing the details of the operations and sources of water was submitted to the SWRCB. This Petition was approved, and the final order and petition supplement are both included in Appendix A. Change in CVP Place of Use to store CVP water in the LBCDR is being obtained for the Project, which would allow the storage of non-LBC water in the Reservoir for release to Project Participants upon request, at a rate consistent with existing Reservoir operation criteria. Figure 1-4 of Appendix A illustrates where the conserved water and groundwater originate from.

The temporary implementation of the 2020 Project demonstrated the feasibility of operating the SLWD facilities to convey CVP water to storage in LBCDR and coordinating inflows and releases with Reclamation, DWR, and DPR to be consistent with historic operations. It also provided data regarding operational costs, installation methods and hydraulic flow conditions, which were useful in design of the proposed larger capacity facilities.

Biological and cultural studies were done along the temporary pipeline alignment, which also provided assurance to the Project Participants and Reclamation that no un-mitigatable site conditions existed. These studies and a summary of the 2020 Project can be found in Appendix B, Documents B-1, B-3, and B-4.

1.2 Purpose and Need/Project Objectives

The Project area is subject to reoccurring flooding, multiple dry years, overdraft of the groundwater subbasin, capacity limitations on facilities during peak irrigation season and lack of flexibility to meet water demands. The Proposed Project will allow for more effective management of the LBCDR in order to maximize flood control and downstream benefits while maintaining recreational use of the Reservoir and continuing to adhere to the existing USACE operating rules.

Project objectives are to:

- Reduce flooding and poor water quality;
- Increase groundwater recharge;
- Maximize water availability to wildlife refuges, riparian habitat, landowners, disadvantaged communities (DACs) and Water Districts, by preserving any refuge water that would otherwise be lost due to rescheduling limitations in the San Luis Reservoir;
- Reduce groundwater pumping by up to 2,666 AF per year;
- Provide year-round access to the Reservoir;
- Improve wetland and riparian habitats; and
- Optimize use of existing infrastructure.

The Project Participants propose that enhancements be made to existing SLWD Pumping Plants 8 and 9, and new facilities be constructed on Reclamation property that will enable the LBCDD to be operated to enhance use and benefits of the LBCDR. See Figure 1-2: LBCDR Stage-Storage Curve Permanent Project Curve and Figure 1-5: Seasonal Operation Diagram found in Appendix A.

2 Alternatives Including Proposed Action

This EA/IS considers two possible actions: the No Action Alternative and the Proposed Action/Project. The No Action Alternative reflects future conditions without the Proposed Action/Project and serves as a basis of comparison for determining potential effects to the human environment. For purposes of analysis, the No Action Alternative is the same as baseline conditions.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not fund or authorize any of its Federal discretionary actions associated with the Proposed Project and proposed facilities and reoperation of the Reservoir would not occur. The Reservoir would continue to operate as it has in the past.

2.2 Alternatives Not Further Analyzed

As part of the temporary 2020 Project, three other pipeline alignments connecting to SLWD Lateral 8 were considered. None of these alignments were deemed to be feasible for construction due to construction impacts and cost. The Project Participants have been looking at various alternatives over the last 10 years. The Alternatives screening process included Project Participant review of cost estimates and field verification of topographic and vegetative cover. As a result, they are not considered further in this document. Alternative 2 was the selected alternative and is discussed in Section 2.3 below. Figure 2-1 in Appendix A depicts each alternative.

2.2.1 Alternative 1: Reservoir No. 8

This alternative utilizes a combination of gravity flow and pumping. SLWD Lateral 8 feeds into an open reservoir along a ridge above LBCDR. From this point a 40 cubic feet per second (cfs) pump station adjacent to SLWD's existing Pump Plant 9 is proposed. The proposed pump plant would provide the energy needed to transfer flow approximately 2,400 linear feet (LF) with approximately 45vertical feet of elevation gain to the apex of the proposed alignment at elevation 435 feet. From this point the flow would convey by gravity for approximately 1,328 LF to the reservoir, for a total length of 3,728 LF. This includes:

- A standalone pump station with a filter (fish screen) with a backwash system out of Reservoir 8;
- one pressure reducing valve at the discharge location;
- eight 8" road crossing devices at four crossings (8 devices for the 40 cfs); and
- a diffuser at the reservoir discharge location.

Alternative 1 was not selected because of the need for an additional investment for a pump station when Pump Station 9 already exists. In addition, the discharge pipe into the reservoir would be along steep and potentially unstable terrain making construction feasibility unlikely.

2.2.2 Alternative 3: 9-1b Alignment

Alternative 3 starts at the same point as Alternative 9-1a and consists of a 40 cfs (36-inch) above ground High Density Polyethylene (HDPE) pipe, plastic irrigation pipe or PVC (for buried options) for 3,053 LF connecting to the existing SLWD Lateral 9-1. The alignment makes a 90 degree turn cutting across to the Alternative 1 alignment and then follows the same alignment as Alternative 1 to the reservoir discharge point. This includes:

- a filter (fish screen) with a backwash system at the existing SLWD lateral 9-1 turnout connection point;
- eight 18" road crossing devices at four crossings;
- one pressure reducing valve at the discharge location; and
- a diffuser at the reservoir discharge location.

Alternative 3 was not selected because proximity to power lines and, just as in Alternative 1, the discharge pipe into the reservoir would be along steep and potentially unstable terrain making construction feasibility unlikely.

2.2.3 Alternative 4: Tunnel Alignment

A fourth alternative was also considered for the Project. Alternative 4 is gravity flows only. From the Lateral 8 connection, the 36-inch reinforced concrete pipe follows the existing road to the intersection of the campground and boat launch access roads (See Appendix A, Figure 2-2, Project Facilities). From the intersection, the alignment generally follows the 390-foot contour of the terrain toward the dam. A 40-foot wide dirt road would be constructed along the alignment to accommodate the construction of the pipeline for approximately 2,400 LF. The alignment then deviates from the 390-foot contour and the pipeline would be installed by tunneling through the hillside approximately 530 feet where a 36-inch steel carrier pipe would be installed. The 36-inch carrier pipe would be installed on skids within a 48-inch diameter, 1/2" thick steel casing pipe. At the end of the tunneled portion, a 24-inch discharge pipe would begin and continue to the desired discharge point.

Alternative 4 was not selected because the cost to do the tunneling work would be prohibitive. Additionally, just as in Alternative 1 and Alternative 2, the discharge pipe into the reservoir would be along steep and potentially unstable terrain making construction feasibility unlikely.

2.3 Proposed Action/Project

Under the Proposed Action, Reclamation would fund and authorize the installation, maintenance, and operation of new facilities within Reclamation right-of-way that would convey non-LBC water for storage in the Reservoir.

2.3.1 Project Facilities

The regional location and the topographic quadrangle maps are shown in Appendix A, Figure 1-1 and Figure 2-2, respectively. The proposed pipeline would have a depth below ground of up to 84 inches. Pipe material is expected to be fused HDPE with final materials selection based on completion of geotechnical evaluation. The alignment is described below and depicted in Appendix A, Figure 2-3.

2.3.1.1 Proposed 9-1a Alignment

To convey the Project Participants' water to the LBCDR, a pipeline would be constructed from existing SLWD pump station lateral to the Reservoir. The SLWD Pump Station is supplied by an existing San Luis Canal turnout at mile post S79.39R. This lateral conveys up to 40 cfs of water pumped from SLWD facilities; water flows through SLWD Lateral 8 to Reservoir 8 and Pumping Plant 9 through existing Lateral 9 to and through anoutlet pipe at Turnout 9-1 (referred to as the proposed 9-1a alignment) at approximate ground elevation 442 feet, then by gravity through a pipe for approximately 3,542 feet connecting to LBCDR at an elevation of about 328 feet. This includes:

- enlarging Turnout 9-1 from 12-inch to approximately 36-inch pipeline connection,
- a filter (fish screen) with a backwash system at SLWD Lateral 9 Turnout 9-1 connection point into an existing stock water pond,
- a pipeline and appurtenances varying in size from 30-inch to 48-inch in diameter,
- water control valve(s) at engineered location(s),
- below-ground crossings of three existing 20-foot-wide roads with 3 feet of cover,
- a water flow energy dissipation flare at the Reservoir discharge location, and
- removable weights placed at various locations on the ground along the pipe to keep it from rolling (if pipe is placed above ground).

During construction, trenches would be excavated to one-half foot below the bottom of the pipe and 12 inches beyond the outside diameter of the pipe on each side of the pipe would be made:

- 30-inch diameter pipe – 54 inches deep, 54 inches wide, and 72 inches deep at the campground road crossing;
- 36-inch diameter pipe – 60 inches deep, 60 inches wide, and 78 inches deep at the fence line and power line road crossings;
- 48-inch diameter pipe – 72 inches deep, 72 inches wide, and 90 inches deep at the boat launch parking area.

2.3.1.2 Other Project Components

In addition to the construction of the water supply conveyance pipeline, the construction of the following improvements are proposed to enhance access to the park and low-water-elevation access to the Reservoir:

Box Culvert at LBC Canyon Road Crossing

The Proposed Project also includes the construction of a box culvert near the LBCDR State Park entrance on Canyon Road, as shown Appendix A, Figure 2-3, with a target capacity of 450 cfs. It is preliminarily designed to have four 12-foot-wide by 3-foot-tall bays, with the ability to allow

flows to overtop the culvert structure when Reservoir releases are greater than 450 cfs. The box culvert would be capped with 20 feet wide concrete pavement, which would allow continued access to recreational facilities, including campgrounds, day-use areas and the boat ramp during periods of flood releases less than 450 cfs, including requested releases by Project Participants from LBCDR. During periods of flood releases in excess of 450 cfs, the culvert would be submerged, and traffic would be restricted as under current flood release protocols.

During construction, a trench would be excavated to five feet below the existing paved creek crossing and one foot beyond the length and eight feet beyond each side of the box culvert structure. The resulting excavation would be 60 feet long, 24 feet wide, and 5 feet below the existing roadway crossing. In addition, a tapered and sloping channel bottom transition apron would be excavated one foot deep below the channel bottom, 8 feet upstream and 8 feet downstream of the box culverts. The width would transition from 70 feet to 56 feet at the culvert face.

Boat Ramp Extension

The Proposed Project also includes the installation of an approximately 90-feet-long by 30-feet-wide extension of the existing boat ramp consisting of interlocking concrete blocks or other suitable materials to allow boat access to the Reservoir at the lower water levels. See Appendix A, Figure 2-3 for the Proposed Project Area map.

During construction, a trench would be excavated to a maximum of six feet below ground surface and one foot beyond the length and width of the boat ramp extension on each side of the extension pavement. The resulting excavation would be 92 feet long 32 feet wide.

The Project Area comprises a total of 12.07 non-contiguous acres and includes the limits of ground disturbance as well as temporary staging and access areas for construction. The maximum depth of ground disturbance is anticipated to be eight feet for the pipeline, six feet for the boat ramp extension, and five feet for the box culvert construction.

2.3.2 Project Operations

Operational components of the Project include:

- altering LBCDR operations (while staying within existing USACE Flood Control Rules) to allow for Project Participant water supply storage and beneficial releases;
- routing natural LBC flows to riparian lands for irrigation and refuge use downstream of the facility, making space available for storage in the spring (depending on hydrology, these releases would happen more frequently so that flood flows throughout the year could be more efficiently captured);
- pumping Project Participant water supplies into the LBCDR available storage (Project); and
- releasing Project Participant water supplies into the LBC for re-diversion and beneficial uses by Project Participants.

Releases from the Dam of up to 250 cfs would be made during summer or winter months, typically running for about16 days, using existing facilities and the water split between the Project Participants. The estimated Project yield includes approximately 8,000 AF of spring

releases of LBC water in wet years, lowering the Reservoir storage to 12,562 AF, and delivery of approximately 8,000 AF of Project Participants' supply into the Reservoir up to the winter conservation pool of approximately 20,562 AF. The storage and release of Project Participant supplies may occur up to two times per year. This operation stays at or below the winter conservation pool capacity as shown in Figure 1-5 of Appendix A, and would not exceed historic Reservoir elevations or flood areas outside normal flood zone areas around the Reservoir (see Figure 1-2: LBCDR Stage-Storage Curve Permanent Project Curve.).

Additionally, water within the LBC would be maintained at historic levels during diversion periods, below the point of diversion into the DMC during release of natural LBC flow, in order to protect downstream water rights and historic recharge. Appendix A, Figure 1-3 shows riparian lands benefitting from the re-regulated natural LBC flow, and Figure 1-4 shows the conveyance systems to generate the supply to exchange into LBCDR in the Proposed Project area. Figure 1-5 shows the seasonal operations schematically and Figure 2-4 shows the Project Participants' locations who could receive the re-regulated Project Participant supply.

Reclamation would assist the Project Participants with any applicable permitting required by the SWRCB associated with reoperation of the Reservoir under the Proposed Project.

In addition, Warren Act contract No. 21-WC-20-5741 allows for conveyance of non-Project (LBC Riparian Water) water in the DMC to CCID, GWD, and SLWD for delivery to riparian lands within the Project Participant districts. This contract would need to have its exhibits updated in order to allow for non-LBC water to be conveyed from LBC into the DMC for use on non-riparian and riparian lands within the Project Participant districts.

A refuge water acquisition and/or exchange agreement between Reclamation and the Project Participants is contemplated as part of the Proposed Project. This would allow GWD to take delivery of additional water stored by the Project when it is most beneficial for wetland habitat. An exchange and/or transfer agreement between the SJRECWA and the Project Participants is contemplated as part of the Proposed Project, minimizing stored water release losses for the Project Participants by moving water where and when it is needed. These exchanges would be through the refuge program, and this would help meet refuge water obligations.

2.3.3 Environmental Commitments

SLWD shall implement the environmental protection measures included in Table 2-1.

Table 2-1 Environmental Protection Measures and Commitments

Resource	Protection Measure
Biological Resources	BIO-1a: (Construction Timing). If feasible, the project will be constructed outside the Swainson's hawk nesting season, which is typically defined as February 1-August 31.
Biological Resources	BIO-1b: (Surveys). If project elements must be initiated between February 1 and August 31, a qualified biologist will conduct surveys for Swainson's hawk nests on and within ¼ mile of the Project Area, following the survey methods and timing prescribed by the Swainson's hawk Technical Advisory Committee (SHTAC) 2000 *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*.
Biological Resources	BIO-1c: (Avoidance). Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the

Resource	Protection Measure
	nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged.
Biological Resources	BIO-2a: (Take Avoidance Surveys). Take avoidance surveys for burrowing owls will be conducted by a qualified biologist within 30 days prior to the start of construction within grassland habitat of the site. The surveys will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The "survey area" will cover grassland work areas and adjacent lands within 200 meters, where potential nesting or roosting habitat is present.
Biological Resources	BIO-2b: (Avoidance of Nest Burrows). If construction activities within grassland habitats are to occur during the breeding season (February 1-August 31) and active nest burrows are identified within the survey area, a 200-meter disturbance-free buffer will be established around each burrow. The buffers will be enclosed with temporary fencing to prevent encroachment by construction equipment and workers. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season, passive relocation of any remaining owls may take place as described below.
Biological Resources	BIO-2c: (Avoidance or Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in work areas may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the work area during the non-breeding season, a 50-meter disturbance-free buffer will be established around these burrows. If a 50-meter disturbance-free buffer is not feasible, then a qualified biologist will determine a minimum buffer distance based on site conditions and the biologist will be on site to monitor the owls during all activities conducted within 50 meters to ensure that the owls are not harmed. Buffers will be enclosed with temporary fencing and will remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity will be conducted in accordance with a relocation plan prepared by a qualified biologist.
Biological Resources	BIO-3a: (Construction Timing). If feasible, the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31
Biological Resources	BIO-3b: (Preconstruction Surveys). If construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey).
Biological Resources	BIO-3c: (Avoidance of Active Nests). Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.
Biological Resources	BIO-4a: (Pre-disturbance Surveys). A pre-disturbance survey for American badgers will be conducted by a qualified biologist within 30 days prior to the start of construction. The survey area will include grassland areas within the Project Area and surrounding lands within 250 feet.
Biological Resources	BIO-4b: (Avoidance). Any non-maternity dens identified during the pre-disturbance survey shall be flagged and avoided with a minimum 50-foot no-disturbance buffer until a qualified biologist has determined that the den is no longer in use. Any maternity dens identified during pre-disturbance surveys shall be flagged and avoided, if feasible, with a minimum 200-foot no-disturbance buffer for the duration of the pup-rearing season, typically February 15 to July 1.
Biological Resources	BIO-4c: (Minimization). If a maternity den cannot feasibly be avoided, CDFW must be contacted to identify appropriate minimization measures prior to initiating any disturbance

Resource	Protection Measure
	that would affect the den, including potential passive relocation by excavation before or after the rearing season.
Biological Resources	BIO-5a: (Pre-construction Surveys). Preconstruction surveys for the San Joaquin kit fox shall be conducted on and within 200 feet of the Project area, no less than 14 days and no more than 30 days prior to the start of ground disturbance activities on the site. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on and adjacent to the site and evaluate their use by kit foxes. A survey report will be sent to the Service within 5 days of survey completion and prior to the start of ground disturbance or construction activities. If construction in a particular work area ceases for two weeks or longer, a new survey by a Service-approved biologist will be conducted prior to re-initiation of ground disturbing activities.
Biological Resources	BIO-5b: (Avoidance). Any potential den (any natural den or burrow with an entrance of appropriate dimensions of 4 to 12 inches in diameter) identified will be avoided according to the Service's 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance by establishing an exclusion zone of at least 50 feet for potential dens, 100 feet for known dens, and requiring further consultation with the Service for pupping/natal dens. If a potential kit fox den cannot be avoided during project activities, it will be monitored for at least 4 consecutive nights using remote cameras and/or tracking medium to determine current use. If no kit fox activity or sign is observed, the den will be temporarily plugged with soil immediately following the final night of observation. During construction the den will be checked regularly to ensure it remains plugged until construction is finished, at which time the soil plug will be removed.
Biological Resources	BIO-5c: (Avoidance). Construction activities shall be carried out in a manner that avoids disturbance to kit foxes in accordance with the Service Standardized Recommendations. The applicant shall implement all avoidance measures presented in the Construction and On-going Operational Requirements section of the Standardized Recommendations, including, but not limited to: a. Project activities will only occur during the day (between 30 minutes before sunrise and 30 minutes after sunset). b. Project-related vehicles will observe a speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways. Off-road traffic outside of designated project areas will be prohibited. c. To prevent inadvertent entrapment of kit foxes or other animals during construction, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe will not be moved until the Service has been consulted. If necessary, and under the direct supervision of a Service-approved biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped. e. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in securely closed containers and removed at least once a week from a construction or project site. f. No firearms shall be allowed on the project site.

Resource	Protection Measure
	g. No pets, such as dogs or cats, shall be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens. h. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. will be re-contoured if necessary, and stabilized to promote natural revegetation of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. i. In the case of trapped animals, escape ramps or structures will be installed immediately to allow the animal(s) to escape, or the Service will be contacted for guidance. j. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed will also be provided to the Service.
Biological Resources	BIO-5d: (Employee Education Program). Prior to the start of construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation. The training will include a handout with all of the training information included in it. The applicant will use this handout to train any construction personnel that were not in attendance at the first meeting, prior to those personnel starting work on the site.
Biological Resources	BIO-5e: (Mortality Reporting). The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.
Biological Resources	BIO-6a (Preconstruction Survey). Within 24hrs prior to the start of construction, a qualified biologist will survey all aquatic areas within the project site, as well as adjacent work areas out to 500 feet from aquatic habitat. If any turtles are observed their location will be recorded and provided to the construction foreman for avoidance to the extent feasible.
Biological Resources	BIO-6b; (Pond Turtle Awareness Training). Prior to the start of construction, construction personnel will be trained on the identification, behavior, and ecology of the northwestern pond turtle, and the project-specific measures adopted for its protection. Attendees will be given a handout that summarizes the training material and provides a photographic key to differentiating between the northwestern pond turtle and the common non-native red-eared slider. Attendance at all training sessions will be documented on sign-in sheets.
Biological Resources	BIO-6c: (Construction Related Avoidance). If any northwestern pond turtles are found within construction zones, work shall stop in the area around the turtle until it leaves the construction zone on its own volition.
Biological Resources	Bio-7a: Once construction is complete, all disturbed areas shall be reseeded with native forbs and grasses.
Biological Resources	Bio-7b: Any removal of native trees or shrubs with a diameter at breast height of 2 inches or greater shall be replaced on-site, in-kind with container plantings so that the combined diameter of the container plantings is equal to the combined diameter of the trees or shrubs removed. These replacement plantings shall be monitored for five (5) years.

Resource	Protection Measure
Biological Resources	Bio-7c Restoration plantings and seedings shall include species that are used by and beneficial for native pollinating species. Suitable pollinator plant references can be found online at: https://www.pollinator.org/guides
Biological Resources	Bio-7e To compensate for temporary losses in wetland habitat from construction of the culvert, invasive giant reed (*Arundo donax*), tamarisk (*Tamarix* sp.), and pepperweed (*Lepidium latifolium*) shall be removed from all Project areas. A monitoring and maintenance program shall be implemented for five (5) years to remove any resprouts and allow native vegetation to naturally fill these areas. It shall be up to the Project Participants to determine what the specifics of the monitoring and maintenance program would entail.
Cultural Resources	CUL-1: A qualified archaeologist will prepare and present an archaeological tailboard to construction crew working on site during ground disturbing activities prior to construction. For new construction crew members, the training should be presented by the on-site archaeological monitor and/or via teleconference video training.
Cultural Resources	CUL-2: A qualified archaeological monitor will be retained to conduct monitoring as needed during ground-disturbing activity. The qualified archaeological monitor shall determine what areas require monitoring and when.
Cultural Resources	CUL-3: If archaeological materials are encountered during ground-disturbing activities, all ground-disturbing work at the find location will cease and a 100-foot buffer will be placed around the area until a qualified archaeologist can assess the significance of the finding and provide (if needed) an avoidance and/or data recovery plan.
Cultural Resources	CUL 4: In the event that previously unidentified subsurface deposits believed to be cultural or human in origin are discovered during implementation of this undertaking, then all work must halt within a 100-foot radius of the discovery. Reclamation Cultural Resource staff would be notified and would follow the procedures for post-review discoveries on Federal lands as described in the regulations at 36 CFR § 800.13(b). A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historical archaeology, shall be retained to evaluate the significance of the find. The qualified archaeologist shall use their professional judgment and shall have the authority to modify the no-work radius as appropriate. The following notifications shall apply, depending on the nature of the find: 1. If the professional archaeologist determines that the find does not represent a cultural resource, then work may resume immediately, and no agency notifications are required. 2. If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, then they shall immediately notify SLWD, Reclamation, and applicable landowner. SLWD and Reclamation shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be eligible for inclusion in the National Register of Historic Places (NRHP). Work cannot resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not eligible for the NRHP; or 2) that the treatment measures have been completed to their satisfaction.
Tribal Cultural Resources	TCR 1: Human Remains Different laws govern the disposition of human remains inadvertently discovered on private, State, Tribal, and Federal lands. It is, therefore, imperative that Project Participants contractors, and other CRM contractors, understand the ownership status of lands on which archaeological work is to be conducted to ensure that the appropriate laws are followed. The following summarizes of the applicable laws that govern the inadvertent (i.e., unanticipated) discovery of human remains and the procedures to be followed should

Resource	Protection Measure
	human remains be discovered during the course of the construction of the Project permitted by Reclamation or other underlying landowner. Federal and Tribal Lands Under the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001) and implementing regulations 43 CFR Part 10, Reclamation is responsible for the protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered on federally-owned lands. All human remains and potential human remains must be treated with respect and dignity at all times. In the event that suspected human remains are discovered during proposed project activity on Reclamation land, all activities in the immediate area will cease, and appropriate precautions will be taken to protect the remains and any associated cultural items from further disturbance. Reclamation will follow the procedures outlined in 43 CFR § 10.4 Inadvertent Discoveries. The Reclamation Interior Region 10 Cultural Resources Branch Chief and Reclamation Interior Region 10 NAGPRA Coordinator will be immediately notified by telephone and will take responsibly for the discovery by contacting the appropriate law enforcement and Reclamation officials. Within three (3) working days of confirmation of the discovery [see 43 CFR § 10.4(d)(1)(iii)], the Reclamation Regional Archaeologist will notify by telephone or in person, with written confirmation, the Indian tribes likely to be affiliated with the discovered human remains (e.g., lineal descendant, culturally-affiliated Indian tribe, Indian tribe with other cultural relationship, and Indian tribe that aboriginally occupied area). Treatment and handling of the remains will be determined through consultation between Reclamation and consulting tribes. As required by NAGPRA (43 CFR §10.4 (f)), Reclamation officials will coordinate their responsibilities under this section with the requirements of Section 106 of the National Historical Preservation Act (NHPA) (54 U.S.C. §306108), implementing regulations at 36 CFR Part 800, Archeological and Historic Preservation Act (AHPA) (54 U.S.C. §312501-312508), and the Archaeological Resource Protection Act (ARPA) (16 U.S.C. §470aa-mm). Compliance with these laws and specifically 36 CFR §800.13: Post-Review Discovery Other Public and Private Lands in California There are numerous California State laws and codes that direct the preservation of prehistoric and historical cultural resources, establish the procedures for protecting inadvertently discovered Native American human remains, and impose penalties and punishments for persons acting in violation of the legal code. Specifically, Section 7050.5 of the California Health and Safety Code deals with the discovery of human remains in any location other than a dedicated cemetery and directs that in such cases the coroner of the county in which the remains are discovered be contacted and further excavation or disturbance in the location of discovery be discontinued until the coroner has examined the remains and made a determination. Pursuant to California Health and Safety Code §7050.5, if known or suspected Native American or other human remains are encountered, all ground-disturbing work must cease in the vicinity of the discovery, and the County Coroner contacted. The respectful treatment and disposition of remains and associated grave offerings shall be in accordance with Public Resource Code §5097.98.
Tribal Cultural Resources	TCR-2: Tribal Monitor Prior to the start of the Project, the Project Participants shall retain a qualified Tribal monitor (Tribal Monitor) who is approved by the Tachi Yokut Tribal Government to provide monitoring/consulting services. The Tribal Monitor shall be present to monitor all project ground disturbance activities for the presence of tribal cultural resources. The term

Resource	Protection Measure
	"ground disturbance activities", as found in these project environmental commitments, refer to activities that may include pavement removal, vegetation clearing, grading, excavation, trenching, drilling, and potholing/auguring within the project site. The Tribal Monitor shall complete a daily log documenting all ground disturbance activities, the locations where those activities occurred, the types of soils involved, and any tribal cultural resources encountered. Monitoring shall end when ground disturbance activities are completed, or when the Tribal Monitor has determined that the site has a low potential for impacting tribal cultural resources. Within 30 days after monitoring has ended, the Tribal Monitor shall submit the daily logs to Reclamation.
Tribal Cultural Resources	TCR-3: Archaeological Monitor Prior to the start of the Project, the Project Participants shall retain a qualified Archaeological Monitor to provide spot monitoring/consulting services. The Archaeological Monitor shall be present to spot monitor project ground disturbance activities for the presence of cultural resources, as determined by a qualified archaeologist. The term "ground disturbance activities", as found in these project environmental commitments, refer to activities that may include pavement removal, vegetation clearing, grading, excavation, trenching, drilling, and potholing/auguring within the project site. The Monitor will complete a daily log documenting all ground disturbance activities, the locations where those activities occurred, the types of soils involved, and any cultural resources encountered. Monitoring shall end when ground disturbance activities are completed, or when the qualified archaeological monitor has determined that the site has a low potential for impacting tribal cultural resources. Within 30 days after monitoring has ended, the Archaeological Monitoring Letter Report along with the daily logs will be submitted to Reclamation.
Water Resources	Introduction of water is required to meet Reclamation's then current water quality standards prior to introduction into the Reservoir. Monitoring shall occur at regular intervals and shall coincide with existing monitoring program(s) that currently occur at existing Project Participants facilities.
Water Resources	Water quality sampling will be collected at three points within the Reservoir, the bank, the dock and post filter (see Figure 2-5 of Appendix A). Sampling will be done prior to annual operations starting, once during operations, and once post-operations.
Water Resources	A Storm Water Pollution Prevention Plan will be developed and implemented as part of the Construction General Permit.
Water Resources	Should unexpected rainfall or discharge events occur during construction activities, best management practices and requirements will be implemented pursuant to the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges associated with Construction and Land Disturbing Activities.
Water Resources	Natural LBC flows released during storm events would only be delivered to lands riparian to Los Banos Creek in accordance with existing riparian water rights.
Water Resources	Implement best management practices and requirements of the Clean Water Act 401 Certification from the Regional Water Quality Control Board.
Water Resources	Implement best management practices and requirements of the Clean Water Act 404 Permit from the U.S. Army Corps of Engineers.
Water Resources	The water introduced under the Proposed Project shall be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines, as applicable. Use of the water shall comply with all federal, state, local, and tribal laws.
Various	The water shall not be used to convert and irrigate native lands or lands untilled for three consecutive years or more without additional environmental analysis and approval. No land conversions may occur as a result of the Proposed Project.

Environmental consequences for resource areas assume the measures specified would be fully implemented.

3 Affected Environment and Environmental Consequences

3.1 Federal Required Resources Disclosures

Department of the Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of Native American Indian sacred sites, Indian Trust Assets, and Environmental Justice when preparing environmental documentation. Impacts to these resources were considered and found to be minor or absent.

3.1.1 Indian Trust Assets

Indian Trust Assets are legal interests in assets that are held in trust by the United States for federally-recognized Indian tribes or individuals. There are no Indian reservations, rancherias, or allotments in the Proposed Action area. The nearest Indian Trust Asset is a public domain allotment about 31 miles to the southwest of the Proposed Action area. Based on the nature of the Proposed Action it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. The Proposed Action would not have any impacts on Indian Trust Assets.

3.1.2 Indian Sacred Sites

Executive Order 13007 (May 24, 1996) a requires that Federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. There would be no impacts to Indian sacred sites as a result of the Proposed Action.

3.1.3 Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. Releases of water from the Reservoir under the Proposed Action would not exceed historic levels and would be used for beneficial purposes. The Proposed Action would not cause dislocation or changes in employment, or increase flood, drought, or disease, nor would it disproportionately impact economically disadvantaged or minority populations.

3.2 Other Resources

This section of the EA/IS includes the NEPA and CEQA analysis portion of the potentially affected environment and the environmental consequences involved with the Proposed Project.

3.2.1 Aesthetics

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.2.1.1 Affected Environment

The Proposed Project area is largely surrounded by large grasslands used for grazing and solar power generation. In addition, Interstate 5 (I-5), rural roadways, the California Aqueduct/San Luis Canal, LBC and the associated LBCDR, and the DMC lie within the vicinity of the Proposed Project area. The closest residence is approximately 0.5 miles from the Proposed Project area. The nearest scenic highway segment is where I-5 and State Route (SR) 152 intersect is located approximately 4.3 miles away to the northwest.

3.2.1.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no impact to aesthetics as no construction would occur and conditions would remain unchanged.

Proposed Action

Portions of the Proposed Project would be buried underground, and ground disturbance during construction activities would be minimal and temporary. Other features such as the box culvert and the extension to the existing boat ramp would be consistent with the existing visual character of the Proposed Project vicinity. Thus, there would be no visual impact to scenic vistas, and a

less than significant impact to the existing visual character of the site. The Proposed Project does not propose any new lighting, and thus there would be no impacts to light or glare.

Cumulative Impacts

The Proposed Project would not be precedent setting, nor would it have a cumulative adverse impact on aesthetics. There are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on aesthetic resources.

3.2.2 Agricultural Resources

In determining whether impacts to agricultural resources are significant environmental effects under CEQA, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation (DOC) as an optional model to use in assessing impacts on agriculture and farmland.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.2.1 Affected Environment

Grazing land is the predominant open space landscape surrounding the Proposed Project area on all sides. The vicinity of the Proposed Project area contains access roads, scattered rural residences, and the San Luis Canal. The site has no remarkable elevation contours or geologic features.

The Merced County General Plan designates the subject area as Grazing Land, with corresponding zoning of A-2 (Exclusive General Agriculture Zone). The purpose of the A-2 Zone is to accommodate larger-scale agricultural enterprises, emphasized by the large minimum parcel size that provides sites more economically suitable for farming activities. The 160-acre minimum parcel size facilitates farming and ranching operations and a variety of open space functions that are typically less dependent on soil quality and are often connected more with foothill and wetlands locations, grazing and pasture land, and wildlife habitat and recreational areas. In addition, the Farmland Mapping and Monitoring Program (FMMP) designates the Proposed Project area as Grazing Land, Vacant or Disturbed Land, and Urban and Built-Up Land (see Appendix A, Figure 3-1).[1]

Pursuant to California Government Code 53091(e), zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.

3.2.2.2 Environmental Consequences

No Action

Farming conditions in the area would remain unchanged. No action would result in the continuance of flooding in agricultural areas during flood operation releases. No action would also result in the continued reduction of groundwater storage in the region.

Proposed Action

Under the Proposed Project, no agriculture would be removed or negatively affected. The Proposed Project would occur within areas devoid of agriculture. The Proposed Project would have a beneficial effect on agriculture within the SLWD as it would allow the movement of additional water supplies by increasing storage capacity of the District's facilities and allowing them to be released to better match demands and would reduce flooding by enabling storage of additional natural LBC water during wet seasons. Agriculture in SLWD would not be negatively impacted during construction as water supplies would continue to be available, and work can be scheduled around irrigation periods. Shutdown periods occur annually for SLWD maintenance, and it is anticipated that construction would be scheduled to take place during said shutdown period(s). Growers are not impacted during this time because the crops are dormant and do not need to be irrigated. The District would work with growers to make sure water deliveries are not impacted if construction happens outside of shutdown periods.

Cumulative Impacts

The Proposed Project would not interfere with water deliveries or facility operation, nor would it cause substantial adverse changes to the conveyance facilities. The Proposed Project would not have a considerable contribution to a cumulative adverse impact on agriculture but would instead allow for the storage of water for later use and reduce flooding that typically occurs with current operations. This Project would allow for regulation of available water supplies in existing facilities, maximizing overall water management with existing water supplies. There are not any

[1] (Calfornia Department of Conservation, 2023)

past, present, or future projects in the area that could potentially contribute to a cumulative effect on agricultural resources.

3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐
e) Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate?	☐	☐	☒	☐

3.2.3.1 Affected Environment

The Proposed Project area lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in the State. Air basins share a common "air shed", the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley experiences episodes of poor atmospheric mixing caused by inversion layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground.

Despite years of improvements, the SJVAB does not meet some State and federal health-based air quality standards (see Ambient Air Quality Standards & Valley Attainment Status (valleyair.org)). To protect health, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required by federal law to adopt stringent control measures to reduce emissions. On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities, except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants caused by a Proposed Project equal or exceed

certain emissions thresholds, thus requiring the federal agency to make a conformity determination.

Table 3-1 below shows the applicable thresholds that have been set within the SJVAPCD, governing air quality emissions within the district.

Table 3-1 San Joaquin Valley Air Pollution Control District Thresholds of Significance

Pollutant	Construction Emissions (Tons/year)	Operation Emissions (Tons/year)
VOC/ROG (as an ozone precursor)	10	10
NO_x (as an ozone precursor)	10	10
PM_{10}	15	15
$PM_{2.5}$	15	15
CO	100	100
SO_x	27	27

Source: (San Joaquin Valley Air Pollution Control District, 2015)

3.2.3.2 Environmental Consequences

No Action

Under the No Project alternative, there would be no impacts to air quality since no construction would take place and operations would remain the same.

Proposed Action

Operational emissions of the Proposed Project would not significantly contribute to criteria pollutant emissions. Water distribution through the facilities would be operated with electric motors, resulting in a mostly passive process with minor emissions generated during the pumping of the water at the existing pump stations. Pumping at the pump stations would increase from current levels, but not beyond what they were designed to do, and have done in previous years. Due to lack of water and storage capacity within the CVP, pumping demand has declined over the last thirty years. The generating power plant that produces the electricity to operate the electric pumps does produce emissions that impact air quality; however, the generating power plant is required to operate under permits issued by the air quality control district. As the Proposed Project would not change the emissions generated at the generating power plant, no additional impacts to air quality would occur from conveyance of water.

There would be emissions associated with construction. Construction of the Proposed Project would be accomplished with tractors, crawlers, graders, loaders, excavators, backhoes, concrete trucks, pumper trucks, water trucks, hauling trucks, and dump trucks. Construction is expected to take approximately six months.

There is one rural residence located approximately 0.5 miles from the Proposed Project Area. Short-term air quality impacts would be associated with construction and would generally arise from dust generation (fugitive dust) and operation of construction equipment. Fugitive dust results from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM_{10} (particulate matter less than 10 microns in diameter) and $PM_{2.5}$ (particulate matter less than 2.5 microns in

diameter). Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, such as nitrogen dioxide (NO_2), carbon dioxide (CO), carbon dioxide (CO_2), ROG (reactive organic gases), sulfur dioxide (SO_2), and small amounts of other air pollutants. Table 3-2 below provides a summary of the estimated emissions during construction of the Proposed Project. Table 3-3 below shows the daily annual emissions that would result from both construction and operational activities, along with the SJVAPCD's daily maximum emissions thresholds.

Table 3-2 Estimated Annual Construction Criteria Air Pollutant Emissions in Tons per Year

	ROG	NO_X	CO	SO_X	PM10	PM2.5
Project Construction Emissions (Max./year)	0.0624	0.6017	0.5275	1.0800e-003	0.2721	0.1529
SJVAPCD Threshold	10	10	100	27	15	15
Threshold Exceeded?	N	N	N	N	N	N

Notes: SJVAPCD = San Joaquin Valley Air Pollution Control District
ROG = reactive organic gases NO_X = nitrogen oxides CO = Carbon monoxide SO_X = sulfur oxides
PM_{10} = inhalable particulate matter between 2.5 and 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

Table 3-3 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions in pounds per day

Pollutant	ROG	NO_X	CO	SO_X	PM10	PM2.5
Construction (Summer)	2.7565	27.5863	20.4971	0.0417	19.9612	11.2005
Construction (Winter)	2.7507	27.5979	19.8226	0.0407	19.9612	11.2005
Operations (Winter)	0.0845	1.0000e-005	7.6000e-004	0	0	0
Operations (Summer)	0.0845	1.0000e-005	7.6000e-004	0	0	0
SJVAPCD Threshold	100	100	100	100	100	100
Threshold Exceeded?	N	N	N	N	N	N

As shown in Table 3-2, annual construction emissions of the Proposed Project are estimated to be below the SJVAPCD's thresholds. In addition, Table 3-3 shows that the Project would not exceed emission thresholds regulating maximum daily emissions during both construction and operational activities. The Proposed Project would be largely passive during operation, so there would be minimal operational emissions generated by its implementation. Operational emissions would be a result of passive use of equipment and vehicle trips to the Proposed Project area for routine maintenance activities.

As emissions are substantially below thresholds of significance, construction and operation under the Proposed Project would not result in adverse impacts to air quality and a conformity determination is not needed.

Cumulative Impacts

Emissions for the Proposed Project are well below the *de minimis* thresholds established by the SJVAPCD and would not have a considerable contribution to a cumulative adverse impact on air

quality. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on air quality resources.

3.2.4 Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.2.4.1 Affected Environment

The Proposed Project is located within the LBCDR area of the San Luis Reservoir State Recreation Area in western Merced County. The Proposed Project area is situated in a vast expanse of open rangeland. Biotic habitats identified in the area include non-native grassland, ruderal/developed, wetland/riparian, and aquatic.

Methodology

A reconnaissance-level field survey of the Proposed Project area was conducted on June 1, 2022, by a Live Oak Associates, Inc. (LOA) biologist. The survey consisted of walking the area while identifying the principal land uses and the constituent plants and animals within each use area. The field survey was sufficient to assess the significance of possible biological impacts associated with the Proposed Project.

Regional Setting

The Proposed Project area is located in the foothills of the Coast Range mountains. The San Joaquin Valley lies to the east and the Coast Range mountains to the west. Like most of California, this area experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer high temperatures range from 80 to 110 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures range from 30 to 75 degrees. Annual precipitation in the vicinity of the Proposed Project is about 10 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The Proposed Project area is situated within undeveloped rangeland, with a large solar farm to the north. The principal drainage in the vicinity is LBC, which flows east through the Project Area to the San Joaquin River.

Physical Conditions/Soils

The topography of the Proposed Project area is sloped with elevations ranging from approximately 227 to 460 feet National Geodetic Vertical Datum.

The Project area contains eight soil mapping units. These soils are summarized in Table 3-4 below.

Table 3-4. Soils of the Proposed Project area

Soil Mapping Unit	Parent Material	Drainage Class	Hydric Rating
220: Mollic Xerofluvents, channeled	Gravelly alluvium	Poorly drained	Predominantly Hydric
284: Xerofluvents, extremely gravelly	Gravelly alluvium	Poorly drained	Predominantly Hydric
207: Los Banos clay loam, 2 to 8 percent slopes	Alluvium	Well drained	No
109: Apollo clay loam, 2 to 8 percent slopes	Residuum weathered from sedimentary rock	Well drained	No
110: Apollo clay loam, 8 to 15 percent slopes	Residuum weathered from sedimentary rock	Well drained	No
124: Ayar clay, 8 to 15 percent slopes	Residuum weathered from sandstone and shale	Well drained	No
223: Oneil silt loam, 30 to 50 percent slopes	Residuum weathered from sandstone and shale	Well drained	No
287: Water	NA	NA	NA

Two of the soil mapping units within the Proposed Project area are considered hydric: 220: Mollic Xerofluvents, channeled; and 284: Xerofluvents, extremely gravelly. These soils are associated with LBC downstream of the LBCDR and have the propensity to pond water generated from creek flows. These soils have been significantly disturbed from the construction of road crossings, roads, and turnouts. Soils have been significantly disturbed in upland areas from historic grading.

Biotic Habitats

Four habitat/land use types, non-native grassland, ruderal/developed, wetland/riparian, and aquatic, were observed within the Proposed Project area during the June 2022 biological field survey. These land uses and their constituent plant and animal species are described in more detail in the Biological Evaluation prepared for the Project (see Appendix C - A list of the vascular plant species observed within the Proposed Project area and a list of the terrestrial vertebrates using, or potentially using, the site are provided in Appendix C.

Special Status Plants and Animals

The *California Natural Diversity Database* (CNDDB) was queried for special status species occurrences in nine United States Geological Survey (USGS) 7.5-minute quadrangles on and surrounding the Project area (*Ortigalita Peak NW, Charleston School, Laguna Seca Ranch, Ortigalita Peak, Ruby Canyon, Los Banos Valley, San Luis Dam, Volta, Los Banos*). An unofficial species list for plants and animals was obtained using the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation system for federally listed species with the potential to be affected by the Proposed Project (see Appendix C). These species, and their potential to occur on the Proposed Project area, are listed in Table 3-5 and Table 3-6 on the following pages. Sources of information for these tables included *California's Wildlife, Volumes I, II, and III* (Zeiner et. Al 1988-1990), CNDDB, *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al 2012), and *The California Native Plant Society's* (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), Calflora.org, and eBird.org.

Table 3-5. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	*Occurrence Within the Project Area
Heartscale (*Atriplex cordulata* var. *cordulata*)	CRPR 1B	Occurs in cismontane woodland and valley and foothill grassland of the San Joaquin Valley at elevations below 1,230 ft. Blooms April–Oct.	**Unlikely**. The site is outside this species' known range. This species is not known to occur west of Interstate 5.
Lost Hills crownscale (*Atriplex coronata* var. *vallicola*)	CRPR 1B	Occurs in chenopod scrub, valley and foothill grassland, and vernal pools in powdery, alkaline soils that are vernally moist with frankenia, atriplex spp. and distichlis. Blooms April–Aug.	**Absent**. Moist, powdery alkaline soils required by this species are absent from the Project Area. The site is approximately 7 miles north of the of the most northern occurrence of this species.
Lesser saltscale (*Atriplex minuscula*)	CRPR 1B	Occurs in chenopod scrub, playas, valley and foothill grassland in sandy, alkaline soils	**Absent**. Sandy alkaline soils required by this species are absent from the Project Area.

Species	Status	Habitat	*Occurrence Within the Project Area
		between 50 and 660 ft. in elevation. Blooms May-October.	
Lemmon's jewelflower (*Caulanthus lemmonii*)	CRPR 1B	Occurs in pinyon-juniper woodland and grassland habitat of California's Inner Coast Range from Alameda Co. on the north to Ventura Co. on the south; occurs between 260 and 4,000 ft. in elevation. Blooms March-May.	**Unlikely**. Not observed during past botanical surveys. Past grading of large portions of grasslands within the Project Area has likely created unsuitable conditions for this species in these areas.
Hispid salty bird's-beak (*Chloropyron molle* spp. *Hispidum*)	CRPR 1B	Occurs in damp alkaline soils, especially in alkaline meadows and alkali sinks with *Distichlis spicata*; occurs below 500 ft. in elevation. Populations are concentrated in the San Joaquin Valley in Merced Co., with outlier populations in the Sacramento Valley, Bay Area, and Tulare Basin; blooms June–September.	**Absent**. Suitable habitat is absent from the Project Area.
Recurved larkspur (*Delphinium recurvatum*)	CRPR 1B	Occurs in chenopod scrub, valley and foothill grassland, cismontane woodland on alkaline soils; often in valley saltbush or valley chenopod scrub up to 2,600 ft in elevation. Blooms March – June.	**Absent**. Alkali soils required by this species are absent from the Project Area.
Spiny-sepaled button celery (*Eryngium spinosepalum*)	CRPR 1B	Occurs in vernal pools and valley and vernally moist areas of foothill grasslands of the San Joaquin Valley and the Tulare Basin between 330 and 840 ft. in elevation. Blooms April-May.	**Unlikely.** Eryngium species were never detected during past botanical surveys of the site nor during LOA's survey. Vernally moist areas of grassland are absent from the Project Area.
Alkali-sink goldfields (*Lasthenia chrysantha*)	CRPR 1B	Occurs in vernal pools within alkali soils in areas less than 655 ft. in elevation. Blooms February – June.	**Absent**. Habitat suitable for this species is absent from the Project Area.
Munz's tidy-tips (*Layia munzii*)	CRPR 1B	Occurs on hillsides, in white-grey alkaline clay soils, w/grasses and chenopod scrub associates between 150-2,500 ft in elevation. Blooms March – April.	**Absent**. Suitable habitat is absent. The Project Area is northwest of the species' known range.
Panoche pepper-grass (*Lepidium jaredii* ssp. *Album*)	CRPR 1B	Occurs in valley and foothill grassland. White or grey clay lenses on steep slopes; incidental on alluvial fans and washes. Clay and gypsum-rich soils between 210-3,300 ft in elevation. Blooms Feb – June.	**Absent**. Suitable habitat appears absent from the Project Area. The Project Area is out of the species' known range. The nearest occurrence was recorded in 1935 approximately 16 miles southeast of the site.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B	Chaparral and coastal scrub from 33-2,500 feet. Blooms May-September.	**Absent**. Habitat for this species is absent from the Project Area.

Species	Status	Habitat	*Occurrence Within the Project Area
Shining navarretia (*Navarretia nigelliformis* ssp. *Radians*)	CRPR 1B	Occurs in vernal pool, valley grassland, foothill woodland, wetland riparian areas of the inner coast range and central valley between 50 – 3,280 ft in elevation. Blooms April – July	**Unlikely**. Habitat for this species is absent to extremely marginal. No Navarretia species were observed during LOA's site survey or past botanical surveys of the site. Three documented occurrences are known from the region east of the Project Area, the closest being 6.5 miles away.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	CRPR 1B	Occurs in wetlands of coastal sage scrub and riparian areas in western San Joaquin valley, San Francisco Bay, South Coast range, and the Santa Rosa Plateau at elevations less than 2296 ft. Blooms April – July.	**Absent**. No Navarretia species were observed during past botanical surveys, nor during LOA's June 2022 survey. Suitable wetland habitat for this species is absent from the Project Area.
California alkali grass (*Puccinellia simplex*)	CRPR 1B	Occurs in alkali sinks and flats within grassland and chenopod scrub habitats of the Central Valley, San Francisco Bay area, and western Mojave Desert below 3,000 ft. in elevation. Blooms March-May.	**Absent**. Suitable alkaline habitat is absent from the Project Area.
Sanford's arrowhead (*Sagittaria sanfordii*)	CRPR 1B	Occurs in freshwater emergent marsh habitat in drainage ditches and canals of California's Central Valley and low Sierra foothills. Blooms May to October.	**Absent**. While potentially suitable habitat is present within Los Banos Creek, this conspicuous species was not observed during past botanical surveys, nor during LOA's June 2022 survey.
Chaparral ragwort (*Senecio aphanactis*)	CRPR 2B	Occurs on drying alkaline flats within chaparral, cismontane woodland, and coastal scrub at elevations of 50-2,624 feet. Blooms January-April.	**Absent**. Habitat suitable for this species is absent from the Project Area.
Arburua Ranch jewel-flower (*Streptanthus insignis* ssp.lyonii)	CRPR 1B	Coastal scrub at elevations of 755-2,800 feet. Annual, blooms March-May.	**Absent**. Habitat suitable for this species is absent from the site. Furthermore, the site is outside the elevational range of the species.
Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)	CRPR 2B	Occurs in mud flats of vernal lakes, drying riverbeds, alkali meadows. Blooms May-September; elevations up to 1,400 ft.	**Absent**. Habitat is absent from the Project Area. Not known to occur west of Interstate 5.

