

Environmental Assessment 16-14-MP

Refuge Level 2 Exchange Agreement for Tertiary Treated Water Project

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

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 commitments 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.

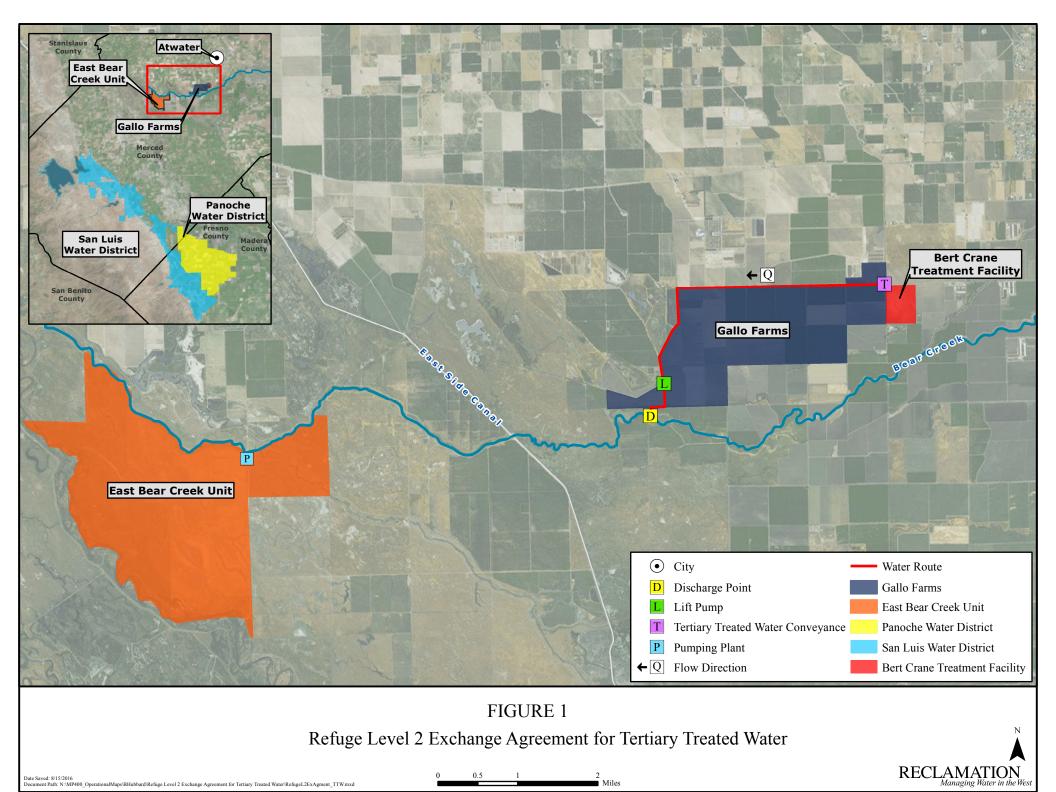
Section 1 Introduction

The Bureau of Reclamation (Reclamation) proposes entering into an agreement with the Panoche Water District (PWD) and the San Luis Water District (SLWD) for the exchange of Refuge Level 2 (L2) water from the Central Valley Project (CVP) for tertiary treated recycled water (Proposed Action). Collectively, PWD and SLWD will be referred to as the "Districts". The term of the Agreement will be one year and is expected to begin in Fall 2016.

The Proposed Action, located in the Merced, San Joaquin, and Fresno counties of California (see **Figure 1**), would allow for the uneven exchange of Refuge L2 water for tertiary treated water (Acquired Water) acquired by the Districts from Gallo Farmland Company (Gallo Farms or Gallo). The Districts propose to provide the East Bear Creek Unit of the San Luis National Wildlife Refuge complex (Refuge) up to 6,000 acre-feet (AF) per year (AFY) of Acquired Water from Gallo Farms. In exchange for the Districts providing up to 6,000 AF of tertiary treated water, Reclamation would provide the Districts up to 3,000 AF of Refuge L2 water. Up to 3,000 AF of Incremental Level 4 (IL4) water would also be provided to South of Delta (SOD) refuges. The Acquired Water would leave the Gallo Point of Discharge and join other instream flows before entering Bear Creek. The Acquired Water would travel down Bear Creek to the Refuge pump station approximately 5 miles west.

1.1 Need for the Proposal

The need for the Proposed Action is to provide L2 water supplies to the Refuge in accordance with requirements under Section 3406(d) of the Central Valley Improvement Act (CVPIA).



Section 2 Proposed Action and Alternatives

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not entering into an agreement with the Districts to fund the exchange of L2 water for tertiary treated recycled water supplies to help meet the East Bear Creek Unit of the San Luis National Wildlife Refuge Complex's (EBC Refuge) demand. The delivery of water to the EBC Refuge from Gallo Farms for purposes defined in this EA would not occur. The Districts would not be able to utilize L2 water, and the IL4 portion of this exchange would not provide water to other South of Delta (SOD) Central Valley Project Improvement Act (CVPIA) refuges.

2.2 Proposed Action Alternative

The Proposed Action involves Reclamation entering into an agreement with the Districts to exchange L2 water for tertiary treated recycled water acquired by the Districts from Gallo Farms. The Districts would provide the EBC Refuge up to 6,000 acre-feet per year (AFY) of tertiary treated recycled water acquired from Gallo Farms (Acquired Water); where the Acquired Water would leave the Gallo Point of Discharge into a natural channel where there is an existing pipe inlet and standpipe to Bear Creek. The Acquired Water will then blend with other instream flows (if existing) in Bear Creek, the combined waters would travel to the EBC Refuge pump station, approximately 5 miles west. The original source of the Acquired Water comes from the City of Atwood's Bert Crane Treatment Facility. The term of the Agreement will be one year and is expected to begin in Fall 2016.

The Acquired Water would be metered at the discharge point on Gallo Farms to measure the volume of tertiary treated recycled water being discharged. A conveyance loss factor of 10% has been estimated based on a review of the type of channel flow, time of year and current condition of the channel. Water quality sampling of the Acquired Water will be conducted according to a monitoring plan to provide representative concentrations of the tertiary treated recycled water quality prior to discharge to Bear Creek.

The Acquired Water would be pumped onto EBC Refuge land and be used for the benefit of wildlife. The Districts will provide Reclamation up to 6,000 AFY of Acquired Water for the EBC Refuge, and Reclamation will deliver to the Districts one acre-foot of Refuge L2 Water for every two acre-feet of Acquired Water discharged to Bear Creek (up to 3,000 AFY Refuge L2 Water). The Proposed Action would also provide up 3,000 AFY of IL4 water to SOD CVPIA refuges.

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.

Potential impacts to the following resources were considered and found to be minor. Brief explanations for the impacts are provided below:

- Indian Trust Assets (ITA): ITAs are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. The closest ITA to the Proposed Action activity is a Public Domain allotment about 45 miles to the northwest. Based on the nature of the planned work 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 does not have the potential to affect ITAs.
- 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: 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. No significant changes in refuge management or in agricultural communities or practices would result from the Proposed Action, other than potential production of groundwater or exchange of water. These changes are not likely to have effects to any individuals or populations within the action area. Accordingly, the Proposed Action would not have disproportionately negative impacts on low-income or minority populations within the study area.

The overall study area includes specific analysis for each resource that may be directly or indirectly affected by the use of Acquired Water for habitat management purposes within the Refuge. The overall study area also includes the

Districts' boundaries. The Districts are located on the west side of San Joaquin, Merced, and Fresno counties and the Refuge and Gallo Farms are located in Merced County (**Figure 1**). The counties are bounded by the Sierra Nevada Mountains to the east and the Pacific coastal range to the west. The study area region is characterized by flat valley lowland wetlands and agricultural lands, with a climate that is cool and moist in the winter and hot and dry in the summer.

3.1 Surface Water Resources

3.1.1 Affected Environment

Bear Creek

Bear Creek is an ephemeral stream with some minimal flood control features to limit potential for damages as it makes its way through the City of Merced, but is otherwise largely uncontrolled. At times, Bear Creek within the Proposed Action area has flows during the summer due to spill from Merced Irrigation District's delivery system. Flood flows that are not diverted make their way to the San Joaquin River. There are water rights associated with Bear Creek with diversions at various points including the Eastside Canal, but much of the flow in the lower reaches of Bear Creek are the result of releases of Merced River water into Bear Creek as operational spills or for subsequent diversion by downstream water users.