Table 3-6 List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	*Occurrence Within the Project Area
Longhorn fairy shrimp (*Branchinecta longiantenna*)	FE	Vernal pools of clear to turbid waters including grass-bottomed pools in Merced County. Can be	**Absent**. Vernal pools required by this species are absent from the

Species	Status	Habitat	*Occurrence Within the Project Area
		caught between December and April.	Project Area and immediately surrounding lands.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Vernal pools of clear to turbid waters of the Central Valley measuring 54 sq.ft. to larger pools (largest known to be 89-acre Olcott Lake).	**Absent**. Vernal pools required by this species are absent from the Project Area and immediately surrounding lands.
Monarch butterfly (*Danaus plexippus*)	FC	The larvae of this insect species reside and feed entirely on milkweed (Asclepias sp.) plants. Adults forage for nectar on a variety of flowering plant species.	**Possible**. Milkweed species (the obligate habitat for monarch larvae) were not observed during LOA's June field survey. Milkweed would have been conspicuous at this time. Monarch butterflies may occasionally forage within the Project Area.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Elderberry shrubs of the Central Valley and foothills north of Fresno County up to 3,000'.	**Absent**. Habitat for this species in the form of elderberry shrubs is absent from the Project Area.
Delta smelt (*Hypomesus transpacificus*)	FT	This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	**Absent**. The Project Area is situated well outside of the known distribution of this species.
California tiger salamander (CTS) (*Ambystoma californiense*)	FT, CT	Inhabits primarily annual grasslands and open woodlands of foothills and valleys, requires vernal pools, swales or stock ponds that fill for at least 3 months. Aestivate in small mammal burrows.	**Absent**. The Project Area is outside the range of this species.
Foothill yellow-legged frog *(Rana boylii*)	CE	Requires partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	**Unlikely**. Marginal habitat for this species occurs within the Project Area at Los Banos Creek. This area of creek was significantly disturbed by a vegetation removal project in 2011/2012. This species was found absent from this area of the creek during previous surveys associated with that project, and this area of stream has been cut off from suitable habitat upstream by the construction of the LBCDR. The nearest documented occurrence of this species occurs approximately 2.25 air-miles upstream. This species is addressed in more detail in Section 2.5.
California red-legged frog (*Rana draytonii*)	FT	Perennial rivers, creeks and stock ponds of the Inner Coast Range	**Absent**. The Project Area is outside the range of this species. The

Species	Status	Habitat	*Occurrence Within the Project Area
		foothills, preferring deep pools with overhanging vegetation.	nearest documented occurrence of this species occurs approximately 4.5 air-miles upstream.
Giant garter snake (*Thamnophis gigas*)	FT, CT, CFP	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. Inhabit small mammal burrows and other upland soil crevices during the winter during hibernation.	**Absent**. The Project Area is outside the range of this species. This species does not occur west of Interstate 5.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in semiarid grasslands, alkali flats, and washes. Avoids densely vegetated areas. Inhabits the San Joaquin Valley and adjacent valleys and foothills north to southern Merced County.	**Unlikely**. Suitable habitat is absent to marginal within the Project Area. This species has never been reported within the Los Banos Reservoir Area of the San Luis Reservoir State Recreation Area and modern occurrence reports are absent from the region. see Section 2.5 for more details.
Bald eagle (*Haliaeetus leucocephalus*)	CE	Occurs in ocean shores, lake margins, and rivers for both nesting and wintering. Nests are in large trees near water.	**Present**. This species is occasionally observed foraging over the LBCDR (eBird 2022). This species is not known to nest at the LBCDR.
Golden eagle (*Aquila chrysaetos*)	CFP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Present**. This species is occasionally observed foraging over the LBCDR (eBird 2022). Suitable breeding habitat is absent from the Project Area.
Swainson's hawk (*Buteo swainsoni*)	CT	This breeding-season migrant to California nests in stands with few trees in riparian areas and juniper-sage flats, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Present**. A Swainson's hawk was observed flying over the Project Area during LOA's June 2022 survey. Potential foraging habitat occurs within grasslands of the Project Area. Suitable nesting habitat is absent from the Project Area but occurs in trees adjacent to the Project Area. This species has been documented nesting in trees along the southern shore of the LBCDR and near the dam (CDFW 2023).
Tricolored blackbird (*Agelaius tricolor*)	CT	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in many open habitats.	**Possible**. Tricolored blackbirds could forage in open areas of the Proposed Project area from time to time. Suitable breeding habitat occurs within wetland/riparian areas of the Project Area. A possible breeding colony was documented in Los Banos Creek below the Los

Species	Status	Habitat	*Occurrence Within the Project Area
			Banos Reservoir Dam in 1992 (CDFW 2022).
Giant kangaroo rat (*Dipodomys ingens*)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills.	**Absent**. The Proposed Project area is outside the range of this species. The nearest documented modern observations of this species occur approximately 20 miles to the southeast (CDFW 2022).
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	Occurs in alkali scrub and herbaceous habitats with scattered shrubs in the southwestern San Joaquin Valley.	**Absent**. The Proposed Project area is well outside this species' current and historic range. The only known extant population is in Kings County.
San Joaquin antelope squirrel (*Ammospermophilus nelsoni*)	CT	Occurs in the southwest portion of the valley in arid grassland and shrubland communities. Lives in burrows of its own construction or dug by kangaroo rats. Diurnal.	**Absent**. The Proposed Project area is outside the range of this species. The nearest documented modern observations of this species occur approximately 17 miles to the south (CDFW 2022).
San Joaquin kit fox (*Vulpes macrotis mutica*)	CT, FE	Dens and breeds in arid grasslands, scrub lands, and foothills of the San Joaquin Valley	**Possible**. There are no known populations of San Joaquin kit fox in the Los Banos Reservoir Area of the San Louis Reservoir State Recreation Area. However, this species could pass through or even temporarily inhabit the Project Area during dispersal movements, as there are known populations west and south of the LBCDR. There are 24 documented occurrences of kit fox in the CNDDB within a 10-mile radius of the Proposed Project area (CDFW 2022)). Denning and foraging habitat is available in grassland areas of the Project Area.
Northern California legless lizard (*Anniella pulchra*)	CSC	Occurs in sandy or loose loamy soils under sparse vegetation. Soil moisture is essential and prefer soils with a high moisture content.	**Absent**. There are no modern occurrences of this species within a 20-mile radius of the site. The nearest historic occurrence is approximately 3.75 miles to the south from 1942 (CDFW 2022). Suitable habitat for this species is absent from the Project Area. Moist areas within the wetland/riparian area of the Project Area contain a layer of introduced rock to stabilize the creek banks.
Western spadefoot (*Spea hammondii*)	FPT, CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary ponds for breeding.	**Absent**. There are only two occurrences of this species in the project vicinity, with the nearest approximately 6 miles to the northwest. The only potentially

Species	Status	Habitat	*Occurrence Within the Project Area
			suitable breeding habitat in the project vicinity are periodically inundated borrow pits that appear to have been created during the construction of the LBCDR in 1964 and 1965. Prior to the creation of these borrow pits suitable spadefoot toad breeding habitat was absent from the vicinity, from which this species could have colonized the pits. This species is addressed in more detail in Section 2.5.
Western pond turtle (*Emys marmorata*)	FPT, CSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites of sandy banks or grassy open fields for egg laying.	**Present**. Aquatic habitat of the Project Area associated with the Reservoir provides potential habitat for this species, which has been documented in and upstream of the Reservoir (CDFW 2023). Wetland/riparian habitat provides unsuitable habitat for this species due to the dense stand of emergent marsh vegetation across the entire creek channel that would significantly inhibit the movements, foraging, and basking opportunities for this species.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	CSC	Open, dry habitats with little or no tree cover. Found in valley grasslands and saltbush scrub in the San Joaquin Valley.	**Present**. This species has been documented multiple times within the State Recreation Area (CDFW 2022). Grassland habitat within the Project Area provides suitable habitat for this species.
Yellow rail (*Coturnicops noveboracensis*)	CSC	Occurs in freshwater marshlands. Is a summer resident in eastern Sierra Nevada in Mono County.	**Unlikely**. There are no modern occurrences of this species in the region. The nearest historic documented occurrence in 1911 was described as near the town of Los Banos.
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, rangelands, emergent wetlands; uncommon in wooded habitats. Nests on the ground in tall, concealing vegetation.	**Possible**. This species potentially forages over the site. Nesting habitat is marginal on the site due to the lack of tall, concealing vegetation in the grasslands and the close proximity of the road crossing through the wetland/riparian area of the Project Area where tall, concealing vegetation is present.
Burrowing owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent	**Possible**. While no evidence of burrowing owls was observed during LOA's field survey, burrows suitably sized to accommodate this species

Species	Status	Habitat	*Occurrence Within the Project Area
		upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	were found within the grasslands of the Project Area. Surrounding grasslands provide potential foraging habitat.
Loggerhead shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Present**. This species was observed during LOA's field survey. Suitable nesting habitat is present within wetland/riparian areas of the Project Area. Foraging habitat occurs within most other areas of the Project Area, except aquatic habitat.
California mastiff bat (*Eumops perotis californicus*)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Roosts in cliff faces, high buildings, trees and tunnels.	**Possible**. This species may forage over the site but roosting and breeding habitat are absent.
American badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Likely**. Suitable habitat for this species is present within grasslands of the Project Area. Potential badger burrows and diggings were observed in this area.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CFP	California Protected
FTE	Federally Threatened (Proposed)	CSC	California Species of Special Concern
FC	Federal Candidate		

CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

3.2.4.2 Environmental Consequences

No Action

Under the No Action Alternative, implementation of the Proposed Project would not occur. The conditions of special-status wildlife species and habitats under the No Action Alternative would remain the same as they are under existing conditions and actions currently taken by State Parks, recreational users, DWR and Reclamation. Under the No Action Alternative, natural LBC flows are stored at a reduced capacity in the Reservoir and would continue to flood uplands and wetlands, resulting in potential damage. Therefore, any existing impacts to biological resources due to flooding would continue.

Proposed Action

Project-Related Disturbance of Nesting Swainson's Hawks
Potential Impacts. Swainson's hawk has been documented nesting in riparian trees along the south shore of the LBCDR, and a specimen was sighted flying over the Proposed Project area during the field survey.

Potential foraging habitat for this species is present within grasslands in the Project area. Proposed Project impacts to potential foraging habitat would be temporary in areas of buried pipeline and negligible in areas were the pipeline is installed above ground; however, an acre of grassland habitat would be permanently impacted by the proposed turnout connection, filter station, and filter station flush pipeline. Because permanent impacts to foraging habitat are small and there are many square miles of similar foraging habitat in the region, impacts to Swainson's hawks from loss of foraging habitat would be less than significant.

Although suitable nesting habitat is absent from the Proposed Project area itself, Swainson's hawks could potentially nest in trees near the Project Area at the LBCDR and at the Los Banos Creek State Recreation Area entrance station. If Swainson's hawks are nesting in trees near the Project area at the time of construction activities, those activities could compromise nesting success. Construction-related disturbance of nesting Swainson's hawks is considered a potentially significant impact. However, current land uses in the area consists of operations of motorized vehicles, recreational activities such as boating and camping, which generates on-going noise disturbance in the area during nesting bird season.

To avoid and minimize the potential for construction-related disturbance of nesting Swainson's hawks, SLWD or its designee will implement the mitigation measures/environmental commitments listed in Section 2.3.3 Environmental Commitments.

Related Mortality or Disturbance of Burrowing Owl
Grassland habitat within the Project area provides potential habitat for this species. Although burrowing owls have not been documented within four miles of the Project area and no evidence of burrowing owl occupation was detected during LOA's field survey, owls are known to occur within similar habitat in the region. It is possible that this species could migrate onto grasslands in the Project area prior to construction.

Burrowing owls are highly mobile while foraging and it is anticipated that any burrowing owls attempting to forage onsite at the time of construction would simply fly away from construction disturbance. Proposed Project impacts to potential foraging habitat would be temporary in areas of pipeline construction; however, an acre of grassland habitat will be permanently impacted by the proposed turnout connection, filter station, and filter station flush pipeline. Because permanent impacts to burrowing owl habitat are small and there are many square miles of similar habitat in the region, impacts to burrowing owls from loss of habitat would be less than significant.

However, if burrowing owls are occupying burrows on or near the Project area at the time of construction or ground-disturbing operations, owls could be vulnerable to Project-related injury or mortality. If construction or ground-disturbing operations occur during the nesting season,

burrowing owls could be disturbed by these activities and abandon their young. Proposed Project-related injury, mortality, or disturbance of burrowing owls is considered a potentially significant impact. In order to minimize construction-related impacts to burrowing owls, SLWD or its designee will implement the mitigation/environmental commitments listed in Section 2.3.3 Environmental Commitments.

Potential Project Impacts to Nesting Birds Including the Tricolored Blackbird and Loggerhead Shrike

The Proposed Project area has the potential to be used for nesting by a variety of birds protected by State and federal law, including the tricolored blackbird protected by the California Endangered Species Act and the loggerhead shrike, a Species of Special Concern. Avian nesting can occur in trees, shrubs, or ground vegetation. If Proposed Project construction takes place during the nesting season, birds nesting on the site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the Proposed Project. Construction-related mortality of nesting birds and disturbance leading to nest abandonment would violate State and federal laws and constitute significant impacts of the Proposed Project. To avoid and minimize the potential for construction-related mortality/disturbance of nesting birds, including the tricolored blackbird and the loggerhead shrike, SLWD or its designee will implement the mitigation/environmental commitments listed in Section 2.3.3 Environmental Commitments.

Project-related Mortality or Disturbance of American Badger

The American badger, a California Species of Special Concern, is a wide-ranging animal with the potential to forage and/or den within grasslands of the Proposed Project area, and potential badger dens and diggings were observed during LOA's field survey. The Proposed Project would result in the loss of potential habitat for this species amounting to approximately 1.0 acre and a negligible area under any above ground pipeline sections within grassland habitat. Many square miles of similar habitat occur outside the Project area. As a result, impacts to American badger due to the loss of habitat are considered less than significant. However, any individuals of this species present on site at the time of construction may be at risk of construction-related injury or mortality, particularly if they are raising young on the site. Construction-related mortality of American badgers would be considered a significant impact of the Proposed Project. To protect the American badger, SLWD or its designee will implement the mitigation/environmental commitments listed in Section 2.3.3 Environmental Commitments.

Project-related Mortality or Disturbance of San Joaquin Kit Fox

Grasslands within the Proposed Project area provide potential foraging and denning habitat for the San Joaquin kit fox (SJKF). While kit fox have not been documented within the State Recreation Area at the LBCDR, SJKF studies by Smith et al. (2006) and Constable et al. (2009) suggest a persistent but low-density kit fox population present on lands just south of Santa Nella from about the Agua Fria conservation lands south to Little Panoche Road .Because the SJKF is wide-ranging and adaptable, there is some potential for individual SJKF to pass through and temporarily utilize the site from time to time. If one or more individuals of this species are present on or near the Proposed Project area at the time of construction or ground-disturbing operations, they may be vulnerable to Project-related injury or mortality. SJKF mortality as a result of Proposed Project would violate the State and federal Endangered Species Acts and is considered a potentially significant impact. To avoid and minimize the potential for Proposed

Project-related injury or mortality of the SJKF, the mitigation measures/environmental commitments adapted from the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* listed in Section 2.3.3 and in Appendix C, will be implemented.

The amount of regionally available foraging habitat lost to Proposed Project development will be negligible. Underground installation of the proposed pipeline will temporarily disturb lands that could occasionally be used by the SJKF. Following pipeline construction, all such areas will return to pre- Project conditions and are expected to assume their former level of suitability for this species. Permanent Proposed Project impacts will be limited to a 1.0-acre area of grassland and a negligible area under any above ground pipeline sections. After Project completion, there will be many square miles of SJKF foraging habitat remaining within the region. For these reasons, Proposed Project-related loss of potential SJKF habitat is considered less than significant.

Project-related Mortality or Disturbance of Western Pond Turtle
The Western Pond Turtle has recently been proposed threatened. The western pond turtle has been documented along Los Banos Creek, upstream of the Dam. However, it has been determined that the Proposed Project may affect, but is not likely to adversely affect the northwestern pond turtle. This is in part due to the wetland/riparian habitat in the Project Area. This potential habitat is unsuitable for this species due to the dense stand of emergent marsh vegetation across the entire creek channel that would significantly inhibit the movements, foraging, and basking opportunities for this species. To protect the Western Pond Turtle, SLWD or its designee will implement the mitigation/environmental commitments listed in Section 2.3.3 Environmental Commitments.

Project Impacts to Riparian Habitat and Sensitive Natural Communities
Designated sensitive natural communities are absent from the Project area. A small area of riparian habitat will be permanently impacted by Proposed Project implementation, resulting in the potential loss of up to two native riparian trees (Fremont cottonwoods) and two non-native trees (a eucalyptus and paloverde tree), as well as a few riparian shrubs. Such a small loss of native riparian trees and shrubs is considered a less than significant impact. However, it should be noted that CDFW will need to be notified of Proposed Project activities in this area and will likely require a Lake and Streambed Alteration Agreement, which will require replacement of any native riparian trees and shrubs removed by the Proposed Project.

While the Project will allow the Reservoir to release water more often and lower the levels in the Reservoir, it would not release them below levels that they may normally see with evaporation or during dry years. Additionally, it will allow for water from the LBC to be put into the Reservoir which would then raise the water levels again. Water levels will fluctuate more frequently with this Project but there will not be a permanent reduction of water levels in the Reservoir that would impact riparian habitats in the area. Historically the reservoir storage levels would drop to and below 12,600 AF about once every three years due to drought conditions. When this occurred riparian vegetation along the target conservation pool of 20,600 AF survives from soil moisture for a period of time but if extended over two years, begins to thin out. While the goal of the project will be to reduce the storage to 12,600 AF annually, the project also calls for filling the reservoir back to 20,600 AF annually when supplies are available to the Participants or LBC

flows are plentiful after March 15th. It is anticipated that water levels would be at historic normal Summer Operating levels every year, dry or wet. Late summer and early fall will be when water levels would drop to the new target of 12,600 AF. The action of water recession and rise in the lake would be gradual and not be expected to cause any erosion. Low lake levels during the rainy season could possibly expose soils below ordinary high water, but the roots of the trees would be expected to stabilize the soil, along with the roots of opportunistic herbaceous vegetation. Furthermore, the annual rainfall in the region is low at only approximately 9.5 inches, which further reduces the possibility of any significant erosion that might impact tree species. The action is anticipated to occur each year and will enhance the riparian vegetation as the process of refilling during March through July will rewet the soil profile annually.

Project Impacts to Wildlife Movement Corridors
While the LBC corridor historically served as a likely travel route for fish and wildlife between the foothill and valley habitats, the installation of the LBCDD has greatly diminished the value of this segment of the creek corridor for fish and wildlife movement. As a result, the Project Area does not provide a significant movement corridor for fish or wildlife and the Proposed Project will not have an adverse effect on wildlife movement corridors.

Project Impacts to Critical Habitat
The Proposed Project will have no effect on designated critical habitat because critical habitat is absent from the Project area and adjacent lands.

Local Policies or Habitat Conservation Plans
The Proposed Project design appears to be consistent with the goals and policies of the Merced County General Plan. No habitat conservation plans are known to pertain to the area.

Cumulative Impacts
The construction and operation of the Proposed Project would result in more effectively managing the LBCDR by maximizing water management opportunities for the region including drought mitigation, local wildlife and agricultural supply reliability, optimizing flood control releases resulting in downstream benefits, while improving access for recreational use of the Reservoir. This would create an improvement of existing conditions and would not result in cumulative negative impacts to biological resources of the study area.

The Proposed Project would be subject to the Environmental Commitments laid out in Table 2-1, which would ensure that there would not be significant impacts from the Proposed Project. Consequently, there would be no cumulative adverse impacts. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on biological resources.

3.2.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

3.2.5.1 Affected Environment

Kleinfelder, an environmental services consultant, prepared a Cultural Resources Identification Report for the Project. Kleinfelder archaeologists surveyed the Proposed Project are of potential effects (APE) in June 2022. The APE is located on the west edge of the Central Valley, at the eastern extent of the Diablo Range. The Proposed Project is situated six miles southwest of the City of Los Banos and one mile west of I-5, just north of the LBCDD and LBCDR. The APE is on the Ortigalita Peak NW, California 7.5-minute quadrangle (USGS 1984) 1:24,000, Sections 1 and 12 of Township 11 South (S.), Range 9 East (E.); and Section 7 of Township 11 S., Range 10 E., Mount Diablo Base and Meridian. The APE includes the Proposed Project footprint and the full extent of temporary construction and long-term operation ground disturbance.

The APE comprises a total of 12.07 non-contiguous acres and includes the limits of ground disturbances as well as temporary staging and access areas for construction. The maximum depth of ground disturbance is anticipated to be eight feet for the pipeline, six feet for the boat ramp extension, and five feet for the box culvert installation.

Records Search and Background Search

A records search of the APE and a 0.5-mile buffer was requested on March 31, 2022 and processed by the Central California Information Center (CCIC) at California State University, Stanislaus on April 1, 2022. The purpose of the records search was to identify if any prehistoric and/or historic-period cultural resources and/or cultural resource studies had been previously documented in the APE and/or the surrounding 0.5-mile radius in order to better understand the cultural resource sensitivity of the area.

The CCIC records search identified one previously documented prehistoric district (P-24-000621). In addition, three historic-era linear resource segments (P-24-002128, P-24-002129, and AE-4133-001) were identified from a 2020 cultural resource inventory by Applied EarthWorks, Inc. (Baloian et al., 2020). Fourteen cultural resources studies have been performed

within the APE and a 0.5-mile surrounding area, and 16 records have been identified and recorded.

Native American Outreach

On March 31, 2022, Kleinfelder requested that the California Native American Heritage Commission (NAHC) perform a search of its Sacred Lands File (SLF). The NAHC responded on April 14, 2022, with a list of Native American Tribes affiliated with the region to contact for additional information. The SLF search did not identify any resources within the vicinity of the APE. As the Federal lead agency, Reclamation consulted with the NAHC and local Native American tribes as part of its tribal consultation responsibilities under Section 106 of the NHPA. The NAHC supplied a list of four individuals and tribal representatives with ancestral ties to the Proposed Project area. No properties of religious and cultural significance to Native American tribes were identified in the APE as a result of this consultation. The NAHC Native American contacts list is provided in Appendix B.

Pedestrian Survey

Pipeline Facilities

The APE was accessible by foot. Most of this portion of the APE was surveyed aside from an approximately 60-foot-long segment of the pipeline alignment that was underwater.

Ground visibility was approximately 25 percent. Soils consisted of a light brown sandy loam. Vegetation consisted of non-native grasses, riparian vegetation, and trees along the Reservoir periphery. Kleinfelder identified three previously recorded historic-era cultural resources in the APE, including two transmission line segments (P-24-002128 and P-24-002128) and a short segment of Canyon Road (AE-4133-001). Both of the transmission lines and the previously recorded segment of Canyon Road were in the same condition as described in the DPR 523 forms completed during the temporary 2020 Project and it was determined that no site updates were necessary.

Boat Ramp

Most of the APE was accessible by foot and approximately 75 percent of this portion of the APE was surveyed. As with the pipeline alignment, a portion (approximately 80 feet) of the proposed boat ramp extension was underwater and could not be surveyed.

Ground visibility was less than 10 percent; most of the APE for the boat ramp is paved or underwater. Vegetation on the edges of the existing boat ramp consisted of non-native grasses and riparian vegetation. No cultural resources were observed.

Box Culvert

This portion of the APE was accessible by foot and 100 percent of the APE was surveyed. Vegetation consisted of short non-native grasses and riparian vegetation along LBC. Due to dense vegetation along the creek, ground visibility was less than 10 percent. An unrecorded segment of Canyon Road was identified within the APE and recorded on DPR 523 forms.

3.2.5.2 Environmental Consequences

No Action

Under the No Action Alternative, construction of the Project would not proceed. There would be no change to existing conditions and accordingly, no cultural resources would be affected.

Proposed Action

The cultural resource inventory of the APE included a review of the natural and cultural environment including the prehistory, ethnography, geoarchaeology, and history; a review of historic maps; record search results from the CCIC; consultation with the NAHC; and a pedestrian survey. As a result of survey efforts, Kleinfelder identified one previously unrecorded segment of Canyon Road and four previously recorded resources within the APE.

Canyon Road, P-24-002128, and P-24-002129 were previously recommended as ineligible for inclusion in the NRHP. The State Historic Preservation Officer (SHPO) concurred with those recommendations; therefore, those resources are not considered historic properties for the purposes of Section 106, or historical resources for the purposes of CEQA. One historic property, Los Banos Creek Archaeological District (LBCAD) (P-24-000621), is located within the APE and is assumed eligible for inclusion in the NRHP and the California Register of Historical Resources for the purposes of this Proposed Project.

Based on the current understanding of the Proposed Project, the current boundary of the LBCAD has been arbitrarily defined, there are no previously recorded features associated with LBCAD within the APE, and the field survey for the Proposed Project resulted in negative findings. Accordingly, Reclamation determined a finding of no adverse effect to historic properties pursuant to 36 CFR § 800.5. On May 4, 2023 SHPO concurred on this finding of no adverse effect to historic properties.

Based upon the background research and survey results, the APE has a high sensitivity for buried prehistoric resources and CUL-1, CUL-2, and CUL-3 as listed in Section 2.3.3 Environmental Commitments will be included as environmental commitments/mitigation measures. These measures will reduce any impacts to less than significant for purposes of CEQA.

Cumulative Impacts

Reclamation has determined that the Proposed Action would not result in impacts to cultural resources; therefore, there would be no cumulative impacts. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on cultural resources.

3.2.6 Energy

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.2.6.1 Affected Environment

California's major sources of energy are petroleum products (i.e., gasoline, diesel, and oil), electricity, and natural gas.

Pacific Gas and Electric (PG&E) supplies electricity to the Project area. PG&E obtains its power through hydroelectric, thermal (natural gas), wind, and solar generation or via power purchases. PG&E continually produces new electric generation and natural gas sources and implements continuous improvements to gas lines throughout its service areas to ensure the provision of services to residents.

3.2.6.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to energy resources as conditions would remain unchanged.

Proposed Action

Construction and operation of the Proposed Project would require energy use, but this use would not be wasteful or inefficient, nor would it require new or expanded electric power or natural gas facilities. No features of the Proposed Project would conflict with or obstruct State or local plans for renewable energy or energy efficiency. The Proposed Project would comply with all Department of Energy pump efficiency requirements. The Proposed Project would not require the relocation or construction of new or expanded electric power or natural gas facilities. The impact on energy use and energy plans would be less than significant.

Cumulative Impacts

No cumulative adverse impacts to energy resources are anticipated. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on energy resources.

3.2.7 Geology/Soils

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code (1994) creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.2.7.1 Affected Environment

The topography of the Project area is sloped with elevations ranging from approximately 227 to 460 feet. The Proposed Project area contains eight soil mapping units, which are listed in Table 3-4 in Section 3.2.4 Biological Resources

. A few of the soils contain clay, which is known to be an expansive soil. Expansive soils are capable of absorbing water. As they absorb water, the volume of the clay increases. As they lose

water, expansive soils will shrink. This swelling and shrinking action can remove support of structures that are built upon them, resulting in damage.[2]

The only active fault identified in Merced County, and the closest to the Proposed Project area, is the Ortigalita fault, which is located approximately 6.3 miles west.[3] Nonetheless, the Proposed Project area is within a seismically active region and is subject to strong ground shaking. This is the principal potential earthquake hazard for the Proposed Project area and could cause damage to buildings and infrastructure.

Liquefaction is a phenomenon in which unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil stability during strong earthquake shaking results in the temporary fluid-like behavior of the soil. The Proposed Project is not located in an area affected by liquefaction.[4]

Landslides are deep-seated ground failures (several tens to hundreds of feet deep) in which a large section of a slope detaches and slides downhill. Landslide-susceptible areas are characterized by steep slopes and downslope creep of surface materials. There is no information available on landslides directly within the Proposed Project area.

3.2.7.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no ground disturbance or excavation performed. There would be no impact to geology and soils as conditions would remain unchanged.

Proposed Action

The faults most susceptible to earthquake rupture are active faults, which are faults that have experienced surface displacement within the last 11,000 years.[5] The Proposed Project area is not located within an Alquist-Priolo Earthquake Fault Zone and no mapped active faults are known to pass through the immediate Project region. As stated above, the nearest Alquist-Priolo Earthquake Fault Zone is approximately 6.3 miles west of the Project area. Therefore, the potential for fault rupture to affect the Proposed Project would be considered less than significant. The Proposed Project would not include habitable structures that could be impacted by strong seismic ground shaking. As discussed above, the Proposed Project would not be affected by liquefaction as the area is not susceptible to it.

The Proposed Project would not directly or indirectly include the risk of loss, injury or death involving seismic related ground failure and impacts would be considered less than significant.

Construction associated with the Proposed Project includes construction of pipeline, a box culvert, and the extension of an existing boat ramp. Implementation of the Proposed Project would not expose people or structures, directly or indirectly, to a potential substantial adverse

[2] (Geology.com, 2023)
[3] (California Department of Conservation , 2022)
[4] Ibid.
[5] (California Department of Conservation, 2023)

impact, including loss, injury, or death resulting from seismically induced fault rupture, ground shaking, liquefaction, or landslides.

No habitable structures would be constructed on the site, nor would substantial grading change the topography to the point where the Proposed Project would expose people or structures to potential substantial adverse effects. There would be no import of soil. The Project would follow all applicable regulations and requirements in the event that any structures are built upon expansive soils. The Proposed Project does not include septic tanks or alternative waste disposal systems. As a result, there is no potential for soil failure associated with the installation of septic tanks or alternative waste disposal systems.

The Proposed Project would disturb more than one acre of land. As defined by the SWRCB National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), projects that exceed one acre of ground disturbing activities are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) which requires applications of Best Management Practices (BMP) to control run-on and runoff from construction sites. The BMPs may include physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods, especially during storm events, use of infiltration swales, protection of stockpiled materials, and numerous other measures that would prevent or substantially reduce erosion from occurring during construction activities in the Project area. Compliance with the BMPs in the SWPPP on sites that are over an acre of ground disturbance would reduce the Program's potential impacts associated with soil erosion and loss of topsoil during construction to less than significant.

No known paleontological resources have been identified at the Proposed Project area. However, if a paleontological resource is found, then construction-related impacts could be a significant impact unless mitigated properly. An environmental commitment will be implemented in order to ensure that impacts to paleontological resources are less than significant (See Section 2.3.3).

Cumulative Impacts

No cumulative adverse impacts are anticipated to Geology and Soils. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on geological resources.

3.2.8 Greenhouse Gas Emissions and Climate Change

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.2.8.1 Affected Environment

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO_2), occur naturally and enter the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG related to human activities are CO_2, methane (CH_4), nitrous oxide, and fluorinated gases (EPA 2019).

GHG and climate change are cumulative global issues. The California Air Resources Board (CARB) and the EPA regulate GHG emissions in California and the U.S., respectively. While CARB has the primary regulatory responsibility for greenhouse gas emissions in California, local agencies such as SJVAPCD can also adopt policies for GHG emission reduction.

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change, including changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc. (EPA 2014a).

During the past century, humans have substantially added to the amount of GHG emissions in the atmosphere by burning fossil fuels such as coal, natural gas, oil, and gasoline to power cars, factories, utilities, and appliances. The added gases, primarily CO_2 and CH_4, are enhancing the natural greenhouse effect and contributing to an increase in global average temperature and related climate changes (EPA 2014b).

Climate change is widely recognized as an imminent threat to the global climate, economy, and population. The national, state, and local climate change regulatory setting is complex and evolving.

In 2006, the State of California issued the California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, which requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is further directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020.

Reclamation completed a global climate model in 2022 for the Sacramento and San Joaquin Basins. The model predicts average annual delivery of Table A water (2,111 TAF) is projected to be 9% lower in 2040 than under existing conditions.[6]

3.2.8.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no potential impact to GHG emissions as conditions would remain unchanged. Accordingly, due to a lack of emissions being generated there would be no impact to climate change.

[6] (State of California Natural Resources Agency Department of Water Resources, 2022)

Proposed Action

The Proposed Project would result in the generation of construction related emissions during construction. To gauge construction related CO_2-equivalent (CO_2e) emissions, the California Emissions Estimator Model (CalEEMod) version 2020.4.0 air quality model was run. The Proposed Project is estimated to produce a maximum annual total of approximately 96.0821 Metric Tons of CO_2e (see Appendix E Operational emissions would be negligible, occurring only to operate any equipment related to the Project facilities. During operations, emissions would also result from vehicle trips to the site during maintenance activities. Table 3-7 and Table 3-8 below show the emission total that would result from construction and operation.

In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*[7], proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. The SJVAPCD does not have an adopted threshold for GHG, however, the Sacramento Metropolitan Air Quality Management District has set a threshold of 1,100 $MTCO_2e$ and has developed BPS and mitigation for the reduction of GHG emitted from projects exceeding 1,100 $MTCO_2e$.[8] This threshold has been applied to this Proposed Project and would not be exceeded by either construction or operational activities. As a result, impacts from the Proposed Project would be considered less than significant.

Table 3-7 Short-Term Construction Generated GHG Emissions

	Emissions (MT CO2e)
Sacramento Metropolitan Air Quality Management District Threshold	1,100
Maximum Annual Construction Emissions	96.0821
Does the Project exceed the threshold?	No

Table 3-8 Long Term Operational Generated GHG Emissions

	Emissions (MT CO2e)
Sacramento Metropolitan Air Quality Management District Threshold	1,100
Maximum Annual project Emissions	0.1113
Does the Project exceed the threshold?	No

Cumulative Impacts

GHG emissions are considered cumulatively significant; however, the estimated annual CO2e emissions required to install and operate the Project is well below the 25,000 metric tons per year threshold for reporting GHG, set by the DWR Greenhouse Gas Emissions Reduction Plan (GGERP).[9] The GGERP was developed by the DWR to lay out its emissions reduction goals and strategies for the near-term (present to 2030) and long-term (2045). As a result, the Proposed Project is not expected to contribute to cumulative adverse impacts to global climate change. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future

[7] (San Joaquin Valley Air Pollution Control District, 2009)
[8] (Sacramento Metropolitan Air Quality Management District, 2020)
[9] (California Department of Water Resources, 2020)

projects in the area that could potentially contribute to a cumulative effect on GHG emissions and climate change.

3.2.9 Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

3.2.9.1 Affected Environment

The Proposed Project area does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control (DTSC). EnviroStor is DTSC's data management

system for tracking cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities, sites with known contamination, or sites where there may be reasons to investigate further.

Geotracker is the SWRCB's data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. Geotracker contains records for sites that require cleanup, such as Leaking Underground Storage Tank Sites, Department of Defense Sites, and Cleanup Program Sites. Geotracker also contains records for various unregulated projects as well as permitted facilities including Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites. A search of the EnviroStor and Geotracker databases performed on December 22, 2022 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Proposed Project.[10] The nearest municipal airport is the Los Banos Municipal Airport located 5.93 miles northeast of the Project area.

3.2.9.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no potential impact from hazards or hazardous materials as conditions would remain unchanged.

Proposed Action

Construction and operation of the Proposed Project would involve the use of minimal amounts of commercially available hazardous materials, including epoxy, hydraulic fluids, and vehicle fuels. A Spill Prevention, Control, and Countermeasure (SPCC) Plan will be prepared for the Proposed Project construction. The SPCC Plan for construction would address fuels, lubricants, and hydraulic fluids expected to be used in construction equipment. Such equipment would be properly maintained to minimize leaks, and to prevent spills, vehicle service and repair would be performed off-site at an appropriate facility. Staging areas would be located within previously disturbed unvegetated areas. Staging areas would incorporate native materials and, if necessary, use only low-impact materials such as gravel for surfacing. It is assumed that any potentially hazardous materials used would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations, including California Occupational Safety and Health Administration requirements, and Titles 8 and 22 of the Code of California Regulations. BMPs that dictate handling of hazardous materials would be used during construction, to prevent accidental spills and to dictate a response in the case of a spill. Therefore, the Proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the use of hazardous materials. Impacts would be less than significant.

There are no schools within 0.25 miles of the Proposed Project area. The nearest school is Charleston Elementary, which is located approximately 5.9 miles east at 18463 Charleston Road,

[10] (California Department of Toxic Substances Control, 2022); (State of California, 2022)

Los Banos. Therefore, the Proposed Project would not emit hazardous emissions or handle hazardous materials within 0.25 miles of a school. No impacts would occur.

The Proposed Project is not located within any of the airport sphere of influence areas identified in Merced County Airport Land Use Compatibility Plan maps. There are no public airports or private airstrips within a two-mile radius of the Proposed Project. The nearest airport to the Proposed Project is Los Banos Municipal Airport located approximately 5.93 miles northeast. Therefore, no impact would occur.

Government Code Section 65962.5, amended in 1992, requires the California Environmental Protection Agency to develop and update annually the Cortese List, which is a list of hazardous waste sites and other contaminated sites. According to the most recently published Cortese List, no hazardous waste sites are located on or in close proximity to the Proposed Project area. Therefore, no impacts would occur.

The Proposed Project would not impair or interfere with the implementation of the County of Merced Emergency Operations Plan as it does not impair any evacuation routes and the Dam would continue to be operated in accordance with the USACE guidance manual.

Lands immediately surrounding the Proposed Project are designated by the California Department of Forestry and Fire Protection's (CAL FIRE) Fire Resource and Protection Program (FRAP) as "Moderate" in State Responsibility Area (SRA) mapping.[11] The surrounding area is not in or near a Wildland Urban Interface zone.[12] Therefore, potential impacts on people or structures associated with fire hazards would be less than significant.

Cumulative Impacts

No cumulative adverse impacts from hazards are anticipated. The Proposed Project would not be precedent setting, nor are there any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to hazards and hazardous materials.

3.2.10 Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒

[11] (ArcGIS, n.d.); (California Department of Forestry and Fire Protection, 2022)
[12] (California Department of Forestry and Fire Protection, 2019)

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.2.10.1 Affected Environment

The Proposed Project area contains the LBC, the LBCDD, and the LBCDR. Both the LBCDD and LBCDR are federally-owned and State-operated. They are used to provide flood control protection to the San Luis Canal/California Aqueduct. Additionally, they are able to provide flood protection to the City of Los Banos and I-5 because of their proximity to the Dam facilities. The Dam is operated to provide a maximum storage of 34,562 AF and a winter conservation pool of 20,562 AF. The Project is located in the Federal Emergency Management Agency Digital Flood Insurance Rate Map Zone D (FIRM Panel 06047C1025G, 12/2/2008), an unstudied area where flood hazards are undetermined, but flooding is possible.[13] (See Appendix A, Figure 3-2)

The Proposed Project area is located in the San Joaquin Valley Basin. The San Joaquin Basin is divided into seven subbasins. The Delta-Mendota subbasin, where the Proposed Project area is located, is approximately 747,000 acres and provides groundwater for areas in the counties of Stanislaus, Merced, Madera, and Fresno. Figure 1-4 in Appendix A shows the way that water is conveyed in the Proposed Project area.

3.2.10.2 Environmental Consequences

No Action

Under the No Action alternative, a more effective management of the water supplies in the LBCDR, maximizing water management opportunities for the region, groundwater recharge, flood control and downstream benefits while improving access for recreational use of the Reservoir, would not occur.

[13] (United States Federal Emergency Management Agency (FEMA), 2023)

Proposed Action

Construction of the Proposed Project would require preparation of a SWPPP. A SWPPP would include site planning and scheduling, limiting disturbed soil areas, and determining BMPs to minimize the risk of pollution and sediments being discharged from construction areas. Implementation of the SWPPP would minimize the potential for the Proposed Project to substantially alter the existing drainage pattern in a manner that would result in substantial erosion or siltation onsite or offsite. In addition, an environmental training program would be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures and SWPPP measures, to all construction crew members. The construction SWPPP identified above would include procedures for quick and safe cleanup of accidental spills. The construction SWPPP would prescribe hazardous materials handling procedures for reducing the potential for a spill during construction and would include an emergency response program to ensure quick and safe cleanup of accidental spills. The SWPPP would identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, would be permitted. Use of chemicals or surfactants would not be generated through the maintenance or operation of the Proposed Project and as such, there would be no discharge directly associated with Proposed Project implementation that could impact water quality standards during operation or maintenance. With meeting the regulatory requirements, the construction and operation Project would not violate any water quality standards and would not impact waste discharge requirements.

Under Reclamation's operational requirements, the Proposed Project would not result in the diversion of additional water from the Sacramento-San Joaquin Delta, a change in the timing of CVP diversions, or the delivery of more CVP water than has been delivered historically. Instead, the requested change would provide the operational flexibility that the CVP needs to improve existing water supply deliveries south of the Delta for wildlife refuges and CVP contractors.

Operation of the Project would allow CVP water from the San Luis Canal segment of the California Aqueduct to be stored in the LBCDR, in additional to other available water supplies identified previously. All non-CVP waters conveyed within federal facilities must meet Reclamation's then-current water quality standards prior to introduction. This would include in the Reservoir and the DMC. During 2020 Project, four water quality tests were conducted, the results of which can be found in the Los Banos Creek Regulation and Storage Proof of Concept Project Summary Report (Appendix BAppendix A: Figures

, Document B-1). These samples showed that water quality was consistent with current thresholds for introducing water into CVP facilities. If the incoming CVP water under the Proposed Project fails to meet the applicable Reclamation standards for introduction into the LBCDR or DMC, it would not be introduced until subsequent testing has demonstrated that it meets the relevant standards. With these requirements, in addition to the water quality environmental protection measures included in Table 2-1, the Proposed Project would not result in adverse impacts to water quality.

The addition of the box culvert would accommodate a flow of up to 450 cfs and thus would not significantly impact flood flows of LBC. In the event of extreme flood flows in the creek, the box culvert would allow for water to pass through and over the top of it.

The Proposed Project increases water available for recharge from the LBC and reduces flood flow releases by creating space to store additional natural LBC water in the Reservoir. Outside of the flood control season the Proposed Project would provide for storage and reregulation of Project Participant supplies, as discussed in Section 2.3.2. A figure showing this can be found in E, Figure 1-5. The use of groundwater within the Project Participants' service areas will comply with their applicable Groundwater Sustainability Plans, which would not result in any impacts associated with the depletion of groundwater supply or recharge. The Project would allow for timed surface water deliveries which would enable landowners to reduce pumping and meet sustainability goals.

Cumulative Impacts

The Proposed Project would not interfere with water deliveries, facility operation, or cause substantial adverse changes to the existing conveyance facilities. It would not trigger other water service actions outside those proposed herein and does not contribute to cumulative negative effects to physical resources when added to other water service actions. The Proposed Project would have beneficial impacts on water resources and public health by reducing flooding in the area and allowing for the storage and timed release of the water for beneficial uses such as agriculture operations, ground water recharge and wetlands management. Therefore, it would not contribute to adverse cumulative impacts on these areas. The Proposed Project would not be precedent setting, nor are there any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to hydrology and water quality.

3.2.11 Land Use/Planning

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.2.11.1 Affected Environment

The Proposed Project area is the existing LCBDR area. The surrounding lands are currently fallow. Lands are classified by the DOC as Grazing Land. The Proposed Project area and its surroundings are zoned A-2.

3.2.11.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to land use as conditions would remain unchanged.

Proposed Action

The Proposed Project includes replacing a boat ramp, a box culvert, and the construction of an underground water conveyance pipeline, and would not include additional structures with the potential to physically divide a community, and would not conflict with any land use plan, policy or regulation. Therefore, no impact would occur.

Cumulative Impacts

In recent years, land use changes within the San Joaquin Valley have involved the urbanization of agricultural lands. These types of changes are typically driven by economic pressures and are as likely to occur with or without the Proposed Project. The Proposed Project would improve existing infrastructure in order to more effectively manage available water supplies to meet existing demands. These are all improvements that would allow the continuation of existing land uses in the SLWD and other areas. Accordingly, no cumulative adverse impacts to land use are anticipated as a result of the Proposed Project. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to land use and planning.

3.2.12 Mineral Resources

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.2.12.1 Affected Environment

The Proposed Project area is located in a region that is designated Mineral Resource Zone 3a (MRZ-3a). The MRZ-3a indicates that there are known mineral resources of undetermined significance in the particular region. The Merced County General Plan does not identify the area as having a high likelihood of known significant sand and gravel resources.

3.2.12.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to mineral resources as conditions would remain unchanged.

Proposed Action

The Proposed Project does not have the potential to impact the availability of any known mineral resources of significance or mineral resource recovery sites as there are no recovery sites within the in the area, and the known mineral resources are of undetermined significance. Therefore, the Proposed Project would not preclude the recovery of any minerals in the area. There would be no impact.

Cumulative Impacts

There would be no cumulative impacts to mineral resources as the Proposed Project would not preclude the recovery of any minerals in the area. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to land mineral resources.

3.2.13 Noise

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☒	☐

3.2.13.1 Affected Environment

The Proposed Project area comprises existing canal structures, recreational areas and agricultural land. The closest residence (noise receptor) is approximately 0.5 miles away.

3.2.13.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no potential noise impacts as conditions would remain unchanged.

Proposed Action

Operation of the Proposed Project would utilize current pump stations and would not involve the construction of new pumps. Pumping at the pump stations would increase from current levels, but not beyond what they were designed to do, and have done in previous years. Due to lack of water and storage capacity of the CVP, the pumping demand has declined over the last thirty years. The current pump station noise levels are consistent with noise levels in the area from farming activities. Overall, there would not be a significant increase in noise in the area. Construction activities would involve temporary noise sources that are anticipated to last approximately six months during construction of the Proposed Project. Typical construction equipment would include an excavator, backhoe/loader, and miscellaneous equipment (e.g., pneumatic tools, generators and portable air compressors).

The Merced County General Plan Noise Element (2013) sets the standard noise threshold of 65 decibels (dBA) at the exterior of nearby residences. The closest residence is approximately 0.5 miles from the Project area. The noise impact would be less than significant.

Table 3-9 Noise Levels in dBA

Equipment	**50 feet from Source (dBA L_{eq})**	**100 feet from Source (dBA L_{eq})**	**1.0 mile from Source (dBA L_{eq})**
Air Compressor	80	74	40
Backhoe	80	74	45
Concrete Mixer	85	79	45
Grader	85	79	45
Jack Hammer	88	82	48
Loader	80	74	40
Paver	85	79	45
Roller	85	79	45
Saw	76	70	43
Scraper	85	79	48
Truck (e.g. dump, water)	84	78	48

Source: Noise level at 50 feet from (John A. Volpe National Transportation Systems Center, 2018)
Note: Noise Levels at 100 feet and one mile, were extrapolated using a 6 dBA attenuation rate per doubling of distance. Each noise level assumes the piece of equipment is operating at full power for the expected duration to complete the construction activity. The duration varies widely between each piece of equipment. Noise levels also depend on the model and year of the equipment used.

Cumulative Impacts

The Proposed Project would not considerably increase cumulative adverse impacts related to noise. The Proposed Project would not be precedent setting, nor are there are not any past,

present, or future projects in the area that could potentially contribute to a cumulative effect related to noise.

3.2.14 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.2.14.1 Affected Environment

The Proposed Project area is within the San Luis State Recreation Area and consists of a boat dock adjacent to a parking lot, a reservoir and dam, a pump station, access roads, and grazing land. The closest residence is approximately 0.5 miles away. The area is zoned A-2 (Exclusive General Agriculture). Construction areas are located in grazing land and vacant or disturbed land as determined by the FMMP. (Appendix A, Figure 3-2).

3.2.14.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to population and housing as conditions would remain unchanged.

Proposed Action

The Proposed Project would not include any features that would require the destruction or relocation of existing housing or the construction of replacement housing, nor does it otherwise involve any increase or decrease in the number of available dwelling units in the area. It would not displace any people. The Proposed Project would assist in improving the efficiency and availability of water supplies to meet existing demands and would have no effect on population growth.

The Proposed Project would not directly induce population growth in the region because the Proposed Project does not involve construction of new homes or businesses and would draw construction workers from the labor force within the region. The Proposed Project would not indirectly induce population growth in the region by removing an obstacle to growth, such as contributing to potable water supply capacity. Therefore, no impact would occur.

The Proposed Project is located in a geographic area designated as Grazing Land and zoned for Agriculture. Although there is a farming residence within approximately 0.5 miles of the Proposed Project, the Project would not displace existing housing or necessitate the construction of replacement housing elsewhere. No impact would occur.

Cumulative Impacts

The Proposed Project would not result in any cumulative impacts to population and housing. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to population and housing.

3.2.15 Public Services

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.2.15.1 Affected Environment

The closest fire station is Merced County Fire Station #71 located approximately 7.5 miles northeast of the Proposed Project area. The Merced County Sheriff, Los Banos Substation, is located approximately 6.7 miles northeast and the nearest school, Charleston Elementary, is located approximately 5.9 miles east. The closest park/recreational area is on the site.

3.2.15.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to public services as conditions would remain unchanged.

Proposed Action

There is one residential structure in the vicinity of the Proposed Project. No new permanent employees would be located onsite after construction. Therefore, no new residents or employees would occupy the Proposed Project area and service demands per person would not increase. The Proposed Project would not require the provision of, or need for, new or physically altered government facilities.

Construction of the Proposed Project would entail delivery of fuel and fueling/maintenance of the construction equipment as well as temporary storage of material (pipes, epoxy, concrete forms, etc.) daily. Because the Proposed Project does not expand the service area in which public services are provided, nor does it introduce any new or expanded facilities normally subject to fire or similar emergencies within the Proposed Project area, existing fire protection and police services would be able to sufficiently respond to emergency events with existing equipment and staffing capacities. Therefore, implementation of the Proposed Project would not require new fire or police facilities to maintain response ratios, service ratios, or other measures of performance. Impacts would be considered less than significant.

As the Proposed Project would not result in an increase in population, it would not change existing demand for school services or necessitate construction of new parks. Therefore, there would be no impact.

The Proposed Project would not include new housing or bring new businesses to the area that would require any additional services or public facilities, including libraries. Therefore, the Proposed Project would have no impact related to other public facilities.

Cumulative Impacts

There would be no cumulative impacts to public services from the Proposed Project. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to public services.

3.2.16 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

3.2.16.1 Affected Environment

As identified previously in Public Services, the closest park/recreational area is the Los Banos Creek State Recreation Area, located within the Proposed Project area. The Los Banos Creek State Recreation Area surrounds the LBCDR and was created in 1966 when Reclamation built the LBCDD. The Reservoir, with a capacity of 34,562 AF, is a joint-use facility owned by Reclamation and operated and maintained by the DWR. Water delivered is used for crop production as well as maintenance of wetlands, waterfowl habitat, and vegetation growth.[14]

3.2.16.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to recreation as conditions would remain unchanged.

Proposed Action

The Proposed Project includes an element that would increase lake access in two ways: 1) by providing a box culvert over the Canyon Road outlet, and 2) extending the existing boat ramp to allow lake access during lower water levels. The box culvert would allow vehicles to pass over during most flood release scenarios. Currently, access is only provided during times of low or no flood flows when it is physically possible for a vehicle to travel across the LBC crossing. Extending the boat ramp would allow increased access for boats/recreational users when water levels are lower. Although ease of access would increase, it is not anticipated to result in a substantial physical deterioration of the facility. Any impacts to the environment from construction of the box culvert and extension of the boat ramp would be less than significant.

Cumulative Impacts

There would be no cumulative impacts to parks and recreation from the Proposed Project. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to recreation.

3.2.17 Transportation

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒

[14] (United States Bureau of Reclamation, 2023)

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

3.2.17.1 Affected Environment

The Proposed Project area would be located approximately 4.3 miles southeast of where I-5 and SR 152 intersect. A portion of the Project Area contains a rural county road named Canyon Road, which provides access to the LBCDR.

3.2.17.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no additional impact to existing traffic patterns in the area. Conditions would remain unchanged.

Proposed Action

The Proposed Project would not conflict with any program or county transportation ordinance or policy. Construction would be temporary and would not result in significant impacts. The Proposed Project would adhere to all applicable local Merced County, State, and federal guidelines for both road and general construction. It would not increase hazards due to a geometric design or incompatible uses. Construction would also not limit emergency access routes in the area. In addition, once the box culvert is constructed, it would allow increased access to the LBCDR recreational facilities during most flood release scenarios.

In accordance with Senate Bill (SB) 743, the California Natural Resources Agency adopted new CEQA Guidelines Section 15064.3, subdivision (b) in December 2018 by. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shift the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled (VMT) is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person. The provisions of SB 743 became applicable statewide on July 1, 2020. The County has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures.

CEQA Guidelines Section 15064.3 suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. Furthermore, projects that generate or attract fewer than 110 operational trips per day would generally be exempt from further consideration with respect to VMT and impacts are assumed to be less than significant. Per this guidance, since the Proposed Project is neither a land use nor a transportation project, and would generate very few additional operational trips, it can be assumed to not have an impact on VMT.

Cumulative Impacts

The Proposed Project, when added to other projects, would not contribute to significant road improvements or degradation in environmental conditions. The Proposed Project would not be precedent setting. There are not any past, present, or future projects in the area that could potentially contribute to a cumulative adverse effect related to transportation.

3.2.18 Tribal Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision © of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivisi©(c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.2.18.1 Affected Environment

On March 31, 2022, Kleinfelder requested that the California Native American Heritage Commission (NAHC) perform a search of its Sacred Lands File (SLF). The NAHC responded on April 14, 2022, with a list of Native American Tribes affiliated with the region to contact for additional information. The SLF search did not identify any resources within the vicinity of the APE. As the Federal lead agency, Reclamation consulted with the NAHC and local Native American tribes as part of its tribal consultation responsibilities under Section 106 of the NHPA. The NAHC supplied a list of four individuals and tribal representative with ancestral ties to the Proposed Project area. No properties of religious and cultural significance to Native American tribes were identified in the APE as a result of this consultation. The NAHC Native American contacts list is provided in Appendix B.

3.2.18.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no additional impact to existing tribal cultural resources in the area. Conditions would remain unchanged.

Proposed Action

The NAHC SLF search identified no previously recorded tribal resources, and Native American outreach to date has not identified areas of concern. No sacred sites or traditional cultural places were identified within or adjacent to the Project APE. Although there is no evidence that tribal cultural resources exist within the APE, Reclamation and the SLWD have included an environmental commitment (see Section 2.3.3) to avoid and/or reduce potential environmental effects to any unknown tribal cultural resources.

Cumulative Impacts

The Proposed Project, when added to other projects, would not contribute to significant tribal cultural resource impacts in environmental conditions. The Proposed Project would not be precedent setting. There are not any past, present, or future projects in the area that could potentially contribute to a cumulative adverse effect related to tribal cultural resources.

3.2.19 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

3.2.19.1 Affected Environment

The Proposed Project area is located in the vicinity of the LBCDR. The Proposed Project area does not currently use any wastewater treatment services. Solid waste disposal during construction would be provided by the Merced County Regional Waste Authority, which operates two landfills. The Billy Wright Landfill is the closest landfill located approximately 3.2 miles northwest of the site.

3.2.19.2 Environmental Consequences

No Action

There would be no impact to utilities and service systems as no construction would occur and conditions would remain unchanged.

Proposed Action

Neither construction nor operation of the Proposed Project components would include any activities that would require the relocation or construction of new expanded water, wastewater treatment, storm drainage, electric power, natural gas, or telecommunication facilities, require new wells or public water or any new or expanded wastewater infrastructure or service.

The Proposed Project is anticipated to generate solid waste from construction activities. Any material generated from this Project would be transported off site for recycling or disposal. The Billy Wright Landfill, which is located approximately 3.2 miles northwest of the Proposed Project area, accepts construction waste and has adequate capacity for waste generated by the Proposed Project.[15] The Proposed Project will comply with all federal, State, and local requirements related to solid waste.