Water quality in Bear Creek is generally good; however, the State Water Resources Control Board (SWRCB) has identified water quality impairments in 84 miles of Bear Creek (from Bear Valley to the San Joaquin River) located within Mariposa and Merced counties which includes the Proposed Action area (SWRCB 2014). Impairments are due to Escherichia coli and unknown toxicity although sources of the contaminants are unknown. The SWRCB has listed this section of Bear Creek as a Category 5 (a water segment where standards are not met and a Total Maximum Daily Load [TMDL] is required, but not yet completed, for at least one of the pollutants being listed for the segment). TMDLs are scheduled to be completed by 2021 (SWRCB 2014).

Gallo Farm Lands - Agricultural Areas

Gallo Farms is located northeast of the Refuge in Merced County as shown on Figure 1. Gallo Farms grows cattle feed to support its dairies and cheese manufacturing operation. Historically, Gallo Farms received secondary treated wastewater from the City of Atwater's previous wastewater treatment plant (WWTP) located near Freeway 99. With the completion of the City's new WWTP located on South Bert Crane Road, as shown on Figure 1, Gallo Farms now receives disinfected tertiary treated water from the new WWTP. The treated water has been used to irrigate seasonal corn crops for use as cattle feed at their dairies. With recent modifications to its cropping pattern and conservation efforts Gallo Farms has the capability to make the treated water it receives available to SLWD and PWD for delivery to the Refuge.

East Bear Creek Unit Refuge

The Refuge is located east of the San Joaquin River, in Merced County. The Refuge includes a portion of Bear Creek and contains native uplands, seasonal wetlands, vernal pools, and riparian floodplain habitat. The Refuge is managed primarily for migratory waterfowl, shorebirds, marsh, water birds, and riparian birds and their associated habitat types, as well as for listed species. The Refuge provides critically important habitat for both resident species and the migratory waterfowl that utilize the Pacific Flyway, and requires substantial water supplies.

Historically, the water supplies delivered to the Refuge have been obtained by diverting water from Bear Creek via its riparian water rights or water annually acquired by Reclamation's Refuge Water Supply Program (RWSP) from willing sellers. The average annual supply purchased for the Refuge has been approximately 3,103 AF, substantially less than the optimal amount. As a result, the Refuge remains underdeveloped for optimum wetland management in support of migratory birds.

Panoche Water District

PWD has a contract with Reclamation to supply 94,000 acre-feet of agricultural water (PWD 2014, page 1). PWD's delivery system is configured such that no operational spills leaves the PWD boundaries. Operational spills from one lateral are picked up by an adjacent lateral and delivered to farm turnouts. As more drip irrigation systems have been installed, water demand variability has increased on some of the laterals. This has resulted in some flooding in certain areas. To minimize the occurrence of flooding, some spill water is currently discharged into the drainage system. (PWD 2014, page 3)

San Luis Water District

SLWD has a long-term water service contract with Reclamation that provides for both agricultural and M&I service from either the DMC or the San Luis Canal (SLC). SLWD's current contract quantity is 125,080 acre-feet. This contract does not identify specific quantities of agricultural versus M&I water nor does it identify specific quantities to be delivered from the DMC versus the SLC. This supply equates to a maximum supply of 2.1 acre-feet per acre to those parcels within SLWD eligible to receive an allocation. SLWD does not have a contract for State Water Project water nor does it have any other source of local surface supply. (SLWD 2013)

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, the Refuge would rely upon available Bear Creek flows or some acquisitions from other sources as they have in the past. The Refuge utilizes water during the spring irrigation season from intermittent Bear Creek flows, if they are available. Refuge L2 water would not be exchanged and made available for agricultural purposes within the CVP place-of-use.

Proposed Action

The Proposed Action would not impact surface water supplies because a net increase or decrease in CVP surface water supplies delivered south of the Delta would not occur. The total amount of CVP surface water delivered south of the Delta would remain the same. Surface water would be provided for reasonable and beneficial use within the Refuge, to meet habitat needs for wildlife. The Districts would receive Refuge L2 surface water supplies through exchange. Delivering Refuge L2 water to the Districts would not trigger new surface water resources' impacts or impacts of greater magnitude than those impacts already considered in the exchange parties' CVP water service contracts.

Cumulative Impacts

No adverse impacts to surface water resources would result from implementation of the Proposed Action, therefore, the Proposed Action would not contribute to cumulative impacts to surface water resources.