Cumulative Impacts

The Proposed Project would not be precedent setting, nor would it have a cumulative adverse impact on utilities and service systems. There are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect on utilities and service systems.

3.2.20 Wildfire

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project: Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project	☐	☐	☐	☒

[15] (CalRecycle, 2022)

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

3.2.20.1 Affected Environment

The Project is located in a Moderate Fire Hazard Severity Area within an SRA. The nearest very high fire hazard severity zone is approximately 15 miles away in San Benito County, California.

3.2.20.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impact to wildfire as conditions would remain unchanged.

Proposed Action

The Proposed Project, due to its lack of proximity to very high fire hazard severity zones, would not substantially impair adopted emergency response or evacuation plans. Additionally, it would not exacerbate fire risk, nor would it necessitate installation of infrastructure that could exacerbate fire risk. Project construction would not hinder evacuation responses. The box culvert would allow for increased access for both pedestrians and emergency vehicles, and the proposed pipeline would be constructed to not impede any existing roadways. Project construction would not result in significant impacts.

Cumulative Impacts

There would be no cumulative impacts to wildfire from the Proposed Project. The Proposed Project would not be precedent setting, nor are there are not any past, present, or future projects in the area that could potentially contribute to a cumulative effect related to wildfire.

3.3 CEQA Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

The analysis conducted in this document results in a determination by SLWD, in accordance with CEQA, that the Proposed Project would have a less than significant effect on the local environment. As described in the sections above, the potential for impacts to biological resources from the construction of the Project would be less than significant with the incorporation of the mitigation measures in Table 2-1.

a): Accordingly, the Proposed Project would involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community, or example of a major period of California history or prehistory.

b): As discussed above, the Proposed Project would result in less than significant impacts to biological resources, cultural resources, geology and soils, and tribal cultural resources with mitigation incorporation listed in Table 2-1 Environmental Protection Measures and Commitments. Proposed Project operation would not require any onsite personnel. Maintenance would be performed on an as-needed basis and would not require any permanent onsite personnel. Accordingly, implementation of the Proposed Project would generate minimal trips. The construction of water conveyance pipeline, a box culvert, and the extension of an existing boat ramp would not result in ongoing impacts that are individually limited or cumulatively considerable. The implementation of the identified Proposed Project-specific mitigation measures and environmental commitments, and

compliance with applicable codes, ordinances, laws, and other regulations would reduce the magnitude of any impacts associated with construction activities to a less than significant level.

c): The Proposed Project would not result in substantial adverse effects on human beings, either directly or indirectly. Implementation of the identified mitigation measures and environmental commitments would reduce the Proposed Project's potential environmental effects to the public and the environment to less than significant levels. Adverse effects on human beings resulting from implementation of the Proposed Project would be less than significant. The Proposed Project is environmentally superior to the No-Project alternative.

4 Consultation and Coordination

4.1 Agencies and Persons Consulted

Reclamation and the District consulted and coordinated with the Southern Sierra Miwuk Nation, Santa Rosa Rancheria Tachi/Yokut Tribe, North Fork Rancheria of Mono Indians of California, CDFW, USFWS, DWR and State Parks in the preparation of this EA/IS.

4.2 Public Involvement

Reclamation and the District will provide the public with an opportunity to comment on the Draft EA/IS during a 30-day public review period.

4.3 Clean Water Act (33 U.S.C. § 1251 et seq.)

Section 301 of the Clean Water Act (33 U.S.C. § 1311) prohibits the discharge of any pollutants into waters of the United States, except as allowed by permit issued pursuant to various sections of the Clean Water Act.

Project proponents will acquire all applicable permits prior to start of construction.

4.4 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation is consulting with USFWS regarding the Proposed Action.

4.5 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act requires that Reclamation consults with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the USFWS and State fish and wildlife agencies "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license". Consultation is to be undertaken for the purpose of "preventing the loss of and damage to wildlife resources".

On November 29, 2023, Reclamation received a Planning Aid Letter from USFWS (see Appendix C 1.

4.6 Title 54 U.S.C. § 306108, Commonly Known as Section 106 of the National Historic Preservation Act

Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the SHPO, Indian tribes and other consulting parties.

Reclamation determined that the Proposed Action would have no adverse effect to historic properties pursuant to 36 CFR § 800.5(d)(1). Reclamation consulted with the SHPO on the findings via digital submission on March 31, 2023. On May 3, 2023, the SHPO responded via email that there were no objections to Reclamation's determination.

4.7 California Fish and Game Code (Section 1600, et seq.)

California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may substantially modify a river, stream, or lake.

Project proponents will acquire all applicable permits prior to start of construction.

5 Preparers and Reviewers

5.1 Bureau of Reclamation

Chris Rigby, Senior Natural Resource Specialist, SCCAO
Shauna McDonald, Wildlife Biologist, SCCAO
Karen Reichardt, Archaeologist, Regional Office, CGB-153
Rain L. Emerson, Contracts Branch Administration Chief, SCCAO – reviewer
David E. Hyatt, Resources Management Division Chief, SCCAO – reviewer

5.2 San Luis Water District

Lon Martin, General Manager
Steven P. Stadler, PE, District Engineer

5.3 Consultant Name

Rick Iger, PE, Principal Engineer
Dawn E. Marple, Principal Planner
Jeffrey O'Neal, AICP, Principal Planner
Amy Wilson, Senior Planner
Jarred Olsen, AICP, Associate Planner
Ryan McKelvey, Assistant Planner
Jeff Gurule, Live Oak Associates, Staff Biologist
Jackie Lancaster, Project Assistant

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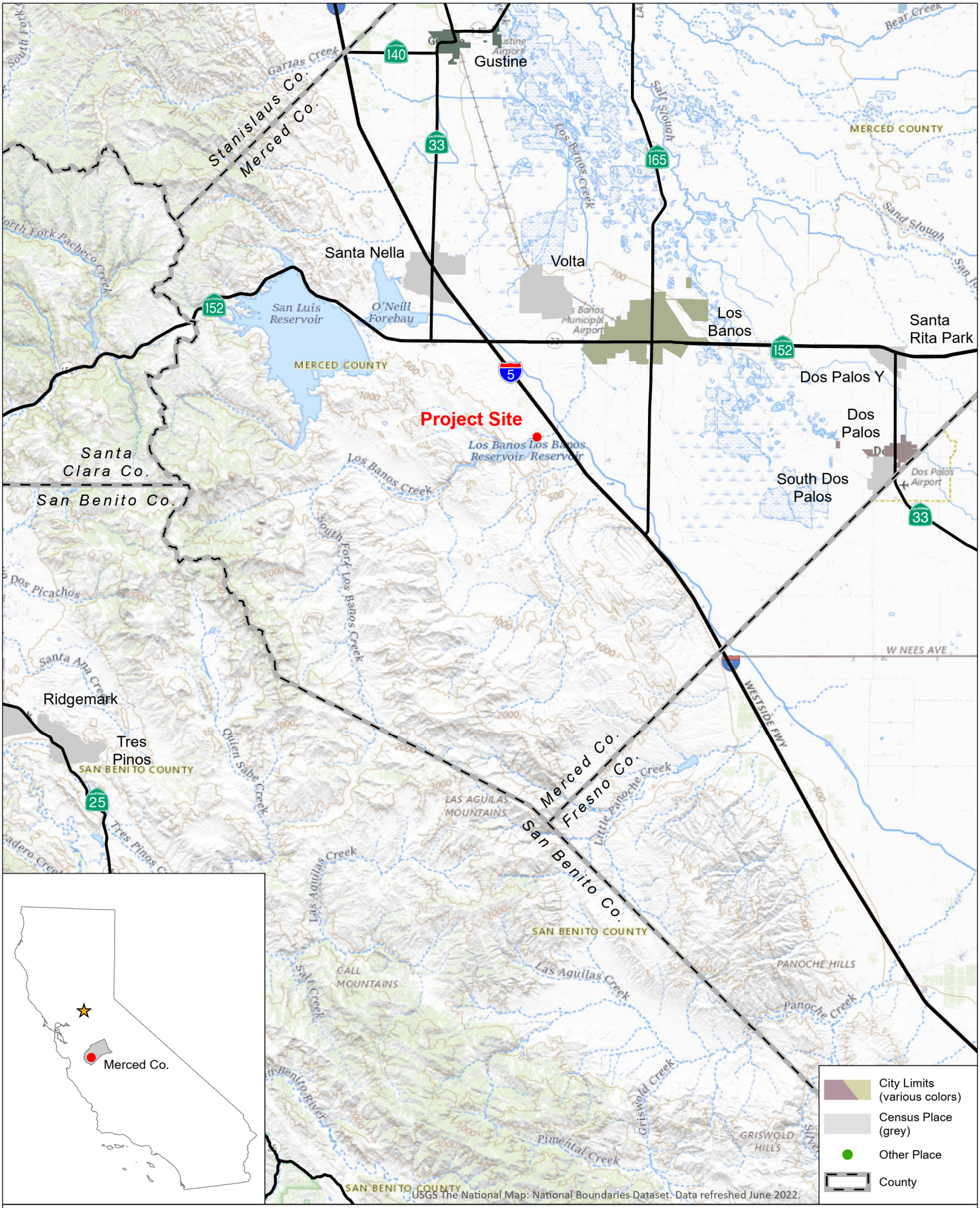
Appendix A: Figures



Vicinity Map

Los Banos Creek Detention Reservoir Regulation and Storage Project

0 2 4 Miles

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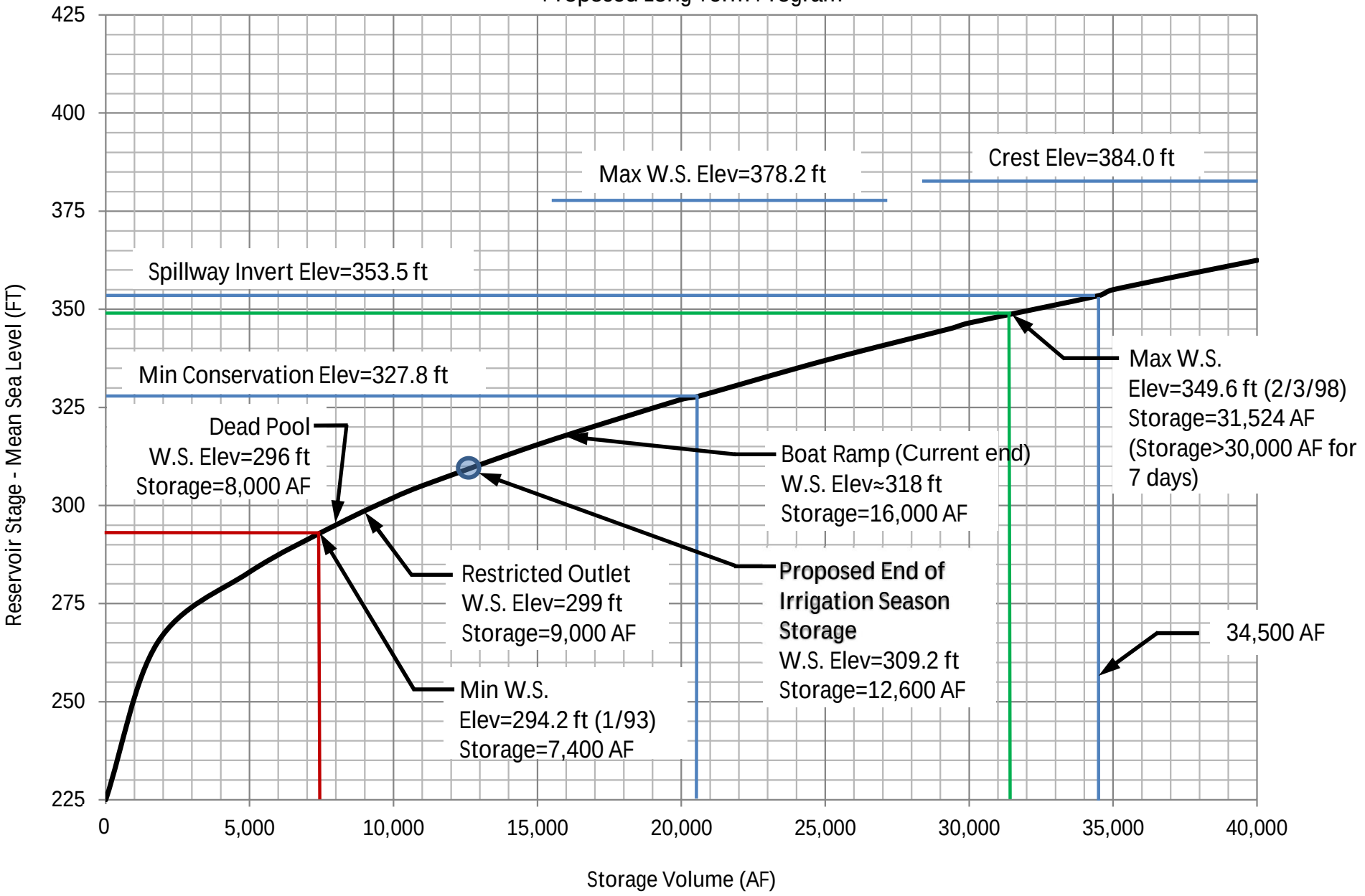
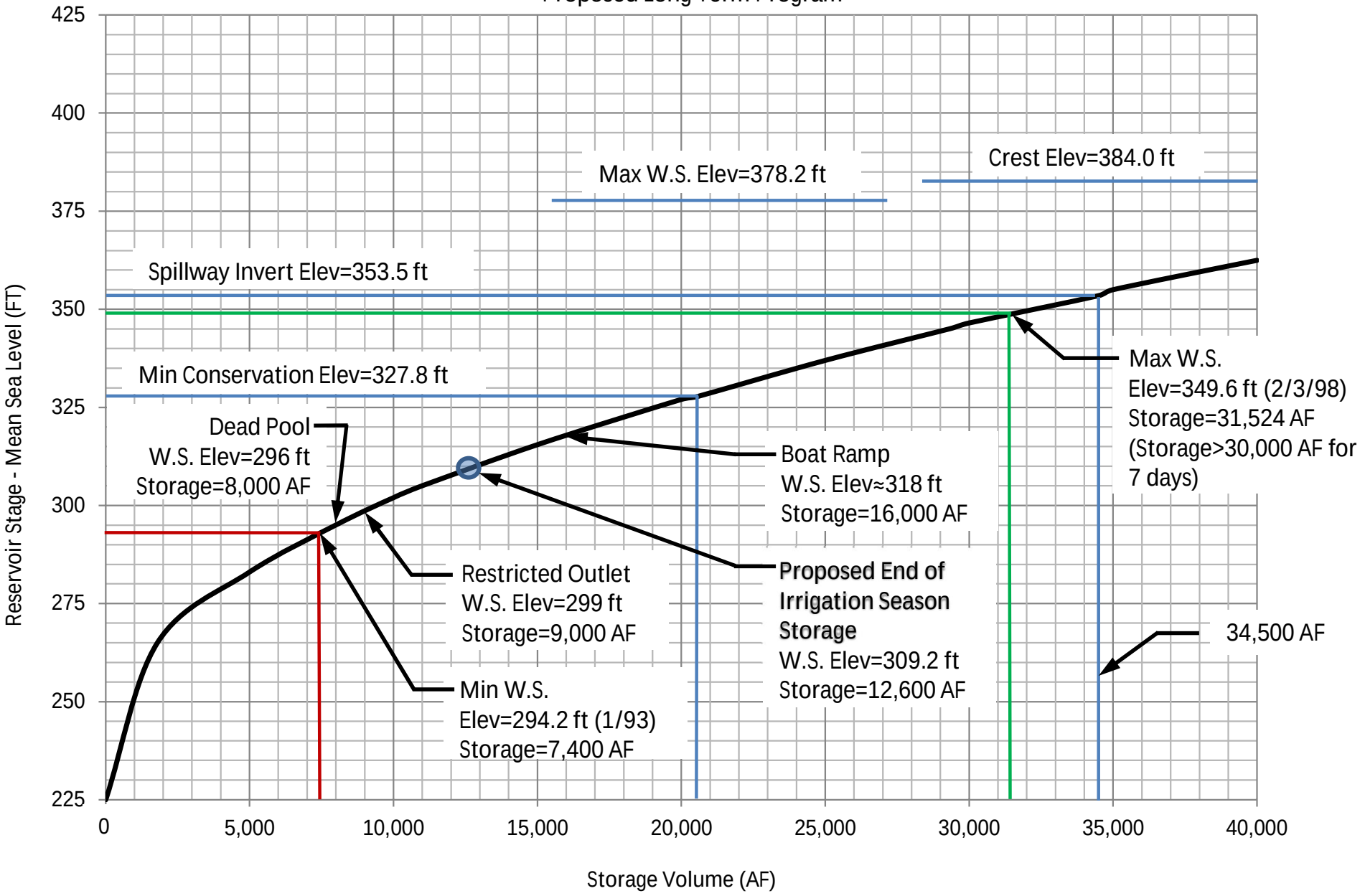
LBCDR - Stage-Storage Curve

Proposed Long Term Program

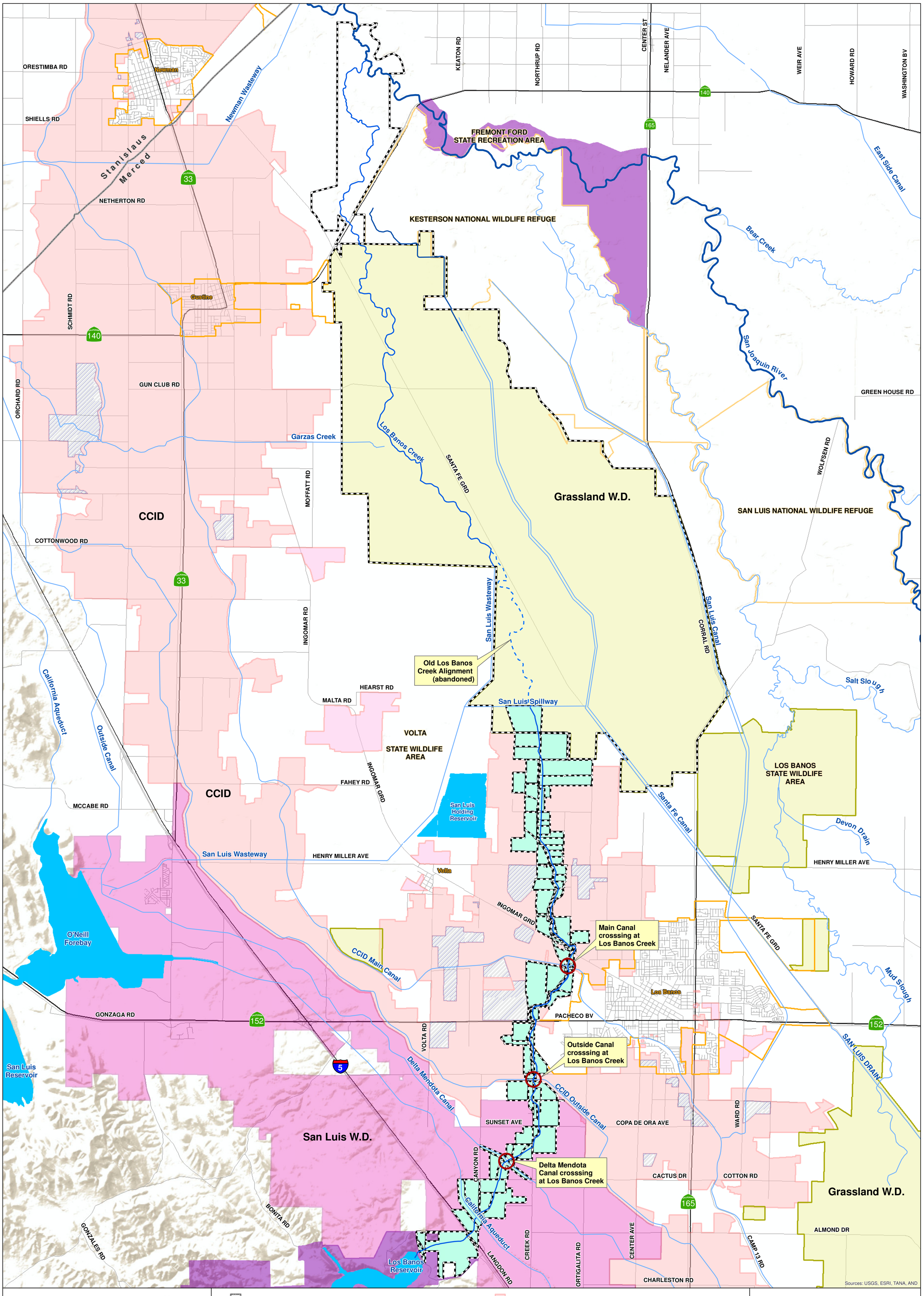


LBCDR - Stage-Storage Curve

Proposed Long Term Program



ATTACHMENT 3



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Miles

EST. 1968
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CONSULTING GROUP
An Employee Owned Company

1800 30th Street, Suite 280
Bakersfield, CA 93301
(661) 616-5900

- County
- City Boundaries
- Parcels Along Creek
- San Luis National Wildlife Refuge
- San Luis State Recreation Area (Approx. Riparian Acres - 42)
- Grassland W.D. (Approx. Riparian Acres - 25,874)
- CCID Boundary (Approx. Riparian Acres - 2,478)
- Island - Not part of CCID
- Island Out - Part of CCID
- San Luis W.D. Boundary (Approx. Riparian Acres - 982)
- Los Banos Creek Riparian Lands (Total Approx. Acres - 32,617)

There are approximately 3,241 acres of riparian land not located within any District

Los Banos Creek Diversion Project Overview Map

San Joaquin River Exchange Contractors Authority

12/10/2015 : G:\SJRECWA-3495\349512B3 - LBC Water Resources Mgmt Plan\GIS\Map\LBC Riparian Land-Parcels-2015.mxd

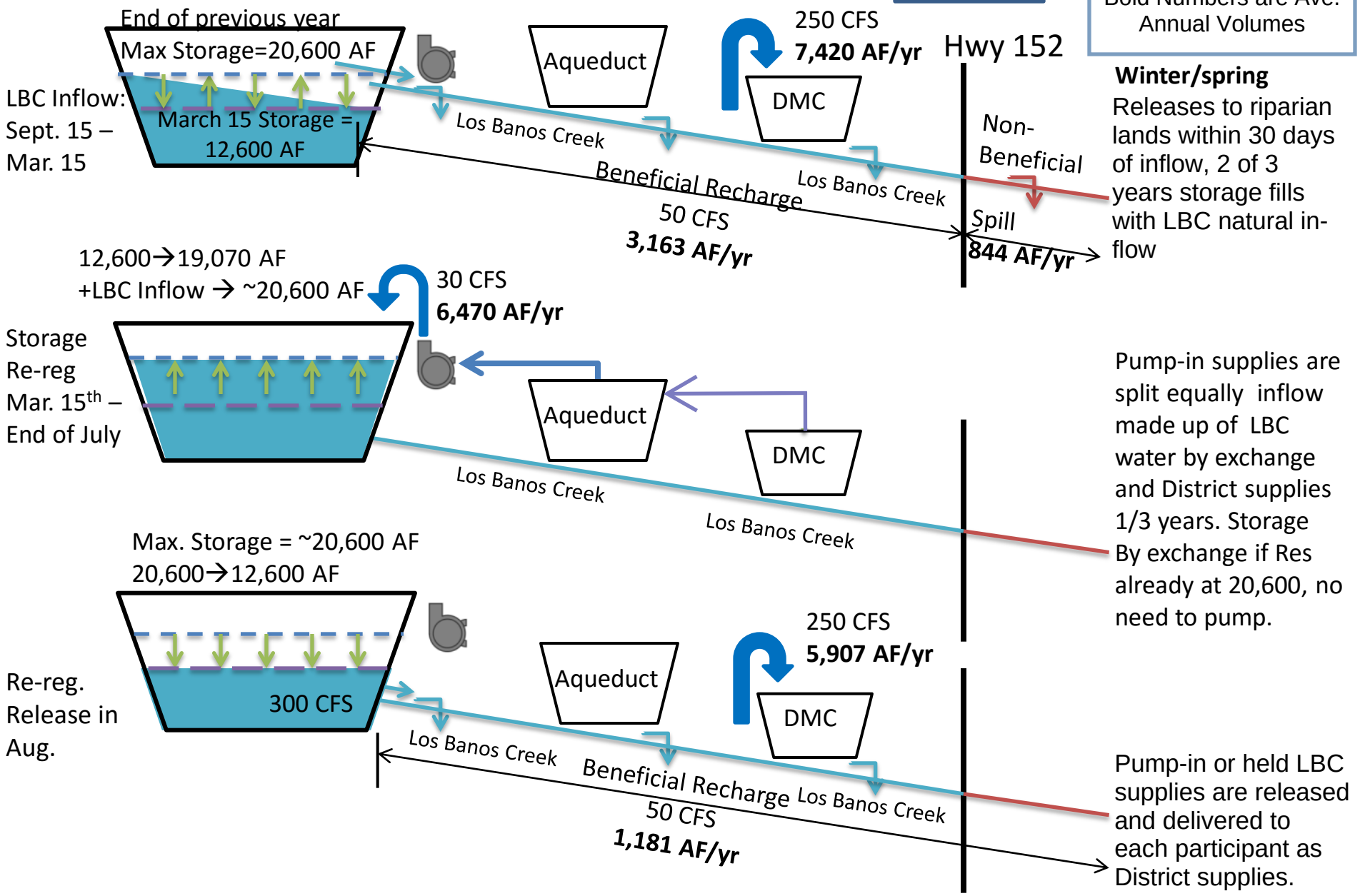
Central California Irrigation District Conveyance System and Distrct Well Locations

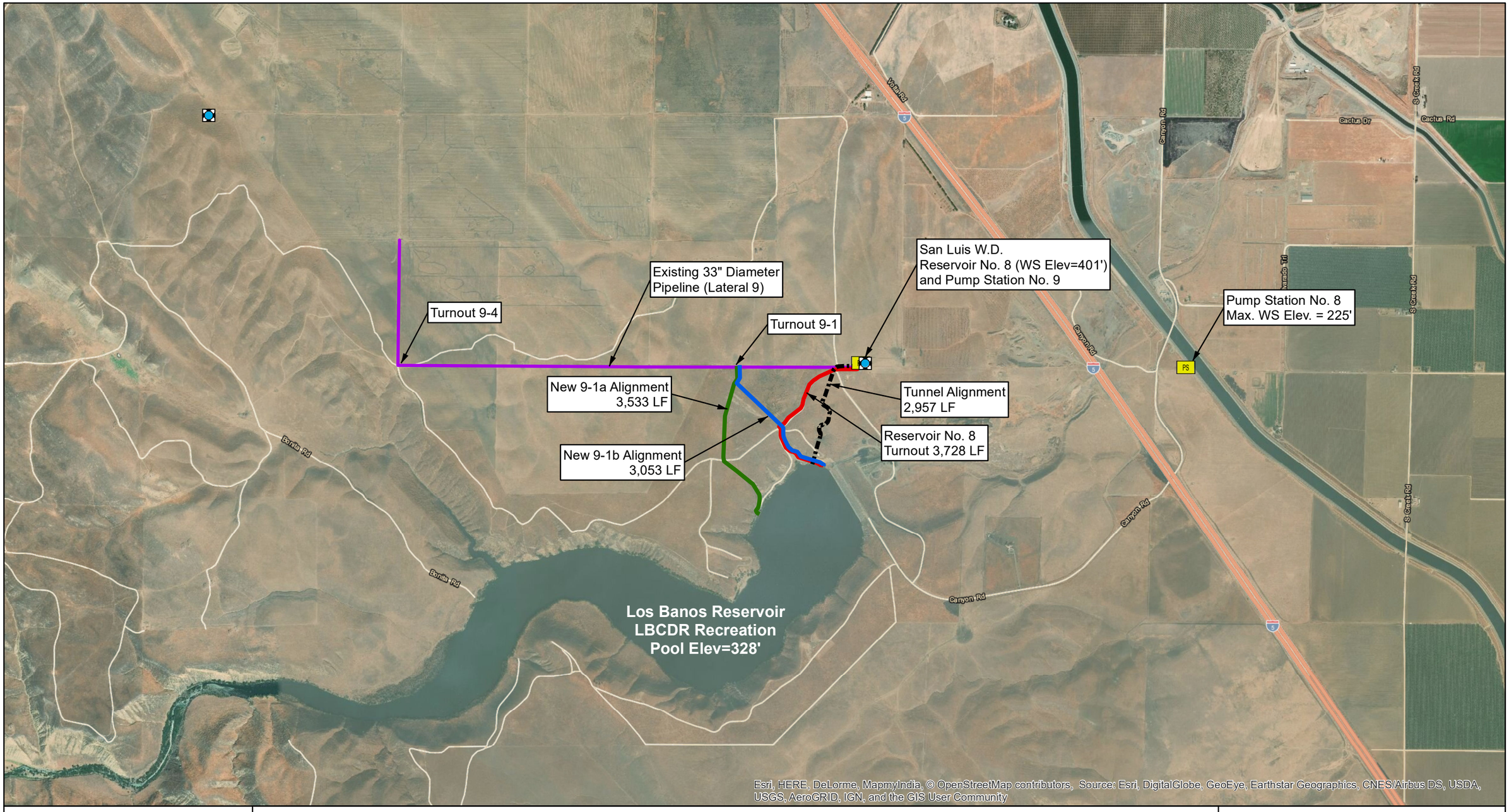
12/20/2017 : \\ppeng.com\pzdata\Clients\Central California ID-3510\351017001-OES Hazard Mitigation Grant Program_DOCS\Background\Sub-Application\GIS\Map\LBC\LBCDR v2.mxd

Basic Operations Use of LBC DR and LBC to DMC Diversion Structure - Average Annual Yield

Sim B1a

Bold Numbers are Ave. Annual Volumes





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N

0 1,000 2,000
Feet

PS Pump Station

Existing 33" Pipeline

Los Banos Creek Detention Reservoir

Storage Project Alternative Alignments

San Joaquin River Exchange Contractors Water Authority

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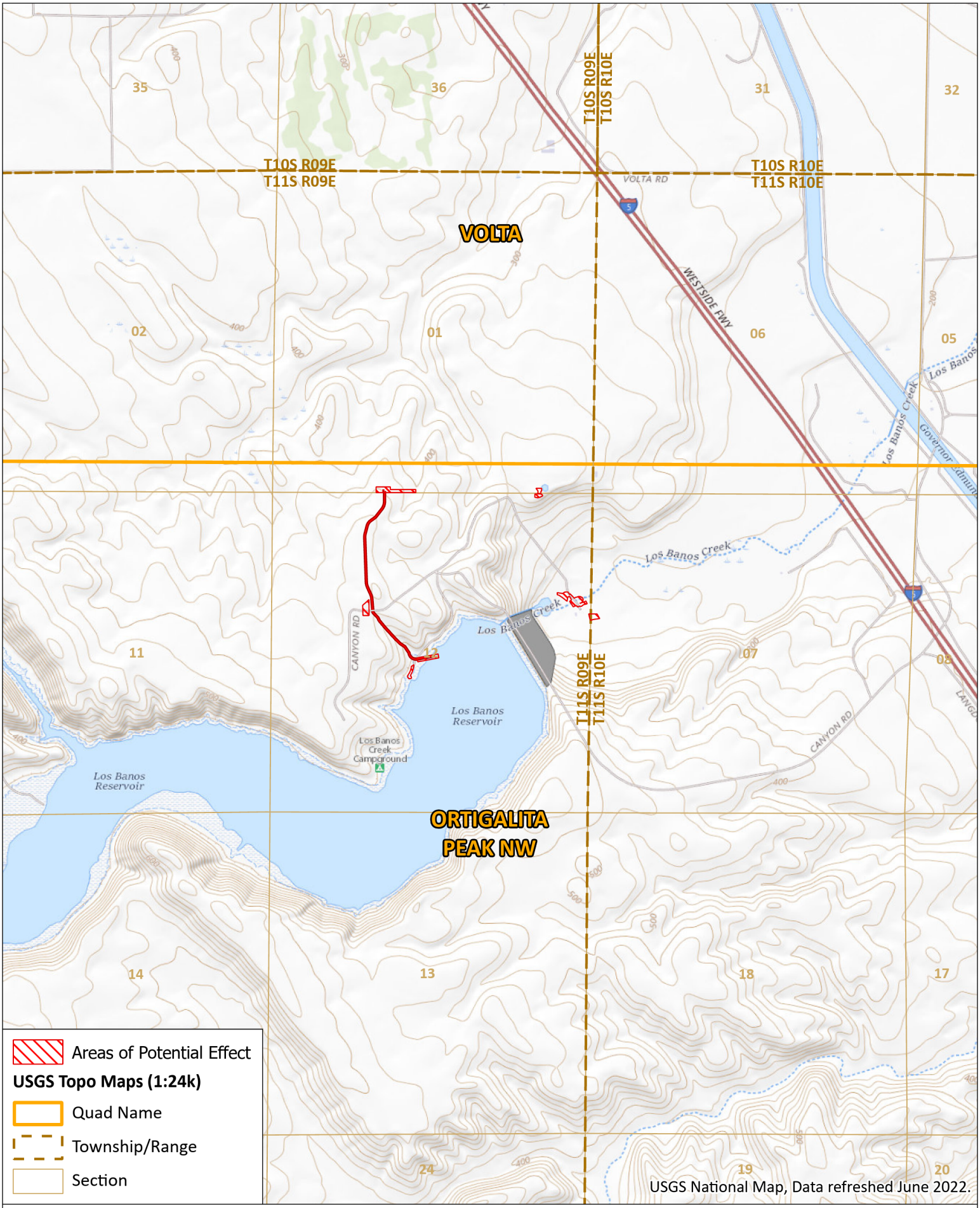

Topographic Map

Los Banos Creek Detention Reservoir Regulation and Storage Project

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PS Pump Station
Temporary APE
Permanent APE
Los Banos Creek
San Luis State Recreation Area
LBC Recharge

APE - Boat Ramp Extension
9-1a Alignment*
3,542 LF
Approx. Boat Ramp
Ext. Footprint
Paved Parking Temporary
Staging Area (0.22 acres)
Imagery - USDA NAIP 2014

LANGDON RD
California Aqueduct

APE for 9-1 Turnout
Connection,
Filter Station
and Flush Pipeline
(1 Ac)
Inside SLWD
Fence Staging Area
(0.12 Ac)
Existing San Luis W.D.
Reservoir No. 8
Elev. = 401 ft and
Pump Station No. 9
36 cfs
Existing SLWD Pipeline
9-1a Alignment*
3,542 LF
Outside SLWD
Fence Staging Area
(0.15 Ac)
Existing SLWD
Pump Station No. 8
Max. WS Elev. = 225 ft
36 cfs
Road Crossing
Staging Area
(0.5 Ac)
Proposed Culvert at
Canyon Road and
potential staging areas
CANYON RD
Paved Parking
Staging Area
(0.22 acres)
Proposed Boat Ramp
Extension for Access
at Lower Water Levels
Los Banos Creek
Detention Reservoir
Elevation 328 ft
Conservation Pool
Water Surface
PRIVATE RD

Temporary Staging
Area (0.50 acres)
Permanent APE at
Box Culvert for 450 CFS
Temporary Staging Area
(0.30 acres)
Source: Esri, Maxar, Earthstar Geographics,
and the GIS User Community

*Note: APE of pipeline alignment will be
a 50' offset on both sides of the pipeline.

0 500 1,000
Feet

Areas of Potential Effect (APE)

Los Banos Creek Detention Reservoir Regulation & Storage Project

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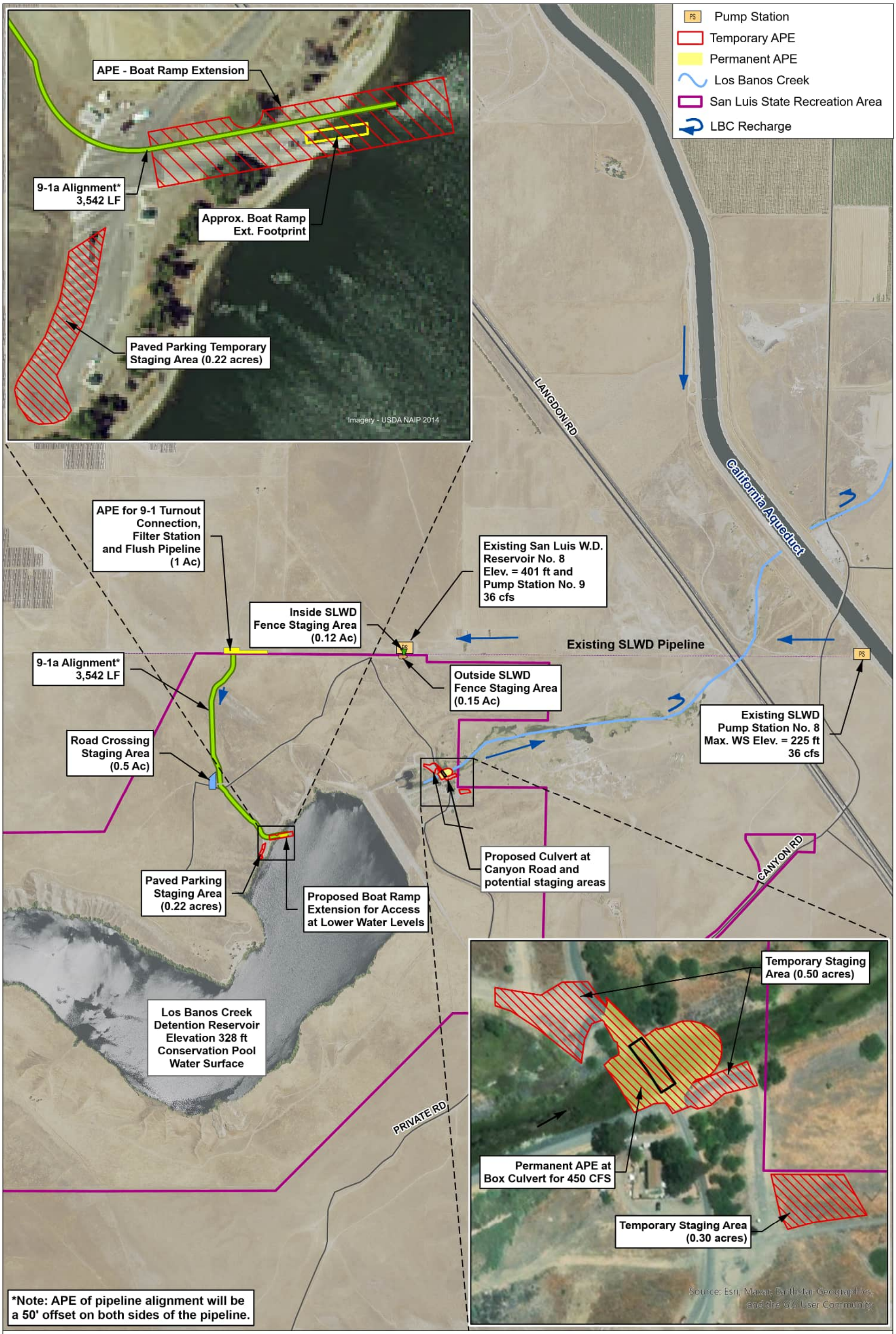

Areas of Potential Effect (APE)

Los Banos Creek Detention Reservoir Regulation & Storage Project

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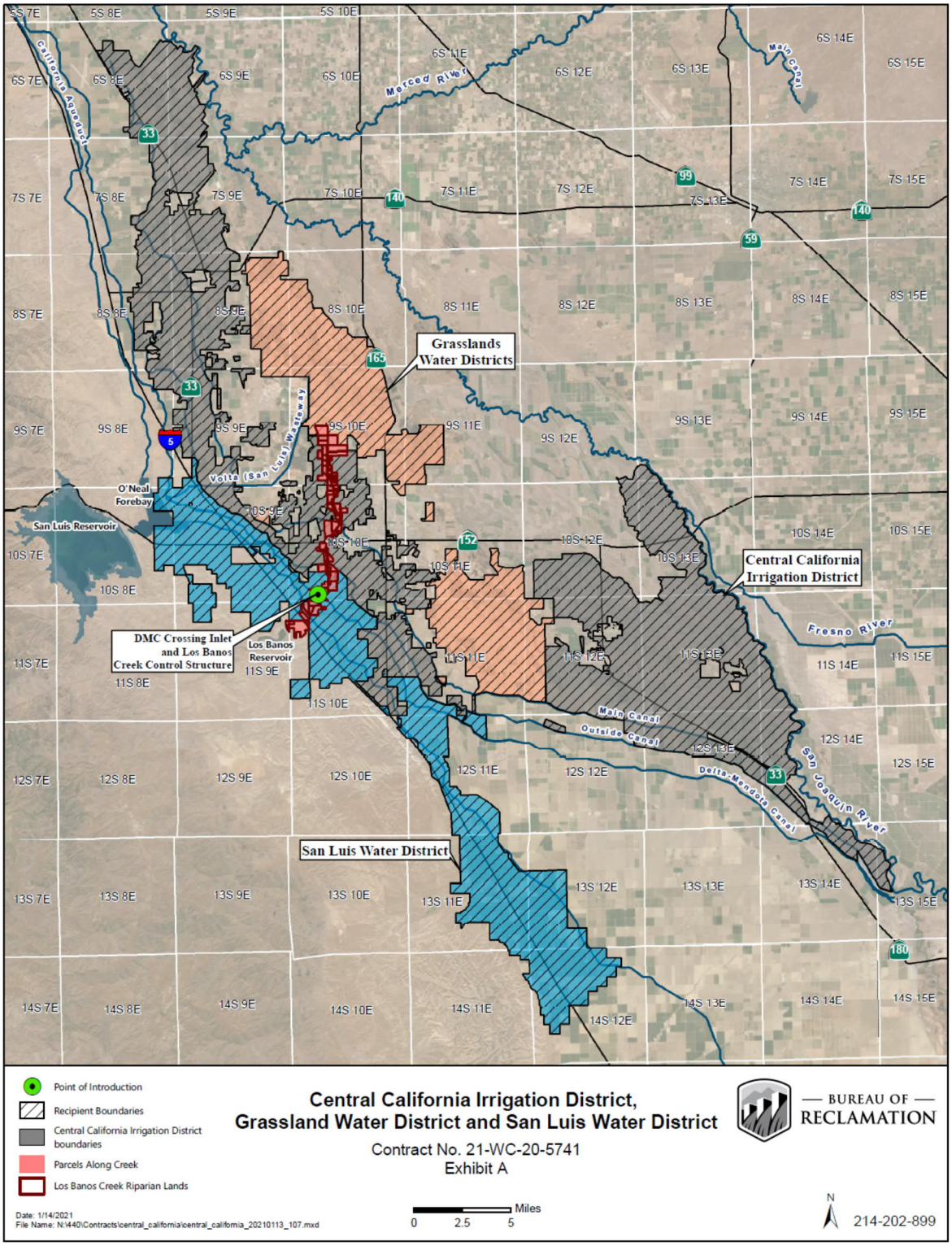
Grasslands Water Districts
Central California Irrigation District
San Luis Water District
DMC Crossing Inlet and Los Banos Creek Control Structure
Los Banos Reservoir
O'Neal Forebay
San Luis Reservoir
Volta (San Luis) Wasteway
Merced River
Fresno River
Main Canal
Outside Canal
Delta-Mendota Canal
San Joaquin River
California Aqueduct
Point of Introduction
Recipient Boundaries
Central California Irrigation District boundaries
Parcels Along Creek
Los Banos Creek Riparian Lands
Central California Irrigation District, Grassland Water District and San Luis Water District
Contract No. 21-WC-20-5741
Exhibit A
BUREAU OF RECLAMATION
Miles
0 2.5 5
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214-202-899
Date: 1/14/2021
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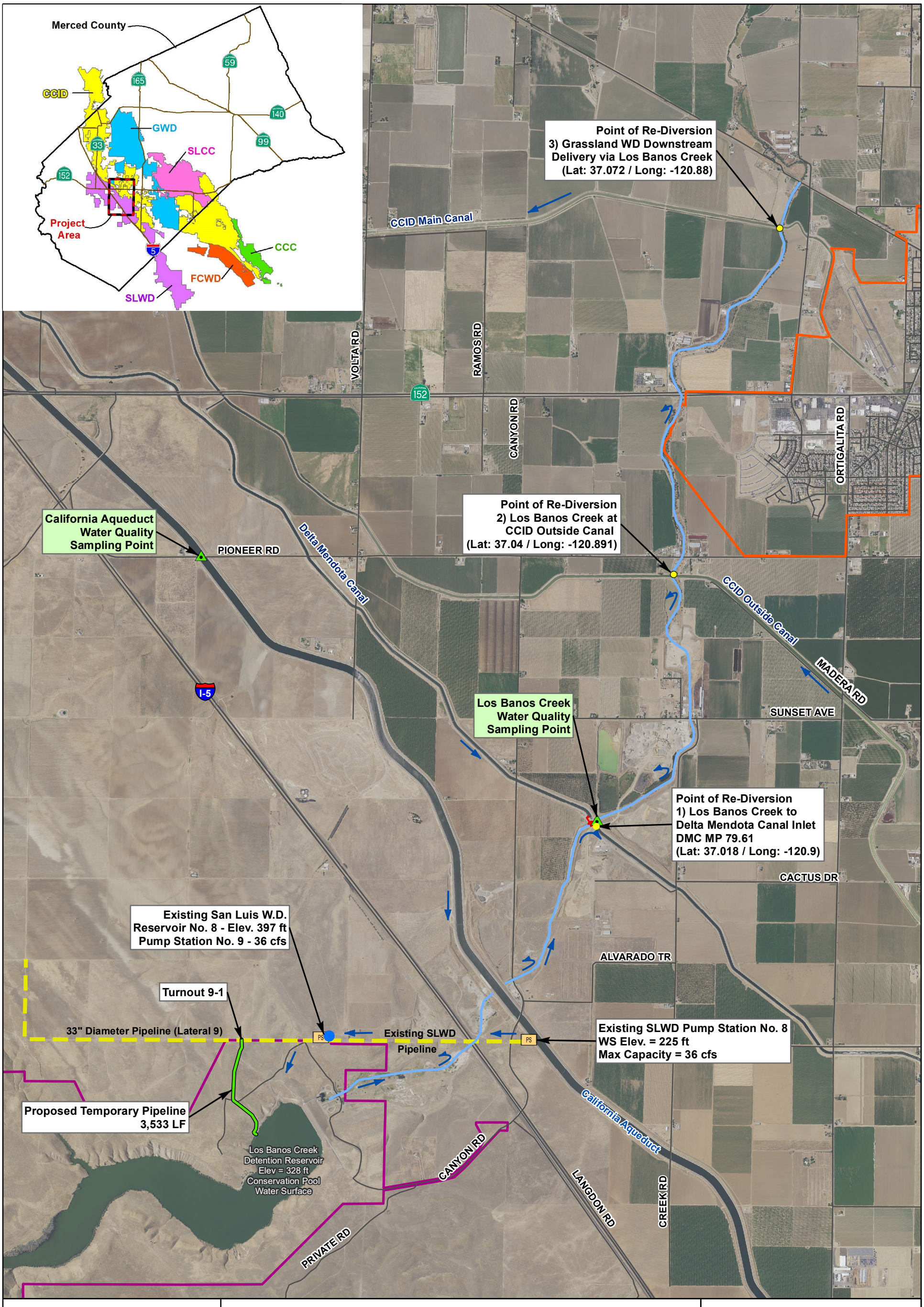

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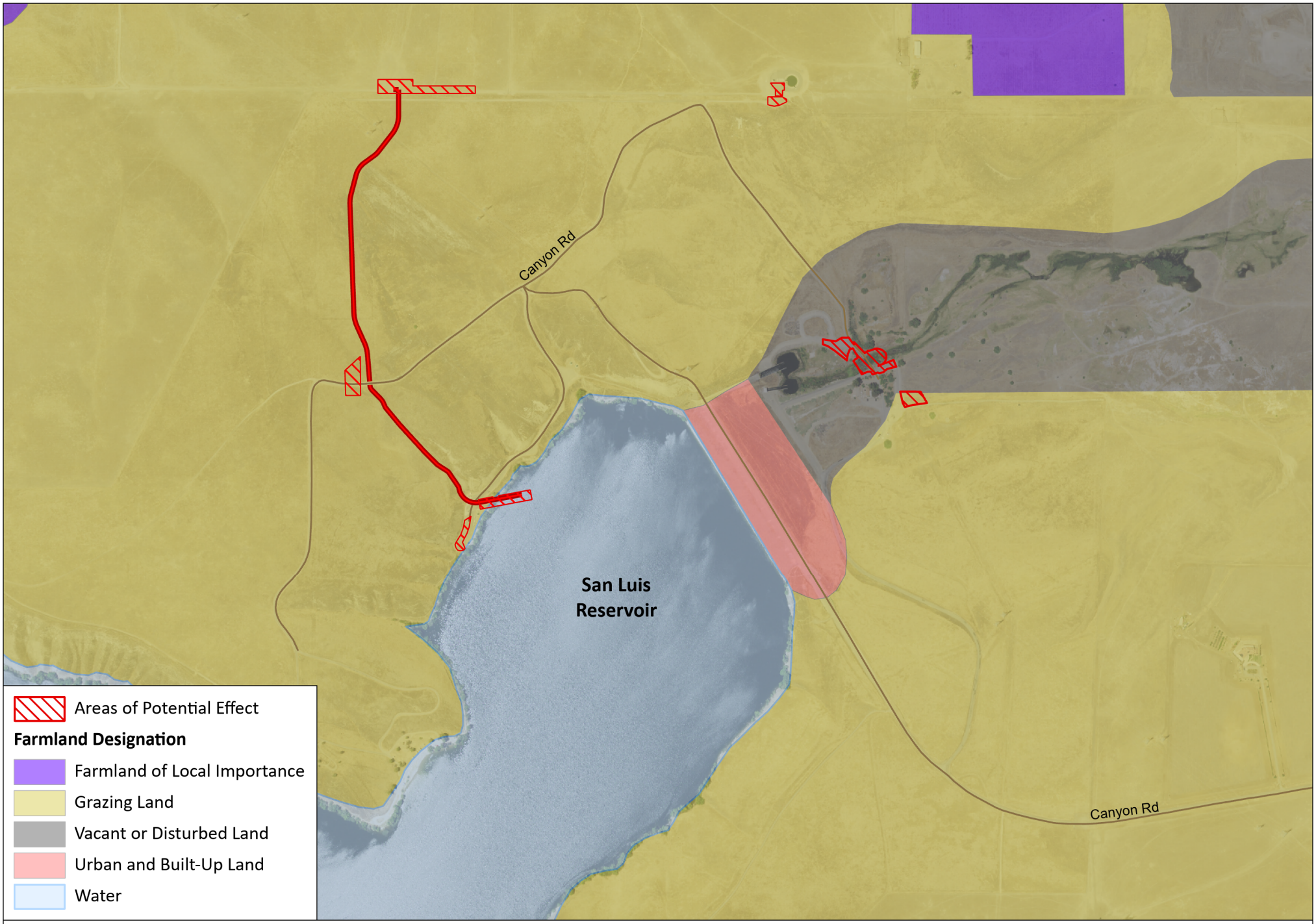

Farmland

Los Banos Creek Detention Reservoir Regulation and Storage Project

PROVOST& PRITCHARD

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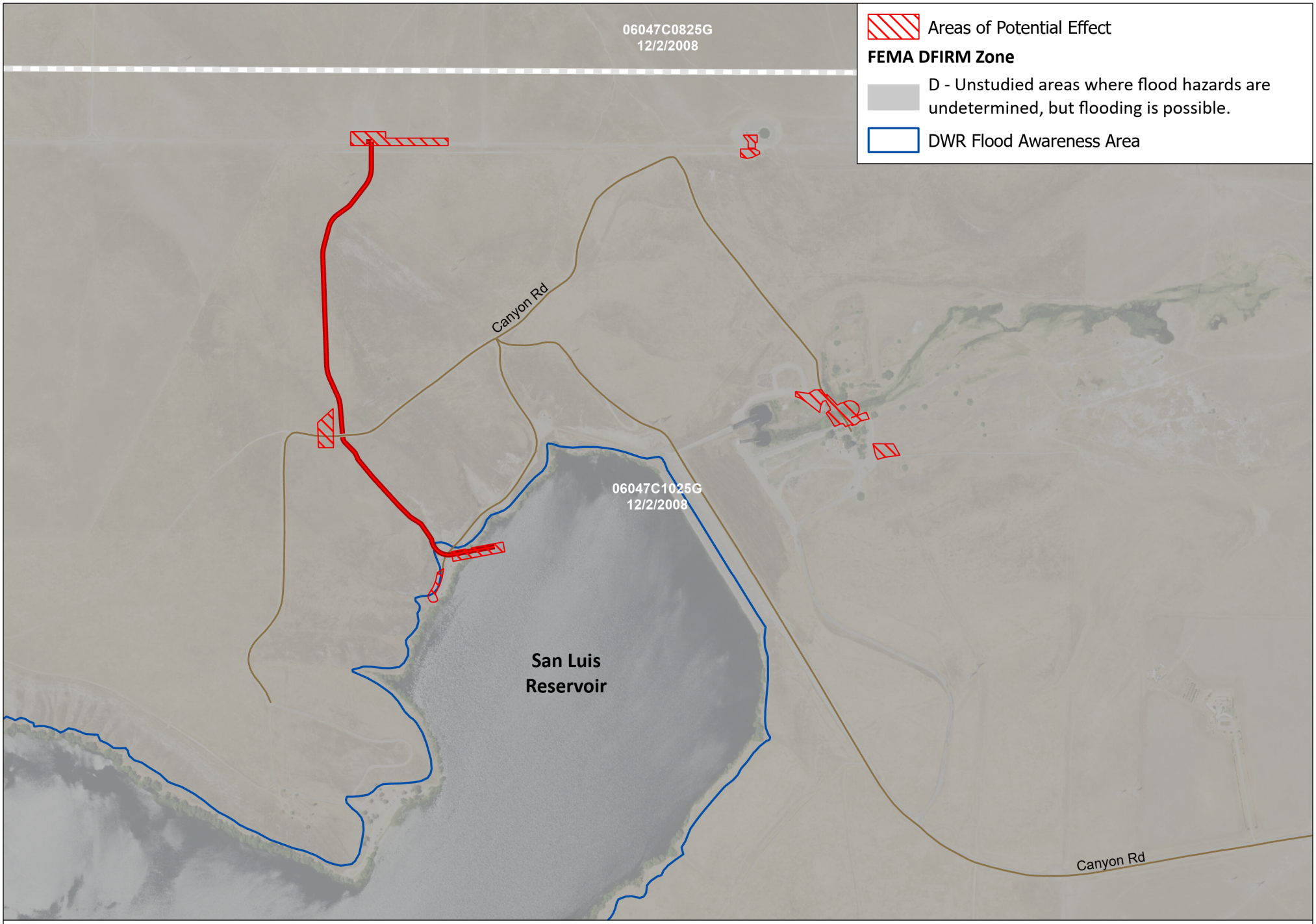

Flood Zone

Los Banos Creek Detention Reservoir Regulation and Storage Project

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Appendix B: Document D-1: Proof of Concept Project Information and Document D-2: Temporary Change Petition

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

IN THE MATTER OF PERMITS 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364 OF THE U.S. BUREAU OF RECLAMATION

PETITION FOR TEMPORARY CHANGE INVOLVING THE TEMPORARY STORAGE OF UP TO 8,000 ACRE-FEET OF PREVIOUSLY STORED WATER IN LOS BANOS CREEK DETENTION RESERVOIR

SOURCE:	American River, Old River, Victoria Canal, Big Chico Creek, Paynes Creek, Sacramento River, Clear Creek, Trinity River, and the San Joaquin Delta
COUNTY:	Contra Costa, Shasta, Trinity, Glenn, Tehama, Folsom, Sacramento, San Joaquin, and Merced

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BY THE DEPUTY DIRECTOR FOR WATER RIGHTS:

1.0 SUBSTANCE OF PETITION

On April 16, 2019, the U.S. Bureau of Reclamation (Reclamation) submitted a petition for temporary change for eleven water rights pursuant to Water Code section 1725 et seq. to the State Water Resources Control Board (State Water Board), Division of Water Rights (Division). The petition seeks to temporarily add Los Banos Creek Detention Reservoir and three locations below the reservoir as points of rediversion in order to re-store up to 8,000 acre-feet (af) of Central Valley Project (CVP) water from the San Luis Reservoir and subsequently deliver the water to various wildlife refuges and irrigation districts in the Central California Irrigation District (CCID), Grassland Water District (Grassland WD) and San Luis Water District (San Luis WD) service areas. CCID, Grassland WD and San Luis WD would make the water available by using groundwater, recovered tailwater, or water stored in the Meyers Water Bank in lieu of surface water from San Luis Reservoir. Although the proposed individual components of substitute water supplies listed in the petition add up to 27,000 af, Reclamation has confirmed that it proposes to limit the amount of water exchanged and stored in Los Banos Creek Detention Reservoir to a total of 8,000 af from all sources. The exchange would begin upon approval of this Order and remain effective for up to one year per Water Code section 1725.

1.1 Description of the Exchange

As described by Reclamation, the purpose of the temporary change is to improve the flexibility of CVP operations and increase water supply reliability for wildlife refuges and other CVP contractors located south of the Sacramento-San Joaquin Delta Estuary (Delta) by permitting up to 8,000 acre-feet of CVP water to be re-stored in Los Banos Creek Detention Reservoir.

In addition, CCID has identified a need in many years to develop "local dispatchable storage" to meet peak summer irrigation demand in order to better manage and utilize its existing water supplies. During the off-peak irrigation season, CCID proposes to use conserved water and/or substitute groundwater and store the CVP water that would have been delivered in the Los Banos Creek Detention Reservoir, for use during peak summer irrigation demand. If CCID does not need the water back to meet peak summer demand, then the water would be moved to one of the project partners to meet irrigation demands.

The petition explains that "Los Banos Creek Detention Dam and Reservoir are federally owned and state operated facilities that were constructed jointly by Reclamation and the California Department of Water Resources as part of the San Luis Unit of the CVP to provide flood control protection to the San Luis Canal. The California Department of Parks and Recreation operates the public recreational facilities at Los Banos Creek Detention Reservoir. Reclamation holds License 12134 for storage of up to 14,000 acre-feet per annum for non-consumptive purposes of use. The footprint of Los Banos Creek Detention Dam is not within the CVP place of use, but Los Banos Creek below the Dam is. The proposed action has been discussed with all parties and will not operate to the detriment of existing uses or Safety of Dams concerns.

It is expected that the reservoir would be operated in the October through February time period to bypass natural Los Banos Creek flow downstream. The operation would create space in the Los Banos Creek Detention Dam to be used to temporarily store water. Then starting in the Spring, the Participants would begin temporarily re-storing up to 8,000 acre-feet of CVP water supplies in the available Los Banos Creek Detention Dam space. CVP water would be conveyed through the San Luis Canal (California Aqueduct) to San Luis WD's Pump Station 8 and lifted into Los Banos Creek Detention Reservoir for temporary storage. The stored water would be returned to the participating Districts during peak irrigation or wildlife water management times via the Los Banos Creek at the three downstream points of rediversion. The Dam operations would preserve and enhance but be consistent with the current flood control criteria and operation."

Reclamation proposes to limit the water withdrawn from San Luis Reservoir and re-stored in Los Banos Creek Detention Reservoir to water previously stored either in San Luis Reservoir or other CVP reservoirs upstream of the Delta. According to Reclamation, the proposed changes will not result in diversion of additional water from the Delta, a change in the timing of CVP diversions, or the delivery of more CVP water than has been delivered historically. Instead, Reclamation maintains that the requested change will provide the

operational flexibility the CVP needs to improve water supply deliveries for wildlife refuges and other CVP contractors.

1.2 Project Participants

The project participants consist of the San Luis WD, Grassland WD, and CCID, a member agency of the San Joaquin River Exchange Contractors Water Authority (SJRECWA or Exchange Contractors). The participants would use one or more of the following projects to generate water that will be used when CVP water from San Luis Reservoir would have been delivered, allowing those deliveries to instead be re-stored in Los Banos Creek Detention Reservoir.

A. CCID: Groundwater Substitution
CCID owns and operates approximately 60 groundwater wells within its service area. CCID would use up to 8,000 acre-feet of groundwater for irrigation purposes instead of its CVP Exchange Contract surface water, making CVP water available for temporary storage in Los Banos Creek Detention Reservoir.

B. CCID: Conserved Water
CCID would use up to 8,000 acre-feet of conserved water, making CVP water available for temporary storage in Los Banos Creek Detention Reservoir. The conserved water would be generated through a conservation/tailwater recovery program, as described in the "Water Transfer Program for the San Joaquin River Exchange Contractors, 2014 – 2038 Environmental Impact Statement/Environmental Impact Report" approved by Reclamation on July 30, 2013.

C. Grassland WD and San Luis WD: North Grasslands Water Conservation and Water Quality Control Project
Grassland WD and San Luis WD have jointly constructed a recirculation project, the "North Grasslands Water Conservation and Water Quality Control Project." After CVP supplies are applied to various wetlands and refuges throughout the Grassland WD, it is re-collected and conveyed back up-gradient and re-applied to those same wetlands and refuges. In return for funding a portion of the project, San Luis WD can use up to half of the conserved water generated from the project.

This project would rely on an exchange of CVP refuge water supplies, leaving up to 6,000 acre-feet of CVP water stored in San Luis Reservoir which could be re-stored in Los Banos Creek Detention Reservoir.

This project was evaluated by Reclamation in the "North Grasslands Water Conservation/Water Quality Control and Level 2 Refuge Water Exchange Project Final Environmental Assessment" approved by Reclamation on April 24, 2017.

D. Grassland Water District and San Luis Water District: Groundwater Exchange
The Grassland WD and San Luis WD provide up to 3,000 acre-feet of groundwater supplies to wetlands and refuges within the Grassland WD, pursuant to an

exchange that leaves an equivalent volume of CVP water stored in San Luis Reservoir, which could be re-stored in Los Banos Creek Detention Reservoir.

San Luis WD and/or Grassland WD desire to store up to 3,000 acre-feet of this CVP water in the Los Banos Creek Detention Reservoir.

This project was evaluated by Reclamation in the "5-Year Groundwater Acquisitions for South of Delta Central Valley Project Improvement Act Refuges Final Environmental Assessment" approved by Reclamation on January 28, 2016.

E. San Luis Water District: Meyers Water Bank Exchange

The San Luis WD stores CVP water in the Meyers Water Bank. As needed, banked CVP water is delivered into the Mendota Pool in exchange for water stored in San Luis Reservoir. On occasion, the stored water is at risk of loss or spill. San Luis WD desires to store up to 2,000 acre-feet of this exchanged CVP water in Los Banos Creek Detention Reservoir. This project would withdraw water from the Meyers Water Bank in lieu of deliveries from San Luis Reservoir, in order to make water available for re-storage at Los Banos Creek Detention Reservoir.

This project was evaluated by Reclamation in the "Amendment to the Meyers Groundwater Banking Exchange Agreement" and the Finding of No Significant Impact (FONSI) was approved by Reclamation in September, 2013.

2.0 BACKGROUND

2.1 Substance of Reclamation's Permits

Reclamation's water rights Permits 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364 are the subject of the change petition. Permits 12721, 12722, and 12723 allow diversion to storage at Shasta Reservoir. Permit 12860 allows diversion to storage at San Luis Reservoir. Permits 11315 and 11316 allow diversion to storage at Folsom Reservoir. Permits 11967, 11968, 11969, and 11971 allow diversion to storage at Trinity Reservoir. Permit 12364 allows for diversion to storage at Whiskeytown Reservoir. Rediversion from storage in upstream reservoirs is authorized per these permits, including rediversion to storage in San Luis Reservoir. These water right permits are available for review online through the Division's eWRIMS electronic database at:

https://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/index.html

The present place of use of water diverted under Reclamation's specified permits is shown on maps on file with the State Water Board, and includes the CCID, San Luis WD, and Grassland WD service areas. Under Reclamation's rights, water may be used for irrigation, domestic, incidental domestic, municipal and industrial, salinity control, fish and wildlife preservation and enhancement, stockwatering, water quality control, and recreational purposes.

2.2 Proposed Temporary Changes

With the petition, Reclamation requests changes to Permits 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364 to temporarily add Los Banos Creek Detention Dam and three points of rediversion on Los Banos Creek to Reclamation's water rights. The change petition requests the temporary addition of the points of rediversion below:

- Los Banos Creek Detention Dam (Lat: 36.993 / Long: -120.934)
- Grassland Water District Downstream Delivery via Los Banos Creek (Lat: 37.072 / Long: - 120.880)
- Los Banos Creek at CCID Outside Canal (Lat: 37.040 / Long: -120.891)
- Los Banos Creek to Delta Mendota Canal Inlet DMC MP 79.61(Lat: 37.018 / Long: -120.900)

3.0 PUBLIC NOTICE AND COMMENTS ON THE PROPOSED TEMPORARY CHANGE

On April 26, 2019, the Division posted public notice of the change petition on the Division's website and sent notice to the water right transfers distribution list through the State Water Board's LYRIS e-mail notification system. In addition, on April 26, 2019, Reclamation noticed the change petition via publication in the Merced-Sun Star newspaper and mailed the notice via first class mail to interested parties, including water right holders with the potential to be affected by the changes. The comment deadline was May 28, 2019. No comments were received.

4.0 COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Water Code section 1729 exempts temporary changes involving a transfer or exchange of water from the requirements of the California Environmental Quality Act. The State Water Board will issue a Notice of Exemption for this project.

5.0 CRITERIA FOR APPROVING THE PROPOSED TEMPORARY CHANGES

Pursuant to Water Code section 1725, "a permittee or licensee may temporarily change the point of diversion, place of use, or purpose of use due to a transfer or exchange of water or water rights if the transfer would involve only the amount of water that would have been consumptively used or stored by the permittee or licensee in the absence of the proposed

temporary change, would not injure any legal user of the water, and would not unreasonably affect fish, wildlife, or other instream beneficial uses." (Wat. Code, § 1725.)

The State Water Board shall approve a temporary change involving the transfer of water under Water Code section 1725 et seq., if it determines that a preponderance of the evidence shows both of the following:

a. The proposed change would not injure any legal user of the water, during any potential hydrologic condition that the State Water Board determines is likely to occur during the proposed change, through significant changes in water quantity, water quality, timing of diversion or use, consumptive use of water or return flows.

b. The proposed change would not unreasonably affect fish, wildlife, or other instream beneficial uses.

(Wat. Code, § 1727, subd. (b).)

Temporary changes pursuant to Water Code section 1725 may be effective for a period of up to one year from the date of approval. (Wat. Code, § 1728.) The one-year period does not include any time required for monitoring, reporting, or mitigation before or after the temporary change is carried out." (*Ibid*.) In addition, if the water involved in the temporary change is moved to off-stream storage outside the watershed of origin within the one-year period, then the water may be put to beneficial use either during or after the one-year period. (*Ibid*.)

The State Water Board also has an independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources to the extent feasible and in the public interest. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419.) The State Water Board considers the evaluation of public trust resources as part of its evaluation of impacts to fish, wildlife, or other instream beneficial uses under Water Code section 1727, subdivision (b)(2).

6.0 REQUIRED FINDINGS OF FACT

6.1 Availability of Water for Transfer

Before approving a temporary change due to a transfer or exchange of water pursuant to Chapter 10.5 of part 2 of Division 2 of the Water Code, the State Water Board must find that the transfer would only involve the amount of water that would have been consumptively used or stored by the permittee or licensee in the absence of the proposed temporary change or conserved pursuant to Section 1011. (Wat. Code, §§ 1725, 1726.) Water Code section 1725 defines "consumptively used" to mean "the amount of water which has been consumed through use by evapotranspiration, has percolated underground, or has been otherwise removed from use in the downstream water supply as a result of direct diversion." This serves to ensure that the change does not result in an

increase in use of water and addresses the potential for injury for other legal users of water by ensuring that the amount of water available for diversion downstream is not affected.

All of the water to be re-stored in Los Banos Creek Detention Reservoir for delivery later in the season is water that would have been consumptively used or stored in the absence of the requested change. In the absence of the change, the water would be "removed from use in the downstream water supply" because it would be exported from the Delta and stored in San Luis Reservoir.

In light of the above, I find in accordance with Water Code section 1726, subdivision (e) that the water proposed for transfer would be consumptively used or stored in the absence of the proposed temporary change.

6.2. No Injury to Other Legal Users of the Water

Before approving a temporary change due to a transfer or exchange of water pursuant to article 1 of Chapter 10.5 of Part 2 of Division 2 of the Water Code, the State Water Board must find that the transfer would not injure any legal user of the water during any potential hydrologic condition that the Board determines is likely to occur during the proposed change, through significant changes in water quantity, water quality, timing of diversion or use, consumptive use of the water, or reduction in return flows. (Wat. Code, § 1727, subd. (b)(1).) In general, the transfer of water that would otherwise be stored or consumptively used will not result in injury to other legal users of water.

6.2.1 Delta Exports

Reclamation claims that the proposed changes will not result in diversion of additional water from the Delta, a change in the timing of CVP diversions, or the delivery of more CVP water than has been delivered historically. Instead, Reclamation maintains that the requested changes will provide the operational flexibility the CVP needs to improve water supply deliveries for wildlife refuges and CVP contractors. Reclamation proposes to limit the water re-stored in Los Banos Creek Detention Reservoir to water previously stored in San Luis Reservoir or other upstream CVP reservoirs. Accordingly, the proposed changes will not result in an increase in the amount of natural and abandoned flow directly diverted from the Delta.

In addition, Reclamation proposes to limit the water re-stored in Los Banos Creek Detention Reservoir to water made available by groundwater pumping or conservation. The project participants will use the additional water generated through groundwater pumping or conservation in order to allow the CVP water that otherwise would have been delivered to them to instead be re-stored in Los Banos Creek Detention Reservoir for later use. Accordingly, the proposed changes will not result in a change in San Luis Reservoir operations or an increase in the amount of water exported from the Delta. This order requires Reclamation to track and account for the water withdrawn from storage and re-stored in accordance with these limitations.

6.2.2 Groundwater Substitution

Pumping additional groundwater to make water available for the proposed exchange has the potential to adversely affect groundwater supplies. The petition states that CCID could pump up to 8,000 acre-feet of groundwater within its service area. In addition, Grassland WD and San Luis WD may supply wetlands and refuges within Grassland WD with up to 3,000 acre-feet of groundwater in exchange for CVP surface water. The groundwater would be pumped from the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin, which the Department of Water Resources has designated as a high-priority basin pursuant to the Sustainable Groundwater Management Act (SGMA).

In the future, compliance with SGMA should ensure that groundwater pumping within the Delta-Mendota Subbasin, including any pumping associated with transfers or exchanges, is managed sustainably. CCID and Grassland WD have each formed or are part of a Groundwater Sustainability Agency (GSA) and are developing their Draft Groundwater Sustainability Plans (GSPs). The GSAs must adopt the GSPs by January 31, 2020. Reclamation states that the draft GSP covering CCID includes monitoring and accounting that is based and expands on the existing plan, which has been in place for many years. As an example, CCID is subdivided into seven different sub-basins of like hydrogeological conditions. The total annual groundwater extractions would be measured and compiled within and adjacent to each sub-basin, including any pumping for transfer. In addition, the plan includes groundwater level triggers in each sub-basin, which are specific to transfers. If groundwater in the spring is below the depth established as the trigger, then transfers from the sub-basin are not allowed in that year.

In addition to impacts to groundwater resources, groundwater substitution transfers or exchanges have the potential to impact surface water supplies. Depending on various factors, including the distance of the groundwater well(s) from the surface stream, depth of the well(s), and local hydrologic conditions, the increase in groundwater pumped to enable the transfer or exchange could result in a reduction in the amount of water that would otherwise have accrued to the stream due to the interconnection of groundwater and surface water (streamflow depletion). Consequently, groundwater pumping for transfers or exchanges has the potential to provide water at the expense of current and future streamflow, which in turn has the potential to injure legal users of the stream.

Within the CCID service area, CCID has established a series of shallow monitoring wells near the San Joaquin River as part of the seepage management plan for the San Joaquin River Restoration Program (SJRRP). Within the CCID service area, fine-grained materials have been deposited, separating groundwater adjacent to the river from the zone that is actively pumped. Data from the shallow monitoring wells were used to determine the locations where surface water and groundwater are disconnected. CCID will only utilize wells in these disconnected areas to develop water for transfer or exchange. This management technique mitigates the potential to have any direct depletion of surface water. Grassland WD is also a member of a GSA, the Grassland Groundwater Sustainability Agency, and is developing a GSP that will be required to address any impacts to surface water attributable to groundwater pumping.

In light of the above, I find in accordance with Water Code section 1727, subdivision (b)(1) that the proposed changes and any associated increase in groundwater pumping will not injure any legal user of the water.

6.3 No Unreasonable Effect on Fish, Wildlife, or Other Instream Beneficial Uses

Before approving a temporary change due to a transfer or exchange of water, the State Water Board must find that the proposed change would not unreasonably affect fish, wildlife, or other instream beneficial uses. (Wat. Code, § 1727, subd. (b)(2).) In addition, the Board has an independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible and in the public interest. *(National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419.)

Reclamation provided CDFW and the Central Valley Regional Water Quality Control Board (Regional Board) with copies of the petition in accordance with California Code of Regulations, title 23, section 794, subdivision (c). CDFW and the Regional Board did not raise concerns regarding potential effects of the proposed changes on water quality, fish, wildlife, and other instream beneficial uses.

Los Banos Creek Detention Dam and the three points on Los Banos Creek are the locations where the exchanged water will be rediverted. The petition states the transfer will improve flexibility in managing multiple water sources over the irrigation season, while also increasing water supplies for wildlife refuges in the San Joaquin Valley. All the water to be stored in Los Banos Creek Diversion Reservoir for consumptive use later in the season is water that would have been delivered to the participating districts earlier in the season in the absence of the exchanges. As conditioned, there will be no change in San Luis Reservoir operations, the amount or timing of Delta pumping, or the amount of flow or water quality conditions in the Delta. In addition, the transfer will be subject to provisions of Reclamation's Permits 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364, and applicable Biological Opinions. Also, as previously mentioned, Reclamation has prepared, and the Board has reviewed, the National Environmental Policy Act (NEPA) documents for the various groundwater substitution, conservation, or exchange projects mentioned in the petition, which indicate that the proposed actions will not significantly affect listed or proposed threatened or endangered species and will not significantly impact natural resources.

Thus, the proposed exchange will not unreasonably affect fish, wildlife or other instream beneficial uses.

7.0 STATE WATER BOARD'S DELEGATION OF AUTHORITY

On June 5, 2012, the State Water Board adopted Resolution 2012-0029, delegating to the Deputy Director for Water Rights the authority to act on petitions for temporary change if the State Water Board does not hold a hearing.

8.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the evaluation required by Water Code section 1727; and therefore, I find as follows:

1. The proposed transfer or exchange involves only an amount of water that would have been consumptively used or stored in the absence of the temporary change.

2. The proposed temporary changes will not injure any legal user of the water.

3. The proposed temporary changes will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses.

ORDER

NOW, THEREFORE, IT IS ORDERED that the petition filed for temporary change for the transfer or exchange of up to 8,000 af of water under Permits 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364 is approved.

All existing terms and conditions of the water rights remain in effect, except as temporarily amended by the following provisions:

1. The transfer or exchange must be effectuated within a one-year period commencing on the date of this Order. The one-year period does not include any time required for monitoring, reporting, or mitigation before or after the temporary transfer or exchange is carried out. In addition, water re-stored in Los Banos Creek Detention Reservoir may be withdrawn from storage in that reservoir and applied to beneficial use after the one-year period, provided that the water is moved to storage in the reservoir within the one-year period.

2. The points of rediversion under Reclamation's Permits 12721, 11967, 12722, 12723, 11315, 11316, 11968, 11969, 12860, 11971, and 12364 are temporarily amended to add:

    - Los Banos Creek Detention Dam (Lat: 36.993 / Long: -120.934)

    - Grassland Water District Downstream Delivery via Los Banos Creek (Lat: 37.072 / Long: - 120.880)

    - Los Banos Creek at CCID Outside Canal (Lat: 37.040 / Long: -120.891)

    - Los Banos Creek to Delta Mendota Canal Inlet DMC MP 79.61(Lat: 37.018 / Long: -120.900)

3. During the period of transfer or exchange, the petitioner shall comply with all applicable Biological Opinions.

4. The total amount of the exchanged water re-stored in Los Banos Creek Detention Reservoir shall be limited to storage releases from San Luis Reservoir or CVP reservoirs upstream of the Delta. There shall be no increase in Central Valley Project allocations or the amount or timing of Delta exports during the period of the exchange. The total amount of water re-stored in Los Banos Creek Detention Reservoir is limited to water that would have been delivered to the project participants in the absence of this approval.

5. Within 90 days of completion of the transfer or exchange, Reclamation shall provide the Deputy Director for Water Rights a report describing the transfer or exchange authorized by this Order. The report shall include the following information:

    - A description of the activities that generated water that was used in lieu of water stored in San Luis Reservoir in order to make water available for re-storage in Los Banos Creek Detention Reservoir.

    - The monthly amount of water generated (broken down by groundwater substitution or conservation and by project participant) in order to make water available for storage in Los Banos Creek Detention Reservoir;

    - The monthly average rate and volume moved from San Luis Reservoir to re-storage in Los Banos Creek Detention Reservoir;

    - Verification that the amount of water re-stored in Los Banos Creek Detention Reservoir would have been delivered to CCID, Grassland WD, or San Luis WD in the absence of the exchange; and

    - The monthly average rate and volume of water released from storage in Los Banos Creek Detention Reservoir via Los Banos Creek to the three downstream points of rediversion.

6. The exchange is subject to compliance with the Department of Water Resources' Division of Safety of Dams requirements.

7. Pursuant to Water Code Sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this transfer and temporary change Order, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board also may be exercised by imposing specific requirements over and above those contained in this Order to minimize waste of water and to meet reasonable water requirements without unreasonable draft on the source.

8. This Order does not authorize any act which results in the taking of a candidate, threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). If a "take" will result from any act authorized under this temporary transfer, Reclamation shall obtain authorization for an incidental "take" permit prior to construction or operation. Reclamation shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary transfer authorized under this Order.

9. The State Water Board reserves authority to supervise the transfer, exchange, and use of water under this Order, and to coordinate or modify terms and conditions for the protection of vested rights, fish, wildlife, instream beneficial uses, and the public interest as future conditions may warrant.

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY:
JULE RIZZARDO, FOR

Erik Ekdahl, Deputy Director
Division of Water Rights

Dated: AUG 01 2019

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

September 10, 2020

Dawn E. Marple, Senior Planner
Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

RE: Results of Preconstruction Surveys for Sensitive Biological Resources, Los Banos Creek Detention Reservoir Regulation and Storage Pilot Project; Merced County

Dear Dawn:

As requested, Live Oak Associates, Inc. (LOA) conducted preconstruction surveys for burrowing owl (*Athene cunicularia*) and San Joaquin kit fox (*Vulpes macrotis mutica*) for the Los Banos Creek Detention Reservoir Regulation and Storage (LBCDR) Pilot Project ("project"), a project which aims to construct an above ground, temporary pipeline to convey Central Valley Project water from the San Luis Canal for storage in the Los Banos Creek Detention Reservoir (LBCDR). The project site entails the pipeline alignment and three staging areas. The project is located at the LBCDR within the San Luis Reservoir State Recreation Area in Merced County.

LOA's preconstruction surveys were conducted in accordance with the Environmental Commitment Program required for the project by the Bureau of Reclamation.

Survey Methodology

On September 9, 2020, LOA biologist Tara Johnson-Kelly conducted a preconstruction survey for burrowing owl and San Joaquin kit fox. The survey area for the burrowing owl included the project site and surrounding lands within 200 meters. The biologist scanned the area for burrowing owls and inspected burrows for signs of potential burrowing owl use (i.e. cough pellets, prey remains, and whitewash). The survey area for the San Joaquin kit fox encompassed the project site and surrounding lands within 200 feet. The biologist scanned the area for burrows of suitable dimensions (i.e. burrows approximately 4 inches or greater in diameter with dirt berms adjacent to the entrances and manmade features such as culverts and pipes) and inspected these burrows for signs of use (i.e. kit fox tracks, scat, or prey remains in the vicinity of the den, and matted vegetation adjacent to the den entrances).

During the survey, Ms. Johnson-Kelly took representative photos of the project site (Attachment 1) and recorded her field observations, including all vertebrate species observed, on a data sheet (Attachment 2).

Results

At the time of the preconstruction survey, the survey area consisted primarily of gently rolling hills dominated by non-native grasses and forbs. Grass height ranged from 6 inches in sparse areas to 12 inches in dense areas. The survey area also contained an asphalt parking lot and access road, as well as a portion of the reservoir. The project site supported isolated California ground squirrel (*Otospermophilus beecheyi*) burrows within the dense stands of grass, and kangaroo rat burrow complexes, presumably occupied by Heermann's kangaroo rat (*Dipodomys heermanni*), were found in sparsely vegetated areas. A large, abandoned coyote (*Canis latrans*) den was discovered during the survey. Numerous fresh scrapes found throughout the project site were attributed to an American badger (*Taxidea taxus*) that was observed foraging in the grassland at the time of the survey.

No observations or evidence of burrowing owls or San Joaquin kit fox were found within the survey area. The ground squirrel and kangaroo rat burrows identified within the survey area were too small to be suitable for use by the San Joaquin kit fox or burrowing owl, and the abandoned coyote den was inspected and found to be collapsed approximately four feet into the burrow, providing no suitable refuge for the San Joaquin kit fox or burrowing owl.

A pair of common ravens was observed flying over the project site and an osprey was seen perched on a nearby transmission tower, however, no active nests were identified at the time of the survey.

Conclusion

Because no evidence of burrowing owl or San Joaquin kit fox occupation of the survey area was detected and burrows suitable for occupation by these species were found absent, there are no disturbance-free buffers that need to be observed for protection of these resources during project construction.

Please feel free to contact me with any questions or comments related to LOA's preconstruction surveys for the Los Banos Creek Detention Reservoir Regulation and Storage Pilot Project. I can be reached at (408) 500-2767 or tjohnsonkelly@loainc.com.

Sincerely,

Tara Johnson-Kelly

Tara Johnson-Kelly
Staff Ecologist

ATTACHMENT 1: PHOTOGRAPHS OF THE PROJECT SITE

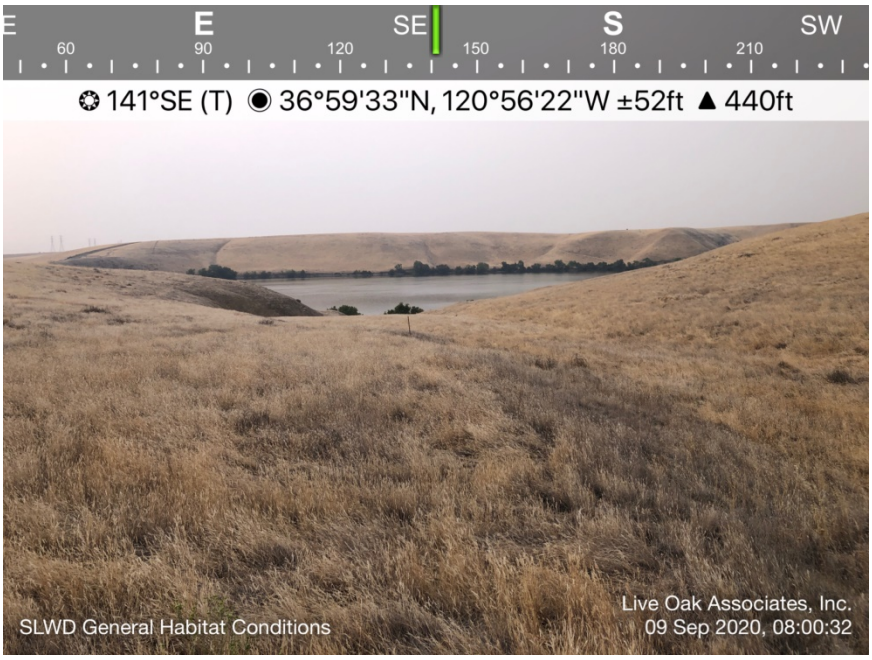

Photo 1 (above). Gently rolling terrain and dense nonnative grassland vegetation characteristic of the project site. **Photo 2 (below).** The entrance of the abandoned coyote den that collapsed after a depth of 4 feet.

ATTACHMENT 2: FIELD DATA SHEET

Los Banos Creek Detention Reservoir Regulation and Storage Pilot Project
San Luis Reservoir State Recreation Area, Merced County

CEC-20-001

Preconstruction Survey

9 September 2020

Tara Johnson-Kelly

7:00AM - 10:00AM

Smokey / hazey
64°F - 74°F

Grass Height
6" - 12"
- mostly dense, nonnative grasses

Burrows
- few cottontail burrows in tall grass
- scattered Kangaroo-rat complexes in sparser areas
- large coyote burrow, no deeper than 4 ft before ending

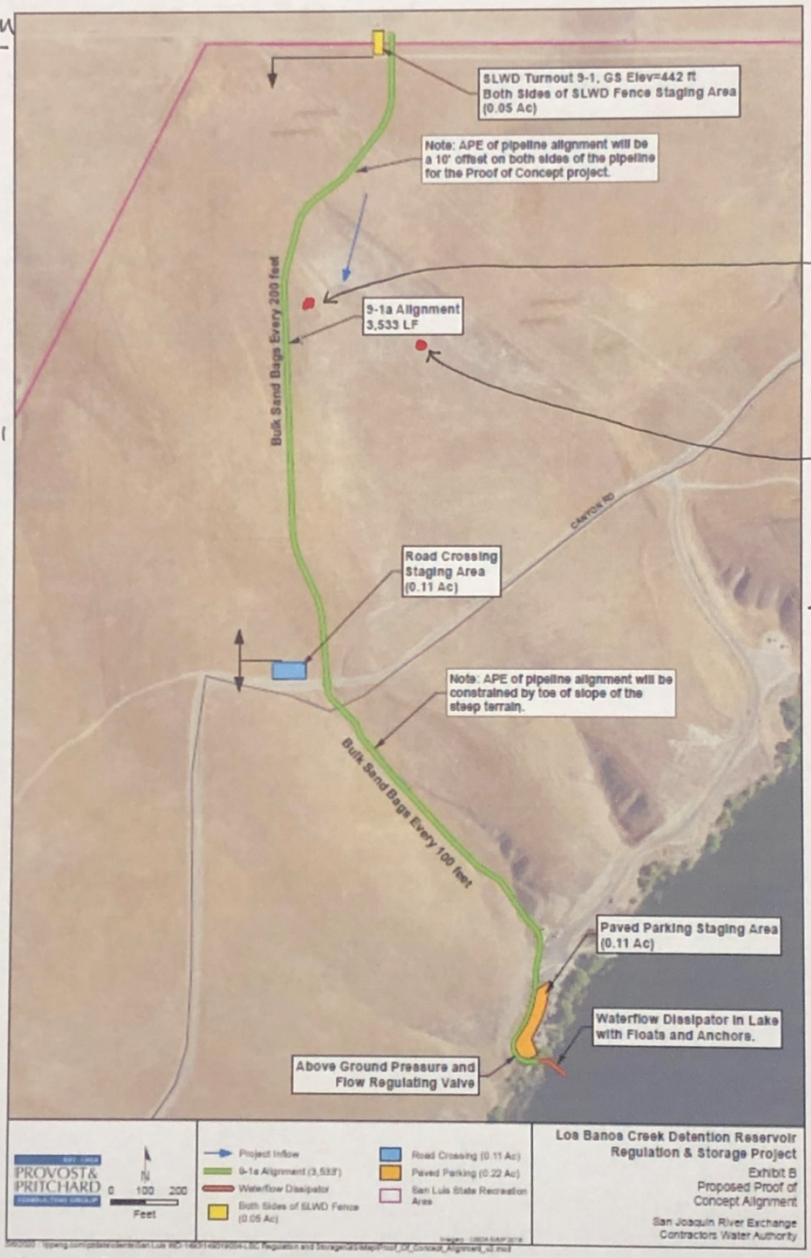

Figure 2 Temporary Above Ground Pipeline Route

Abandoned Coyote Den, collapsed inside after 4 feet of tunnel

American Badger observed foraging
36.99646°N
-120.93946°W

Birds
Common raven
Osprey

6

RECLAMATION

Managing Water in the West

Record of Decision

Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority, 2014 – 2038

Sacramento, California
Mid-Pacific Region

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Record of Decision

Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority, 2014 - 2038

Recommended:

Richard M. Stevenson
Acting Regional Resources Manager
Mid-Pacific Region

Date July 24, 2013

Concur:

Anastasia T. Leigh
Regional Environmental Officer
Mid-Pacific Region

Date 7/25/2013

Approved:

David G. Murillo
Regional Director
Mid-Pacific Region

Date 7/30/2013

I. Background

The U.S. Department of the Interior (Interior), Bureau of Reclamation (Reclamation) and the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) prepared a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) on the proposed program to annually transfer up to 150,000 acre feet (af) of water over a 25-year time frame (25-Year Water Transfer Program [25-Year WTP]) to other South of Delta (SOD) water users. The Exchange Contractors are the state lead agency for the EIR pursuant to the California Environmental Quality Act, and Reclamation is the Federal lead agency for the EIS pursuant to the National Environmental Policy Act. The Final EIS/EIR was issued in January 2013 and subsequently the Exchange Contractors certified the EIR, made specific findings, and prepared a Notice of Determination on March 1, 2013.

The water made available through the 25-Year WTP would be transferred to San Joaquin Valley wildlife refuges (i.e., the wildlife and wetland habitat areas located in the San Joaquin River Basin) and Tulare Lake Basin wildlife refuges, to Friant Division and San Luis Unit CVP contractors, and/or to SWP contractors west and south of the Sacramento-San Joaquin River Delta (Delta), specifically Kern County Water Agency (KCWA) (SWP water), Santa Clara Valley Water District (SCVWD) (CVP/SWP water), East Bay Municipal Utility District (EBMUD) (CVP water), Contra Costa Water District (CCWD) (CVP water), and Pajaro Valley Water Management Agency (PVWMA) (CVP water). All transfers would be consistent with CVP place of use requirements.

Under the current 10-Year (2005-2014) Water Transfer Program (10-Year Program), the Exchange Contractors are allowed to annually transfer up to 130,000 af of water. Under this existing program, the Exchange Contractors could develop up to 80,000 af of water through conservation measures such as tailwater recovery and groundwater pumping, and up to 50,000 af of water from temporary land fallowing. In recent years, up to 88,000 af have been developed from conservation, temporary land fallowing, and groundwater pumping. Water made available under the 10-Year Program has been transferred to San Joaquin Valley wildlife refuges (i.e., the wildlife and wetland habitat areas located in the San Joaquin River Basin) and Tulare Lake Basin wildlife refuges; and to Friant Division and San Luis Unit CVP contractors. The existing 10-Year Program was subject to environmental review and all the project impacts were identified and mitigated.

The Exchange Contractors consist of the following member agencies: Central California Irrigation District, San Luis Canal Company, Firebaugh Canal Water District, and Columbia Canal Company. These agencies exchanged the use of their pre-1914 water rights with Reclamation for a substitute water supply from the Delta-Mendota Canal. The seniority of these water rights means that this water would be available when many other SOD contractors have their water supplies curtailed because of water supply shortages or when full contract deliveries cannot otherwise be made due to conveyance limitations or environmental concerns. This water supply benefits SOD CVP and SWP contractors by already being south of the Delta, which means it is subject to fewer conveyance constraints and is more reliable than north of Delta water supplies considered for transfer. The Exchange Contractors propose to make a portion of this water available for transfer and/or exchange to either the refuges, CVP contractors for existing

municipal and industrial (M&I) and/or agricultural uses, and other potential SWP contractors for agricultural and/or M&I uses, or to some combination of these users and uses.

II. Summary of Action

Reclamation's Federal Action is: (1) acquire water for the San Joaquin River Basin and the Tulare Lake Basin wildlife refuges (Incremental Level 4 under the Central Valley Project Improvement Act [CVPIA]) and/or (2) approve transfers and/or exchanges of Exchange Contract/CVP water from the Exchange Contractors to other CVP and SWP contractors. This ROD supports Reclamation's decision to approve (subject to annual monitoring review) the annual water transfers and/or exchanges described within the Final EIS/EIR. Under the executed agreements and transfer/exchange approvals, the 25-Year WTP develops water supplies from member agencies within the Exchange Contractors' service area through water conservation measures, tailwater recovery, and crop idling/fallowing activities. The major features associated with the action are as follows:

- The Exchange Contractors would continue to employ their tailwater recovery efforts[1] and supplement their tailwater recapture program with other conserved water.[2] Assuming a maximum of 150,000 af total from all sources; up to 100,000 af would be made available by tailwater recapture (80,000 af) and by other conservation efforts (20,000) (including reduced conveyance losses, reduced spillage, lined canal, and improved on-farm irrigation efficiencies), and up to 50,000 af would be made available through temporary land fallowing[3] in any year. Up to 150,000 af of water annually during any noncritical Exchange Contract year could be developed for transfer and/or exchange.
- There would be no groundwater pumping to make water available for transfer and/or exchange.
- The action consists of a range of acquisitions by Reclamation's Refuge Water Supply Program (RWSP) for the wildlife refuges and by CVP/SWP contractors (agriculture and M&I users identified in the EIS/EIR, not to exceed Contract supplies) in any given year.
- A multiple year agreement with any of the transferees is possible, including the option of a specific quantity of water in each year of the agreement. Agreements may contain exceptions for critical years when Exchange Contractors' CVP supply deliveries are reduced.

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[1] Tailwater recovery is defined as the reuse of tailwater flows in the act or act(s) of reclaiming surface water from irrigated lands into a surface supply system. This reclamation can be achieved either by gravity or by low lift pumps. The water is reused within the political boundaries of the agency or agencies from which it originated. The tailwater recovery effort by the Exchange Contractors is their tailwater recapture program.

[2] Conserved water is defined as water made available from canal lining, changes in irrigation practices (such as drip irrigation and other microsystems), spill reductions projects, reductions in percolation to saline sinks, and other water management practices excluding land fallowing. Land fallowing that normally occurs is the non-application of water for 1 year on selected areas.

[3] Crop idling/land fallowing beyond normal practices is for the purpose of developing water. Lands to be fallowed would be temporary, i.e., not occur on same lands for more than 3 consecutive years.

- The 25-Year WTP begins March 1, 2014 and continues through February 28, 2039. Activities by the Exchange Contractors would occur from January 1, 2014, through December 31, 2038.

The transfers would be monitored, reviewed, and annually reported by Reclamation to calculate the cumulative transfer activity of the 25-Year WTP. The monitoring reports for the 25-Year WTP would be based on the format of reports currently submitted on an annual basis and is discussed in detail in Section 14.5 of the EIS/EIR.

III. Decision

Reclamation's decision is to proceed with Alternative D as proposed by the Exchange Contractors, identified in the EIS/EIR (page 2-27). This alternative allows Reclamation to sign an agreement with the Exchange Contractors to support water acquisitions by the RWSP for wildlife refuges. This alternative also provides for continued and expanded water transfers and exchanges of water from the Exchange Contractors to several potential water users over a 25-year timeframe.

In making this decision, Reclamation will a) work with the Exchange Contractors to execute an agreement for refuge water acquisitions, and b) streamline the time it takes to approve water transfer and/or exchange proposals that fall within the scope of those analyzed in the EIS/EIR. The scope of the action and the impact analysis is described in detail in the EIS/EIR in Sections 1, 2 and 3. This decision does not extend to any future Refuge water acquisitions, transfers, or exchanges that do not fall within the action and scope captured in the EIS/EIR. The "Water Receiving Areas" analysis included in the EIS/EIR (in Section 3.3) relies on multiple other environmental documents that may expire over the next 25 years. Reclamation's decision recognizes that supplemental environmental documents may be needed prior to approving certain future annual transfers and/or exchanges under the 25-Year WTP.

IV. Alternatives Considered

No-Action Alternative

The No-Action Alternative represents the projection of current conditions to reasonably foreseeable future conditions that could occur if the proposed activity would not take place. The No Action Alternative would result in no transfer or exchange of water from the Exchange Contractors to either Interior or to any of the other potential water users at the conclusion of the existing Program on February 28, 2014 (through water year 2013). The response of the entities directly involved with the 25-Year WTP to no transfer from the Exchange Contractors would be:

- No temporary land fallowing would occur in the absence of a transfer program. Under existing conditions, enough land is fallowed to conserve 8,000 af of water. If this land were returned to agricultural production a negligible increase in tailwater of less than 0.1 cubic feet per second of flow per month would result.

- The Exchange Contractors would recover and reuse within their own operations the water previously transferred and generate approximately the same amount of tailwater flows. The reused tailwater would be integrated into the Exchange Contractors' water supply

and reduce groundwater pumping that currently helps meet irrigation demands and capacity constraints.

- The Exchange Contractors would not modify their operations relative to the San Joaquin River because the amounts of return flow would remain approximately the same.

- Deliveries to the wildlife refuges would consist of Level 2 Water and Replacement Water[4] quantities plus a portion of the Incremental Level 4 Water need that could reasonably be obtained from other sources.

- Agricultural and M&I water users would get their CVP and SWP contractual supplies subject to the limitations in their contracts. Under the No Action/No Project Alternative, the CVP and SWP water users may obtain water from other sources or they would continue to experience shortages.

Action Alternatives

The four action alternatives are based on the quantity of water and sources of supply. Each action alternative has a range of sub-alternatives or scenarios based not only on the source of supply but also on potential water users and whether these users are hydraulically connected to the San Joaquin River. Any or all of the available water could be provided to the refuges, agriculture, and M&I users. The EIS/EIR considered four action alternatives:

- **Alternative A: 50,000 Acre-Feet.** Although at the discretion of the Exchange Contractors a zero transfer amount may occur in any year, Alternative A is the smallest level of program implementation framed as an alternative. All of the water would be developed from crop idling/temporary land fallowing; however, it could occur in any type of water year under the Exchange Contract. Assuming a transferable quantity of 2.5 af per acre, the maximum amount of land to be temporarily crop idled (or fallowed) is approximately 20,000 acres, 8.3 percent of the irrigable land (240,000 acres) in the Exchange Contractors' service area. The affected land would be rotated to avoid crop idling the same land year after year, and fallowing on any parcel would be limited to not more than 3 consecutive years. Of the maximum amount of 50,000 af per year, 8,000 af occurred in 2009, while 42,000 af would be additional water development not yet experienced.

- **Alternative B: 88,000 Acre-Feet.** Alternative B represents an intermediate level of program implementation and is in essence the existing condition currently underway and experienced in both critical (2008–2009) and noncritical years. For this action alternative, the Exchange Contractors would provide up to 88,000 af of water during any noncritical Exchange

[4] Replacement Water is the amount of water that the San Luis Unit, Freitas, and Kesterson national wildlife refuges, and Volta and Mendota wildlife management areas had historically received and used, which is more than Level 2 amounts but may be less than or equal to their Level 4 amounts. Replacement Water was originally provided by groundwater and tailwater, but due to water quality concerns, Reclamation entered into agreements to provide Replacement Water to the wildlife areas. When willing sellers and funds are available, Reclamation acquires water to supplement supplies to minimize the impact to CVP contractors south of the Delta.

Contract year through a combination of conservation and crop idling/land fallowing sources. Conservation measures are defined as tailwater recapture, recovery of irretrievable losses to a saline sink, and reductions in operational spills for up to 80,000 af of the total developed supply. Temporary land fallowing would contribute up to 8,000 af of developed water. Flexibility exists in the development of 88,000 af of water for transfer. The Exchange Contractors have indicated the availability of up to 50,000 af of water from temporary crop idling/land fallowing. This source of water in combination with tailwater and other conservation opportunities can provide flexibility in the source of transfer water.

- **Alternative C: 130,000 Acre-Feet.** Alternative C makes available up to 130,000 af of water annually during any noncritical Exchange Contract year similar to the level of maximum transfer contemplated by the Exchange Contractors under the existing 10-Year (2005–2014) Water Transfer Program. Under this alternative, up to 80,000 af of water is made available through conservation, including tailwater recovery, and up to 50,000 af of water is made available through crop idling/temporary land fallowing.

- **Alternative D: 150,000 Acre-Feet, Preferred Alternative.** Alternative D expands upon Alternative C water of 130,000 af (from conservation and crop idling) with an additional 20,000 af from conservation measures not already considered in the other alternatives. These measures include the lining of canals and implementation of on-farm irrigation or district conveyance system improvements that would not have a hydrologic effect on the San Joaquin River. Alternative D represents the maximum water transfer by adding an additional increment of conservation water above existing capabilities.

V. Basis of Decision, Issues Evaluated, and Factors Considered

The alternatives were evaluated on how well they met the project's purpose and need, environmental effects, and compliance with the Endangered Species Act (ESA).

Purpose and Need

The overall purpose of the 25-Year WTP is to allow the annual development and transfer of CVP water from the Exchange Contractors to continue after February 28, 2014, and to provide for the delivery of transfer and/or exchange water to additional areas and contractors not included in the 10-Year Program EIS/EIR. The purposes of the proposed 25-Year WTP are the transfer and/or exchange of CVP water from the Exchange Contractors to:

- The RWSP to meet water supply needs (Incremental Level 4) for San Joaquin River Basin wildlife refuges and the Tulare Lake Basin wildlife areas

- Other CVP contractors and SWP contractors to meet demands of agricultural and M&I uses

The continuation of a program of temporary annual water transfers and/or exchanges is needed to maximize the use of limited water resources for agriculture, fish and wildlife resources, and M&I purposes with the following objectives:

- Develop supplemental water supplies from willing seller agencies within the Exchange Contractors' service area through water conservation measures/tailwater recovery and crop idling/fallowing activities consistent with agency policies.

- Assist in providing water supplies to meet the Incremental Level 4 requirements for the San Joaquin River Basin and Tulare Lake Basin wildlife refuges.

- Assist Friant Division CVP repayment contractors or water service contractors to obtain additional water for the production of agricultural crops or livestock and/or M&I uses because of water supply shortages or when full contract deliveries cannot otherwise be made.

- Assist SWP (KCWA and SCVWD) and other CVP agricultural service and M&I contractors (San Luis Unit, SCVWD, EBMUD, CCWD, PVWMA) to obtain supplemental water supplies.

- Promote seasonal flexibility of deliveries to the Exchange Contractors through exchange with CVP and SWP agricultural service and M&I contractors wherein water would be delivered and then returned at a later date within the year.

All action alternatives meet the proposed action's purposes. While Alternative B (up to 88,000 af) is the most similar alternative to the current 10-Year Program, Alternative D (up to 150,000 af) has greater potential to maximize water development from all sources for use by a broad range of transferees, without additional environmental impact. The No Action Alternative would not meet the purpose and need nor the objectives of the proposed project.

Environmental Issues Evaluated

Environmental issues in several resource areas were evaluated. A synopsis of the issues associated with transfer water development by the Exchange Contractors identified during scoping and subsequently analyzed in the EIS/EIR are presented below:

- effects on flow and water quality in the San Joaquin River at Vernalis,

- effects on New Melones Reservoir operations and Stanislaus River water users,

- effects on the CVP/SWP's Delta water supply,

- effects on groundwater levels and/or flow patterns,

- effects on wetlands, special-status species, and aquatic habitat,
- effects on land use and agriculture,

- effects on socioeconomic and environmental justice,
- effects on air quality,
- effects on climate change/greenhouse gas effects, and
- effects on Indian Trust Assets.

For all four action alternatives the effects would be the same for the following resource issues:

- Regarding water quality at Vernalis, New Melones Reservoir operation/storage, and Delta water supply; Alternatives A, B, C, and D have the same minimal effects.
- The impacts from temporary land fallowing are the same for all of the action alternatives.
- Changes in flows to Mud and Salt sloughs and the San Joaquin River that could affect habitat for aquatic resources are minimal for all four action alternatives
- Transfers to CVP and SWP agriculture and M&I contractors will not result in deliveries of water in excess of full contract amounts, and therefore, adverse impacts are not anticipated beyond those identified and analyzed in long-term contract renewal environmental documentation.
- None of the four action alternatives would affect Indian Trust Assets.

Environmentally Preferred Alternative

Section 13.5 Environmentally Preferred/Superior Alternative of the EIS/EIR and in this ROD, Alternative D has been identified as the environmentally preferable alternative. Alternative D was selected as the Environmentally Preferred Alternative due to benefits to water quality, the regional economy, and minority and low income minority populations. For additional details see Section 13.5 of the EIS/EIR.