3.2 Water Quality

3.2.1 Affected Environment

City of Atwater and Gallo Farm Land

The City of Atwater's tertiary treated water sent to Gallo Farms has been extensively monitored since receiving the National Pollutant Discharge Elimination System permit. The most recent water quality monitoring results are attached in **Appendix B** for reference.

East Bear Creek Unit - Refuge

The surface water taken from Bear Creek via the pumping plant and provided to the Refuge for habitat purposes has always been of acceptable quality. Regional groundwater quality is highly variable on lands to the east of the San Joaquin River with the best water quality being reported in areas served by shallow wells associated with recharge areas supplied by east-side tributaries such as the Merced River and Bear Creek with poorer water quality reported from deeper wells closer to the San Joaquin River. Water quality in the above- Corcoran semiconfined aquifer is affected by the regional flow system that is influenced by recharge from local streams and surface water conveyances and drainage into the San Joaquin River to the west. Newer man-made channels which cut through sandy formations within the shallow groundwater aquifer may experience high rates of seepage. Older natural channels may seal over time as fine grained materials plug the interstices between sand grains and hence experience low rates of seepage. In the latter case, the rate of seepage is dictated by the permeability of the streambed rather than the permeability of the shallow aquifer.

Panoche Water District and San Luis Water District

PWD, which is a part of Panoche Drainage District (PDD), requires that all tailwater be retained on farm and be managed by each water user. Discharge of tailwater into the PDD system is prohibited. PWD manages drainage so that its drainage reduction goal is attained. The drainage water is recycled into the delivery system to achieve blended water quality of an average of no more than 700 mg/L Total Dissolved Solids (TDS) and 0.7 mg/L Boron. Subsurface drain water is captured, stored, recirculated and used within the PWD, or discharged into the PDD system. Ultimately, PDD discharges a portion of the collected drainage water into the San Luis Drain under a Waste Discharge Permit for the Grassland Bypass Project issued to the San Luis & Delta-Mendota Water Authority (SLDMWA) and Reclamation. The current permit expires on December 31, 2019. (Panoche, 2014)

SLWD requires landowners to construct and maintain adequate drainage facilities so that adjacent or lower lying lands are not harmed by runoff and to insure that water is being beneficially used. As a result of the high cost of SLWD water and the limited supply available, all irrigation runoff (tail water) is kept on-farm. Discharge of tail water is prohibited by Rule No. 4. The majority of land within SLWD does not have a drainage outlet. A small area of SLWD, consisting of approximately 5,200 acres has a drainage outlet to the San Joaquin River through participation in the Grasslands Basin Drainer's (GBD) use of the San Luis Drain. Since the GBD do not allow tailwater to be discharged into the drainage system, all tailwater is recycled on farm. Most of the subsurface drain water is either recycled on-farm or by the GBD in order to meet the discharge requirement associated with use of the Drain. SLWD does not independently monitor surface, ground or drainage water quality. Water quality data for the DMC and the SLC, which are the sole sources of SLWD's water supply, are available from Reclamation, DWR, and/or the SLDMWA upon request. (San Luis Water District, 2013)

3.2.2 Environmental Consequences

No Action

The No Action Alternative would consist of Reclamation not entering into agreements with the Districts to exchange Refuge L2 water for Project Water to help meet the Refuge's IL4 water demands.

Proposed Action

The Proposed Action would include implementation of a water quality monitoring plan (see **Appendix A**) to ensure that water quality standards are not exceeded. If water quality monitoring indicates unsuitable water quality, water deliveries to Bear Creek and to the Refuge would be modified or curtailed as necessary to stay in compliance with established thresholds. Further detail is provided in the Water Quality Monitoring Plan (WQMP) included in **Appendix A**. The 2015 water quality analyses conducted on the City of Atwater's treated

water samples are included in a table in **Appendix B**. The WQMP includes monitoring of specific Chemicals of Emerging Concern (CECs) in addition to the monitoring that the City of Atwater undertakes.

Surface Water Quality

Under the Proposed Action, surface water quality sampling and analysis will be conducted in Bear Creek to help ensure compliance with surface water quality objectives set for the Project. If a surface water quality objective is exceeded water discharged into Bear Creek and pumped into the Refuge will be modified or curtailed until surface water quality objectives are met. Weekly monitoring of the electrical conductivity (EC), pH and temperature in Bear Creek will continue. The water quality monitoring and reporting for the Proposed Action is described in the WQMP.

Delivering Refuge L2 water to the Districts would not trigger new water quality impacts or impacts of greater magnitude