ESA Consultations

On August 3, 2012, the U.S. Bureau of Reclamation (Reclamation) requested concurrence from the U.S. Fish and Wildlife Service (Service) that the proposed action may affect, but is not likely to adversely affect (NLAA), the Federally-listed threatened giant garter snake (*Thamnophis gigas*). The EIS/EIR includes a full analysis of the effects of the proposed action (Alternative D) on listed species, designated critical habitat, proposed species and proposed critical habitat that may be present in the action area. The specific biological analysis related to listed species is included in Chapter 6 of the EIS/EIR and in an attachment to the August letter to the Service. The Service was provided copies of the Draft EIS/EIR in May 2012, and the Final EIS/EIR was provided in January 2013.

For the action area, Reclamation determined that there would be no effect on all but one Federally-listed species, the giant garter snake. Based on their historic range, this species potentially occurs in Salt and Mud Sloughs, which provides habitat for the giant garter snake in the vicinity of the project. A reduction in flows to Salt and Mud Sloughs resulting from Alternative D may occur. The change in hydrologic effect on giant garter snakes due to the reduction of return flows in the San Joaquin River, Salt and Mud Slough would not be substantial, as these flow reductions would be small (< 2 cubic feet per second). As such, these waterways would continue to provide suitable habitat for prey species for giant garter snake, as well as provide the same migratory corridors that currently exist. These changes in flow would not substantially affect giant garter snakes or their habitat; therefore, it is not likely to adversely affect this species.

The Service sent a letter on November 20, 2012 concurring with Reclamation's NLAA determination on the giant garter snake. The Service recommended that Reclamation commit to continue to monitor and/or compile water quality and flow data for stations L2, M2, and F for the life of the 25-Year WTP and to post this data on the web as either part of the Grassland Bypass Project or a separate effort. Therefore, unless new information reveals that the 25-Year WTP may affect listed species in a manner or to an extent not considered, or it may affect a new species or critical habitat not currently designated, no further action pursuant to the Act is required. A copy of the Service's letter of concurrence is attached as Exhibit A.

Socioeconomics

Generally, land fallowing and conservation water transfers have distinct effects on the regional economy. Land fallowing generates adverse economic effects due to the lost production value on fallowed lands, which indirectly affects agriculture-support industries, farm labor, and other related sectors. These effects are mitigated to some extent in the case of water transfer sales, which brings money back into the regional economy in the form of income to agricultural landowners. These offsetting effects are highest under Alternative D, where transfer prices are assumed to be the highest. Conversely, conservation transfers bring new revenues into the regional economy and generate economic benefits to those industries and labor that support water district operations. In all alternatives, except Alternative D, investment in conservation projects is sufficient to meet the 25-Year WTP's conservation needs; therefore, no additional capital outlays are necessary. In Alternative D, new capital investment would be required, but would be funded through conservation transfer revenues.

Alternative D would have varying effects on the regional economy depending on how the water is made available for transfer. The total economic impacts include an annual loss of $7.3 million in total output and 20 jobs, but an increase in $6.6 million in labor income, considering landowner-to-landowner transfers only. In the case of water transfer sales, the total effects in the four-county economy include annual increases of $3.4 million in output, $7.9 million in labor income, and 55 jobs.

Section 106 Compliance

Reclamation is responsible for complying with Section 106 of the National Historic Preservation Act (NHPA). The water development activities associated with Alternative D would not result in any construction or land-altering/ground-disturbing activities beyond normal agricultural practices, including temporary land fallowing, or in any significant changes in reservoir operations that would expose buried resources, if present. Changes in water levels due to water quality releases from New Melones Reservoir (to mitigate for potential effects on water quality at Vernalis) would be within the range of drawdowns experienced in recent years.

V. Implementing the Decision and Environmental Commitments

The EIS/EIR identifies no potentially significant impacts or substantial adverse effects to physical and biological resources from implementing Alternative D, and no mitigation is required. However, the Exchange Contractors and Reclamation will continue to monitor both surface and groundwater resources to avoid the development of substantial adverse effects and meet existing environmental commitments.

On-going Monitoring

The primary mechanism for monitoring groundwater resources is implementation of the Exchange Contractors' *Updated AB 3030 Groundwater Management Plan* (KDSA 2008) which provides for conjunctive use of surface and groundwater to meet peak crop water demands during June, July, and August. Well pumpage in each district is measured annually and estimated for both upper and lower aquifers. Water-level elevation maps are prepared every 5 years with the upper aquifer map completed in Spring 2006. Water quality is evaluated from samples taken at least every 5 years from both aquifers (KDSA 2008). Even though transfers will not be through groundwater pumping, monitoring of groundwater will continue and the Exchange Contractors will continue to manage groundwater pumping in accordance with their AB 3030 plan.

Monitoring of the San Joaquin River flows and surface water supplies is proposed and the results will continue to be used as part of Reclamation's transfer approval process. This annual accounting process evaluates if any actual water supply impacts occurred from the current water transfer and through mutual agreement determines if any limitations on the sources of water developed by the Exchange Contractors as well as any limitations on the disposition of water by the parties to whom the transfer is made in a subsequent year are necessary. The monitoring requirements of the transfer approval process will continue to ensure that any impacts that may accrue to the CVP, or to the affected environment will be identified and appropriate action taken.

Reclamation is responsible, through the transfer approval process, for ensuring that the transfer is consistent with applicable monitoring requirements.

Existing Environmental Commitments

The Exchange Contractors and its member agencies have adopted a Mitigation Monitoring and Reporting Plan (MMRP) for the Preferred Alternative under CEQA. Section 14 of the EIS/EIR includes the complete MMRP.

Additional Environmental Commitments

Pursuant to the Service's recommendation in their letter of concurrence, Reclamation will continue to monitor and/or compile water quality and flow data for stations L2, M2, and F for the life of the 25-Year WTP and to post this data on the web as either part of the Grassland Bypass Project or a separate effort, as long as these sites continue to be monitored as part of the Grasslands Bypass Project monitoring effort.

VI. Summary of Comments Received on the Final EIS/EIR

Following the publication of the Final EIS/EIR in January 2013, comment letters were received from AquAlliance, California Water Impact Network, and Center for Biological Diversity, on February 11, 2013, Stanislaus County Environmental Review Committee on February 13, 2013 and United States Environmental Protection Agency on March 11, 2013.

These three letters reiterated many of the comments made on the Draft EIS/EIR and the agencies response to specific issues submitted during public review can be found in the Final EIS/EIR, Appendix G. The comments received on the Final EIS/EIR focus on the project impacts to groundwater supplies, land subsidence, and habitat in Mud and Salt Sloughs for the giant garter snake in large part because the commenters believe the environmental baseline and scope of analysis were not correctly defined.

Impacts to Groundwater Supplies and Land Subsidence

Agency Response: There is no groundwater extraction proposed in any of the alternatives, so there is no obligation to focus on groundwater extraction in the EIS/EIR. The issues are the impacts of proposed reduction in deep percolation from both fallowing and conservation actions on groundwater levels and groundwater quality which are addressed in Section 5.2 of the EIS/EIR. The extent that the transfer and/or exchange water is used by the receiving areas instead of groundwater supplies, meeting one of the original purposes of the CVP (i.e. to bring surface water to areas relying substantially on groundwater supplies), will help to reduce the problems associated with over-reliance on groundwater supplies including subsidence.

Impacts to Habitat in Mud and Salt Slough for Giant Garter Snake

Agency Response: The USFWS letter of concurrence of Not likely to Adversely Affect the giant garter snake corrects the misunderstanding of environmental impacts embedded in the EIS/EIR comments received on the reduction in return flows to the sloughs and giant garter snake habitat (see Exhibit A).

Incorrect Environmental Baseline and Scope of Analyses

Agency Response: The description of the future 25-Year WTP as a continuation of an existing 10-Year Program with some changes is appropriate and accurate. The previous 10-Year Program has worked well, without impact to nonparticipating water users being identified during the annual transfer approval process and with water being put to beneficial use under periods of supply shortages. Furthermore, the order of the alternatives from the smallest program to the largest enables the impacts analysis to proceed in a logical manner. Alterative B was designed to reflect the most recent transfer activity, and the physical environment has adjusted to that activity. In any event, the No Action alternative is a discontinuation of the 10-Year Program, and each alternative is compared to the No Action alternative to provide a quantitative analysis of the impacts of not approving the project. Even in comparison to a discontinuation of the 10-Year Program, Alternative D does not have any substantial adverse impacts.

The process of setting parameters for water transfers and/or exchanges needs to provide for flexibility in supplies and adaptive management for changing environmental conditions and water market economics that culminate in a negotiation process to determine the precise amounts of water in any year. In every water year since 1999, the Exchange Contractors and Reclamation have successfully negotiated water acquisitions for transfer to the wildlife refuges. Water allocations under CVP contracts vary from year to year based on hydrologic conditions. Years in which the participating contractors do not receive their full contract amounts are when the transfers become an important source of supply. Just as Reclamation cannot predict years in advance their precise water allocations to contractors, neither can the Exchange Contractors make precise commitments on water for transfer. But the parameters of maximum amount of water to be developed under the methods of conservation, including tailwater recovery and temporary land fallowing, ensure that the environmental impacts are addressed in the EIS/EIR.

EXHIBIT "A"

LETTER OF CONCURRENCE FROM

U.S. FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2011-I-0701-3

30 November 2012

Memorandum

To: Richard Woodley, Regional Resources Manager, U.S. Bureau of Reclamation, Mid-Pacific Regional Office, Sacramento, California

From: Ken Sanchez, Assistant Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority 2014-2038

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) concurrence with the U.S. Bureau of Reclamation's (Reclamation) August 3, 2012 determination that the proposed water transfer program (Transfer Program) for the San Joaquin River Exchange Contractors Water Authority (SJRECWA) from 2014 through 2038 may affect, but is not likely to adversely affect (NLAA) the federally-listed giant garter snake (*Thamnophis gigas*). Reclamation as the federal lead agency, and the SJRECWA as the California Environmental Quality Act (CEQA) lead agency, prepared a draft EIS/EIR (DEIS/R) pursuant to the National Environmental Policy Act (NEPA) and CEQA that was released for public comment in May 2012. A copy of the DEIS/R was provided as supporting documentation with your request for concurrence memorandum. The DEIS/R examines the environmental effects of the transfer and/or exchange of up to 150,000 acre-feet annually of substitute water from the SJRECWA to several potential users over a 25-year period.

The Proposed Action would extend the timeframe and expand the geographic scope of an existing 10-Year water transfer program. The Transfer Program would allow the exchange and/or transfer of up to 150,000 acre-feet of water annually for 25 years from the SJRECWA to San Joaquin Valley public and private wetlands, and south of Delta agricultural, municipal and industrial users in Alameda, Contra Costa, Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, San Benito, Santa Clara, Santa Cruz, Stanislaus, and Tulare counties. The water for the Transfer Program would be developed by the SJRECWA by means of a suite of actions consisting of the following: tailwater recapture, temporary land fallowing, reductions in deep water percolation and applied water efficiency improvements. The SJRECWA service area is made up of the Central California Irrigation District (CCID), the San Luis Canal Company

(SLCC), the Firebaugh Canal Water District (FCWD), and the Columbia Canal Company in Fresno, Madera, Merced, and Stanislaus counties.

This response is provided pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (Act) (16 U.S.C. 1531 *et seq).* We received your memorandum requesting informal consultation under the Act on August 10, 2012. Our concurrence with your effects determination is based on the information and commitments provided by Reclamation and the SJRECWA in the DEIS/R, mail and e-mails, and meetings between the Service, Reclamation and the SJRECWA and their consultants.

Consultation History

June 20, 2011: The Service receives a Notice of Preparation of a DEIS/R for the Transfer Program from the SJRECWA and Reclamation.

July 22, 2011: The Service transmits scoping comments on the Transfer Program to Reclamation and the SJRECWA.

September 12, 2011: Representatives of the Service meet with Reclamation, the SJRECWA and their consultants to discuss issues raised in the Service's July 22, 2011 scoping comments on the Transfer Program.

December 1, 2011: Reclamation provides a copy of the DEIS/R for the Transfer Program to the Service for review and comments.

January 11, 2012: The Service transmits draft comments to Reclamation on the DEIS/R for the Transfer Program.

January 18, 2012: Representatives of the Service met with Reclamation, the SJRECWA and their consultants to discuss the Service's draft comments on the DEIS/R.

February 13, 2012: The Service transmits final comments on the DEIS/R for the Transfer Program. The Service's two main concerns provided in the comments on the DEIS for the 25-Year Transfer Program pertained to whether the water transfers would result in a detrimental loss of summer water for giant garter snakes or a detrimental increase in water-borne contaminants.

March 13, 2012: Representatives of the Service met with Reclamation, the SJRECWA and their consultants to go over revisions to the DEIS/R and be briefed on a new analysis the consultants had completed addressing flow impacts in the Grasslands wetland channels.

August 10, 2012: Reclamation transmits to the Service a copy of the DEIS/R for the Transfer Program, and a request for concurrence with the determination that the proposed Transfer Program for the SJRECWA from 2014 through 2038 may affect, but is NLAA the federally-listed giant garter snake.

Background

The Service previously completed informal consultations pursuant to section 7(a)(2) of the Endangered Species Act, as amended (16 U.S.C. 153 1 *et seq.*) and in accordance with the regulations governing interagency consultations (50 CFR §402), on the 10-Year Transfer Program of the SJRECWA from March 1, 2005 to February 28, 2014 (Service File Nos., 04-I-2162 and 06-I-1131). Those memos are incorporated here by reference. The 25-Year Transfer Program being considered in this consultation is an extension of the existing 10-Year Program when it ends in 2014. Our consultation on the 10-Year Transfer Program concurred with Reclamation's determination that the proposed action may affect, but is NLAA the federally-listed as threatened giant garter snake. Our concurrence with a NLAA determination was based on a number of criteria including the following: 1) there would be no loss of listed species habitat as a result of these transfers, and 2) Reclamation will track the monitoring of water quality and selenium levels in Salt Slough to assist in identifying factors that could affect giant garter snake habitat and the ongoing effect of the tailwater recapture program.

Project Description

The proposed project considered in this informal consultation is defined in the DEIS/R as Alternative D. The proposed action involves the development of water by the SJRECWA of up to 150,000 acre-feet per year (AFY) and an exchange and/or transfer of that water or a portion of that water to public and private wetlands in the San Joaquin Valley (refuges), agricultural, and municipal and industrial (M&I) users listed below. The agricultural and M&I users that are eligible to purchase water from the Transfer Program include the Friant Division and San Luis Unit Central Valley Project (CVP) contractors, State Water Project (SWP) contractors west and south of the Sacramento-San Joaquin River Delta, specifically Kern County Water Agency (SWP water), Santa Clara Valley Water District (CVP and/or SWP water), East Bay Municipal Utility District (CVP water), Contra Costa Water District (CVP water), and Pajaro Valley Water Management Agency (CVP water). All transfers would be consistent with CVP place of use requirements. The proposed Federal action is to (1) acquire water for the San Joaquin River Basin and the Tulare Lake Basin refuges (Incremental Level 4 under the Central Valley Project Improvement Act [CVPIA]) and/or (2) approve transfers and/or exchanges of CVP water from the SJRECWA to other CVP and SWP contractors. The SJRECWA prepared the DEIS/R document to examine the environmental impacts of:

1. Continuing the existing transfer of their CVP water (up to 130,000 AFY with up to 80,000 AFY from conservation and up to 50,000 AFY from temporary land fallowing) in the same manner that was documented in the 10-Year Water Transfer Program Environmental (EIS/EIR) (prepared prior to 2005) and extending it past the period studied in the 10-Year Water Transfer Program EIS/EIR for water years 2014 to 2038 in the San Joaquin Valley, San Benito County, and Santa Clara County, and,
2. Expanding the transfer by up to 20,000 AFY of conserved water under certain specified conditions (up to a total of 100,000 AFY of conserved water and up to a total of 50,000 AFY of water from temporary land fallowing or a total of up to 150,000 AFY) for 2014 to 2038, and allowing for an exchange, and,
3. Including authorization to transfer and/or exchange portions of the transferred water described in numbers 1 and 2 above to not only those CVP contractors who were included

in the current SJRECWA 10-Year Transfer Program but also to other CVP and SWP contractors in Alameda, Contra Costa, Monterey, Santa Cruz, and Kern counties.

The SJRECWA proposes to make the water described above available for transfer and/or exchange of substitute water to either the refuges, CVP contractors for existing M&I and/or agricultural uses, and other potential SWP contractors for existing agricultural and/or M&I uses, or to some combination of these users and uses on an annual basis. The duration of the Transfer Program is for 25 consecutive years beginning March 1, 2014 and going through February 28, 2039. Specifically, the proposed actions implemented by the SJRECWA to develop water for the Transfer Program would occur from January 1, 2014, through December 31, 2038.

The SJRECWA would continue to develop the water for the Transfer Program from within their service area. The SJRECWA service area covers 240,000 acres of agricultural land in Fresno, Madera, Merced, and Stanislaus counties, and is shown in Figure 1. Recipient districts of the Transfer Program water include CVP contractors north, west, and south of the Delta. The Transfer Program would expand the Project Area from Fresno, Kern, Kings, Madera, Merced, San Benito, San Joaquin, Santa Clara, Stanislaus, and Tulare counties for the existing 10-Year Transfer Program to include an additional four counties (Contra Costa, Alameda, Monterey, and Santa Cruz) in California (14 counties total). The locations of the SJRECWA Water Transfer Program's potential recipients (transferees) are shown in Figures 2 and 3. The public and private wetland habitat areas that would receive the Transfer Program water are located in Merced, Fresno, Tulare, and Kern counties as shown in Figure 2. The agricultural and/or M&I water users that would be potential recipients of the Transfer Program water are located in Stanislaus, San Joaquin, Merced, Madera, Fresno, San Benito, Santa Clara, Tulare, Kern, Kings, Contra Costa, Alameda, Monterey, and Santa Cruz counties, as shown in Figure 3.

EXHIBIT "A"

LETTER OF CONCURRENCE FROM

U.S. FISH AND WILDLIFE SERVICE

Figure 1. Service Area of the SJRECWA for the 25-Year Transfer Program.

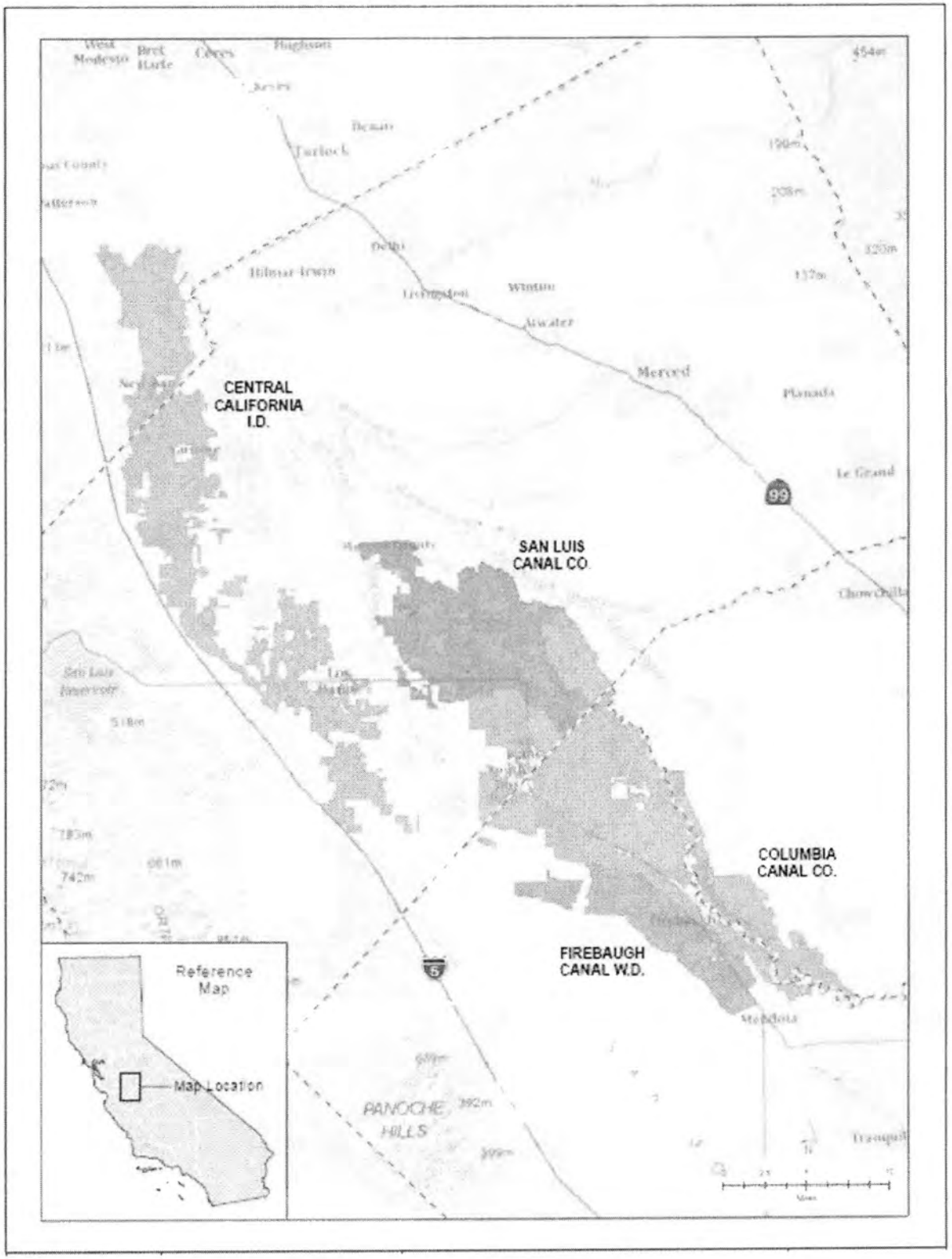


Figure 2. Potential Public and Private Wetlands that could Receive Water from the 25-Year Transfer Program.

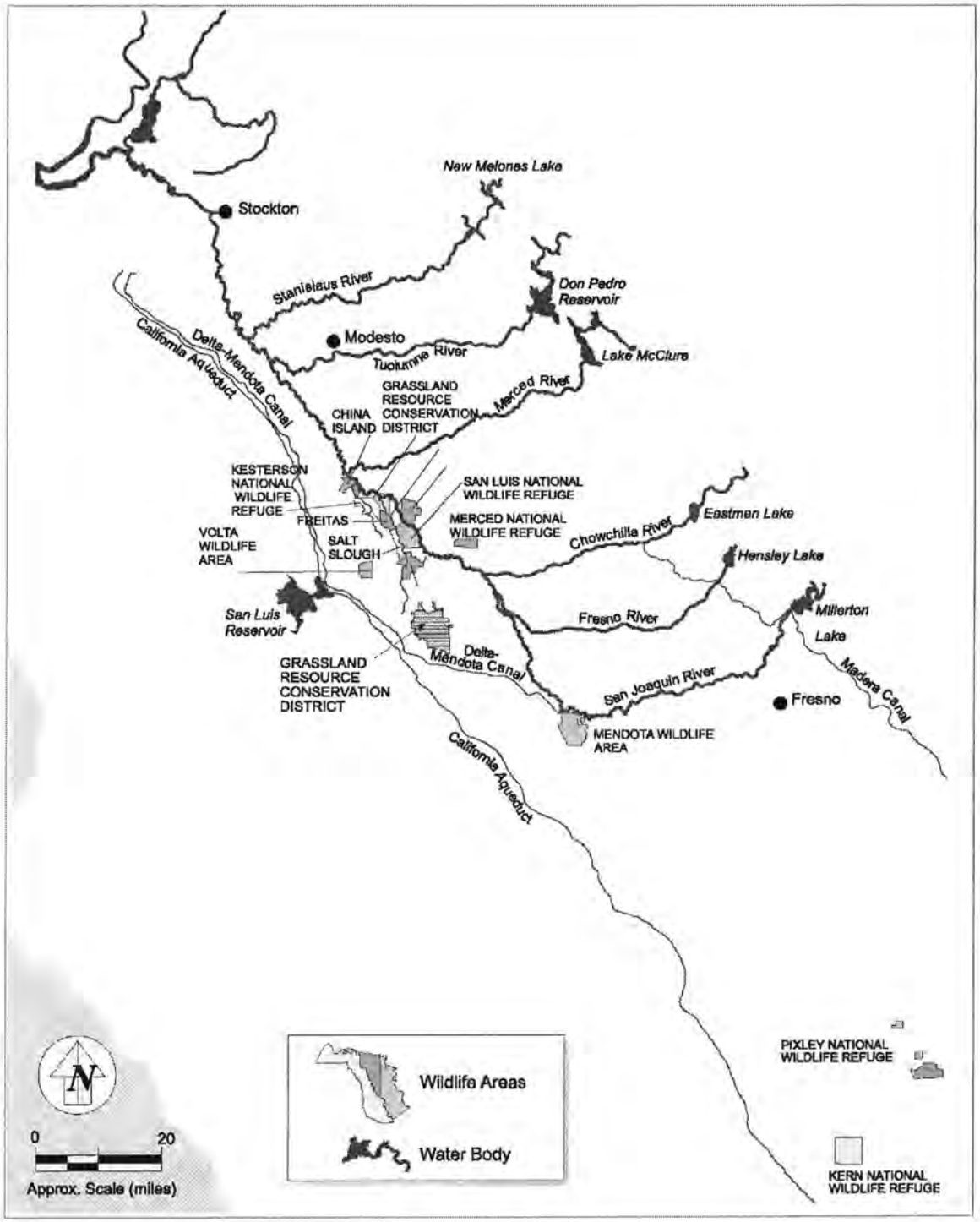
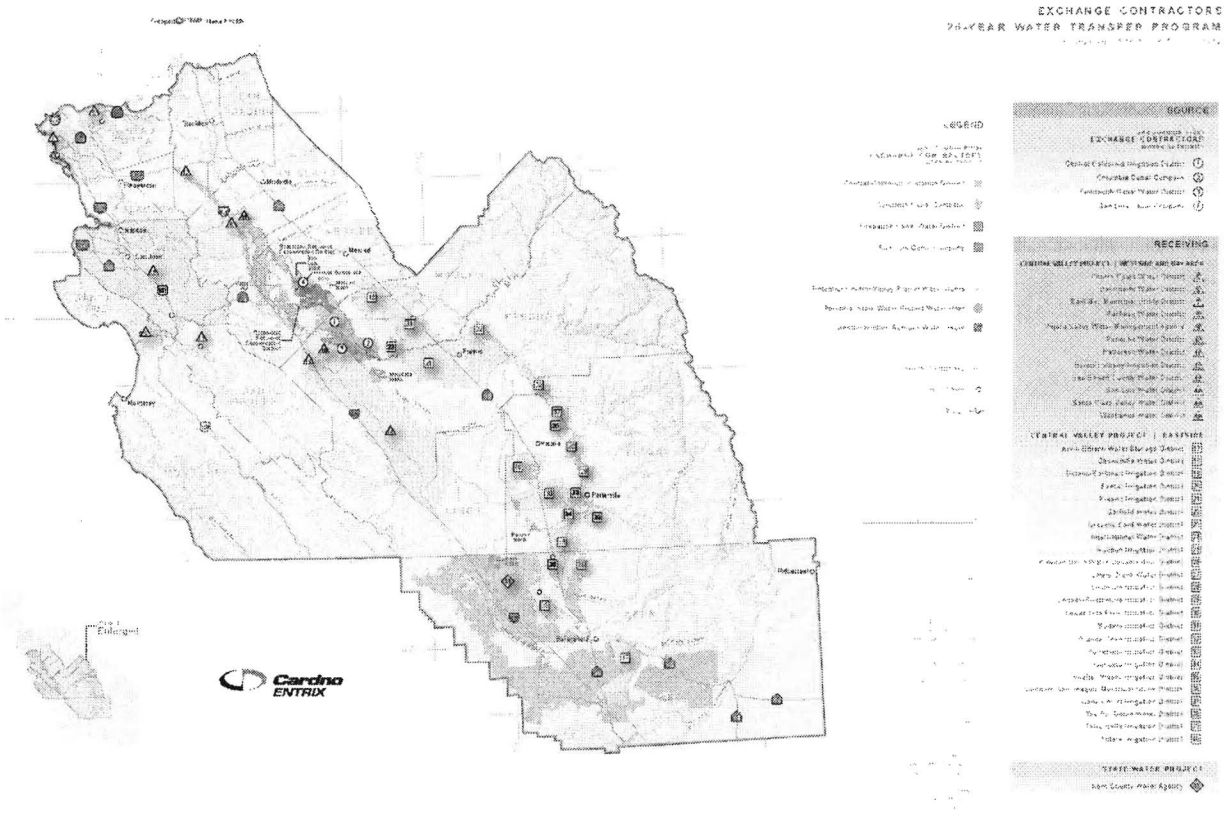


Figure 3. Potential Ag and M&I Districts that could Receive Water from the 25-Year Transfer Program.



Effects Analysis

A comparison of the methods used to develop water under existing conditions and the Transfer Program is provided in Table 1 below. As part of the Transfer Program, the SJRECWA will continue to use conserved water developed from reductions in seepage and evaporation of tailwater, reductions of spills to non-district lands, reductions of tailwater otherwise discharged to Mud and Salt Sloughs (or other watercourses connected to the San Joaquin River), and reductions in tailwater that otherwise would discharge to the San Joaquin River above Sack Dam. The SJRECWA will expand its use of temporary land fallowing to develop water for the Transfer Program. The Transfer Program will also develop water through reduction of deep percolation (reduction of seepage from canals) and/or applied water efficiency improvements (conversion from surface or surface/sprinkler irrigation to micro or micro/sprinkler systems). Groundwater substitution will not be used to develop water for the Transfer Program.

Table 1 shows the average volume of tailwater recapture exercised by the SJRECWA from 2003 thru 2010. The 80,000 AFY of developed water from "tailwater recapture" under the 10-Year and 25-Year Transfer Programs (as shown in Table 1 below) is only a portion of the water conserved by the SJRECWA's tailwater recapture facilities. The SJRECWA has invested in over 250 low lift stations for the purpose of tailwater recapture that has resulted in the recapture and reuse of about 135,000 AFY of tailwater (i.e., average volume of 80,000 AFY for the Transfer Program and an additional 54,161 AFY for reuse within the SJRECWA Service Area during the 10-Year Transfer Program). Additional tailwater recapture facilities could be installed during the 25-Year Transfer Program that could increase the cumulative capacity of tailwater recapture in the SJRECWA Service Area. This stated capacity does not include the on-farm facilities controlled by individual landowners. The tailwater recapture facilities result in the following effects: 1) less water will evaporate, or seep to the groundwater basin, 2) less water will be inadvertently discharged to non-district lands, and 3) less water will be discharged to Salt Slough and Mud Slough or other runoff escape locations (DEIS/R Appendix B, page 6).

Hydrologic Effects: For the proposed Transfer Program, any water developed through the continuation of existing tailwater recapture measures (up to 80,000 acre-feet) will cause no change in current hydrologic conditions in waterways. Water developed through improvements in applied water efficiency, or improvements to conveyance structures that reduce seepage will result in reductions to deep percolation with little, if no hydrologic effect on waterway hydrology. The only potential hydrologic effects identified in the DEIS/R occur in the full development of proposed temporary land fallowing.

The historical-review analysis in the DEIS/R indicated that land fallowing that has occurred under the current Transfer Program has likely resulted in very little, if any hydrologic effects to San Joaquin River hydrology or overland discharges to adjacent areas. Assumptions were made in the DEIS/R concerning the amount of fallowed land that may have hydrologic connection to the San Joaquin River or spills to non-district lands or waterways. The maximum 50,000 acre-feet of transfer water that would be developed by the Transfer Program from fallowing is assumed to be developed within FCWD, CCID and SLCC. To develop the full 50,000 acre-feet of water through fallowing, 20,000 acres of agricultural land would need to be fallowed. Based on a review of the lands representing the downslope boundary of CCID and SLCC, and the assumed distribution of potential fallowed land within the districts, the DEIS/R concluded that

little, if any potential exists for fallowing under the proposed Transfer Program to occur on parcels that would have provided tailwater runoff to adjacent uncultivated lands. The parcels at the district's boundary are typically surrounded by several additional farmed fields, or immediately bounded by roads, canals or ditches.

Table 1. Comparison of No Action/No Project Alternative with Transfer Program DEIS/R Action Alternative D (quantities of water in acre-feet/year).

Method used to Develop Water for Transfer/Exchange	Included in 10-Year Transfer Program	25-year Transfer Program (Proposed Action)	Not Included in 10-Year Transfer Program or Proposed Action but part of Existing Conditions in DEIS/R
Tailwater Recapture:	80,000	80,000	54,161[1]
Temporary Land Fallowing	8,000	50,000	
Deep Water Percolation & Applied Water Efficiency	0	20,000	
Total (acre-feet/year)	88,000	150,000	

[1]Derived from Table 5 of Appendix B from the DEIS/R as Average Total (134,161) minus 80,000 from existing conditions = 54,161 AFY.

Effects to flows in Mud and Salt Sloughs: It is assumed for the purposes of this consultation that Reclamation will continue to acquire water from the Transfer Program for the San Joaquin Basin refuges in amounts similar to, but not less than quantities acquired under the 10-Year Transfer Program. As denoted in the materials provided by Reclamation for this consultation, the Transfer Program has the potential to affect the giant garter snake. The historic range of the snake includes Mud and Salt Sloughs which are in the vicinity of the project. Mud Slough (South) and Salt Slough provide suitable habitat for the snake. The full range of potential hydrologic effects associated with the Transfer Program was analyzed in Appendix B of the DEIS/R. The effects of the hydrologic changes associated with the Transfer Program on garter snake were further assessed in the Attachment to the Transmittal Memo for this consultation titled, "Information Concerning Effects on Giant Garter Snake" (Attachment). The assessment in the Attachment concludes that the reduction of flows in the San Joaquin River, and Salt and Mud Sloughs from the Transfer Program would not be substantial as these reductions would be small (<2 cubic feet per second). Under a worst-case scenario, this amount would correspond to about a 6 percent reduction in the total flow under the driest conditions, if all of the flow reduction occurred in a single channel, which the Attachment concludes is unlikely. Even under the worst-case scenario, the predicted reductions in flow associated with the Transfer Program are not expected to substantially affect giant garter snakes or their habitat.

Effects to rice acreage in the SJRECWA service area: There is a limited area devoted to rice production in the SJRECWA service area, averaging about 3,009 acres per year. The existing

10-Year Transfer Program has not resulted in fallowing of much rice acreage. For the existing Transfer Program, only the 2010 transfer had any fallowed parcel associated with a history of rice planting within a 3-year period prior to fallowing. The 25-Year Transfer Program includes up to 20,000 acres of fallowing that could be used to develop water for transfer. It is possible that some lands previously planted in rice could be fallowed, but this is expected to represent a small proportion of the acreage fallowed and crop rotation schedules do not result in the same fields being planted in rice from one year to the next or even in every third year. Further, the acreage used to grow rice within the SRECWA service area is spread over a wide area and separated by other crops that do not provide habitat for the giant garter snake. These parcels are not adjacent to the refuges or natural waterways where the snake is known to occur. Much of the SJRECWA service area does not provide appropriate habitat for the giant garter snake. The canal sides and levees are continuously maintained and kept free of vegetation. A minor amount of emergent vegetation grows in the canals but it is insufficient to provide for basking and cover needs of the snake. In most of the service area, upland areas near the canals are not appropriate for cover and refuge as they are highly managed to prevent vegetation or encroachment by burrowing animals.

Cumulative Effects

The Transfer Program operates in a regional context in which the following factors affect surface hydrology:

- Substantially reduced water availability
- Regulatory requirements to increase water use efficiency
- Regulatory requirements to reduce the amount of constituents in water including selenium boron, and pesticides in agricultural runoff.

In response to these challenges, the agricultural community has improved irrigation efficiency and reduced runoff containing constituents as required by regulatory authorities. To meet these regulatory requirements, however, less water is allowed to run off the farms and into Mud Slough (South), Salt Slough, other waterways, and ultimately, the San Joaquin River. These combined water conservation and water quality improvement efforts have the potential to contribute to the cumulative loss of habitat for aquatic species such as the giant garter snake. However, the decreases in flow in aquatic habitat from the Transfer Program are not likely to be significant because of the offsetting effects of Reclamation's Refuge Water Acquisition Program and the San Joaquin River Restoration Program. The 10-Year Transfer Program has been an important source of water to the Grasslands Area refuges. The 25-Year Transfer Program includes the Grasslands Area refuges as potential recipients of transferred water.

Mitigation and Monitoring

As noted above, one of the potential effects of the Transfer Program is a small reduction in flows to the San Joaquin River and Salt and Mud Sloughs. The SJRECWA has installed over 250 low lift stations for the purpose of tailwater recapture that has resulted in the recapture and reuse of about 135,000 AFY of tailwater (80,000 AFY developed for the Transfer Program and about 54,000 AFY developed for use within the SJRECWA service area). One of the key assumptions in the DEIS/R for the Transfer Program is that the methods used to develop water for transfer (as highlighted in Table 1) will cause no change in current hydrologic conditions in waterways.

Reclamation has committed in the DEIS/R to conduct a formal coordination process to identify other programs that could significantly affect the assumption, implementation, or effectiveness of the SJRECWA Transfer Program. Programs included in the DEIS/R were the following:

- The Westside Integrated Resources Plan
- Various CVP yield improvement studies
- Land retirement studies and implementation
- San Luis Drainage Feature Re-evaluation Drainage Program implementation
- Grassland Bypass Project and related studies
- All components of the San Joaquin River Restoration Program, as described in the San Joaquin River Settlement Act and related Stipulation for Settlement, including but not limited to Restoration Flow releases and measures taken for the protection, recirculation, and recapture of Restoration Flows.

Subsequent to the time that Reclamation initiated consultation on the Transfer Program, the Service became aware of potential revisions to the Grassland Bypass Project Monitoring Program that would eliminate monitoring and reporting of two stations in the Grasslands wetland channels (Station L2 – San Luis Canal, and Station M2 – Santa Fe Canal) and on the San Joaquin River (Station F - Fremont Ford). These revisions are still in draft form and have not yet been finalized, although a final revised monitoring plan is expected to be completed by the end of 2012. The Service believes that continued monitoring and reporting of these sites is necessary to verify one of the key assumptions in the DEIS/R, that the Transfer Program will cause no change in current hydrologic conditions in waterways. These three monitoring stations have been monitored since the mid-1990s and provide useful baseline data for comparison. As there are numerous actions being implemented in the vicinity of these monitoring stations, the Service recommends that Reclamation continue to monitor and/or compile water quality and flow data at these stations for the life of the Transfer Program and to post this data on the web as either part of the Grassland Bypass Project or a separate effort. The Grassland Bypass Project monitoring data is all archived and maintained by the San Francisco Estuary Institute and available for viewing at their website: http://www.sfei.org/gbp.

Conclusion and Recommendations

The Service appreciates the early coordination efforts made by Reclamation and the Exchange Contractors and their consultants to help facilitate the environmental documentation process and the interagency consultation process. We believe the early coordination was very useful in addressing our questions and concerns. Although not explicitly addressed in the DEIS/R, we recommend that Reclamation commit to continue monitor and/or compile water quality and flow data for stations L2, M2 and F for the life of the Transfer Program and to post this data on the web as either part of the Grassland Bypass Project or a separate effort. As previously noted, the Grassland Bypass Project has a long history of monitoring water quality and flow at these sites, and reporting their findings and posting their reports on the web.

Our concurrence with your NLAA determination for the giant garter snake concludes this consultation. Therefore, unless new information reveals effects of the Transfer Program that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat

is designated that may be affected by the Transfer Program, no further action pursuant to the Act is necessary. If you have questions regarding this action, please contact Thomas Leeman or Joy Winckel at (916) 414-6600.

cc: Michael C. S. Eacock, U.S. Bureau of Reclamation, Fresno, CA
Stephanie Skophammer, U.S Environmental Protection Agency, San Francisco, CA
Theresa Presser, U.S. Geological Survey, Menlo Park, CA
Leslie Mirise and Joe Dillon, National Marine Fisheries Service, Sacramento, CA
Kim Forrest, U.S. Fish and Wildlife Service, San Luis NWRC, Los Banos, CA
Rudy Schnagl, Central Valley Regional Water Quality Control Board
Julie Vance, California Department of Fish and Game, Fresno, CA
Bill Cook, California Department of Fish and Game, Los Banos, CA
Rick Ortega, Grassland Water District, Los Banos, CA

RECLAMATION

Managing Water in the West

Finding of No Significant Impact 18-02-MP

Water Exchange Agreement with San Luis and Grassland Water Districts

Refuge Water Supply Program
Bureau of Reclamation, Mid-Pacific Region
Sacramento, California

Prepared by: Shelly Hatleberg Date: 4/12/18
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Reviewed by: Linda M. H. Colella Date: 4/12/2018
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Richard Woodley
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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

April 2018

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Background

The Bureau of Reclamation prepared an Environmental Assessment (EA 18-02-MP, dated March 2018) that examined the environmental effects of the Department of the Interior Refuge Water Supply Program's (RWSP) agreement with San Luis Water District (SLWD) and Grasslands Water District (GWD) to provide South of Delta refuges with additional Refuge Level 4 (L4) Water in exchange with SLWD for Refuge Level 2 (L2) water. The Proposed Action would further the goals and objectives of the RWSP by improving refuge water availability South of the Delta. The proposed agreement is being undertaken pursuant to, and would be in full compliance with, Section 3406(d)(2) of Title XXXIV of the Act of October 1992 (106 Stat. 4706) Central Valley Project Improvement Act (CVPIA), which authorizes new water supply contracts for fish and wildlife purposes.

This Finding of No Significant Impact is supported by Reclamation's EA 18-02-MP, and is hereby attached and incorporated by reference.

Alternatives Including Proposed Action

No Action Alternative

Under the No Action Alternative, Reclamation would not enter into an agreement with SLWD and GWD to exchange Refuge L2 Water with SLWD for SLWD's forbearance of its share of water produced by the Los Banos Creek (LBC) Diversion Project for delivery to GWD and for funding GWD's share of the operations and maintenance (O&M) of the LBC Diversion Project. SLWD would not be able to utilize exchanged Refuge L2 Water, and the Refuge Incremental L4 Water portion of this exchange would not provide additional water to the RWSP.

Proposed Action

Reclamation proposes to enter into an agreement with SLWD and GWD to exchange Refuge L2 Water with SLWD for water made available via SLWD's forbearing the diversion of their share of Los Banos Creek riparian rights water and for funding GWD's O&M costs. The LBC Diversion Project could generate up to 15,082 acre-feet per year (AFY) in wet years and 3,162 AFY on average (includes both SLWD and GWD shares of the Project Yield). However, during dry and critically dry years the LBC Diversion Project may not produce any water. The Proposed Action would further the goals and objectives of the RWSP by improving refuge water availability South of the Delta. Another benefit of the Proposed Action is that it would enable delivery of water to SLWD for agricultural use. GWD would take delivery of SLWD's Los Banos Creek riparian water rights water as Refuge L4 Water.

Under the Proposed Action, SLWD would exchange its share of the LBC Diversion Project Yield with Reclamation, SLWD's forbearance water would be delivered to GWD riparian land within the GRCD, and Refuge L2 Water at a rate of 2 AF of Project Yield (SLWD's share) delivered to GWD for 1 AF of Refuge L2 Water delivered to SLWD. Refuge L2 water would also be made available at a rate of 2 AF of Project Yield (GWD's share) delivered to GWD as reimbursement for SLWD's funding of GWD's share of future Project Routine O&M costs on an annual basis. If SLWD, with the approval of Reclamation, funds GWD's share of any non-routine O&M, the exchange rate would be temporarily changed to 1 to 1 until such time as SLWD is compensated with Refuge L2 Water for costs incurred to fund the non-routine O&M. SLWD, GWD and Reclamation may mutually agree in writing to adjust the volume of L2 Water to be exchanged on a monthly or seasonal basis, provided that the amount of L2 Water to be exchanged shall not exceed the exchange rates over any 24-month period.

The Proposed Action will increase the water supply available to refuge lands within the GRCD. Reclamation and GWD would not be required to take delivery of Project Yield or exchange L2 Water if there is no refuge water demand at the time SLWD's share of Project Yield is made available or L2 Water is not available for exchange.

The proposed term of the initial Exchange Agreement is five years from the date of execution and may be extended upon written consent of SLWD, GWD and Reclamation for up to 25 years. This EA is intended to cover the entire 25 year period in anticipation that the initial five year agreement may be extended.

Public Comment

The EA 18-02-MP was released for public review on April 2, 2018 and extended until April 9, 2018. No formal comments were received.

Findings

In accordance with NEPA, the Mid-Pacific Regional Office of Reclamation has found that approval of the Proposed Action is not a major federal action that will significantly affect the quality of the human environment. Consequently, an environmental impact statement is not required.

Following are the reasons why the impacts from the proposed action are not significant:

1. The proposed action will not significantly affect public health or safety (40 CFR 1508.27(b)(2)).

2. The proposed action will not significantly affect natural resources and unique geographical characteristics such as proximity to historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order (EO) 11990); floodplains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (40 CFR 1508.27(b)(3) and 43 CFR 46.215(b)).

3. There is no potential for the effects to be considered highly controversial (40 CFR 1508.27(b)(4)).

4. The proposed action will not have possible effects on the human environment that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)).

5. The proposed action will neither establish a precedent for future actions with significant effects nor represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)).

6. The proposed action will not have a cumulatively significant impacts (40 CFR 1508.27(b)(7)).

7. The proposed action will not significantly affect historic properties (40 CFR 1508.27(b)(8)).

8. The proposed action will not significantly affect listed or proposed threatened or endangered species, or its habitat that has been determined to be critical under the Endangered Species Act of 1973 (40 CFR 1508.27(b)(9)).

9. The proposed action will not threaten a violation of Federal, state, tribal or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)).

10. The proposed action will not affect any Indian Trust Assets (512 DM 2, Policy Memorandum dated December 15, 1993).

11. Implementing the proposed action will not disproportionately affect minorities or low-income populations and communities (EO 12898).

12. The proposed action will not limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 13007 and 512 DM 3).

RECLAMATION

Managing Water in the West

Environmental Assessment 18-02-MP

Water Exchange Agreement with San Luis and Grassland Water Districts

Refuge Water Supply Program
Bureau of Reclamation, Mid-Pacific Region
Sacramento, California

April 2018

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Section 1 Introduction

In conformance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and Department of the Interior (DOI) Regulations (43 CFR Part 46), the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with the San Luis Water District's (SLWD) and Grassland Water District's (GWD) proposed Los Banos Creek Level 4 (L4) Refuge Water Exchange Project (Proposed Action). The Proposed Action is located in Merced and Fresno counties, California (see Figure 1).

Reclamation proposes to enter into an agreement with SLWD and GWD to provide South of Delta refuges with additional Refuge L4 Water in exchange with SLWD for Refuge L2 water. The Proposed Action would further the goals and objectives of the Refuge Water Supply Program (RWSP) by improving refuge water availability South of the Delta.

1.1 Background

The Central California Irrigation District (CCID), Columbia Canal Company, Firebaugh Canal Water District, and San Luis Canal Company, collectively referred to as San Joaquin River Exchange Contractors Water Authority (SJRECWA), SLWD and GWD constructed the Los Banos Creek Water Diversion Project (LBC Diversion Project or Project), in 2017. The LBC Diversion Project included the installation of infrastructure in Los Banos Creek and the Delta-Mendota Canal (DMC) for diversion of flood water released from Los Banos Creek Detention Dam for beneficial use on riparian lands in the SJRECWA, SLWD and GWD. The three entities have executed a 25-year cost sharing agreement in which all are entitled to their respective portions of the LBC Diversion Project water and all agreed that one party to the agreement may forbear delivery of its share of the LBC Diversion Project water in favor of another party.

Reclamation will conduct unequal L2 Refuge Water exchanges with SLWD for the respective shares of the LBC Diversion Project water for SLWD and GWD (2 for 1 exchange). First, an unequal exchange will be conducted with SLWD for the forbearance of SLWD's share of the LBC Diversion Project water delivered by GWD to riparian lands in the Grassland Resource Conservation District (GRCD) as Refuge Level 4 (L4) Water. Second, an unequal exchange with SLWD will be conducted for GWD's share of the LBC Diversion Project water for SLWD's funding of GWD's Project O&M costs. A portion of the water made available by the LBC Diversion Project will be made available to GWD to help Reclamation meet its obligation to provide Refuge L4 Water Supplies under the CVPIA.

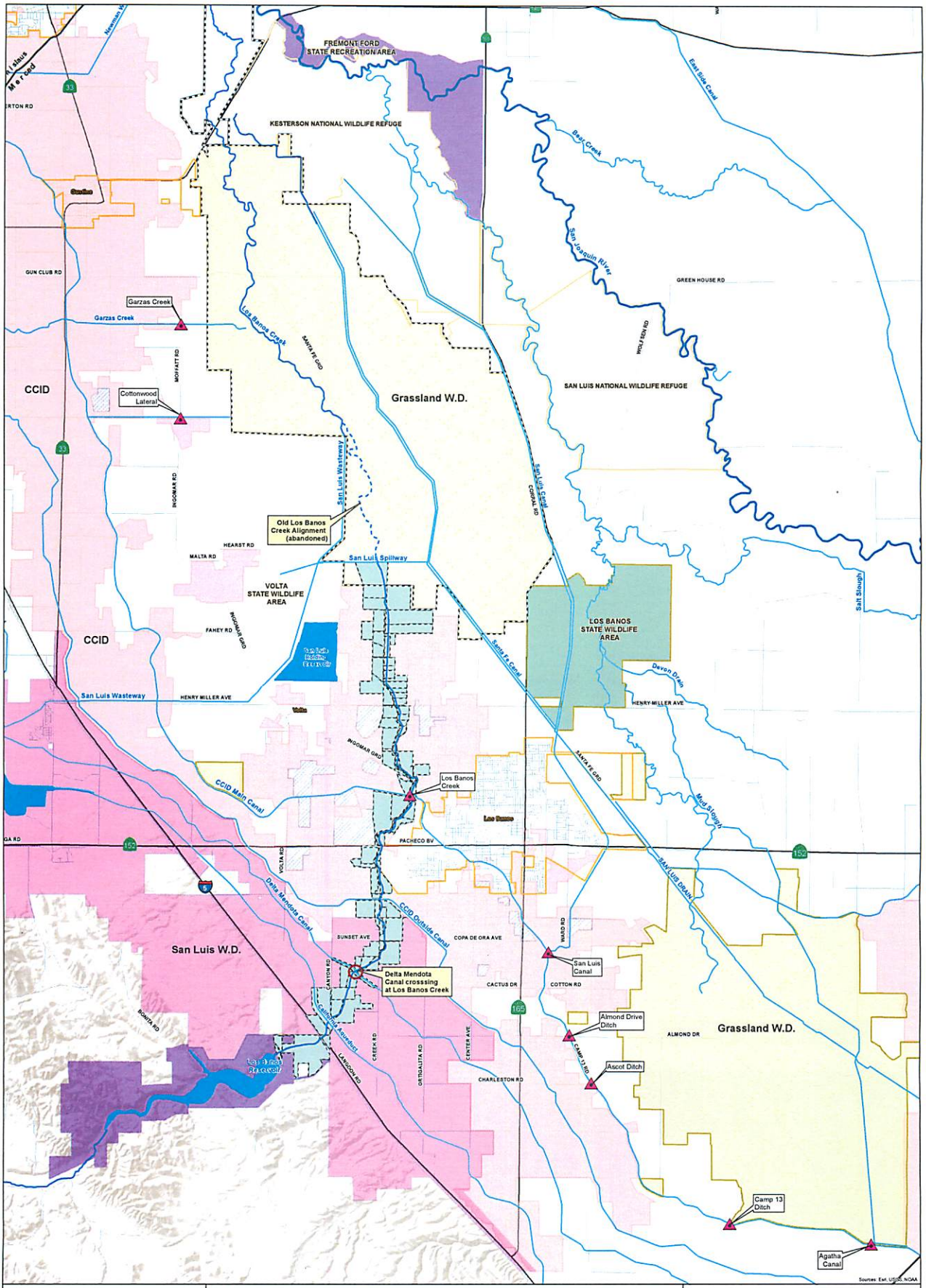

Figure 1

Los Banos Creek Diversion
Riparian Land and Points of Delivery

Exchange Agreement No. 17-WC-20-5056

1/12/2018 : \\ppeng.com\pzdata\Clients\SJRECWA-3495\349512B3 - LBC Water Resources Mgmt Plan\GIS\Map\LBC Riparian Lands and POD-2018.mxd

1.2 Need for the Proposed Action

The need for the Proposed Action is to provide Refuge L4 Water to the refuges in accordance with requirements under Section 3406(d) of the Central Valley Improvement Act (CVPIA) and to provide additional water supplies to SLWD.

1.3 Previous Environmental Analysis

The construction and operation of the LBC Diversion Project was analyzed in Reclamation's 2015 *Los Banos Creek Diversion Project Environmental Assessment (EA) and Finding of No Significant Impact (FONSI 12-060)* (Reclamation 2015 EA/FONSI). The document analyzed constructing and operating a weir in Los Banos Creek to divert available water from Los Banos Creek into the Delta Mendota Canal (DMC). These documents and the environmental analyses they contain are hereby incorporated by reference as they include the same Proposed Action area.

Section 2 Proposed Action and Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not enter into an agreement with SLWD and GWD to exchange Refuge L2 Water with SLWD for SLWD's forbearance of its share of water produced by the LBC Diversion Project for delivery to GWD and for funding GWD's share of the O&M of the LBC Diversion Project. SLWD would not be able to utilize exchanged Refuge L2 Water, and the Refuge L4 Water portion of this exchange would not provide additional water to the RWSP.

2.2 Proposed Action Alternative

Reclamation proposes to enter into an agreement with SLWD and GWD to exchange Refuge L2 Water with SLWD for water made available via SLWD's forbearing the diversion of their share of Los Banos Creek riparian rights water and for funding GWD's O&M costs. The LBC Diversion Project could generate up to 15,082 acre-feet per year (AFY) in wet years and 3,162 AFY on average (includes both SLWD and GWD shares of the Project Yield). However, during dry and critically dry years the LBC Diversion Project may not produce any water. The Proposed Action would further the goals and objectives of the RWSP by improving refuge water availability South of the Delta. Another benefit of the Proposed Action is that it would enable delivery of water to SLWD for agricultural use. GWD would take delivery of SLWD's Los Banos Creek riparian water rights water as Refuge L4 Water.

Under the Proposed Action, SLWD would exchange its share of the LBC Diversion Project Yield with Reclamation, SLWD's forbearance water would be delivered to GWD riparian land within the GRCD, and Refuge L2 Water at a rate of 2 AF of Project Yield (SLWD's share) delivered to GWD for 1 AF of Refuge L2 Water delivered to SLWD. Refuge L2 water would also be made available at a rate of 2 AF of Project Yield (GWD's share) delivered to GWD as reimbursement for SLWD's funding of GWD's share of future Project Routine O&M costs on an annual basis. If SLWD, with the approval of Reclamation, funds GWD's share of any non-routine O&M, the exchange rate would be temporarily changed to 1 to 1 until such time as SLWD is compensated with Refuge L2 Water for costs incurred to fund the non-routine O&M. SLWD, GWD and Reclamation may mutually agree in writing to adjust the volume of L2 Water to be exchanged on a monthly or seasonal basis, provided that the amount of L2 Water to be exchanged shall not exceed the exchange rates over any 24-month period.

The Proposed Action will increase the water supply available to refuge lands within the GRCD. Reclamation and GWD would not be required to take delivery of Project Yield or exchange L2 Water if there is no refuge water demand at the time SLWD's share of Project Yield is made available or L2 Water is not available for exchange.

The proposed term of the initial Exchange Agreement is five years from the date of execution and may be extended upon written consent of SLWD, GWD and Reclamation for up to 25 years. This EA is intended to cover the entire 25 year period in anticipation that the initial five year agreement may be extended.

Section 3 Affected Environment and Environmental Consequences

This section discusses the affected environment and environmental consequences of the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist. The Proposed Action does not involve any construction or ground disturbance, but rather includes the forbearance of riparian water and funding of O&M in exchange for Refuge L2 Water. Potential impacts to the following resources were considered in the Los Banos Creek Diversion Project EA and were found to be minor. Since the Proposed Action is within this same area, that document is hereby incorporated by reference. Brief explanations are provided below:

- Indian Trust Assets (ITA): The Proposed Action would not impact ITAs as there are none in the Proposed Action area.

- Indian Sacred Sites: The Proposed Action would not affect and/or prohibit access to and ceremonial use of Indian sacred sites.

- Cultural Resources: Reclamation has determined that the Proposed Action is the type of undertaking that does not have the potential to cause effects on historic properties, should such properties be present, pursuant to 36 CFR § 800.3(a)(1). As such, Reclamation has no further obligations under 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA).

- Environmental Justice: No significant changes in refuge management or in agricultural communities or practices would result from the Proposed Action. Accordingly, the Proposed Action would not have disproportionately negative impacts on low-income or minority populations within the study area.

Potential impacts to the following resources were considered in the Los Banos Creek Diversion Project EA and since the Proposed Action is within this same area, analysis within this EA comes from that previous EA:

- Water Resources

- Biological Resources

3.1 Water Resources

3.1.1 Affected Environment

Los Banos Creek is an intermittent creek that is dammed at Reclamation's Los Banos Detention Dam. The dam was constructed as a flood control facility and is operated pursuant to the U.S. Army Corps of Engineers' operating criteria and in accordance with License 12134 from the State Water Resources Control Board (SWRCB). The reservoir, with a capacity of 34,000 AF, is a joint-use facility owned by Reclamation and operated and maintained by DWR.

CCID, GWD and SLWD have historically delivered surface water from the CVP and Los Banos Creek to the riparian lands along Los Banos Creek. Delivered water has been and continues to be used for crop production as well as maintenance of wetlands, waterfowl habitat, and vegetation growth. The delivery of surface water to these riparian lands benefits wildlife and reduces groundwater extraction by riparian landowners. Until approximately the early 1960s, a control structure existed at the junction of Los Banos Creek and the CCID Main Canal and Outside Canal that intercepted water flowing in Los Banos Creek for conveyance to the riparian lands located within CCID or within GWD. In the 1960s, the weir structures were replaced with siphons that pass under Los Banos Creek stopping re-regulation of these flows.

CCID measures groundwater levels throughout the Los Banos Creek groundwater subarea at regular intervals. Depth to water ranges from less than 10 feet beneath the northwest, northeast, and southeast part of the Los Banos Creek groundwater subarea (north of Highway 152), to more than 130 feet in the area west of the DMC and south of Los Banos Creek. Depth to water exceeds about 60 feet in most of the Los Banos Creek subarea. Groundwater flow direction varies based upon wet or dry climatic conditions that determine the amount of releases from the Los Banos Detention Reservoir into Los Banos Creek. During wet years a groundwater mound builds along the course of Los Banos Creek due to infiltration of surface water in the stream channel. The groundwater mound dissipates during dry years (Reclamation 2015).

3.1.2 Environmental Consequences

No Action
Under the No Action Alternative, Reclamation would not enter into an agreement with SLWD and GWD for SLWD to forbear its share of water produced by the LBC Diversion Project for delivery to GWD and to fund GWD's share of the O&M of the LBC Diversion Project in exchange for Refuge L2 Water. The SLWD would not be able to utilize exchanged Refuge L2 Water, and the Refuge IL4 Water portion of this exchange would not provide additional water to the RWSP. Non-riparian landowners within SLWD would not be able to receive the portion of CVP water that could have been delivered to them under the Proposed Action. GWD would continue to need to release previously delivered water from wetlands within the District in order to accommodate the additional flows from Los Banos Creek when reservoir releases are made or shutdown all deliveries and route the flood releases to the San Joaquin River through its conveyance and drainage system.

Proposed Action
With the availability of water from Los Banos Creek, CVP water that would have been delivered to the riparian lands would instead be available for distribution to other landowners within CCID, GWD and SLWD, providing additional water supply reliability for landowners within the districts. The Proposed Action would not interfere with normal operations of Federal facilities nor would it impede any CVP obligations to deliver water to other contractors or to local fish and wildlife habitat.

Cumulative Impacts
As has historically been the case, hydrological conditions and other factors are likely to result in fluctuating water supplies which drives requests for water service actions. It is likely that during drought, more districts would request exchanges, transfers and Warren Act contracts (conveyance of non-CVP water in CVP facilities) due to hydrologic conditions and regulatory actions affecting water supplies. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Capacity in the DMC is limited, and if many water actions were scheduled to take place concurrently they could cumulatively compete for capacity. However, non-CVP water would be allowed to enter the DMC for conveyance through Federal facilities if excess capacity is available. As such, the Proposed Action would not likely limit the ability of other users to make use of the facilities.

No adverse cumulative impacts to water quality are expected as non-CVP water is required to meet Reclamation's water quality standards prior to introduction into the DMC.

3.2 Biological Resources

3.2.1 Affected Environment

Los Banos Creek tends to be ephemeral, dry except during floods in the more upstream reaches, but receives water from some discharges and drains in the lower reaches (Reclamation 2015). Riparian vegetation in the project area are either very sparse, or very dense, herbaceous wetland vegetation is generally lacking, and most of these areas are dry except during rain events. As such, they don't provide high quality habitat for giant garter snakes which need adequate water during their active season to support a prey base, and which generally are found in areas with emergent herbaceous wetland vegetation.

Managed wetlands in the GRCD provide habitat for a variety of wintering waterfowl and many other waterbirds, as well as brood habitat for year-round species, such as mallards. The wetlands in the GRCD are managed to allow support forage for several duck species as well as habitat for some shorebirds (Reclamation 2015).

Section 3406(d)(2) of the CVPIA requires that Reclamation provide full Refuge L4 Water supplies to all refuges starting in 2002. However, due to constraining issues including availability of water for L4 acquisition, funding and inadequate external conveyance capacity, Reclamation has not yet been able to fully meet that goal (Reclamation 2015).

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not enter into an agreement with SLWD and GWD to exchange Refuge L2 Water with SLWD for SLWD's forbearance of its share of water produced by the LBC Diversion Project for delivery to GWD and for funding GWD's share of the O&M of the LBC Diversion Project. SLWD would not be able to utilize exchanged Refuge L2 Water, and the Refuge L4 Water portion of this exchange would not provide additional water to the RWSP.

Proposed Action

According to the February 20, 2015 informal consultation with USFWS and Reclamation for the LBC Diversion Project, all introduced water may only be used on the riparian lands associated with Los Banos Creek in CCID, North GWD, and SLWD. Delivery to the riparian lands must occur within 30 days of introduction and any Los Banos Creek water not delivered within the 30 days would be placed back into Los Banos Creek near Check 15 or from existing CCID or GWD facilities. This would allow for additional groundwater recharge as it is conveyed into the GWD through Los Banos Creek. With the LBC Diversion Project, flood waters which would normally flow into Los Banos Creek and then into GWD would be diverted into the DMC. Up to 250 cfs would be diverted into the DMC via the connection structure when flood waters are being released. The amounts actually diverted would be dependent on demand and available capacity in the DMC. In order to match historic groundwater recharge in the area between the Los Banos Creek Detention Dam and CCID's Main Canal crossing, a minimum of 50 cfs would be maintained in this portion of Los Banos Creek during diversion events. Water quality monitoring will be conducted in accordance with Reclamation's current water quality standards (USFWS February 2015 consultation letter included as appendix to Reclamation 2015 EA). Los Banos Creek is generally dry except for intermittent flows during rainfall events, and canals in the area are lined with concrete and devoid of emergent vegetation or other cover and therefore, habitat quality for giant garter snake is considered low. By diverting waters into the DMC, project operation would reduce the flow entering GWD from Los Banos Creek during flood releases, typically at a time when habitat managers are attempting to drain the marsh and initiate the growing season. The volume of water diverted into the DMC would be delivered within 30 days, to provide additional irrigations during the growing season and provide additional habitat for the giant garter snakes. These effects of operation may benefit the snake.

The Proposed Action would benefit waterfowl and other birds that utilize the wetland habitats in the Project area by providing additional water for habitat and to support foraging.

Cumulative Impacts

The Proposed Action will have little to no cumulative impacts to biological resources.

Section 4 Consultation and Coordination

4.1 Public Involvement

The public review period for the draft Water Exchange Agreement EA is April 2, 2018 through April 9, 2018. Any comments received will be included and addressed in the Final EA.

4.2 National Historic Preservation Act (54 U.S.C. § 300101 et seq.)

54 U.S.C. § 304108, commonly known as Section 106 of the NHPA, requires that Federal agencies take into consideration the effects of their undertakings on historic properties. Historic properties are cultural resources that are included in, or eligible for inclusion in, the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA and outline the procedures necessary for compliance with the NHPA. Compliance with the Section 106 process follows a series of steps that are designed to identify if significant cultural resources are present in the proposed action project area and to what level they would be affected by the proposed Federal undertaking.

Reclamation determined that the proposed action is the type of undertaking that does not have the potential to cause effects on historic properties, should such properties be present, pursuant to 36 CFR § 800.3(a}(l}. As such, Reclamation has no further obligations under Section 106 of the NHPA. Reclamation cultural resources staff has reviewed the draft Environmental Assessment for this project and agrees the current language in the EA is sufficient for cultural resources analysis. No additional language will be provided. The proposed action would have no impacts on cultural resources.

Section 5 References

Bureau of Reclamation. 2015. Los Banos Creek Diversion Project Final Environmental Assessment (EA-12-060) and Finding of No Significant Impact (FONSI-12-060). February 2015.

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Draft Memorandum

To:	Lon Martin and Ben Fenters, San Luis Water District Jarrett Martin, Central California Irrigation District Ric Ortega and Ken Swanson, Grassland Water District Chris White and Steve Chedester, San Joaquin River Exchange Contractors Water Authority
From:	Rick Iger and Calvin Monreal
Subject:	Los Banos Creek Regulation and Storage Proof of Concept Project Summary Report
Date:	March 24, 2021

Project Background and Description:

San Luis Water District and a group of local agencies (Project Participants) would like to convey water from Turnout 9-1 on its Lateral 9 into the Los Banos Creek Detention Reservoir (LBCDR or reservoir), located about five miles southwest of Los Banos in Merced County. A proof of concept (POC) project was developed in which the reservoir was used to regulate water. Exhibit A shows the POC facilities.

LBCDR and its dam are Federally owned and State operated facilities by the United States Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) as part of the San Luis Unit of the Central Valley Project (CVP) and State Water Project to provide flood control protection to the San Luis Canal/California Aqueduct and City of Los Banos. The California Department of Parks and Recreation (DPR) operates the public recreational facilities at LBCDR. The Project Participants consist of the San Luis Water District (SLWD), Grassland Water District (GWD), and the member agencies of the San Joaquin River Exchange Contractors Water Authority (SJRECWA or Exchange Contractors) which consists of Central California Irrigation District, San Luis Canal Company, Firebaugh Canal Water District and Columbia Canal Company.

The POC allowed SLWD to filter and convey water from its Turnout 9-1 into the LBCDR for approximately 48 days, in accordance with the Plans and the Specifications developed for the project.

While operating, approximately 5 to 6 cfs from SLWD's Turnout 9-1 flowed through the equipment beginning about ground elevation 445 feet. Project water then flowed through a sand media filter station then through 12-inch nominal size above ground rented DR-17 HDPE pipe for about 3,495 feet where equipment intended to provide pressure relief, assure full pipe flow, regulate flow and discharge water into the reservoir was located at about elevation 331 feet. The operating pressure at Turnout 9-1 was about 80 psi.

The primary components were generally described as follows:

- Rented pipe and filter equipment, two SLWD supplied CLA-VAL valves, SLWD supplied flow meter, and SLWD supplied lay flat pipe at existing Turnout 9-1 that allowed SLWD to turn the water on and off, run water through sand media filters,

measure flow, plus relieve excessive pressure, air, or vacuum. The existing cattle watering system fed from Turnout 9-1 was replumbed to allow it to continue operating continuously throughout the duration of the rental agreement and remain in place and functioning afterward. Backflush water from the filters flowed through a 6" lay flat pipe supplied by SLWD approximately 570 feet eastward for discharge into an existing drainage swale.

- Approximately 3,495 lineal feet of rented 12" DR 17 High Density Polyethylene (HDPE) pipe from the filter station to the LBCDR with associated fittings and air vent/vacuum relief valves. Rented air vent/vacuum relief valves and sandbag pipe anchors were placed at designated locations. Imported fill was placed in substantial voids under the pipe to support it.
- A dirt ramp (using imported fill) was built over the pipe at the fire break road near Turnout 9-1 and vehicles traveling the dirt road on the north side of the State Park fence line were routed around Turnout 9-1 and filters. A rented multiple tube type crossing was installed on Canyon Road.
- 10" CLA-VAL valves provided by SLWD for installation on tees for pressure relief at the filter station and LBCDR were not used, as they could not be set up for pressure relief. A 10" CLA-VAL pressure sustaining and flow control valve provided by SLWD was installed on the rented pipe and a water flow dissipator with floats and anchors was installed in the LBCDR. A protective cage was installed over the valve near LBCDR and 10" lay flat pipe from the pressure relief valve to low water line was not used.

Four staging areas were provided. Installation of the temporary infrastructure was performed in a way that did not result in earth disturbance that would injure cultural or biological resources. The portion of the pipeline from the paved road to the boat ramp parking lot traversed along a path which was previously excavated and used as a road to transport material at the time of the construction of the reservoir. Additionally, installation of all project components adhered to the project biologist's recommendations.

The parking lot staging area was blocked with construction cones during construction and a sign posted explaining the Project and providing contact information. Pipe, materials and vehicles were stored at the SLWD Pumping Plant 9 fenced-in area after working hours.

Summary of Installation Activities

A bid was received from Rain for Rent on September 1, 2020. The bid was reviewed and awarded on September 18, 2020. Once the contract was executed, certificates of insurance and payment and performance bonds were received a Notice to Proceed was issued on September 23, 2020. Work commenced on September 25th, mobilization and installation occurred between September 29th through October 9th. Testing occurred on October 9, 2020 with operations beginning on October 12, 2020 and ending on November 30, 2020 at 1:35 pm. Removal of equipment began on December 2, 2020 and was completed by December 7, 2020. The costs from Rain for Rent totaled $_____. Pictures taken during installation and operation are included at the end of this memorandum in **Appendix A**.

POC Project Monitoring and Operating Description

Reservoir Fill

As a precaution, project operations were done only during daylight hours on weekdays until November 4th when 24-hour operations began. The flowmeter's totalizer was set to zero before operations began and was read when they ended. The instantaneous indicator showed up to 6 cfs when it was checked periodically in October and November. Pressures upstream of the turnout valve were 80 psi, the CLA-VAL pressure reducing valve immediately downstream of the meter was set to 60 psi, and filter pressure loss was 30 psi when gauges were periodically checked. Operators reported that the pressure reducing valve at the filter station never activated, indicating that when flowing pressures upstream of the filter were less than 60 psi.

The fused 12-inch nominal HDPE pipeline system and its components proved to handle 6 cfs through uphill, downhill, and flat sections. The CLA-VAL near LBCDR could not be set up to maintain full pipe flow due to excessive air in the pipeline coming in via air-vent/ vacuum relief valves, so supercritical flows and hydraulic jumps did occur, but were not a problem. Use of single-acting air vents rather than combination air-vents did not cause problems either.

Pressure loss through the filters proved to be higher than will work to trigger backflush based on excessive pressure loss, so timers were set to backflush on a regular schedule instead.

The total volume of water delivered to the filters was measured at 250 AF including backflush water of 0.36 AF as discussed later in this Report. A portion of the 250 AF was delivered to LBC and Participants in January and February 2021, discussed under Reservoir Releases, later in this Report.

Water quality tests included general mineral, inorganic, and ten metals on grab samples from Reservoir 8 and the reservoir at the dock on October 8th (See Exhibit B) plus periodic portable meter measurements of Electrical Conductivity (EC), dissolved oxygen (DO), and pH at the reservoir's dock, bank at discharge, and three other locations in the reservoir.

Date	Location	EC (uS/cm)	DO (mg/L)	pH
10/13/2020	Bank	500	7.77	7.89
	Dock	447	7.87	7.76
	Post Filter	490	7.9	7.99
10/21/2020	Bank	497	7.8	7.73
	Dock	450	7.84	7.75
	Post Filter	500	7.89	7.8
10/30/2020	Bank	518	7.94	8
	Dock	430	7.83	7.99
	Post Filter	484	8.3	7.89
11/6/2020*	1	525	7.55	7.89
	2	530	6.15	7.91
	3	522	7.33	7.93

* See reservoir map on next page for sample location.

Flow volume and rate achieved pre-filter was measured as well as pressure pre-filter and post filter. Flow rate and power consumption measurements at PS 8 and 9 were also taken to establish kWh/ac-ft pumped at those stations.

Data was gathered periodically, and the flow rate was adjusted by SLWD operators to stabilize flows going into the Reservoir. Data from the filter backflush timers was also collected to allow estimates of water discharged from the filters. One filter showed a total of 86 backflushes and the other had a total of 62 backflushes. The estimated back wash is 200 gpm for 4 minutes for each bank of filters (I minute per pod). This totals 0.36 acre-feet discharged from backflushing.

A piece of lath was set into the Reservoir and marks were made on it corresponding to water surface. On November 10th Ben Fenters reported the water level receded about an inch over two weeks despite 122 ac-ft delivered during that time.

Power cost to lift water into the LBCDR was approximately $15 per ac-ft. For the 250 ac-ft about $3,750 in power costs were incurred.

Reservoir Release

Inflow from a rain event into LBCDR started on January 28, 2021 and ran through January 31, 2021 resulting in a total inflow of 930 ac-ft as a result of a heavy rainfall event beginning on January 26, 2021 and continuing through January 29, 2021 for a total of 2.86 inches of rainfall. On January 28, 2021 DWR began Flood Control releases at 1300 (50 cfs) for 24 hours, ending at 1300 on January 29, 2021. DWR continued a 50 cfs release for an additional 24 hours beginning at 1300 on January 29, 2021 for the LBC POC project per the request of SLWD. On February 2, 2021 at 1500 DWR began releasing 50 cfs for 24 hours ending at 1500 on February 3, 2021 for the LBC POC project per the request of SLWD. A total of 300 ac-ft was released, 100 ac-ft for

Flood Control and 200 ac-ft for the LBC POC project. A total of 50 ac-ft of project water is still stored in the LBCDD.

Full connectivity from LBC to the LBC Diversion did not occur during the initial release due to the small release rate and short duration of flow. Therefore, the initial project release will be documented as beneficial recharge for later irrigation.

On the positive side some good data was gathered for future operations and anticipated losses. DWR began releases some time Thursday AM, and the flows reached the check structure sometime late Friday night or early Saturday morning, so we learned that at 45 to 50 CFS, it takes about 42+/- hours and 225 – 250 AF is required to bring us to the point of being able to divert when the creek channel is moist.

A request to Rob Dunlop at DWR was made on February 2, 2021 to see if an additional 100 AF can be released from LBCDD early this week while the creek channel was still saturated, and the basins are full. Upon the request from SLWD a second release of 62 ac-ft was made on February 4, 2021.

Participants then diverted water from LBC into the DMC for a total of 21.5 ac-ft at flow rates varying from 20 to 64 cfs over a two-day period for eight hours on the first day and two hours on the second day. The remaining flow will be released at a future date.

The US Army Corp of Engineers (USACE) has created a revised link to access storage, water levels (elevation), inflow, and outflows for the LBCDD as shown below. (https://www.spk-wc.usace.army.mil/plots/california_new.html?name=lbn&year=2021&interval=d&tab=plot&window=wy).

Photos of reservoir release diversion into the DMC are provided in Appendix B.

Data Analysis

Data was also gathered on precipitation and reference evapotranspiration (ETo) from the California Department of Water Resources' California Irrigation Management Information Service (CIMIS) web site for CIMIS' Los Banos weather station. No precipitation was recorded between October 9th and 31st and 0.25 inches was recorded in November. Precipitation in December and January was 1.61 and 2.76[1] inches respectively. ETo was estimated at 3.02 inches between October 9th and 31st and 2.22 inches in November, 1.32 inches in December and 1.61 inches in January.

Water delivered to LBCDR was 249.64 AF (250 AF delivered to filter less backflush water of 0.36 AF). Filter backflush losses were 0.144%. The chart recorder at SLWD's Pump Station 8 (PS-8) showed flows varying between 3.7 and 7.4 cfs when its pumps were running. The variations were likely due to when either one or two pumps were being used to supply the reservoir at Pump Station 9 (PS-9). At PS-8 on November 10th an instantaneous flow measurement of 4.0 cfs on the USBR flowmeter and 50 kW on the WAPA electric meter were recorded with one pump running. PS-8 power use at that time calculates to 148 kWh per ac-ft pumped. On the same date the flowmeter at Turnout 9-1a measured 0.010 ac-ft in 73 seconds, which converts to 6.0 cfs). The WAPA meter at PS-9 registered 100 kW that morning. Energy use at Pump Station 9 computes

[1] DWR flagged one or more of the daily readings in January.

to 203 kWh per acre-foot into the filter station and both pump stations add to 351 kWh per acre-foot. SLWD's WAPA power rate for fiscal year 2020 was initially set at $0.04266/kWh but will be subject to a "true up" at the end of the fiscal year that will change it some. An energy cost of $14.97/acre-ft results from using 351 kWh per acre-foot and $0.04266/kWh. Higher flows at PS-8 and 9 will increase energy use and costs due to additional pipe friction loss.

Findings and Recommendations

The Los Banos Creek Detention Reservoir POC established a successful above-ground pipeline alignment that will be considered as a starting place to establish the permanent pipeline into LBCDR. Subsurface conditions and possibly incorporating the permanent discharge into dock modifications will be factors in establishing the permanent pipeline alignment. Based on the findings of the POC project the following considerations should be incorporated into the design of the permanent project:

1) SLWD's CLA-VAL valves can't be set up to perform pressure relief, so new valves specifically designed to provide pressure relief will be needed (note that valves with a plate and spring mechanism should not be specified as they don't open quickly enough for effective water hammer protection).
2) Sand media filters can be considered for striped bass egg removal, but pressure differential exceeded what was expected based on manufacturer's literature, so that should be factored in filter selection, and plan on using the backflush timer rather than pressure differential to trigger backflushing (other types of filters should also be reviewed). The filters selected for the POC filter down to 20 micons and striped bass eggs are 4,000 microns (4 millimeters), so their removal was assured. It may be impractical to scale up the sand media filter system for the permanent project as seven times as many filters could be required; therefore, alternative filter systems will need to be reviewed.
3) To allow pipeline filling and operation without excessive air the pipeline could be filled with a pump from LBCDR or an in-line butterfly valve could be added just downstream of the pressure sustaining/flow-control valve near LBCDR (while the POC project performed well in fused HDPE pipe with part-full super-critical flows, hydraulic jumps, and entrained air; those conditions are not recommended in the permanent project pipeline. P&P is reluctant to design the permanent project for super-critical flows, hydraulic jumps, and entrained air as such conditions can be hazardous and extremely difficult to predict. Designing for those conditions may require a sub-consulting specialist and would likely increase pipe wall thickness and durability requirements to withstand repeated shock waves plus requirements for pipe joints that withstand higher pressure and vacuum conditions associated with high velocities that are unstable and full of air).
4) Combination air vent/vacuum relief valves should be specified despite knowing single-acting vents worked out on the POC project.
5) Incorporating LBCDR discharge into dock modifications is something to consider versus a stand-alone suspended pipe discharge.
6) An alternative to using a crane (perhaps barge(s)) to deploy facilities in LBCDR should be considered.
7) Any roads that parallel the pipeline will need surfacing to prevent excessive dust generation and possibly allow all-weather patrols.

8) Storage and carryover in LBCDR will help allow more storm water releases that can be conveyed for delivery to riparian water right owners which enhances Grassland Water District operations and benefits.
9) Storage for carryover also provides for higher water levels for recreation and greater dissolved oxygen levels for wildlife benefits.
10) Releases for remaining stored water and future programs can be timed with storm water releases to enhance deliveries into the DMC.

Next Phase: Considerations for a Permanent Pipeline

- Soil borings, tests, and soils engineering report will be important to understand subsurface conditions sufficiently for project design.
- Hydraulic engineering, including surge protection analysis will be needed to establish turnout, filter, pipeline, and valve sizes and other design parameters.
- Biological and Cultural Resources studies will need to be expanded for excavation.
- The License Agreement will need to be modified.
- Water Rights will need to be modified.
- CEQA/NEPA compliance work will be needed.
- Design and bidding documents will be needed.
- Construction of infrastructure is scheduled for 2022.

Appendix A – Construction Photos

San Luis Water District
LBC Regulation and Storage Proof of Concept Project
Construction Photos

1-Filters in Operation (10-29-20)

2-HDPE Pipe Stored (9-29-20)

3-Filters Being Placed (9-29-20)

4-Outlet Location at Reservoir (9-29-20)

5-2nd Fusion Machine (9-30-20)

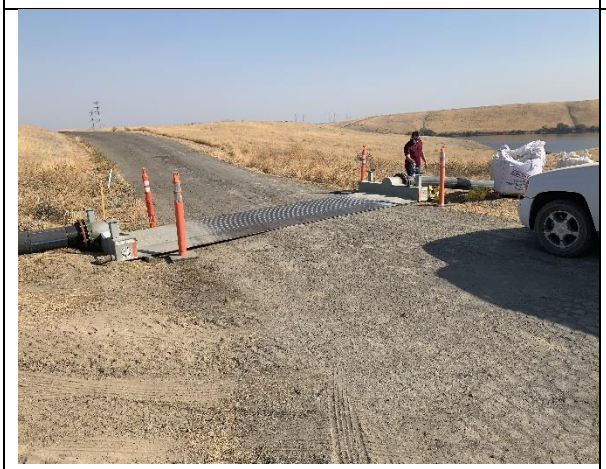
6-Placing Pipe for Fusion (9-30-20)

7-Preparing to Make a Joint (9-30-20)

8-Removing Pipe from Fusion Machine (9-30-20)

9-Completed Fusion and Moving Pipe (9-30-20)

10-SLWD Furnished Valve at Filter Station (10-2930-20)



11-Road Crossing (10-5-20)

12-Pipeline after road crossing (10-29-20)

13-Pipeline before road crossing (10-29-20)

14-Turnout 9-1a (10-29-20)

15-Layflat Pipe at Filters (10-29-20)

16-Pipe at Parking Lot (10-29-20)

17-WAPA Power Meter (left side) (10-29-20)

18-Ramp Over Pipe at Filters (10-6-20)

19-Location Where Outlet Enters Reservoir (10-7-20)

20-Outlet Diffuser Pipe Fabrication (10-7-20)

21-Sandbag Placement at Parking Lot (10-7-20)

22-Pipe at end of parking area (10-29-20)

23-Cla Valve and Enclosure at Parking Lot (10-9-20)

24-Concrete Anchor for Outlet (10-9-20)

25-Moving Outlet into Reservoir (10-9-20)

26-Making Final Connection for Discharge Pipe (10-9-20)

27-Discharge Pipe Floating (10-9-20)

28-PS8 Flowmeter (10-29-20)

Appendix B – Release Photos

San Luis Water District
LBC Regulation and Storage Proof of Concept Project
Release Photos

1- (2-4-21)

1- (2-4-21)

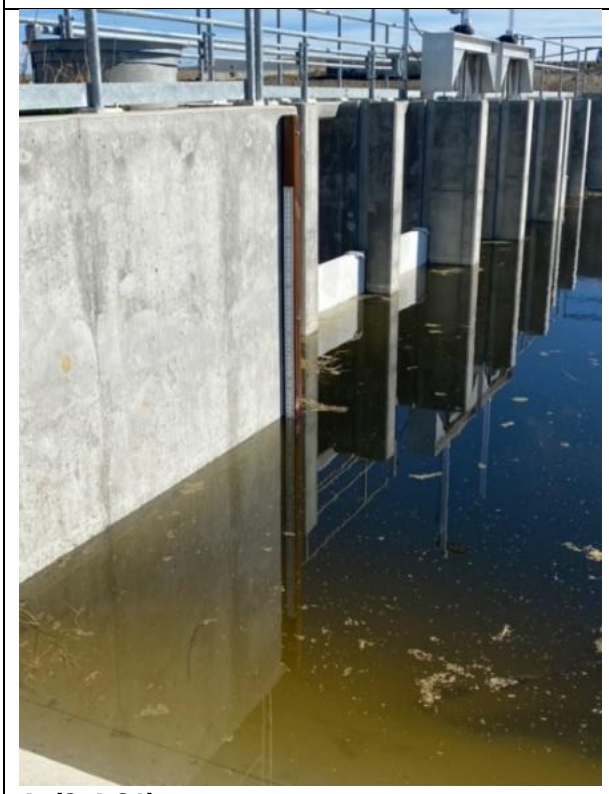
3- (2-4-21)

8- (2-4-21)

San Luis Water District
LBC Regulation and Storage Proof of Concept Project
Release Photos

2- (2-4-21)

3- (2-4-21)



4- (2-4-21)

5- (2-4-21)

San Luis Water District
LBC Regulation and Storage Proof of Concept Project
Release Photos

6- (2-4-21)

7- (2-4-21)

8- (2-4-21)

9- (2-4-21)

Appendix C: Biological Report and Planning Aid Letter

LIVE OAK
ASSOCIATES, INC.

LOS BANOS CREEK DETENTION RESERVOIR REGULATION & STORAGE PROJECT BIOLOGICAL EVALUATION MERCED COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.
Austin Pearson, Vice President
Jeff Gurule, Senior Project Manager

Prepared for

Amy Wilson
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130 North Garden Street
Visalia, CA 93291

July 29, 2022 PN 2443-01

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted an investigation of the biological resources of approximately 10 acres of land potentially impacted by the Los Banos Creek Detention Reservoir (LBCDR) Regulation & Storage Project ("area of potential effect (APE)," "Action Area," or "project site") and assessed potential project impacts to those resources pursuant to the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Section 7 of the federal Endangered Species Act. The project site is located east of Interstate 5 within the Los Banos Reservoir area of the San Luis Reservoir State Recreation Area in western Merced County.

The proposed project includes the following project elements:

- altering LBCDR operations (while staying within existing USACE Flood Control Rules) to allow for project participant water supply storage and beneficial release;
- utilizing/modifying San Luis Water District (SLWD) Pumping Plant No. 8 and Pumping Plant No. 9 to pump 30-36 cfs from the San Luis Canal/California Aqueduct into the LBCDR;
- installing a pipeline from SLWD Lateral 9 to the reservoir (the 9-1a alignment) consisting of segments of 30-inch, 36-inch and 48-inch pipe;
- installing a 450 cfs box culvert crossing of the LBC at Canyon Road (just downstream of the LBCDD (dam) outlet; and
- extending the existing LBCDR boat ramp.

The project APE is situated in a vast expanse of open rangeland. Biotic habitats identified within the project APE include non-native grassland, ruderal/developed, wetland/riparian, and aquatic. The project will have no significant impacts to regionally occurring special status plant species. The project may result in significant impacts to nesting birds, including the Swainson's hawk, tricolored blackbird, and the loggerhead shrike; burrowing owls; American badger; and San Joaquin kit fox.

Impacts to nesting birds will be reduced either by constructing the project outside the nesting season, or through preconstruction surveys and avoidance of active nests if construction must occur during the nesting season. Impacts to burrowing owls will be reduced through preconstruction surveys and avoidance of active burrows. If avoidance of active burrows is not feasible, owls may be passively relocated during the non-breeding season. Impacts to American badger and San Joaquin kit fox will be reduced through preconstruction surveys and avoidance of active burrows, as well as implementation of the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*.

Impacts would be less than significant for two special status species that could potentially occur on site (the San Joaquin coachwhip and western pond turtle); 16 locally occurring special status animal species that would not be expected to occur within the project site; five special status animal species (monarch butterfly, bald eagle, golden eagle, northern harrier, and California mastiff bat) that could potentially forage over the project site but would roost, nest, or reproduce elsewhere; wildlife movement corridors; sensitive habitats; critical habitat; and jurisdictional waters. The project also appears to be in compliance with local policies and no habitat conservation plans are in effect for the project area. The project will not result in the significant loss of habitat for special status animal species.

TABLE OF CONTENTS

1.0 INTRODUCTION

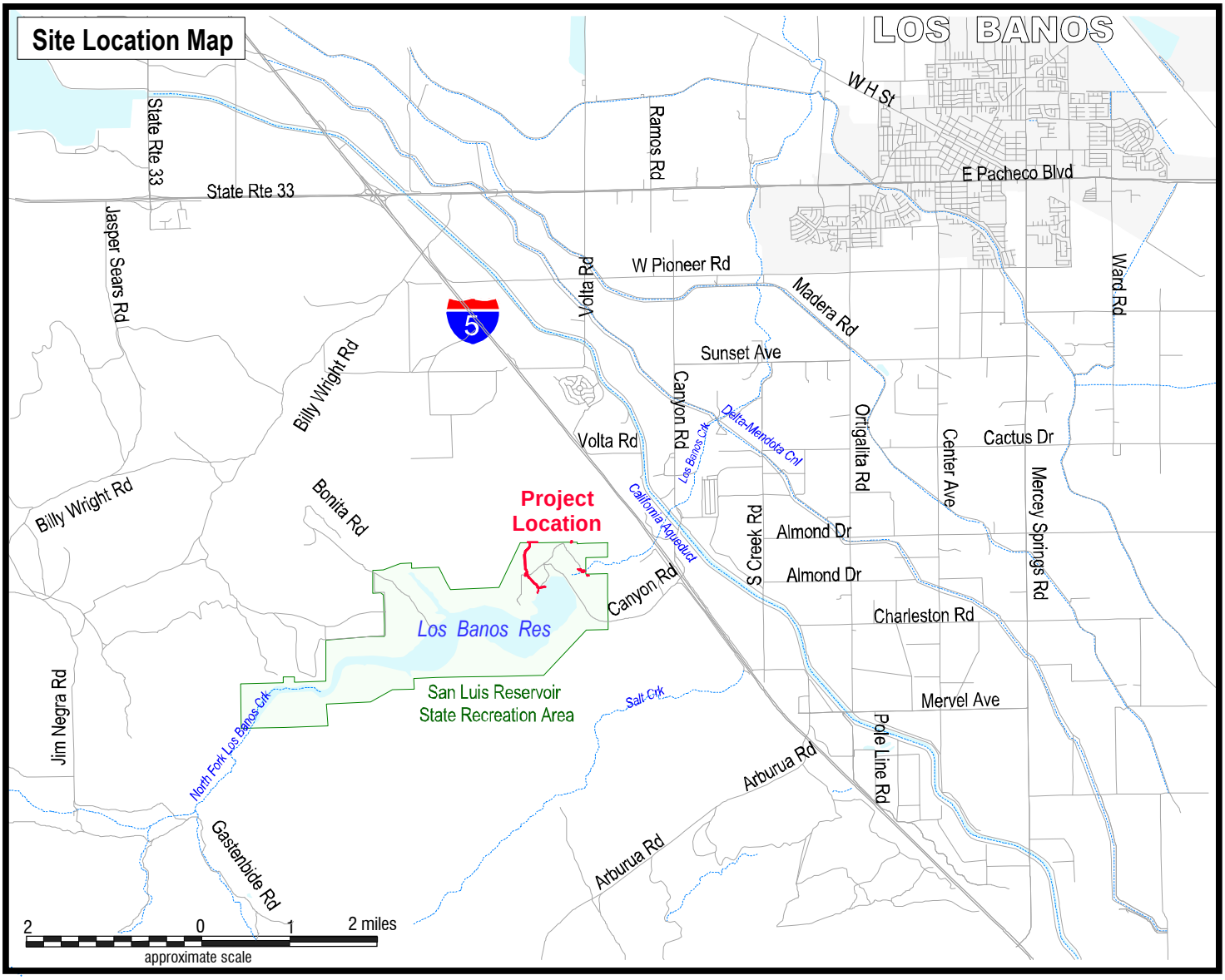
The following technical report, prepared by Live Oak Associates, Inc. (LOA), in support of the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Section 7 of the federal Endangered Species Act, describes the biotic resources of approximately 10 acres of land ("area of potential effect (APE)" or "Action Area" or "project site") that may be impacted by the Los Banos Creek Detention Reservoir Regulation & Storage Project ("project"), and evaluates potential impacts to those resources that could result from the project.

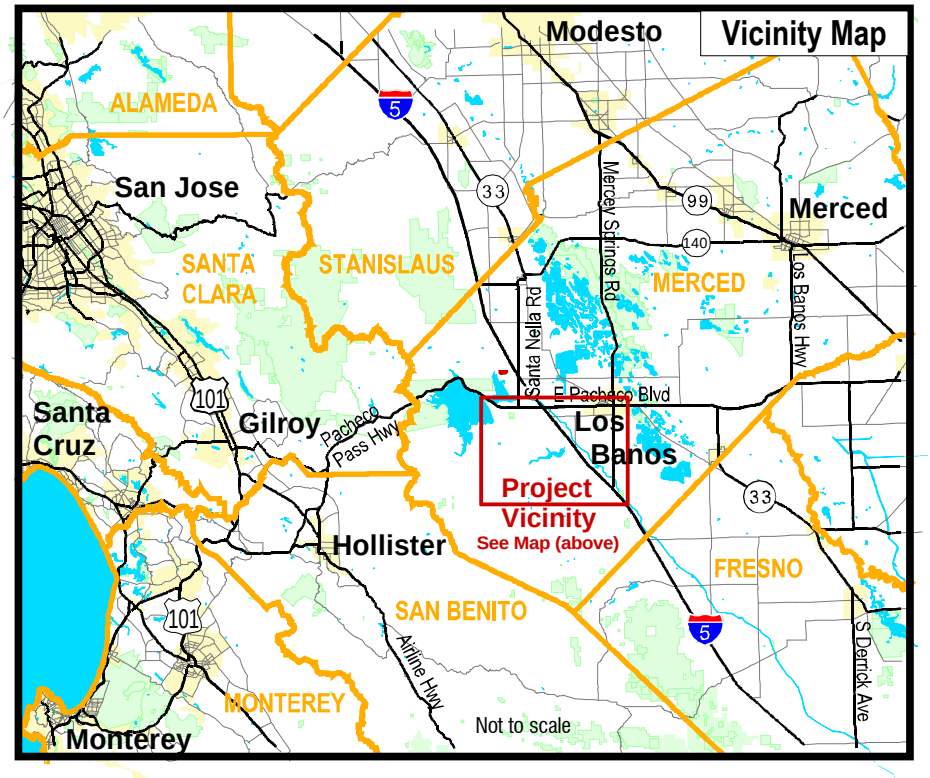
The project APE is primarily linear and is located within the Los Banos Creek Area of the San Luis Reservoir State Recreation Area in western Merced County (Figures 1 and 2). The site may be found on the *Ortigalita Peak NW* U.S. Geological Survey (USGS) 7.5-minute quadrangle in Sections 1 and 12 in Township 11 South, Range 9 East. A small portion of the project site extends into Section 7 in Township 11 South, Range 10 East (Figure 3).

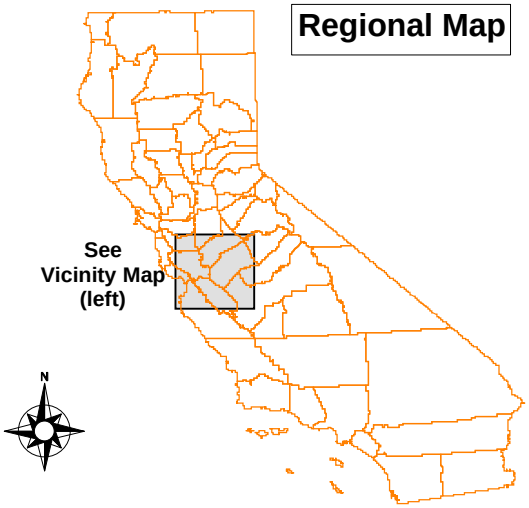
1.1 PROJECT DESCRIPTION

A group of local agencies (Project Participants) propose that the Los Banos Creek Detention Dam (LBCDD) be operated to:

- route natural Los Banos Creek (LBC) flows to riparian lands downstream of the facility making space available for storage in the spring;
- pump Participant water supplies (conserved water or groundwater) into the Los Banos Creek Detention Reservoir (LBCDR or "reservoir") available storage (Project); and
- release Participant water supplies into the Los Banos Creek for rediversion and beneficial use by Project Participants.







LIVE OAK ASSOCIATES, INC.

Los Banos Creek Detention Reservoir Regulation & Storage Project

Vicinity Map

Date	Project #	Figure #
7/15/2022	2443-01	1

LIVE OAK ASSOCIATES, INC.

Los Banos Creek Detention Reservoir Regulation & Storage Project

Site Plan / Project APE's

Date	Project #	Figure #
7/15/2022	2443-01	2

APE - Boat Ramp Extension

9-1a Alignment*
3,542 LF

Approx. Boat Ramp
Ext. Footprint

Paved Parking Temporary
Staging Area (0.22 acres)

Imagery - USDA NAIP 2014

LANGDON RD

California Aqueduct

APE for 9-1 Turnout
Connection, Filter Station
and Flush Pipeline
(1 Ac)

Existing San Luis W.D.
Reservoir No. 8
Elev. = 401 ft and
Pump Station No. 9
36 cfs

Inside SLWD
Fence Staging Area
(0.12 Ac)

Existing SLWD Pipeline

9-1a Alignment*
3,542 LF

Outside SLWD
Fence Staging Area
(0.15 Ac)

Existing SLWD
Pump Station No. 8
Max. WS Elev. = 225 ft
36 cfs

Road Crossing
Staging Area
(0.5 Ac)

Proposed Culvert at
Canyon Road and
potential staging areas

Paved Parking
Staging Area
(0.22 acres)

Proposed Boat Ramp
Extension for Access
at Lower Water Levels

CANYON RD

Los Banos Creek
Detention Reservoir
Elevation 328 ft
Conservation Pool
Water Surface

PRIVATE RD

*Note: APE of pipeline alignment will be a 50' offset on both sides of the pipeline.

Temporary Staging
Area (0.50 acres)

Permanent APE at
Box Culvert for 450 CFS

Temporary Staging Area
(0.30 acres)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EST. 1968
PROVOST& PRITCHARD
CONSULTING GROUP

N

0 500 1,000
Feet

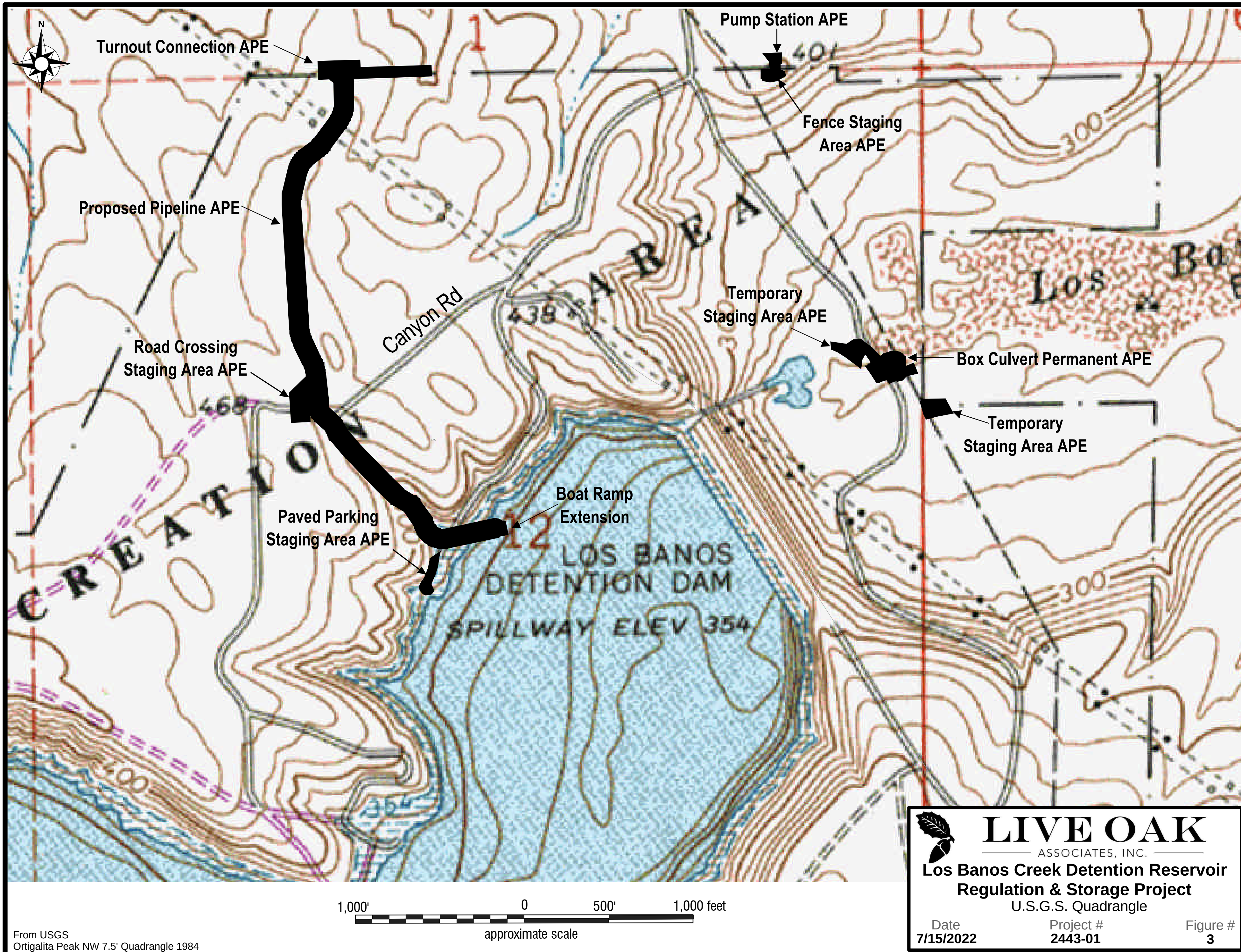
- Temporary APE
- Permanent APE
- Pump Station
- Los Banos Creek
- San Luis State Recreation Area
- LBC Recharge

Los Banos Creek Detention Reservoir Regulation & Storage Project

Project Facilities APE

San Joaquin River Exchange Contractors Water Authority

4/27/2022 : G:\San Luis WD-1493\149319004-LBC Regulation and Storage-PERM\400 GIS\Map\Project_Facilities_APE.mxd



From USGS
Ortigalita Peak NW 7.5' Quadrangle 1984

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Los Banos Creek Detention Reservoir Regulation & Storage Project
U.S.G.S. Quadrangle

Date	Project #	Figure #
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The Project Participants consist of the San Luis Water District (SLWD), Grassland Water District (GWD), and the member agencies of the San Joaquin River Exchange Contractors Water Authority (SJRECWA or Exchange Contractors) which consists of Central California Irrigation District (CCID), San Luis Canal Company (SLCC), Firebaugh Canal Water District (FCWD) and Columbia Canal Company (CCC).

The project consists of five components:

- altering LBCDR operations (while staying within existing USACE Flood Control Rules) to allow for project participant water supply storage and beneficial release;
- utilizing/modifying San Luis Water District (SLWD) Pumping Plant No. 8 and Pumping Plant No. 9 to pump 30-36 cfs from the San Luis Canal/California Aqueduct into the LBCDR;
- installing a pipeline from SLWD Lateral 9 to the reservoir (the 9-1a alignment) consisting of segments of 30-inch, 36-inch and 48-inch pipe;
- installing a 450 cfs box culvert crossing of the LBC at Canyon Road (just downstream of the LBCDD (dam) outlet; and
- extending the existing LBCDR boat ramp.

A release flow of up to 250 cfs will be available during summer or winter months, for typically 16 days, and split between the Project Participants. The estimated yield is up to 8,000 acre-feet AF of spring releases of LBC water in wet years, and up to 8,000 AF of releases of Project Participants' stored water.

The preferred pipeline route (the 9-1a alignment) and project capacities have been identified and are under design. The alignment is described below. Once the geotechnical study is complete, a determination will be made as to whether the pipeline will be placed above ground, below ground or a combination of both; the maximum depth below ground would be 84 inches. Pipe material is expected to be fused High Density Polyethylene (HDPE) with final materials selection based on completion of geotechnical evaluation. Below is the description of the proposed alignment being considered.

Proposed 9-1a Alignment

This alignment consists of a maximum 36 cfs flow pumped from SLWD facilities; Reservoir 8 and Pump Plant 9 through existing Lateral 9 to and through existing or new outlet pipe at Turnout 9-1 at approximate ground elevation 442 feet then by gravity through a maximum 36-inch diameter pipe for approximately 3,542 feet connecting to LBCDR at about elevation 328 feet. This includes:

- a filter (fish screen) with backwash system at Lateral 9 Turnout 9-1 connection point into an existing stock water pond,
- a pipeline and appurtenances varying in size from 30-inch to 48-inch,
- water control valve(s) at engineered location(s),
- below ground 20-foot wide road crossings at 3 existing roads with 3 feet of cover,
- a water flow energy dissipation flare at the reservoir discharge location, and
- removable weights placed at various locations on the ground along the pipe to keep it from rolling (if pipe is placed above ground).

In addition to the supply conveyance pipeline, a box culvert for enhanced ingress and egress to the park, and an extension of the existing boat ramp to enhance low water elevation access to the reservoir are proposed as follows.

Box Culvert at LBC Canyon Road Crossing

The project also includes the construction of a box culvert near the LBCDR State Park entrance on Canyon Road with a target capacity of 450 cfs, preliminarily sized to have two 12 feet by 4 feet bays, with the ability to allow flows to overtop when reservoir discharges are greater than 450 cfs. The box culvert will allow continued access to recreational facilities, including campgrounds, day use areas and the boat ramp during periods of flood releases less than 450 cfs or requested releases by Project Participants from LBCDR. During periods of flood releases in excess of 450 cfs, the culvert will be submerged, and traffic will be restricted as under current flood release protocol.

Boat Ramp Extension

The Project also includes the installation of an approximately 90 feet-long by 30 feet-wide extension of the existing boat ramp consisting of interlocking concrete blocks or other suitable materials to allow boat access to the reservoir at the lower water levels.

1.2 REPORT OBJECTIVES

Water distribution projects such as that proposed by the Project Participants may damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to review under CEQA and/or NEPA, and/or subject to local policies and ordinances. This report addresses issues related to: 1) sensitive biotic resources occurring within the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development.
- Identify and discuss project impacts to biological resources that may occur within the project site within the context of CEQA and NEPA guidelines and relevant state and federal laws.
- Identify avoidance and mitigation measures that would reduce the magnitude of project impacts in a manner consistent with the requirements of CEQA and NEPA and that are generally consistent with recommendations of the resource agencies regulating affected biological resources.
- Make effects determinations pursuant to Section 7 of the federal Endangered Species Act for federally listed species with the potential to occur in the project vicinity.

1.3 STUDY METHODOLOGY

A reconnaissance-level field survey of the project site was conducted on June 1, 2022 by LOA biologist Jeff Gurule. The survey consisted of walking the APE while identifying the principal land uses of the project site and the constituent plants and animals of each land use. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the development plans for the project site.

LOA conducted an analysis of potential project impacts based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) results of the June 2022 reconnaissance-level survey, (2) results of a 2013 spring botanical survey conducted by Cardno ENTRIX, (3) a 2011 NEPA Environmental Assessment for the Vegetation and Sediment Maintenance Program at Los Banos Detention Dam, (4) the *California Natural Diversity Data Base* (CDFW 2022), (5) the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2022) (6) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), and (7) manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

LOA's field investigation did not include an aquatic resources delineation or focused surveys for special status species. However, an aquatic resources delineation is planned for a later date after completion of this analysis. The field survey was sufficient to generally describe those features of the project site that could be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB), and to assess the significance of possible biological impacts associated with development of the project site.

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located in the foothills of the Coast Range mountains. The San Joaquin Valley lies to the east and the Coast Range mountains to the west.

Like most of California, this area experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer high temperatures range from 80 to 110 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures range from 30 to 75 degrees. Annual precipitation in the vicinity of the project is about 10 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The project site is situated within undeveloped rangeland and a large solar farm to the north. The principal drainage of the project vicinity is Los Banos Creek, which flows east through the project APE to the San Joaquin River.

2.2 PHYSICAL CONDITIONS OF PROJECT SITE

The topography of the project site is sloped with elevations ranging from approximately 227 to 460 feet National Geodetic Vertical Datum (NGVD).

The project APE contains eight soil mapping units (NRCS 2021). These soils are summarized in Table 1 below.

TABLE 1: SOILS OF THE PROJECT SITE

Soil Mapping Unit	Parent Material	Drainage Class	Hydric Rating
220: Mollic Xerofluvents, channeled	Gravelly alluvium	Poorly drained	Predominantly Hydric
284: Xerofluvents, extremely gravelly	Gravelly alluvium	Poorly drained	Predominantly Hydric
207: Los Banos clay loam, 2 to 8 percent slopes	Alluvium	Well drained	No
109: Apollo clay loam, 2 to 8 percent slopes	Residuum weathered from sedimentary rock	Well drained	No
110: Apollo clay loam, 8 to 15 percent slopes	Residuum weathered from sedimentary rock	Well drained	No
124: Ayar clay, 8 to 15 percent slopes	Residuum weathered from sandstone and shale	Well drained	No
223: Oneil silt loam, 30 to 50 percent slopes	Residuum weathered from sandstone and shale	Well drained	No
287: Water	NA	NA	NA

Two of the soil mapping units within the project APE are considered hydric, 220: Mollic Xerofluvents, channeled; and 284: Xerofluvents, extremely gravelly. These soils are associated with Los Banos Creek downstream of the LBCDR. These areas have the propensity to pond water generated from creek flows. These soils within the APE have been significantly disturbed from the construction of road crossings, roads, and turnouts. Soils have been significantly disturbed in upland areas of the APE from historic grading, which is visible on a 1967 aerial photograph.

2.3 BIOTIC HABITATS/LAND USES OF THE PROJECT SITE

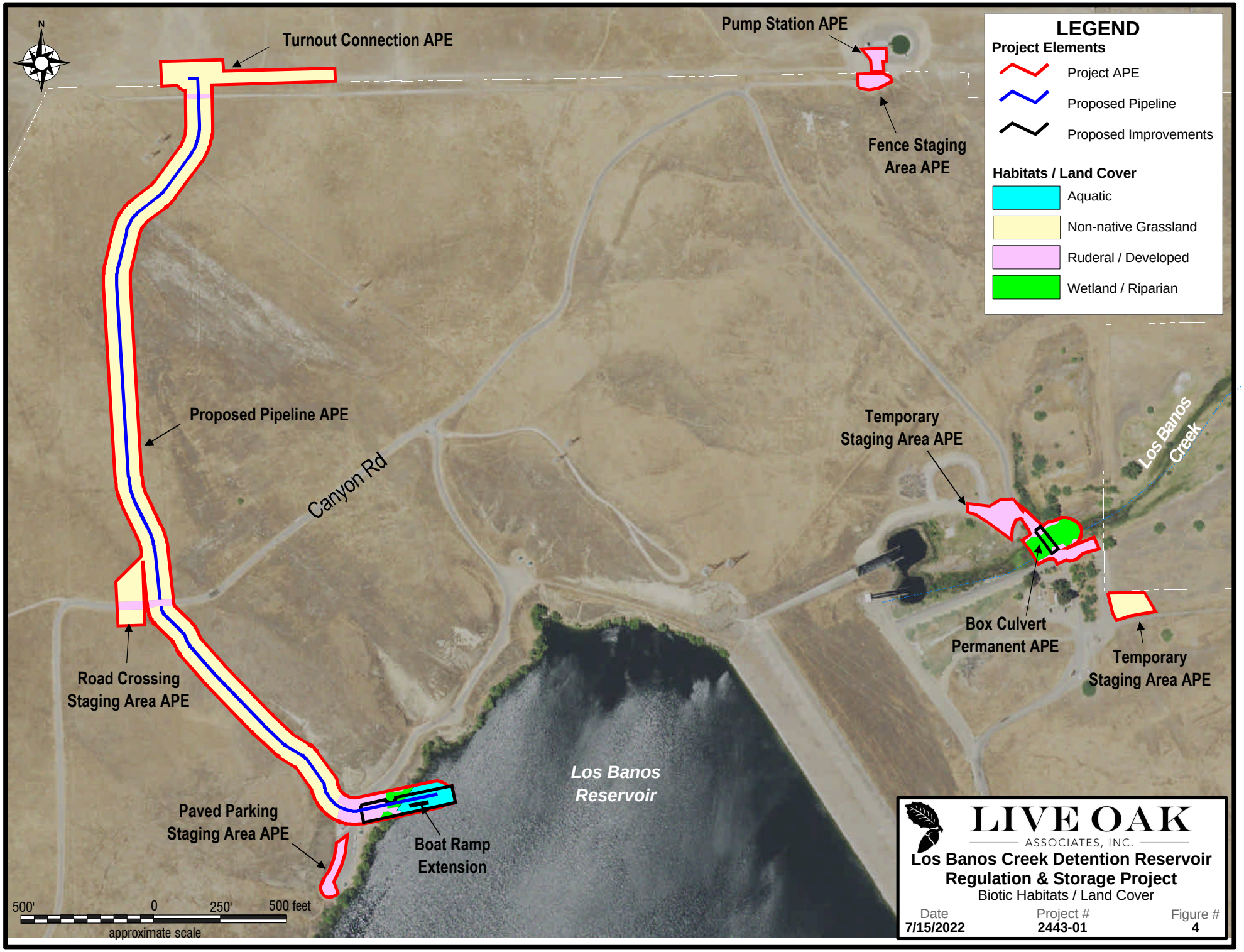
Four habitat/land use types, non-native grassland, ruderal/developed, wetland/riparian, and aquatic, were observed within the project APE during the June 2022 biological field survey (Figure 4). These land uses and their constituent plant and animal species are described in more detail below. A list of the vascular plant species observed within the project site and a list of the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Representative photos of the project site are presented in Appendix C.

2.3.1 Non-native Grassland

A majority of the APE contains non-native grassland. Large portions of this non-native grassland habitat have been historically disturbed from grading activities and vehicle traffic. Nonetheless, grasslands of the site provide habitat for a variety of native plants and animals, including several special status species.

Grasses and forbs of European origin dominate this habitat. Grass species common to this habitat include ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), foxtail brome (*Bromus madritensis*), wild oats (*Avena fatua*), and rattail fescue (*Vulpia myuros*). Common forbs observed amidst these grass species include bi-color lupine (*Lupinus bicolor*), red-stem filaree (*Erodium cicutarium*), Russian thistle (*Salsola tragus*), fiddleneck (*Amsinckia menziesii*), and shortpod mustard (*Hirschfeldia incana*), among others.

Non-native grasslands of the APE, like grasslands throughout the region, are productive biotic habitats supporting a large diversity of native terrestrial vertebrates. Grasslands of the region provide significant foraging habitat for a variety of resident and wintering raptors, as well as large numbers of other birds. Furthermore, the dense cover of grasses and forbs provide cover for large populations of small mammals that in turn attract a diversity of predatory species.



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Los Banos Creek Detention Reservoir Regulation & Storage Project

Biotic Habitats / Land Cover

Date	Project #	Figure #
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Common reptile species likely to forage and seek cover in this habitat include common side-blotched lizards (*Uta stansburiana*), gopher snakes (*Pituophis melanoleucus*), common kingsnakes (*Lampropeltis getulus*), and western rattlesnakes (*Crotalus oreganus*). The APE's grasslands are unlikely to be occupied by amphibian species due to the absence of nearby breeding habitat.

Raptors known to utilize grassland habitats in the region include the golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and northern harrier (*Circus hudsonius*). These species are likely to prey on reptiles and small birds and mammal within the APE. Other resident avian species expected to utilize grasslands within the APE included common ravens (*Corvus corax*), mourning doves (*Zenaida macroura*), and western meadowlarks (*Sturnella neglecta*). Spring and summer migrants that frequent these grasslands would include barn swallows (*Hirundo rustica*), horned larks (*Eremophila alpestris*), and western kingbirds (*Tyrannus verticalis*). Common winter migrants attracted to grasslands of the region include savannah sparrows (*Passerculus sandwichensis*), American pipits (*Anthus rebescens*), and Say's phoebes (*Sayornis saya*).

A number of small mammal species are expected to use the grasslands of the APE, as well, including California ground squirrels (*Otospermophilus beecheyi*), Botta's pocket gophers (*Thomomys bottae*), California voles (*Microtus californicus*), and deer mice (*Peromyscus maniculatus*). A number of large mammalian species may move through or utilize the onsite grasslands from time to time. These would include the striped skunk (*Mephitis mephitis*), coyotes (*Canis latrans*), American badger (*Taxidea taxus*), and bobcat (*Lynx rufus*). Various species of bats would forage over the grasslands, as well as other areas of the APE.

2.3.2 Ruderal/Developed

A large portion of the project APE consists of ruderal/developed lands, or lands regularly disturbed by human activities and/or associated with the built environment. Ruderal/developed areas of the APE include paved surfaces and gravel covered lots and roads that were barren to sparsely vegetated at the time of the survey. Where vegetation was present in these areas, it generally consisted of common weedy grasses such as ripgut brome, foxtail brome, and

Bermudagrass (*Cynodon dactylon*). Annual forbs observed included a mix of native and non-native species tolerant of disturbed soils such as tocalote (*Centaurea melitensis*), red stemmed filaree, gumweed (*Grindellia camporum*), prickly lettuce (*Lactuca serriola*), shortpod mustard, Russian thistle, common spikeweed (*Centromadia pungens*), and doveweed (*Croton setiger*), among others.

The wildlife habitat value of ruderal/developed lands within the APE is relatively low; nonetheless, these lands can be utilized by some native wildlife species. Amphibians such as the Sierran tree frog (*Pseudacris sierra*) and western toad (*Bufo boreas*) may disperse through ruderal lands of the project site during the winter and spring where suitable breeding habitat occurs nearby. Common reptiles such as the western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard, and Pacific gopher snake could potentially use ruderal habitats within the APE.

Avian species expected to forage on or pass over ruderal/disturbed areas of the site include the northern mockingbird (*Mimus polyglottos*), mourning dove, killdeer (*Charadrius vociferus*), Brewer's blackbird (*Euphagus cyanocephalus*), and European starling (*Sturnus vulgaris*).

Evidence of burrowing mammal activity on the ruderal/developed lands of the APE was absent, as the paved and gravel surfaces and compacted soils of these areas do not provide a suitable burrow substrate. Mammalian predators with the potential to occasionally occur on ruderal/developed lands of the site include disturbance-tolerant species such as the raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), striped skunk, and coyote.

2.3.3 Wetland/Riparian

The APE also contained an area of wetland/riparian associated with Los Banos Creek. This area has been significantly disturbed from historical installation of the road crossing and a vegetation removal project in 2011. This area was vegetated with emergent wetland vegetation dominated by chairmaker's bulrush (*Schoenoplectus americanus*) and broadleaf cattail (*Typha latifolia*). Wetland herbaceous species along the banks of the creek here were rabbit's foot grass (*Polypogon monspeliensis*), broad-leaf pepperweed (*Lepidium latifolium*), and bird's foot trefoil

(*Lotus corniculatus*). Trees and shrubs along the creek banks included mulefat (*Baccharis salicifolia*), Fremont cottonwood (*Populus fremontii*), and Goodding's black willow (*Salix gooddingii*).

The wetland/riparian habitat within the APE offers relatively high value habitat to native wildlife. The non-native mosquito fish (*Gambusia affinis*) was observed here as well as the American bullfrog (*Lithobates catesbeianus*). Sierran tree frogs and western toads may also breed in this area. Reptiles such as the western yellow-bellied racer (*Coluber constrictor mormon*) and valley gartersnake (*Thamnophis sirtalis fitchi*) may forage in this habitat as well. These and other prey species may attract wading birds such as the great blue heron (*Ardea herodias*) and great egret (*Ardea alba*). Other birds observed in this area included red-winged blackbirds (*Agelaius phoeniceus*), common yellowthroat (*Geothlypis trichas*), and barn swallows. Mammals such as raccoons are expected to utilize this area, as well. Feral pigs (*Sus scrofa*) were found taking cover under riparian trees immediately adjacent to the project APE.

2.3.4 Aquatic

The aquatic area of the APE is associated with the LBCDR. Vegetation is absent from aquatic areas of the APE. Various species of fish are known to occur in this habitat such as rainbow trout (*Oncorhynchus mykiss*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), and channel catfish (*Ictalurus punctatus*), among others. The aquatic habitat also provides habitat for a number of avian species such as the American coot (*Fulica americana*), ruddy duck (*Oxyara jamaicensis*), Clark's grebe (*Aechmophorus clarkii*), and common merganser (*Mergus merganser*), among others.

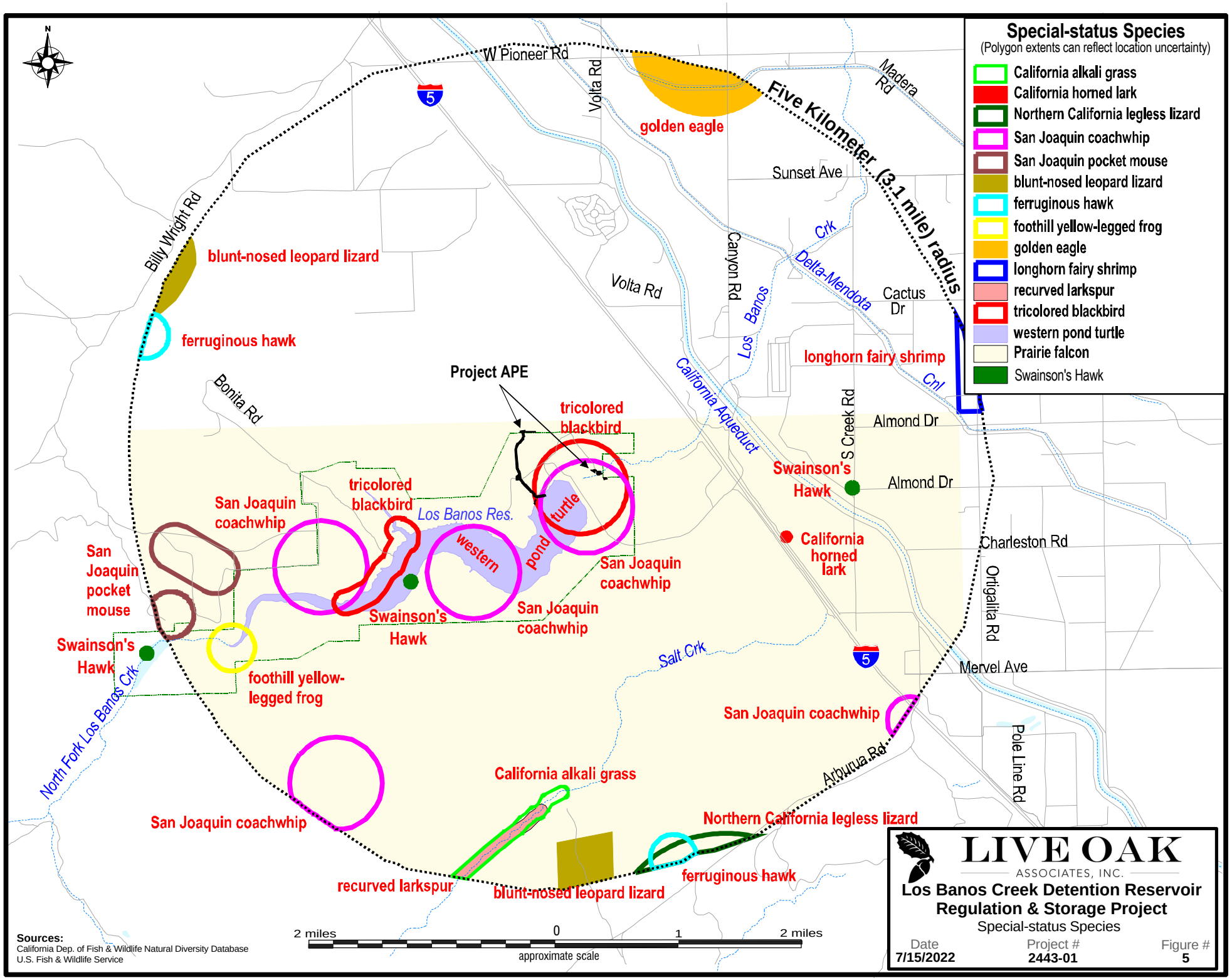
2.4 SPECIAL STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.4, state and federal laws have provided CDFW and the USFWS with a mechanism for conserving and protecting the diversity

of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists (i.e., California Rare Plant Ranks, or CRPR) of native plants considered rare, threatened, or endangered (CNPS 2022). Collectively, these plants and animals are referred to as "special status species."

The *California Natural Diversity Data Base* (CDFW 2022) was queried for special status species occurrences in nine USGS 7.5-minute quadrangles on and surrounding the project APE (*Ortigalita Peak NW, Charleston School, Laguna Seca Ranch, Ortigalita Peak, Ruby Canyon, Los Banos Valley, San Luis Dam, Volta, Los Banos*). An unofficial species list was obtained using the USFWS IpaC system for federally listed species with the potential to be affected by the project (USFWS 2022) (Appendix D). These species, and their potential to occur on the project site, are listed in Table 2 on the following pages. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. Al 1988-1990), *California Natural Diversity Data Base* (CDFW 2022), *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al 2012), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), Calflora.org, and eBird.org.

Special status species occurrences within 3.1 miles of the project site are depicted in Figure 5 and San Joaquin kit fox occurrences within a 10-mile radius of the site are presented in Figure 6.


Special-status Species
(Polygon extents can reflect location uncertainty)
California alkali grass
California horned lark
Northern California legless lizard
San Joaquin coachwhip
San Joaquin pocket mouse
blunt-nosed leopard lizard
ferruginous hawk
foothill yellow-legged frog
golden eagle
longhorn fairy shrimp
recurved larkspur
tricolored blackbird
western pond turtle
Prairie falcon
Swainson's Hawk
Five Kilometer (3.1 mile) radius
Project APE
W Pioneer Rd
Volta Rd
Madera Rd
Sunset Ave
Billy Wright Rd
Canyon Rd
Delta-Mendota Cnl
Los Banos Crk
Cactus Dr
California Aqueduct
S Creek Rd
Almond Dr
Bonita Rd
Charleston Rd
Ortigalita Rd
Mervel Ave
Salt Crk
Pole Line Rd
Arburua Rd
North Fork Los Banos Crk
Los Banos Res.
golden eagle
blunt-nosed leopard lizard
ferruginous hawk
tricolored blackbird
San Joaquin coachwhip
San Joaquin pocket mouse
Swainson's Hawk
California horned lark
western pond turtle
foothill yellow-legged frog
longhorn fairy shrimp
California alkali grass
Northern California legless lizard
recurved larkspur
2 miles
0
1
2 miles
approximate scale
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
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ASSOCIATES, INC.
Los Banos Creek Detention Reservoir
Regulation & Storage Project
Special-status Species
Date
7/15/2022
Project #
2443-01
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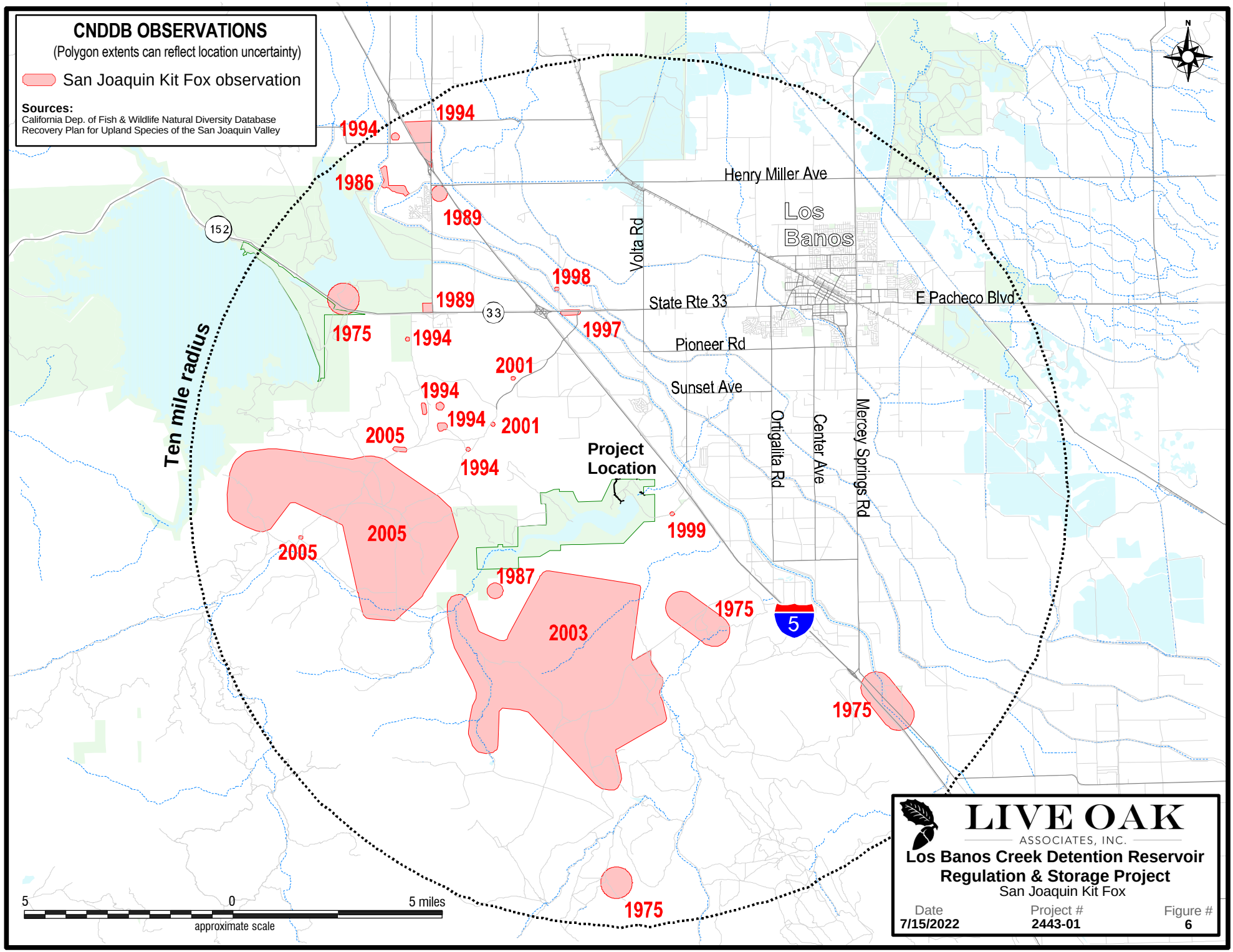
CNDDB OBSERVATIONS
(Polygon extents can reflect location uncertainty)
San Joaquin Kit Fox observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
N
Henry Miller Ave
Los Banos
Volta Rd
State Rte 33
E Pacheco Blvd
Pioneer Rd
Sunset Ave
Ortigalita Rd
Center Ave
Mercey Springs Rd
152
33
5
Ten mile radius
Project Location
1994
1994
1986
1989
1998
1989
1975
1994
1997
2001
1994
1994
2001
2005
1994
2005
2005
1999
1987
2003
1975
1975
1975
5
0
5 miles
approximate scale
LIVE OAK
ASSOCIATES, INC.
Los Banos Creek Detention Reservoir
Regulation & Storage Project
San Joaquin Kit Fox
Date
7/15/2022
Project #
2443-01
Figure #
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TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2022, USFWS 2022, and CNPS 2022)

CNPS-Listed Plants

Species	Status	Habitat	*Occurrence Within the Project APE
Heartscale (*Atriplex cordulata var. cordulata*)	CRPR 1B	Occurs in cismontane woodland and valley and foothill grassland of the San Joaquin Valley at elevations below 1,230 ft. Blooms April–Oct.	**Unlikely.** The site is outside this species' known range. This species is not known to occur west of Interstate 5.
Lost Hills Crownscale (*Atriplex coronata var. vallicola*)	CRPR 1B	Occurs in chenopod scrub, valley and foothill grassland, and vernal pools in powdery, alkaline soils that are vernally moist with frankenia, atriplex spp. and distichlis. Blooms April–Aug.	**Absent.** Moist, powdery alkaline soils required by this species are absent from the project APE. The site is approximately 7 miles north of the of the most northern occurrence of this species.
Lesser Saltscale (*Atriplex minuscula*)	CRPR 1B	Occurs in chenopod scrub, playas, valley and foothill grassland in sandy, alkaline soils between 50 and 660 ft. in elevation. Blooms May-October.	**Absent.** Sandy alkaline soils required by this species are absent from the project APE.
Lemmon's Jewelflower (*Caulanthus lemmonii*)	CRPR 1B	Occurs in pinyon-juniper woodland and grassland habitat of California's Inner Coast Range from Alameda Co. on the north to Ventura Co. on the south; occurs between 260 and 4,000 ft. in elevation. Blooms March-May.	**Unlikely.** Not observed during past botanical surveys. Past grading of large portions of grasslands within the APE has likely created unsuitable conditions for this species in these areas.
Hispid Salty Bird's-Beak (*Chloropyron molle spp. hispidum)*	CRPR 1B	Occurs in damp alkaline soils, especially in alkaline meadows and alkali sinks with *Distichlis spicata*; occurs below 500 ft. in elevation. Populations are concentrated in the San Joaquin Valley in Merced Co., with outlier populations in the Sacramento Valley, Bay Area, and Tulare Basin; blooms June–September.	**Absent.** Suitable habitat is absent from the project site.
Recurved Larkspur (*Delphinium recurvatum*)	CRPR 1B	Occurs in chenopod scrub, valley and foothill grassland, cismontane woodland on alkaline soils; often in valley saltbush or valley chenopod scrub up to 2,600 ft in elevation. Blooms March - June.	**Absent.** Alkali soils required by this species are absent from the project APE.
Spiny-Sepaled Button Celery (*Eryngium spinosepalum*)	CRPR 1B	Occurs in vernal pools and valley and vernally moist areas of foothill grasslands of the San Joaquin Valley and the Tulare Basin between 330 and 840 ft. in elevation. Blooms April-May.	**Unlikely.** *Eryngium* species were never detected during past botanical surveys of the site nor during LOA's survey. Vernally moist areas of grassland are absent from the project APE.
Alkali-Sink Goldfields (*Lasthenia chrysantha*)	CRPR 1B	Occurs in vernal pools within alkali soils in areas less than 655 ft. in elevation. Blooms February – June.	**Absent.** Habitat suitable for this species is absent from the project APE.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS cont'd.

CNPS-Listed Plants

Species	Status	Habitat	*Occurrence Within the Project APE
Munz's Tidy-Tips (*Layia munzii*)	CRPR 1B	Occurs on hillsides, in white-grey alkaline clay soils, w/grasses and chenopod scrub associates between 150-2,500 ft in elevation. Blooms March – April.	**Absent.** Suitable habitat is absent. The project site is northwest of the species' known range.
Panoche Pepper-Grass (*Lepidium jaredii ssp. album*)	CRPR 1B	Occurs in valley and foothill grassland. white or grey clay lenses on steep slopes; incidental on alluvial fans and washes. clay and gypsum-rich soils between 210-3,300 ft in elevation. Blooms Feb – June.	**Absent.** Suitable habitat appears absent from the project APE. The project site is out of the species' known range. The nearest occurrence was recorded in 1935 approximately 16 miles southeast of the site.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B	Chaparral and coastal scrub from 33-2,500 feet. Blooms May-September.	**Absent.** Habitat for this species is absent from the project APE.
Shining Navarretia (*Navarretia nigelliformis* ssp. *radians*)	CRPR 1B	Occurs in vernal pool, valley grassland, foothill woodland, wetland riparian areas of the inner coast range and central valley between 50 – 3,280 ft in elevation. Blooms April - July	**Unlikely.** Habitat for this species is absent to extremely marginal. No *Navarretia* species were observed during LOA's site survey or past botanical surveys of the site. Three documented occurrences are known from the region east of the project site, the closest being 6.5 miles away.
Prostrate Vernal Pool Navarretia (*Navarretia prostrata*)	CRPR 1B	Occurs in wetlands of coastal sage scrub and riparian areas in western San Joaquin valley, San Francisco Bay, South Coast range, and the Santa Rosa Plateau at elevations less than 2296 ft. Blooms April – July.	**Absent.** No *Navarretia* species were observed during past botanical surveys, nor during LOA's June 2022 survey. Suitable wetland habitat for this species is absent from the project site.
California Alkali Grass (*Puccinellia simplex*)	CRPR 1B	Occurs in alkali sinks and flats within grassland and chenopod scrub habitats of the Central Valley, San Francisco Bay area, and western Mojave Desert below 3,000 ft. in elevation. Blooms March-May.	**Absent.** Suitable alkaline habitat is absent from the project APE.
Sanford's Arrowhead (*Sagittaria sanfordii*)	CRPR 1B	Occurs in freshwater emergent marsh habitat in drainage ditches and canals of California's Central Valley and low Sierra foothills. Blooms May to October.	**Absent.** While potentially suitable habitat is present within Los Banos Creek, this conspicuous species was not observed during past botanical surveys, nor during LOA's June 2022 survey.
Chaparral Ragwort (*Senecio aphanactis*)	CRPR 2B	Occurs on drying alkaline flats within chaparral, cismontane woodland, and coastal scrub at elevations of 50-2,624 feet. Blooms January-April.	**Absent.** Habitat suitable for this species is absent from the project APE.
Arburua Ranch Jewel-Flower (*Streptanthus insignis* ssp. *lyonii*)	CRPR 1B	Coastal scrub at elevations of 755-2,800 feet. Annual, blooms March-May.	**Absent.** Habitat suitable for this species is absent from the site. Furthermore, the site is outside the elevational range of the species.
Wright's Trichocoronis (*Trichocoronis wrightii var. wrightii*)	CRPR 2B	Occurs in mud flats of vernal lakes, drying riverbeds, alkali meadows. Blooms May-September; elevations up to 1,400 ft.	**Absent.** Habitat is absent from the project APE. Not known to occur west of Interstate 5.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2022 and USFWS 2022)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence Within the Project APE
Longhorn Fairy Shrimp (*Branchinecta longiantenna*)	FE	Vernal pools of clear to turbid waters including grass-bottomed pools in Merced County. Can be caught between December and April.	**Absent.** Vernal pools required by this species are absent from the APE and immediately surrounding lands.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	FE	Vernal pools of clear to turbid waters of the Central Valley measuring 54 sq.ft. to larger pools (largest known to be 89-acre Olcott Lake).	**Absent.** Vernal pools required by this species are absent from the APE and immediately surrounding lands.
Monarch Butterfly (*Danaus plexippus*)	FC	The larvae of this insect species reside and feed entirely on milkweed (*Asclepias* sp.) plants. Adults forage for nectar on a variety of flowering plant species.	**Possible.** Milkweed species (the obligate habitat for monarch larvae) were not observed during LOA's June field survey. Milkweed would have been conspicuous at this time. Monarch butterflies may occasionally forage within the project APE.
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	FT	Elderberry shrubs of the Central Valley and foothills north of Fresno County up to 3,000'.	**Absent.** Habitat for this species in the form of elderberry shrubs is absent from the project APE.
Delta Smelt (*Hypomesus transpacificus*)	FT	This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	**Absent.** The project site is situated well outside of the known distribution of this species.
California Tiger Salamander (CTS) (*Ambystoma californiense*)	FT, CT	Inhabits primarily annual grasslands and open woodlands of foothills and valleys, requires vernal pools, swales or stock ponds that fill for at least 3 months. Aestivate in small mammal burrows.	**Unlikely.** The only potentially suitable breeding habitat in the project vicinity are periodically inundated borrow pits that appear to have been created during the construction of the LBCDR in 1964 and 1965. CTS typically don't utilize such habitats and prior to the creation of these borrow pits suitable CTS breeding habitat was absent from the vicinity, from which this species could have colonized the pits. This species is addressed in more detail in Section 2.5.
Foothill Yellow-Legged Frog (*Rana boylii*)	CE	Requires partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	**Unlikely.** Marginal habitat for this species occurs within the APE at Los Banos Creek. This area of creek was significantly disturbed by a vegetation removal project in 2011/2012. This species was found absent from this area of the creek during previous surveys associated with that project, and this area of stream has been cut off from suitable habitat upstream by the construction of the LBCDR. The nearest documented occurrence of this species occurs approx. 2.25 air-miles upstream. This species is addressed in more detail in Section 2.5.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence Within the Project APE
California Red-legged Frog (*Rana draytonii*)	FT	Perennial rivers, creeks and stock ponds of the Inner Coast Range foothills, preferring deep pools with overhanging vegetation.	**Unlikely.** Marginal habitat for this species occurs within the APE at Los Banos Creek. This area of creek was significantly disturbed by a vegetation removal project in 2011/2012. This species was found absent from this area of the creek during previous surveys associated with that project, and this area of stream has been cut off from suitable habitat upstream by the construction of the LBCDR. The nearest documented occurrence of this species occurs approx. 4.5 air-miles upstream. This species is addressed in more detail in Section 2.5.
Giant Garter Snake (*Thamnophis gigas*)	FT, CT, CFP	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. Inhabit small mammal burrows and other upland soil crevices during the winter during hibernation.	**Absent.** The project site is outside the range of this species. This species does not occur west of Interstate 5.
Blunt-Nosed Leopard Lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in semiarid grasslands, alkali flats, and washes. Avoids densely vegetated areas. Inhabits the San Joaquin Valley and adjacent valleys and foothills north to southern Merced County.	**Unlikely.** Suitable habitat is absent to marginal within the APE. This species has never been reported within the Los Banos Reservoir Area of the San Luis Reservoir State Recreation Area and modern occurrence reports are absent from the region. See Section 2.5 for more details.
Bald Eagle (*Haliaeetus leucocephalus*)	CE	Occurs in ocean shores, lake margins, and rivers for both nesting and wintering. Nests are in large trees near water.	**Present**. This species is occasionally observed foraging over the LBCDR (eBird 2022). This species is not known to nest at the LBCDR.
Golden Eagle (*Aquila chrysaetos*)	CFP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Present**. This species is occasionally observed foraging over the LBCDR (eBird 2022). Suitable breeding habitat is absent from the project APE.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence Within the Project APE
Swainson's Hawk (*Buteo swainsoni*)	CT	This breeding-season migrant to California nests in stands with few trees in riparian areas and juniper-sage flats, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Present.** A Swainson's hawk was observed flying over the project APE during LOA's June 2022 survey. Potential foraging habitat occurs within grasslands of the APE. Suitable nesting habitat is absent from the project APE but occurs in trees adjacent to the APE. This species has been documented nesting in trees along the southern shore of the LBCDR (CDFW 2022).
Tricolored Blackbird (*Agelaius tricolor*)	CT	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in many open habitats.	**Possible.** Tricolored blackbirds could forage in open areas of the project site from time to time. Suitable breeding habitat occurs within wetland/riparian areas of the APE. A possible breeding colony was documented in Los Banos Creek below the Los Banos Reservoir Dam in 1992 (CDFW 2022).
Giant Kangaroo Rat (*Dipodomys ingens*)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills.	**Absent**. The project site is outside the range of this species. The nearest documented modern observations of this species occur approximately 20 miles to the southeast (CDFW 2022).
Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)	FE, CE	Occurs in alkali scrub and herbaceous habitats with scattered shrubs in the southwestern San Joaquin Valley.	**Absent.** The project site is well outside this species' current and historic range. The only known extant population is in Kings County.
San Joaquin Antelope Squirrel (*Ammospermophilus nelsoni*)	CT	Occurs in the southwest portion of the valley in arid grassland and shrubland communities. Lives in burrows of its own construction or dug by kangaroo rats. Diurnal.	**Absent**. The project site is outside the range of this species. The nearest documented modern observations of this species occur approximately 17 miles to the south (CDFW 2022).
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	CT, FE	Dens and breeds in arid grasslands, scrub lands, and foothills of the San Joaquin Valley	**Possible.** There are no known populations of San Joaquin kit fox in the Los Banos Reservoir Area of the San Louis Reservoir State Recreation Area. However, this species could pass through or even temporarily inhabit the project APE during dispersal movements, as there are known populations west and south of the LBCDR. There are 24 documented occurrences of kit fox in the CNDDB within a 10-mile radius of the project site (CDFW 2022) (Figure 6). Denning and foraging habitat is available in grassland areas of the project APE.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

State Species of Special Concern

Species	Status	Habitat	*Occurrence Within the Project APE
Northern California Legless Lizard (*Anniella pulchra*)	CSC	Occurs in sandy or loose loamy soils under sparse vegetation. soil moisture is essential and prefer soils with a high moisture content.	**Absent.** There are no modern occurrences of this species within a 20-mile radius of the site. The nearest historic occurrence is approximately 3.75 miles to the south from 1942 (CDFW 2022). Suitable habitat for this species is absent from the project APE. Moist areas within the wetland/riparian area of the APE contain a layer of introduced rock to stabilize the creek banks.
Western Spadefoot (*Spea hammondii*)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary ponds for breeding.	**Unlikely.** There are only two occurrences of this species in the project vicinity, with the nearest approximately 6 miles to the northwest. The only potentially suitable breeding habitat in the project vicinity are periodically inundated borrow pits that appear to have been created during the construction of the LBCDR in 1964 and 1965. Prior to the creation of these borrow pits suitable spadefoot toad breeding habitat was absent from the vicinity, from which this species could have colonized the pits. This species is addressed in more detail in Section 2.5.
Western Pond Turtle (*Emys marmorata*)	CSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites of sandy banks or grassy open fields for egg laying.	**Possible.** Aquatic habitat of the APE associated with the reservoir provides potential habitat for this species, which has been documented in and upstream of the reservoir (CDFW 2022). Wetland/riparian habitat provides unsuitable habitat for this species due to the dense stand of emergent marsh vegetation across the entire creek channel that would significantly inhibit the movements, foraging, and basking opportunities for this species.
San Joaquin Coachwhip (*Masticophis flagellum ruddocki*)	CSC	Open, dry habitats with little or no tree cover. Found in valley grasslands and saltbush scrub in the San Joaquin Valley.	**Present.** This species has been documented multiple times within the State Recreation Area (CDFW 2022). Grassland habitat within the project APE provides suitable habitat for this species.
Yellow Rail (*Coturnicops noveboracensis*)	CSC	Occurs in freshwater marshlands. Is a summer resident in eastern Sierra Nevada in Mono County.	**Unlikely.** There are no modern occurrences of this species in the region. The nearest historic documented occurrence in 1911 was described as near the town of Los Banos.
Northern Harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, rangelands, emergent wetlands; uncommon in wooded habitats. Nests on the ground in tall, concealing vegetation.	**Possible.** This species potentially forages over the site. Nesting habitat is marginal on the site due to the lack of tall, concealing vegetation in the grasslands and the close proximity of the road crossing through the wetland/riparian area of the APE where tall, concealing vegetation is present.

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

State Species of Special Concern

Species	Status	Habitat	*Occurrence Within the Project APE
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Possible.** While no evidence of burrowing owls was observed during LOA's field survey, burrows suitably sized to accommodate this species were found within the grasslands of the APE. Surrounding grasslands provide potential foraging habitat.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Present.** This species was observed during LOA's field survey. Suitable nesting habitat is present within wetland/riparian areas of the APE. Foraging habitat occurs within most other areas of the APE, except aquatic habitat.
California Mastiff Bat (Eumops perotis ssp. californicus)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Roosts in cliff faces, high buildings, trees and tunnels.	**Possible.** This species may forage over the site but roosting and breeding habitat are absent.
American Badger (Taxidea taxus)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Likely.** Suitable habitat for this species is present within grasslands of the project APE. Potential badger burrows and diggings were observed in this area.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CFP	California Protected
FC	Federal Candidate	CSC	California Species of Special Concern
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.5 SPECIAL STATUS SPECIES WARRANTING FURTHER DISCUSSION

2.5.1 California Tiger Salamander

Life history and ecology. The California tiger salamander (CTS) occurs in areas with vernal pool complexes or stock ponds within extensive grassland habitats. Pools that hold water for 3-4 months of the winter and spring provide suitable breeding habitat for the CTS. Eggs are

deposited and attached to vegetation. Upon hatching, CTS larvae mature in these vernal pools until they begin to dry in April and May, at which time they metamorphose into juveniles that can then disperse into upland habitats. The juvenile CTS leave the drying pools to find the burrows of California ground squirrels and pocket gophers which serve as underground refugia in which CTS over-summer during the warm, dry months of late May through mid-October or later (depending on when the fall rains start). While CTS may wander a mile or more from their pools in search of over-summering habitat, one CTS study found that most post-breeding adult salamanders seek out rodent burrow refugia within 0.4 mile of breeding habitat (Trenham and Shaffer 2005). The CDFW and USFWS typically assume CTS to be present in grassland habitat within 1.3 miles of known or potential breeding pools, unless proven absent through accepted results of protocol level surveys.

Potential to occur on the site. The foothill region in which the project APE is situated is not a vernal pool landscape. However, an alkali flat within an historic drainage that may occasionally pool water for short periods of time occurs 0.3 miles northeast of the project APE. Examination of aerial photography dating back to 1946 shows no ponding within this flat. Even a March 2017 photo (a year of extremely high rainfall) shows no ponding in this area at a time when ponding should have been clearly visible and would need to have been present during this month for this area to support CTS larvae. Because this area lacks sufficient ponding it is not considered suitable CTS breeding habitat. Aquatic areas within and adjacent to the APE consisting of the LBCDR and Los Banos Creek provide unsuitable CTS breeding habitat due to the presence of predatory fish and bullfrogs, and flowing water and dense vegetation in the creek. Borrow pits created at the time of the Los Banos Creek Dam construction in 1964-65 occur within the Los Banos Creek corridor downstream from the APE. This pits temporarily accumulate water resulting from rises in the water table and/or flood waters in years of heavy rainfall and hold water for a period of time sufficient for CTS larval development. While these pools could conceivably support CTS larvae, the nearest current and historic breeding habitat and CTS populations around this habitat occur approximately 4 to 5 miles southeast (CNDDB Occ No 311) and 5 to 6 miles northeast (CNDDB Occ No 106) of the project APE further up the foothills. Examination of historic aerial photos dating back to 1957 and historic topographic maps dating back to 1957 and 1958 clearly show the breeding habitat (i.e. stock ponds)

associated with the mapped CTS occurrences. In contrast, examination of historic aerial photos dating back to 1947 and historic topographic maps dating back to 1920 show no evidence of any potential CTS breeding habitat within 1.6 miles of the project APE. Two ponds approximately 1.63 and 2.37 miles south of the APE were constructed sometime between 1981 and 1992 within the channel of the ephemeral channel of Salt Creek and an ephemeral tributary of Salt Creek, in areas that would otherwise be unsuitable for CTS breeding. These ponds are relatively recent additions to the landscape and much younger than the CTS breeding habitat documented in the region. They were created in an area that itself has no evidence of supporting historic CTS breeding habitat. Because the APE is situated in a landscape historically lacking CTS breeding habitat and it is highly unlikely that CTS would have traversed many miles of dry land from there documented locations to colonize the nearby borrow pits since their construction in 1964-65, CTS are considered highly unlikely to occur within the project APE.

2.5.2 Western Spadefoot Toad

Life history and ecology. The western spadefoot typically breeds between January and May in seasonal ponds occurring in chaparral, short grass plains or coastal sage scrub. Females usually deposit clusters of eggs (10-40) on plant stems within these ponds. Eggs hatch within six days, and larval development takes between three to 11 weeks. To survive, larval development must be completed before the ponds dry.

Mostly active at night, the spadefoot has adapted to digging in sandy soils and finding refugia in small rodent burrows, creating aestivation habitat that protects it from hot, arid, daytime conditions. This species may be inactive for periods of up to eight or nine months and may not reach maturity for two years. Adults range from 1.5 to 2.5 inches and can be distinguished from other toads by their cat-like eyes (vertically elliptical pupils), dark spades on their hind legs (used for digging), teeth in their upper jaw, rather smooth skin, and four light stripes on their backs. Adults feed on a variety of invertebrates, including but not limited to worms, beetles, flies and ants.

Potential to occur on the site. The breeding requirements of spadefoot toads is similar to those of the CTS. As a result, the CTS discussion above is relevant to the spadefoot toad. The nearest

spadefoot occurrences are approximately 9.3 miles southeast (CNDDB Occ No 35) and approximately 5.5 miles to the northeast (CNDDB Occ No 1280) presumably utilizing the same breeding pond as CTS Occ No 106. Spadefoot toads are considered highly unlikely to occur on the site for the same reasons as presented in the CTS discussion above.

2.5.3 California Red-Legged Frog

Life history and ecology. The California red-legged frog breeds in low-gradient freshwater bodies including ponds and backwaters within streams and creeks. Water bodies must remain inundated for a minimum of 20 weeks in order for larvae of this species to complete metamorphosis.

The California red-legged frog also utilizes aquatic habitat for ecological needs unrelated to breeding, such as space, food, and cover. Non-breeding aquatic habitat includes shallow freshwater features such as streams, small seeps, and ponds that dry too quickly to support breeding.

The California red-legged frog may use upland habitats up to two (2) miles away from water (Bulger et al. 2003), although a distance of one (1) mile is more common. Suitable upland habitats include grassland, woodland, forest, wetland, and riparian areas that provide shelter, forage, and escape from predators.

Although the California red-legged frog does not require any particular type of habitat for dispersal, habitat connecting breeding locations and other aquatic habitat must be free of significant barriers such as heavily traveled roads, large bodies of water, large expanses of asphalt or concrete, and/or moderate- to high-density developed areas.

Potential to occur on the site. The wetland/riparian habitat associated with Los Banos Creek and immediately surrounding uplands within the project APE provide extremely marginal habitat for this species. The aquatic habitat of the reservoir is unsuitable for the red-legged frog due to the presence of predatory sport fish. Red-legged and yellow-legged frog investigations and surveys of the area of the APE in and around Los Banos Creek were conducted in association with a 2011 NEPA Environmental Assessment prepared for the Vegetation and Sediment Maintenance

Program at Los Banos Detention Dam. Neither of these species was detected at that time. This area of the APE was then significantly disturbed by this project at that time, which removed all the vegetation in and around the creek. Furthermore, the construction of the LBCDR has created a significant barrier between the wetland/riparian habitat of the APE from suitable habitat upstream of the LBCDR where California red-legged frog have been documented approximately 4.5 air-miles upstream. LOA's field survey observed American bullfrog adults and larvae at this area, which are predators and competitors of the red-legged frog, further decreasing the likelihood of this species occurring here. For these reasons, the California red-legged frog is highly unlikely to occur within the project APE.

2.5.4 Foothill Yellow-Legged Frog

Life history and ecology. This medium-sized frog frequents rocky streams and rivers with open, sunny banks, in forests, woodlands, and chaparral. It is rarely found far from water. Feeds on a wide variety of invertebrates including aquatic, terrestrial, and flying insects, spiders, snails, and grasshoppers. This frog originally ranged from northern Oregon west of the Cascades south along the coast ranges to the San Gabriel Mountains, and south along the foothills of the western side of the Sierra Nevada Mountains to the edge of the Tehachapi Mountains, with isolated populations in Southern California in Elizabeth Lake Canyon and the drainage of the San Gabriel River.

This frog has disappeared from much of its range in California (possibly up to 45 percent.) Populations south of southern Monterey County are now apparently extinct. The foothill yellow-legged frog is also gone from an estimated 66 percent of its range in the foothills of the Sierra Nevada Mountains, especially south of highway 80 where it is nearly extinct. Introduced fish stress frog populations by consuming eggs and tadpoles, and introduced bullfrogs compete for food and eat the frogs. Habitat loss, disease, introduced crayfish, stream alteration from dams, mining, logging, and grazing, are also threats to this frog.

Potential to occur on the site. The wetland/riparian habitat associated with Los Banos Creek within the project APE provides unsuitable habitat for this species due to the dense stand of herbaceous vegetation that is incompatible with the habitat requirements of the yellow-legged

frog. Furthermore, as discussed, this species was not detected in this area of the APE during surveys conducted in 2011 prior to a vegetation removal project here. This area of the APE was then significantly disturbed by this project at that time, which removed all the vegetation in and around the creek. Furthermore, the construction of the LBCDR has created a significant barrier between the wetland/riparian habitat of the APE from suitable habitat upstream of the LBCDR where California red-legged frog have been documented approximately 2.25 air-miles upstream. LOA's field survey observed American bullfrog adults and larvae at this area, which are predators and competitors of the yellow-legged frog, further decreasing the likelihood of this species occurring here. For these reasons, the foothill yellow-legged frog is highly unlikely to occur within the project APE.

2.5.5 Blunt-Nosed Leopard Lizard

Ecology of the species. Endemic to the San Joaquin Valley of California, the blunt-nosed leopard lizard (BNLL) typically inhabits open, sparsely vegetated areas of low relief on the San Joaquin Valley floor and in the surrounding foothills. The BNLL feeds primarily on insects and other lizards. It uses small rodent burrows, typically those of California ground squirrels or kangaroo rats (*Dipodomys* spp.), for shelter from predators and temperature extremes. In areas of low rodent burrow density, the BNLL may construct shallow, simple tunnels in earth berms or under rocks. BNLL activity varies seasonally, as they hibernate in the winter, emerging from their burrows in March or April. Breeding activity begins within a month of emergence and continues through June. The female lays her eggs in June or July, and the young hatch in July or August. Adults retreat to their burrows to hibernate in August or September, but hatchlings are generally active through October.

Potential to occur onsite. This species has been historically documented within the region with little information collected on the extent or number of individuals observed. There are no modern occurrences of this species within a 10-mile radius of the project APE. The project APE consists of unsuitable to marginal habitat for the BNLL. Areas of grassland habitat provide marginal habitat for this species due to the relatively dense grass cover. This species has never been detected within the Los Banos Reservoir Area of the San Louis Reservoir State Recreation

Area. For these reasons, the BNLL is considered highly unlikely to occur within the project APE.

2.6 JURISDICTIONAL WATERS

Jurisdictional waters are those rivers, creeks, drainages, lakes, ponds, reservoirs, and wetlands that are subject to the authority of the USACE, CDFW, and/or the RWQCB. In general, the USACE regulates navigable waters, tributaries to navigable waters, and wetlands adjacent to these waters, where wetlands are defined by the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. The CDFW asserts jurisdiction over waters in California that have a defined bed and bank, and the RWQCB has jurisdiction over California surface water and groundwater. The regulation of jurisdictional waters is discussed in more detail in Section 3.9.

Within the project APE Los Banos Creek and LBCDR are likely to be considered jurisdictional waters.

2.7 DESIGNATED CRITICAL HABITAT

As will be discussed further in Section 3.3, the USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site and immediately surrounding lands.

2.8 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status species, etc. CDFW is responsible for the classification and mapping of all natural communities in California. Natural communities are assigned state and global ranks according to their degree of imperilment. Natural communities with ranks of S1-S3 are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents.

Designated sensitive natural communities are absent from the project APE. However, riparian habitat within and adjacent to the APE would be considered sensitive under CEQA.

2.9 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. Certain features of the project area have the potential to function as movement corridors for resident and migratory fish and wildlife species.

While the Los Banos Creek corridor historically served as a likely travel route for fish and wildlife between the foothill and valley habitats, the installation of the dam along the creek just upstream of the APE has greatly diminished the value of the creek corridor, here, for fish and wildlife. As a result, the APE does not provide a significant movement corridor for fish or wildlife.

3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 GENERAL PLAN POLICIES OF MERCED COUNTY

In compliance with CEQA, the lead agency must consider conformance with applicable goals and policies of the General Plan of Merced County. The Merced County General Plan was updated in 2013 and has a planning horizon through 2030. It presents the County's vision for long-term growth and development and establishes goals and policies to accomplish this vision. Goals and policies relevant to the study area's biological resources are primarily derived from the Plan's Natural Resources Element, and include the following:

- Cooperate with local, state, and federal agencies to ensure that adequate ongoing protection and monitoring occurs adjacent to rare and endangered species habitats or within identified significant wetlands
- Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities
- Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands
- Protect existing trees and encourage the planting of new trees in existing communities
- Coordinate with private, local, state, and federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies

3.2 HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP) developed by the project applicant in collaboration with the USFWS and/or National Marine Fisheries Service (NMFS) ensures that such minimization and mitigation will occur, and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP) developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.3 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as "(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species." The Act goes on to define "conservation" as "the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary."

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.

The USFWS designates critical habitat for a species by identifying general areas likely to contain the species' "primary constituent elements," or physical or biological features of the landscape that the species needs to survive and reproduce. Although a unit of critical habitat for a particular species may be quite large, only those lands within the unit that contain the species' primary constituent elements are actually considered critical habitat by the USFWS.

3.4 THREATENED AND ENDANGERED SPECIES

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as "threatened" or "endangered" under one or both Acts, and/or as "rare" under CESA. Under both Acts, "endangered" means a species is in danger of extinction throughout all or a significant portion of its range, and "threatened" means a species is likely to

become endangered within the foreseeable future. Under CESA, "rare" means a species may become endangered if their present environment worsens. Both Acts prohibit "take" of listed species, defined under CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86), and more broadly defined under FESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3).

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.5 CALIFORNIA FULLY PROTECTED SPECIES

The classification of certain animal species as "fully protected" was the State of California's initial effort in the 1960s, prior to the passage of the California Endangered Species Act, to identify and provide additional protection to those species that were rare or faced possible extinction. Following CESA enactment in 1970, many fully protected species were also listed as California threatened or endangered. Fully protected species are identified, and their protections stipulated, in California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and fish (5515). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except in conjunction with necessary scientific research and protection of livestock.

3.6 MIGRATORY BIRDS

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds

native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities. Moreover, the California Migratory Bird Protection Act, enacted in September 2019, clarifies native bird protection and increases protections where California law previously deferred to federal law.

3.7 BIRDS OF PREY

Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.8 NESTING BIRDS

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

3.9 WETLANDS AND OTHER JURISDICTIONAL WATERS

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA's passage in 1972. A variety of regulatory definitions have been promulgated by the two

federal agencies responsible for implementing the CWA, the Environmental Protection Agency (EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Most recently, waters of the U.S. were defined by the Navigable Waters Protection Rule (NWPR). The new rule was published in the Federal Register on April 21, 2020, and took effect on June 22, 2020. However, on August 30, 2021, in the case of *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency*, the U.S. District Court for the District of Arizona vacated and remanded the NWPR. In light of this order, the EPA and USACE have halted implementation of the NWPR and, until further notice, are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime.

The interpretation of waters of the U.S. prior to 2015 generally included:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a jurisdictional water.

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the

condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all waters of the State, even those that are not also waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

4.0 IMPACTS AND MITIGATIONS

This impact assessment assumes that a majority of project impacts will be temporary resulting from staging of equipment, vehicles, and materials, as well as an unknown quantity of buried pipeline. Permanent impacts will occur in the following areas: 1) within an approximate 0.5-acre area of wetland/riparian habitat from the installation of a box culvert crossing; 2) within an approximate 1.0-acre area of grassland habitat from the installation of a turnout connection, filter station, and flush pipeline; 3) an unknown area of above ground pipeline installation, which is anticipated to be a very small impact area likely associated with the small footprints of regularly spaced pipeline supports; and 4) within an approximate 0.06-acre area of aquatic habitat within the LBCDR from the installation of a boat ramp extension.

4.1 SIGNIFICANCE CRITERIA

NEPA

Federal projects are subject to the provisions of NEPA. The purpose of NEPA is to assess the effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures that if implemented would mitigate those effects. As used in NEPA, a determination that certain effects on the human environment are "significant" requires considerations of both context and intensity (see 40 CFR 1508.27).

Context means that significance must be analyzed in terms of the affected environment in which a proposed action would occur ("action area"). For the purposes of assessing effects of an action on biological resources, the relevant context is often local. The analysis requires a comparison of the action area's biological resources to the biological resources of the local area within which the action area is located. The analysis may, however, require a comparison of the action area's biological resources with the biological resources of an entire region.

Intensity refers to the severity of impact. In considering the intensity of impact to biological resources, it is necessary to address the unique qualities of wetlands and ecologically critical areas that may be affected by the action, the degree to which the action will be controversial, the degree to which the effects of the action will be uncertain, the degree to which the action will

establish a precedent for future actions that may result in significant effects, and the potential for the action to result in cumulatively significant effects.

The effects of an action on some biological resources are generally considered to be "significant." Actions that adversely affect federally listed threatened and endangered species and Waters of the U.S. are two examples. Other examples include actions that impede the migratory movements of fish and wildlife, and actions that substantially reduce the areal extent of fish and wildlife habitat, especially if habitat loss occurs in areas identified by state and federal governments as ecologically sensitive or of great scenic value.

NEPA requires mitigation for the effects of an action on the environment. Suitable measures include the following:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

This report identifies likely project impacts, identifies those that may be considered "significant" per the provisions of NEPA, and recommends mitigation measures, if any, that would avoid significant impact to biological resources.

CEQA

Approval of general plans, area plans, and specific projects is subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are carried out. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced.

Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Although the lead agency may set its own CEQA significance thresholds, project impacts to biological resources are generally considered to be significant if they would meet any of the following criteria established in Appendix G of the CEQA Guidelines:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

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

- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make "mandatory findings of significance" if the project has the potential to:

> "Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory."

4.2 POTENTIALLY SIGNIFICANT PROJECT IMPACTS

4.2.1 Project-Related Disturbance of Nesting Swainson's Hawks

Potential Impacts. A Swainson's hawk was sighted flying over the project APE during the field survey and this species has been documented nesting in riparian trees along the south shore of the LBCDR.

Potential foraging habitat for this species is present within grasslands of the APE. Project impacts to potential foraging habitat would be temporary in areas of buried pipeline and negligible in areas were the pipeline is installed above ground. In addition, an acre of grassland habitat will be permanently impacted from the proposed turnout connection, filter station, and flush pipeline. Because permanent impacts to foraging habitat are small and there are many square miles of similar foraging habitat in the region, impacts to Swainson's hawks from loss of foraging habitat would be less than significant.

Although suitable nesting habitat is absent from the project site itself, trees near the APE at the LBCDR and at the State Recreation Area entrance station could potentially be utilized by Swainson's hawks for nesting. If Swainson's hawks are nesting in trees near the APE at the time of construction, these activities could compromise Swainson's hawk nesting success. Construction-related disturbance of nesting Swainson's hawks is considered a potentially significant impact of the project.

Mitigation. To avoid and minimize the potential for construction-related disturbance of nesting Swainson's hawks, the applicant will implement the following measures.

***Mitigation Measure 4.2.1a* (*Construction Timing*).** If feasible, the project will be constructed outside the Swainson's hawk nesting season, typically defined as March 1-September 15.

***Mitigation Measure 4.2.1b* (*Surveys*).** If project elements must be initiated between March 1 and September 15, a qualified biologist will conduct surveys for Swainson's hawk nests on and within ½ mile of the project APE following the survey methods and timing prescribed by the Swainson's hawk Technical Advisory Committee (SHTAC) 2000 *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*.

***Mitigation Measure 4.2.1c* (*Avoidance*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of these measures will reduce project-related impacts to the Swainson's hawk to a less than significant level and ensure compliance with state and federal laws protecting this species.

4.2.2 Project-Related Mortality or Disturbance of Burrowing Owl

Potential Impacts. Grassland habitat within the APE provides potential habitat for this species. Although burrowing owls have not been documented within 4 miles of the project APE and no evidence of burrowing owl occupation of the APE was detected during LOA's field survey, they are known to occur within similar habitat within the region. It is possible that this species could migrate onto grasslands of the APE prior to construction.

Burrowing owls are highly mobile while foraging and it is anticipated that any burrowing owls attempting to forage on site at the time of construction would simply fly away from construction disturbance. Project impacts to potential foraging habitat would be temporary in areas of buried pipeline and negligible in areas were the pipeline is installed above ground. In addition, an acre of grassland habitat will be permanently impacted from the proposed turnout connection, filter station, and flush pipeline. Because permanent impacts to burrowing owl habitat are small and there are many square miles of similar habitat in the region, impacts to burrowing owls from loss of habitat would be less than significant.

However, if burrowing owls are occupying burrows on or near the APE at the time of construction or ground-disturbing operations, owls could be vulnerable to project-related injury or mortality. If construction or ground-disturbing operations occur during the nesting season, burrowing owls could be disturbed by these activities and abandon their young. Project-related injury, mortality, or disturbance of burrowing owls is considered a potentially significant impact.

Mitigation. In order to minimize construction-related impacts to burrowing owls, the applicant will implement the following measures:

> ***Mitigation Measure 4.2.2a (Take Avoidance Surveys).*** Take avoidance surveys for burrowing owls will be conducted by a qualified biologist within 30 days prior to the start of construction within grassland habitat of the site. The surveys will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey will cover grassland work areas and adjacent lands within 200 meters, where potential nesting or roosting habitat is present ("survey area").
>
> ***Mitigation Measure 4.2.2b (Avoidance of Nest Burrows).*** If construction activities within grassland habitats are to occur during the breeding season (February 1-August 31) and active nest burrows are identified within the survey area, a 200-meter disturbance-free buffer will be established around each burrow. The buffers will be enclosed with temporary fencing to prevent encroachment by construction equipment and workers. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season, passive relocation of any remaining owls may take place as described below.
>
> ***Mitigation Measure 4.2.2c (Avoidance or Passive Relocation of Resident Owls).*** During the non-breeding season (September 1-January 31), resident owls occupying burrows in work areas may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the work area during the non-breeding season, a 50-meter disturbance-free buffer will be established around these burrows. If a 50-meter disturbance-free buffer is not feasible, then a qualified biologist will determine a minimum buffer distance based on site conditions and the biologist will be on site to monitor the owls during all activities conducted within 50 meters to ensure that the owls are not harmed. Buffers will be enclosed with temporary fencing, and will remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity will be conducted in accordance with a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures will reduce potential impacts to the burrowing owl from project-related injury, mortality, or disturbance to a less than significant level and will ensure that the project is in compliance with state and federal laws protecting this species.

4.2.3 Potential Project Impacts to Nesting Birds Including the Tricolored Blackbird and Loggerhead Shrike

Potential Impacts. The project site has the potential to be used for nesting by a variety of birds protected by state and federal law, including the tricolored blackbird protected by the California Endangered Species Act and the loggerhead shrike, a Species of Special Concern. Avian nesting could occur in trees, shrubs, or ground vegetation. If project construction takes place during the nesting season, birds nesting on the site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the project site. Construction-related mortality of nesting birds and disturbance leading to nest abandonment would violate state and federal laws and constitute significant impacts of the project.

Mitigation. To avoid and minimize the potential for construction-related mortality/disturbance of nesting birds, including the tricolored blackbird and the loggerhead shrike, the following measures will be implemented:

> ***Measure 4.2.3a (Construction Timing).*** If feasible, the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31.
>
> ***Measure 4.2.3b (Preconstruction Surveys*)**. If construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e. birds of prey).
>
> ***Measure 4.2.3c (Avoidance of Active Nests*)**. Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will ensure that the project does not significantly impact nesting birds, including the tricolored blackbird and the loggerhead shrike, and that the project is in compliance with state and federal laws.

4.2.4 Project-related Mortality or Disturbance of American Badger

Potential Impacts. The American badger, a California Species of Special Concern, is a wide-ranging animal with the potential to forage and/or den within grasslands of the project APE. In fact, potential badger dens and diggings were observed during LOA's field survey. The project would result in the loss of potential habitat for this species amounting to approximately 1.0 acre and a negligible area under any above ground pipeline sections within grassland habitat of the APE. Many square miles of similar habitat occur outside the APE. As a result, impacts to American badger due to the loss of habitat are considered less than significant. However, any individuals of this species present on site at the time of construction may be at risk of construction-related injury or mortality, particularly if they are raising young on the site. Construction-related mortality of American badgers would be considered a significant impact of the project.

Mitigation. The following measures will be implemented for the protection of the American badger:

> ***Mitigation Measure 4.2.4a (Pre-disturbance Surveys).*** A pre-disturbance survey for American badgers will be conducted by a qualified biologist within 30 days prior to the start of construction. The survey area will include grassland areas within the APE and surrounding lands within 250 feet.
>
> ***Mitigation Measure 4.2.4b (Avoidance).*** Any non-maternity dens identified during the pre-disturbance survey shall be flagged and avoided with a minimum 50-foot no-disturbance buffer until a qualified biologist has determined that the den is no longer in use. Any maternity dens identified during pre-disturbance surveys shall be flagged and avoided, if feasible, with a minimum 200-foot no-disturbance buffer for the duration of the pup-rearing season, typically February 15 to July 1.
>
> ***Mitigation Measure 4.2.4c (Minimization).*** If a maternity den cannot feasibly be avoided, CDFW must be contacted to identify appropriate minimization measures prior to initiating any disturbance that would affect the den, including potential passive relocation by excavation before or after the rearing season.

Implementation of these measures will reduce potential project impacts to the American badger to a less than significant level.

4.2.5 Project-related Mortality or Disturbance of San Joaquin Kit Fox

Potential Impacts. Grasslands within the project APE provide potential foraging and denning habitat for the San Joaquin kit fox (SJKF). While kit fox have not been documented within the State Recreation Area at Los Banos Reservoir, SJKF studies by Smith et al. (2006) and Constable et al. (2009) suggest a persistent but low-density kit fox population present on lands just south of Santa Nella from about the Agua Fria conservation lands south to Little Panoche Road. Because the SJKF is wide-ranging and adaptable, there is some potential for individual SJKF to pass through and temporarily utilize the site from time to time. If one or more individuals of this species are present on or near the project APE at the time of construction or ground-disturbing operations, they may be vulnerable to project-related injury or mortality. SJKF mortality as a result of project activities would violate the state and federal Endangered Species Acts and is considered a potentially significant impact.

The amount of regionally available foraging habitat lost to project development will be negligible. Underground installation of the proposed pipeline will temporarily disturb lands that could occasionally be used by the SJKF. Following pipeline construction, all such areas will return to pre-project conditions and are expected to assume their former level of suitability for this species. Permanent project impacts will be limited to a 1.0-acre area of grassland habitat within the APE and a negligible area under any above ground pipeline sections. After project completion many square miles of SJKF foraging habitat will continue to occur within the region. For these reasons, project-related loss of potential SJKF habitat is considered less than significant.

Mitigation. To avoid and minimize the potential for project-related injury or mortality of the SJKF, the following measures adapted from the U.S. Fish and Wildlife Service 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix D) will be implemented.

Mitigation Measure 4.2.5a (Pre-construction Surveys). Preconstruction surveys for the San Joaquin kit fox shall be conducted on and within 200 feet of the project site, no less than 14 days and no more than 30 days prior to the start of ground disturbance activities on the site. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on and adjacent to the site and evaluate their use by kit foxes.

Mitigation Measure 4.2.5b (Avoidance). Should active kit fox dens be detected during preconstruction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

Mitigation Measure 4.2.5c (Minimization). Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes in accordance with the USFWS *Standardized Recommendations*. The applicant shall implement all minimization measures presented in the Construction and On-going Operational Requirements section of the *Standardized Recommendations*, including, but not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g. pipes), as well as installation of escape structures in open trenches (e.g. wood or earthen ramps), to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash. See Appendix E for more details.

Mitigation Measure 4.2.5d (Employee Education Program). Prior to the start of construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation. The training will include a handout with all of the training information included in it. The applicant will use this handout to train any construction personnel that were not in attendance at the first meeting, prior to those personnel starting work on the site.

Mitigation Measure 4.2.5e (Mortality Reporting). The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures will reduce potential impacts to the SJKF to a less than significant level and ensure compliance with state and federal laws protecting this species.

4.3 LESS THAN SIGNIFICANT PROJECT IMPACTS

4.3.1 Project Impacts to Special Status Plant Species

Potential Impacts. Eighteen (18) special status plant species have been documented in the project vicinity (see Table 2). All 18 of these species are considered absent or unlikely to occur on the project site due to the absence of suitable habitat, the fact that they were not found on site when they should have been readily detectable, and/or the site's location outside the species' range. The proposed project is not expected to adversely affect individuals or regional populations of the 18 special status plant species analyzed, and impacts are considered less than significant.

Mitigation. Mitigation measures are not warranted.

4.3.2 Project Impacts to Special Status Animal Species Absent from, or Unlikely to Occur, within the Project Site

Potential Impacts. Of the 28 special status animal species that potentially occur in the general vicinity of the site, 16 are considered absent or unlikely to occur within the project site due to the absence of suitable habitat, and/or the project site's being situated outside of the species' known distribution (see Table 2). These include the longhorn fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Delta smelt, California tiger salamander, foothill yellow-legged frog, California red-legged frog, blunt-nosed leopard lizard, giant garter snake, giant kangaroo rat, Fresno kangaroo rat, San Joaquin antelope squirrel, San Joaquin kit fox, Northern California legless lizard, western spadefoot, and yellow rail. The project is expected to have no effect on these species through construction mortality/disturbance or loss of habitat because there is little or no likelihood that they are present.

Mitigation. Mitigation is not warranted.

4.3.3 Project Impacts to Special Status Species Potentially Occurring on the Site as Foragers Only

Potential Impacts. Five (5) species may utilize the site for foraging but would nest and roost elsewhere. These species are the monarch butterfly, bald eagle, golden eagle, northern harrier, and California mastiff bat. Since these species are highly mobile while foraging, the project is not expected to result in construction related mortality of individuals that may occur on the site prior to or during construction. The project site does not represent unique or important foraging habitat for these species, with many square miles of similar habitat present in the region. Furthermore, upon project completion, foraging habitat conditions will remain essentially unchanged from pre-project conditions. Therefore, project impacts to the monarch butterfly, bald eagle, golden eagle, northern harrier, and California mastiff bat are considered a less than significant impact.

Mitigation. Mitigation is not warranted.

4.3.4 Project Impacts to Western Pond Turtle

Potential Impacts. The western pond turtle may occur in aquatic habitat associated the LBCDR. Nesting and overwintering of turtles in the uplands of the APE adjacent to aquatic habitat are not expected due to paved and compacted surfaces and the high level of human activity associated with the boat ramp, parking lot, and picnic area in these areas. The wetland/riparian habitat provides unsuitable habitat for this species due to the dense stand of emergent vegetation inhibiting movement, foraging, and basking activity. Project buildout would not result in a significant loss of habitat and turtles potentially in the vicinity of the project APE would easily escape threatening project-related disturbance by swimming away. As a result, the project would not result in a significant adverse impact to western pond turtles.

Mitigation. Mitigation is not warranted.

4.3.5 Project Impacts to San Joaquin Coachwhip

Impact. A total of four individual San Joaquin coachwhip snakes have been documented in the CNDDB by a single surveyor in 1985. Grassland habitat within the project APE provides suitable habitat for this species and it is possible that one or more individual San Joaquin coachwhip snakes could potentially occur within these areas. If these snakes were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Therefore, construction-related mortality of the San Joaquin coachwhip is considered a less than significant impact of the project.

The project will result in the loss of approximately 1 acre of non-native grassland currently suitable for the San Joaquin coachwhip. Because many square miles of similar habitat occur in the region, the loss of an acre of grassland habitat is considered a less than significant impact to this species.

Mitigation. Mitigation is not warranted.

4.3.6 Potential Project Impacts to Waters of the State and U.S.

Potential Impacts. Likely jurisdictional waters on the site comprise the wetland/riparian and aquatic areas of the APE. The project will result in fill of approximately 0.4 acres of waters of the State and U.S. Most of these impacts will occur at the existing road crossing of Los Banos Creek. This area experiences regular disturbance from vehicle traffic and has been historically disturbed through the installation of the concrete ford, vegetation removal, and the placement of rock in the area. Approximately 0.06 acres of aquatic areas to be impacted by the boat ramp extension would be miniscule in comparison to the vast amount of aquatic habitat associated with the LBCDR. Because project-related impacts to waters of the State and U.S. are relatively small, and because the affected waters are regularly and historically disturbed, these impacts are considered less than significant. However, it should be noted that appropriate agency permits will be needed for activities within the jurisdictional boundaries of onsite aquatic resources.

Mitigation. Mitigation is not warranted.

4.3.7 Project Impacts to Riparian Habitat and Sensitive Natural Communities

Potential Impacts. Designated sensitive natural communities are absent from the APE. A small area of riparian habitat will be permanently impacted by project implementation, resulting in the potential loss of up to two native riparian trees (Fremont cottonwoods) and two non-native trees (a eucalyptus and paloverde tree), as well as a few riparian shrubs. Such a small loss of native riparian trees and shrubs is considered a less than significant impact. However, it should be noted that CDFW will need to be notified of project activities in this area and will likely require a Lake and Streambed Alteration Agreement, which will require replacement of any native riparian trees and shrubs removed by the project.

4.3.8 Project Impacts to Wildlife Movement Corridors

Potential Impacts. While the Los Banos Creek corridor historically served as a likely travel route for fish and wildlife between the foothill and valley habitats, the installation of the dam just upstream of the creek at the APE has greatly diminished the value of the creek corridor, here, for fish and wildlife. As a result, the APE does not provide a significant movement corridor for fish or wildlife and the project will not have a significant effect on wildlife movement corridors.

Mitigation. Mitigation is not warranted.

4.3.9 Project Impacts to Critical Habitat

Potential Impacts. The project will have no effect on designated critical habitat because critical habitat is absent from the project site and adjacent lands.

Mitigation. Mitigation is not warranted.

4.3.10 Local Policies or Habitat Conservation Plans

Potential Impacts. The proposed project design appears to be consistent with the goals and policies of the Merced County General Plan. No habitat conservation plans are known to pertain to the area containing the project site.

Mitigation. No mitigation is required.

4.4 SECTION 7 DETERMINATIONS FOR FEDERALLY LISTED SPECIES

The following table summarizes project effect determinations for Federally Listed Species found on the USFWS IPaC list and CNDDB list generated for the project Action Area.

Table 3: Section 7 Determinations for Federally Listed Species

Species	Determination	Rationale for the Determination
Longhorn Fairy Shrimp (*Branchinecta longiantenna*)	***No effect***	• Habitat absent
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	***No effect***	• Habitat absent
Monarch Butterfly (*Danaus plexippus*)	***No effect***	• Larval habitat absent • Possible foraging adults expected to flee site disturbance
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	***No effect***	• Habitat absent
Delta Smelt (*Hypomesus transpacificus*)	***No effect***	• Habitat absent • Project site out of species' range
California Tiger Salamander (*Ambystoma californiense*)	***No effect***	• Species not expected to occur on or near the project APE.
Foothill Yellow-legged Frog (*Rana draytonii*)	***No effect***	• Habitat absent to unsuitable • Species not expected to occur on or near the project APE.
California Red-legged Frog (*Rana draytonii*)	***No effect***	• Habitat absent to extremely marginal • Species not expected to occur on or near the project APE.
Giant Garter Snake (GGS) (*Thamnophis gigas*)	***No effect***	• Project site out of species' range
Blunt-Nosed Leopard Lizard (*Gambelia sila*)	***No effect***	• Habitat absent to marginal • Species not expected to occur on or near the project APE.
Giant Kangaroo Rat (*Dipodomys ingens*)	***No effect***	• Project site out of species' range
Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)	***No effect***	• Project site out of species' range
San Joaquin Kit Fox (SJKF) (*Vulpes macrotis mutica*)	***May Effect, Not Likely to Adversely Effect***	• Species known to occur in the region. • USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance will be implemented

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APPENDIX A:

VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The plant species listed below were observed on the project site during surveys conducted by Live Oak Associates, Inc. on June 1, 2022. The U.S. Fish and Wildlife Service Arid West wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
NR - No review
NA - No agreement
NI - No investigation

ASTERACEAE - Sunflower Family		
Ambrosia acanthicarpa	Annual Bursage	UPL
Baccharis salicifolia	Mule Fat	FAC
Centaurea melitensis	Tocalote	UPL
Centromadia pungens	Common Spikeweed	FAC
Helianthus annuus	Annual Sunflower	FACU
Grindelia camporum	Great Valley Gumweed	FACW
Lactuca serriola	Prickly Lettuce	FACU
Lessingia glandulifera	Valley Lessingia	UPL
Xanthium strumarium	Rough Cocklebur	FAC
BORAGINACEAE - Borage Family		
Amsinckia menziesii	Small Flowered Fiddleneck	UPL
Heliotropium curassavicum	Seaside Heliotrope	FACU
BRASSICACEAE - Mustard Family		
Hirschfeldia incana	Short-podded Mustard	UPL
Lepidium latifolium	Broadleaved peppergrass	FACW
Sisymbrium irio	London Rocket	UPL
CHENOPODIACEAE – Goosefoot Family		
Salsola sp.	Russian Thistle	FACU
CYPERACEAE - Sedge Family		
Schoenoplectus americanus	Chairmaker's bulrush	OBL
EUPHORBIACEAE – Spurge Family		
Croton setigerus	Doveweed	UPL
FABACEAE—Pea Family		
Acmispon wrangelianus	Wrangel’s Lotus	UPL
Lotus corniculatus	Bird’s Foot Trefoil	FAC
Parkinsonia aculeata	Mexican Palo Verde	FAC
Prosopis glandulosa	Honey Mesquite	FACU
Medicago polymorpha	Bur Clover	FACU
Melilotus indicus	Sweetclover	FACU
GERANIACEAE - Geranium Family		
Erodium cicutarium	Red-stemmed Filaree	UPL

JUNCACEAE - Rush Family		
Juncus effusus	Bog Rush	FACW
LAMIACEAE – Mint Family		
Marrubium vulgare	Horehound	FACU
Trichostema lanceolatum	Vinegar Weed	FACU
MYRTACEAE – Myrtle Family		
Eucalyptus globulus	Bluegum	UPL
POACEAE - Grass Family		
Avena fatua	Wild Oat	UPL
Bromus diandrus	Ripgut	UPL
Bromus hordeaceus	Soft Chess	FACU
Bromus madritensis	Red Brome	UPL
Cynodon dactylon	Bermuda Grass	FACU
Distichlis spicata	Saltgrass	FAC
Festuca myuros	Rattail Sixweeks Grass	FACU
Polypogon monspeliensis	Rabbit's Foot Grass	FACW
POLYGONACEAE - Buckwheat Family		
Rumex crispus	Curly Dock	FAC
SALICACEAE – Willow Family		
Populus fremontii	Fremont's Cottonwood	UPL
Salix gooddingii	Goodding's Black Willow	FACW
SOLANACEAE – Nightshade Family		
Datura wrightii	Jimsonweed	UPL
TYPHACEAE – Cattail Family		
Typha latifolia	Broad-leaved Cattail	OBL

APPENDIX B:
TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed on or adjacent to the project site during surveys conducted by Live Oak Associates, Inc. on June 1, 2022 have been noted with an asterisk.

CLASS: AMPHIBIA (Amphibians)
ORDER: SALIENTIA (Frogs and Toads)
FAMILY: BUFONIDAE (True Toads)
Western Toad (*Bufo boreas*)
FAMILY: HYLIDAE (Treefrogs and relatives)
Sierran Treefrog (*Pseudacris sierra*)
FAMILY: RANIDAE (True Frogs)
*Bullfrog (*Lithobates catesbeianus*)

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Western Fence Lizard (*Sceloporus occidentalis*)
Side-blotched Lizard (*Uta stansburiana*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Racer (*Coluber constrictor*)
Pacific Gopher Snake (*Pituophis catenifer catenifer*)
Common Kingsnake (*Lampropeltis getulus*)
Common Garter Snake (*Thamnophis sirtalis*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)
ORDER: PELECANIFORMES (Tropicbirds, Pelecans and Relatives)
FAMILY: PHALACROCORACIDAE (Cormorants)
Double-Crested Cormorant (*Phalacrocorax auritus*)
ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)
FAMILY: ARDEIDAE (Herons and Bitterns)
*Great Blue Heron (*Ardea herodias*)
Snowy Egret (*Egretta thula*)
*Great Egret (*Ardea alba*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)
ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)

FAMILY: ANATIDAE (Swans, Geese and Ducks)
Canada Goose (*Branta canadensis*)
Mallard (*Anas platyrhynchos*)
Ring-necked Duck (*Aythya collaris*)
Common Goldeneye (*Bucephala clangula*)
Common Merganser (*Mergus merganser*)
Ruddy Duck (*Oxyura jamaicensis*)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Northern Harrier (*Circus cyaneus*)
Cooper's Hawk (*Accipiter cooperi*)
Red-shouldered Hawk (*Buteo lineatus*)
*Swainson's Hawk (*Buteo swainsoni*)
*Red-tailed Hawk (*Buteo jamaicensis*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
FAMILY: ODONTOPHORIDAE (New World Quail)
*California Quail (*Callipepla californica*)
ORDER: PODICIPEDIFORMES (Grebes and Relatives)
FAMILY: PODICIPEDIDAE (Grebes)
Pied-Billed Grebe (*Podilymbus podiceps*)
Eared Grebe (*Podiceps nigricollis*)
Western Grebe (*Aechmophorus occidentalis*)
*Clark's Grebe (*Aechmophorus clarkii*)
ORDER: GRUIFORMES (Cranes, Rails and Relatives
FAMILY: RALLIDAE (Rails, Gallinules, and Coots)
*American Coot (*Fulica Americana*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)
*Killdeer (*Charadrius vociferus*)
FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)
Ring-billed Gull (*Larus delawarensis*)
California Gull (*Larus californicus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
*Mourning Dove (*Zenaida macroura*)
*Eurasian Collared-Dove (*Streptopelia decaocto*)
*Rock Pigeon (*Columba livia*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Great Horned Owl (*Bubo virginianus*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: APODIFORMES (Swifts)
White-throated Swift (*Aeronautes saxatalis*)

FAMILY: TROCHILIDAE (Hummingbirds)
Black-chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)

ORDER: CORACIIFORMES (Kingfishers and Relatives)

FAMILY: ALCEDINIDAE (Kingfishers)
Belted Kingfisher (*Megaceryle alcyon*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)
Red-breasted Sapsucker (*Sphyrapicus ruber*)
Nuttall's Woodpecker (*Picoides nuttallii*)
Downy Woodpecker (*Picoides pubescens*)
Northern Flicker (*Colaptes auratus*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
*Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)
*Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)
*California Scrub Jay (*Aphelocoma calfornica*)
American Crow (*Corvus brachyrhynchos*)
*Common Raven (*Corvus corax*)

FAMILY: ALAUDIDAE (Larks)
*Horned Lark (*Eremophila alpestris*)

FAMILY: HIRUNDINIDAE (Swallows)
Tree Swallow (*Tachycineta bicolor*)
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Cliff Swallow (*Hirundo pyrrhonota*)
*Barn Swallow (*Hirundo rustica*)

FAMILY: AEGITHALIDAE
Bushtit (*Psaltriparus minimus*)

FAMILY: TROGLODYTIDAE (Wrens)
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (Kinglets)
Ruby-crowned Kinglet (*Regulus calendula*)

FAMILY: TURDIDAE
*American Robin (*Turdus migratorius*)
Western Bluebird (*Sialia mexicana*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)

FAMILY: STURNIDAE (Starlings)
European Starling (*Sturnus vulgaris*)

FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubrescens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Yellow-rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Sparrows and Relatives)
Song Sparrow (*Melospiza melodia*)
Savannah Sparrow (*Passerculus sandwichensis*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
*Red-winged Blackbird (*Agelaius phoeniceus*)
Tricolored Blackbird (*Agelaius tricolor*)
Western Meadowlark (*Sturnella neglecta*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
Great-Tailed Grackle (*Quiscalus mexicanus*)
Brown-headed Cowbird (*Molothrus ater*)
*Bullock's Oriole (*Icterus bullockii*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)
FAMILY: FRINGILLIDAE (Finches)
*House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)

CLASS: MAMMALIA (Mammals)
ORDER: DIDELPHIMORPHIA (Marsupials)
FAMILY: DIDELPHIDAE (Opossums)
Virginia Opossum (*Didelphis virginiana*)
ORDER: INSECTIVORA (Shrews and Moles)
FAMILY: TALPIDAE (Moles)
Broad-footed Mole (*Scapanus latimanus*)
ORDER: CHIROPTERA (Bats)
FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)
Southern Long-nosed Bat (*Leptonycteris curasoae*)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Pale Big-eared Bat (*Corynorhinus townsendii pallescens*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
Audubon's Cottontail (*Sylvilagus audubonii*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

*California Ground Squirrel (*Otospermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

*Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)

Heermann's Kangaroo Rat *(Dipodomys heermanni)*

FAMILY: MURIDAE (Old World Rats and Mice)

Western Harvest Mouse (*Reithrodontomys megalotis*)

Deer Mouse (*Peromyscus maniculatus*)

House Mouse (*Mus musculus*)

California Vole (*Microtus californicus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and relatives)

Coyote (*Canis latrans*)

FAMILY: PROCYONIDAE (Raccoons and relatives)

Raccoon (*Procyon lotor*)

FAMILY: MEPHITIDAE (Skunks)

Striped Skunk (*Mephitis mephitis*)

APPENDIX C:

SELECTED SITE PHOTOGRAPHS

Photo 1: Wetland/Riparian habitat within the project APE at the location of the proposed road improvements over Los Banos Creek.

Photo 2: Another view of wetland/riparian habitat within the project APE.

Photo 3: Example of ruderal/developed habitat within the project APE.

Photo 4: Non-native grassland habitat within project APE. This area appears to have been historically graded.

Photo 5: Another view of grassland habitat within the project APE. This section near the LBCDR appears to be an area of historic fill that occurred near the time of LBCDR construction that provided access to the lake.

Photo 6: Ruderal/developed habitat associated with the existing boat ramp in foreground. Aquatic habitat associated with the LBCDR in background.

APPENDIX D:
USFWS INFORMATION FOR PLANNING AND CONSULTATION UNOFFICIAL SPECIES LIST

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Merced County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600

(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Fresno Kangaroo Rat Dipodomys nitratoides exilis Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5150	Endangered
Giant Kangaroo Rat Dipodomys ingens Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened

California Tiger Salamander Ambystoma californiense — Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the

endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

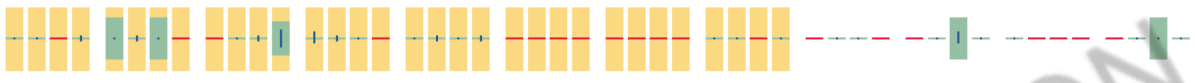
Bald Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

California Thrasher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Clark's Grebe BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

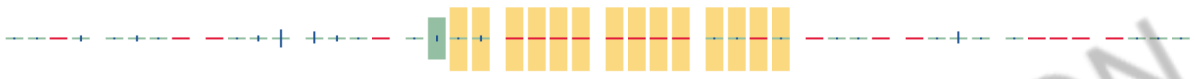
Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Lawrence's Goldfinch BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Olive-sided Flycatcher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tricolored Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Magpie BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of

data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source

imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX E:
USFWS STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. 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 and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. **The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source 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 representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - 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 kit fox. 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 kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Appendix D: Cultural Resources

Appendix E: Air Quality

SLWD Los Banos Creek Detention Reservoir Regulation and Storage Project - Merced County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SLWD Los Banos Creek Detention Reservoir Regulation and Storage Project

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.00	1000sqft	0.07	3,000.00	0
Parking Lot	0.40	1000sqft	0.01	400.00	0
Other Non-Asphalt Surfaces	4.06	Acre	4.06	176,853.60	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	49
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Boat Ramp Extention = 3000 sqft
Box Culvert = 400 sqft
3542 Linear feet piping x 50 feet width = piping APE

Construction Phase - Updated Construction Schedule

Off-road Equipment - Trenching equipment

Grading - Acres graded

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	10.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	8.00	15.00
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	PhaseEndDate	9/4/2024	12/1/2023
tblConstructionPhase	PhaseEndDate	10/18/2023	11/17/2023
tblConstructionPhase	PhaseEndDate	9/30/2024	12/15/2023
tblConstructionPhase	PhaseEndDate	10/6/2023	10/27/2023
tblConstructionPhase	PhaseStartDate	10/19/2023	11/18/2023
tblConstructionPhase	PhaseStartDate	10/7/2023	10/28/2023
tblConstructionPhase	PhaseStartDate	9/5/2024	12/2/2023
tblGrading	AcresOfGrading	15.00	8.00
tblGrading	AcresOfGrading	30.00	7.50
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0624	0.6017	0.5275	1.0800e-003	0.2451	0.0270	0.2721	0.1280	0.0249	0.1529	0.0000	95.2294	95.2294	0.0264	6.5000e-004	96.0822
2024	0.0407	0.4009	0.3680	8.8000e-004	4.0300e-003	0.0165	0.0205	1.0700e-003	0.0152	0.0162	0.0000	77.4395	77.4395	0.0241	9.0000e-005	78.0685
Maximum	**0.0624**	**0.6017**	**0.5275**	**1.0800e-003**	**0.2451**	**0.0270**	**0.2721**	**0.1280**	**0.0249**	**0.1529**	**0.0000**	**95.2294**	**95.2294**	**0.0264**	**6.5000e-004**	**96.0822**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0624	0.6017	0.5275	1.0800e-003	0.1024	0.0270	0.1294	0.0517	0.0249	0.0766	0.0000	95.2293	95.2293	0.0264	6.5000e-004	96.0821
2024	0.0407	0.4009	0.3680	8.8000e-004	4.0300e-003	0.0165	0.0205	1.0700e-003	0.0152	0.0162	0.0000	77.4394	77.4394	0.0241	9.0000e-005	78.0684
Maximum	**0.0624**	**0.6017**	**0.5275**	**1.0800e-003**	**0.1024**	**0.0270**	**0.1294**	**0.0517**	**0.0249**	**0.0766**	**0.0000**	**95.2293**	**95.2293**	**0.0264**	**6.5000e-004**	**96.0821**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**57.29**	**0.00**	**48.78**	**59.09**	**0.00**	**45.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-4-2023**	**12-3-2023**	0.5488	0.5488
2	**12-4-2023**	**3-3-2024**	0.4323	0.4323
3	**3-4-2024**	**6-3-2024**	0.1262	0.1262
		Highest	0.5488	0.5488

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0154	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.1101	0.1101	2.0000e-005	0.0000	0.1112
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0154**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1102**	**0.1102**	**2.0000e-005**	**0.0000**	**0.1113**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0154	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.1101	0.1101	2.0000e-005	0.0000	0.1112
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0154**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1102**	**0.1102**	**2.0000e-005**	**0.0000**	**0.1113**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/30/2023	10/27/2023	5	20	
2	Grading	Grading	10/28/2023	11/17/2023	5	15	
3	Building Construction	Building Construction	11/18/2023	12/1/2023	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	12/2/2023	12/15/2023	5	10	
5	Trenching	Trenching	12/16/2023	3/29/2024	5	75	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 8

Acres of Paving: 4.14

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Trenching	Crawler Tractors	2	8.00	212	0.43
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Trenching	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

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Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Trenching	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	76.00	30.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1846	0.0000	0.1846	0.0997	0.0000	0.0997	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.2752	0.1824	3.8000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	33.4507	33.4507	0.0108	0.0000	33.7212
Total	**0.0266**	**0.2752**	**0.1824**	**3.8000e-004**	**0.1846**	**0.0127**	**0.1973**	**0.0997**	**0.0117**	**0.1114**	**0.0000**	**33.4507**	**33.4507**	**0.0108**	**0.0000**	**33.7212**

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3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	6.7000e-004	7.6800e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8311	1.8311	5.0000e-005	5.0000e-005	1.8487
Total	**8.6000e-004**	**6.7000e-004**	**7.6800e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8311**	**1.8311**	**5.0000e-005**	**5.0000e-005**	**1.8487**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0720	0.0000	0.0720	0.0389	0.0000	0.0389	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.2752	0.1824	3.8000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	33.4507	33.4507	0.0108	0.0000	33.7211
Total	**0.0266**	**0.2752**	**0.1824**	**3.8000e-004**	**0.0720**	**0.0127**	**0.0847**	**0.0389**	**0.0117**	**0.0506**	**0.0000**	**33.4507**	**33.4507**	**0.0108**	**0.0000**	**33.7211**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	6.7000e-004	7.6800e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8311	1.8311	5.0000e-005	5.0000e-005	1.8487
Total	**8.6000e-004**	**6.7000e-004**	**7.6800e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8311**	**1.8311**	**5.0000e-005**	**5.0000e-005**	**1.8487**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0494	0.0000	0.0494	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0128	0.1345	0.1106	2.2000e-004		5.8100e-003	5.8100e-003		5.3500e-003	5.3500e-003	0.0000	19.5455	19.5455	6.3200e-003	0.0000	19.7035
Total	**0.0128**	**0.1345**	**0.1106**	**2.2000e-004**	**0.0494**	**5.8100e-003**	**0.0552**	**0.0253**	**5.3500e-003**	**0.0306**	**0.0000**	**19.5455**	**19.5455**	**6.3200e-003**	**0.0000**	**19.7035**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	4.2000e-004	4.8000e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1445	1.1445	3.0000e-005	3.0000e-005	1.1554
Total	**5.4000e-004**	**4.2000e-004**	**4.8000e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1445**	**1.1445**	**3.0000e-005**	**3.0000e-005**	**1.1554**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0193	0.0000	0.0193	9.8600e-003	0.0000	9.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0128	0.1345	0.1106	2.2000e-004		5.8100e-003	5.8100e-003		5.3500e-003	5.3500e-003	0.0000	19.5454	19.5454	6.3200e-003	0.0000	19.7035
Total	**0.0128**	**0.1345**	**0.1106**	**2.2000e-004**	**0.0193**	**5.8100e-003**	**0.0251**	**9.8600e-003**	**5.3500e-003**	**0.0152**	**0.0000**	**19.5454**	**19.5454**	**6.3200e-003**	**0.0000**	**19.7035**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4000e-004	4.2000e-004	4.8000e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1445	1.1445	3.0000e-005	3.0000e-005	1.1554
Total	**5.4000e-004**	**4.2000e-004**	**4.8000e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1445**	**1.1445**	**3.0000e-005**	**3.0000e-005**	**1.1554**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8600e-003	0.0719	0.0812	1.3000e-004		3.5000e-003	3.5000e-003		3.2900e-003	3.2900e-003	0.0000	11.5902	11.5902	2.7600e-003	0.0000	11.6592
Total	**7.8600e-003**	**0.0719**	**0.0812**	**1.3000e-004**		**3.5000e-003**	**3.5000e-003**		**3.2900e-003**	**3.2900e-003**	**0.0000**	**11.5902**	**11.5902**	**2.7600e-003**	**0.0000**	**11.6592**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	6.2900e-003	2.1200e-003	3.0000e-005	9.0000e-004	4.0000e-005	9.4000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	2.6707	2.6707	1.0000e-005	4.0000e-004	2.7893
Worker	1.8200e-003	1.4100e-003	0.0162	4.0000e-005	4.7100e-003	3.0000e-005	4.7400e-003	1.2500e-003	2.0000e-005	1.2800e-003	0.0000	3.8657	3.8657	1.1000e-004	1.1000e-004	3.9027
Total	**1.9900e-003**	**7.7000e-003**	**0.0183**	**7.0000e-005**	**5.6100e-003**	**7.0000e-005**	**5.6800e-003**	**1.5100e-003**	**6.0000e-005**	**1.5800e-003**	**0.0000**	**6.5364**	**6.5364**	**1.2000e-004**	**5.1000e-004**	**6.6920**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8600e-003	0.0719	0.0812	1.3000e-004		3.5000e-003	3.5000e-003		3.2900e-003	3.2900e-003	0.0000	11.5902	11.5902	2.7600e-003	0.0000	11.6592
Total	**7.8600e-003**	**0.0719**	**0.0812**	**1.3000e-004**		**3.5000e-003**	**3.5000e-003**		**3.2900e-003**	**3.2900e-003**	**0.0000**	**11.5902**	**11.5902**	**2.7600e-003**	**0.0000**	**11.6592**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	6.2900e-003	2.1200e-003	3.0000e-005	9.0000e-004	4.0000e-005	9.4000e-004	2.6000e-004	4.0000e-005	3.0000e-004	0.0000	2.6707	2.6707	1.0000e-005	4.0000e-004	2.7893
Worker	1.8200e-003	1.4100e-003	0.0162	4.0000e-005	4.7100e-003	3.0000e-005	4.7400e-003	1.2500e-003	2.0000e-005	1.2800e-003	0.0000	3.8657	3.8657	1.1000e-004	1.1000e-004	3.9027
Total	**1.9900e-003**	**7.7000e-003**	**0.0183**	**7.0000e-005**	**5.6100e-003**	**7.0000e-005**	**5.6800e-003**	**1.5100e-003**	**6.0000e-005**	**1.5800e-003**	**0.0000**	**6.5364**	**6.5364**	**1.2000e-004**	**5.1000e-004**	**6.6920**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6900e-003**	**0.0440**	**0.0610**	**9.0000e-005**		**2.1800e-003**	**2.1800e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**8.1893**	**8.1893**	**2.5700e-003**	**0.0000**	**8.2536**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.7000e-004	4.2700e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2500e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0173	1.0173	3.0000e-005	3.0000e-005	1.0270
Total	**4.8000e-004**	**3.7000e-004**	**4.2700e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2500e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0173**	**1.0173**	**3.0000e-005**	**3.0000e-005**	**1.0270**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6900e-003**	**0.0440**	**0.0610**	**9.0000e-005**		**2.1800e-003**	**2.1800e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**8.1893**	**8.1893**	**2.5700e-003**	**0.0000**	**8.2536**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.7000e-004	4.2700e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2500e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0173	1.0173	3.0000e-005	3.0000e-005	1.0270
Total	**4.8000e-004**	**3.7000e-004**	**4.2700e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2500e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0173**	**1.0173**	**3.0000e-005**	**3.0000e-005**	**1.0270**

3.6 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.3300e-003	0.0667	0.0550	1.3000e-004		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	11.4158	11.4158	3.6900e-003	0.0000	11.5081
Total	**6.3300e-003**	**0.0667**	**0.0550**	**1.3000e-004**		**2.7500e-003**	**2.7500e-003**		**2.5300e-003**	**2.5300e-003**	**0.0000**	**11.4158**	**11.4158**	**3.6900e-003**	**0.0000**	**11.5081**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.9000e-004	2.1300e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5087	0.5087	1.0000e-005	2.0000e-005	0.5135
Total	**2.4000e-004**	**1.9000e-004**	**2.1300e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5087**	**0.5087**	**1.0000e-005**	**2.0000e-005**	**0.5135**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.3300e-003	0.0667	0.0550	1.3000e-004		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	11.4158	11.4158	3.6900e-003	0.0000	11.5081
Total	**6.3300e-003**	**0.0667**	**0.0550**	**1.3000e-004**		**2.7500e-003**	**2.7500e-003**		**2.5300e-003**	**2.5300e-003**	**0.0000**	**11.4158**	**11.4158**	**3.6900e-003**	**0.0000**	**11.5081**

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3.6 Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.9000e-004	2.1300e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5087	0.5087	1.0000e-005	2.0000e-005	0.5135
Total	**2.4000e-004**	**1.9000e-004**	**2.1300e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5087**	**0.5087**	**1.0000e-005**	**2.0000e-005**	**0.5135**

3.6 Trenching - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0393	0.3998	0.3554	8.5000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	74.2345	74.2345	0.0240	0.0000	74.8348
Total	**0.0393**	**0.3998**	**0.3554**	**8.5000e-004**		**0.0165**	**0.0165**		**0.0152**	**0.0152**	**0.0000**	**74.2345**	**74.2345**	**0.0240**	**0.0000**	**74.8348**

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3.6 Trenching - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	1.0500e-003	0.0126	3.0000e-005	4.0300e-003	2.0000e-005	4.0500e-003	1.0700e-003	2.0000e-005	1.0900e-003	0.0000	3.2050	3.2050	9.0000e-005	9.0000e-005	3.2338
Total	**1.4300e-003**	**1.0500e-003**	**0.0126**	**3.0000e-005**	**4.0300e-003**	**2.0000e-005**	**4.0500e-003**	**1.0700e-003**	**2.0000e-005**	**1.0900e-003**	**0.0000**	**3.2050**	**3.2050**	**9.0000e-005**	**9.0000e-005**	**3.2338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0393	0.3998	0.3554	8.5000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	74.2344	74.2344	0.0240	0.0000	74.8347
Total	**0.0393**	**0.3998**	**0.3554**	**8.5000e-004**		**0.0165**	**0.0165**		**0.0152**	**0.0152**	**0.0000**	**74.2344**	**74.2344**	**0.0240**	**0.0000**	**74.8347**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Trenching - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	1.0500e-003	0.0126	3.0000e-005	4.0300e-003	2.0000e-005	4.0500e-003	1.0700e-003	2.0000e-005	1.0900e-003	0.0000	3.2050	3.2050	9.0000e-005	9.0000e-005	3.2338
Total	**1.4300e-003**	**1.0500e-003**	**0.0126**	**3.0000e-005**	**4.0300e-003**	**2.0000e-005**	**4.0500e-003**	**1.0700e-003**	**2.0000e-005**	**1.0900e-003**	**0.0000**	**3.2050**	**3.2050**	**9.0000e-005**	**9.0000e-005**	**3.2338**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.515533	0.047958	0.156749	0.151796	0.029800	0.007258	0.013970	0.049021	0.000803	0.000458	0.021477	0.002201	0.002977
Parking Lot	0.515533	0.047958	0.156749	0.151796	0.029800	0.007258	0.013970	0.049021	0.000803	0.000458	0.021477	0.002201	0.002977

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.1101	0.1101	2.0000e-005	0.0000	0.1112
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.1101	0.1101	2.0000e-005	0.0000	0.1112
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1050	0.0972	2.0000e-005	0.0000	0.0981
Parking Lot	140	0.0130	0.0000	0.0000	0.0131
Total		**0.1101**	**2.0000e-005**	**0.0000**	**0.1112**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1050	0.0972	2.0000e-005	0.0000	0.0981
Parking Lot	140	0.0130	0.0000	0.0000	0.0131
Total		**0.1101**	**2.0000e-005**	**0.0000**	**0.1112**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0154	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004
Unmitigated	0.0154	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004
Total	**0.0154**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0000**	**1.4000e-004**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3000e-004	1.3000e-004	0.0000	0.0000	1.4000e-004
Total	**0.0154**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0000**	**1.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation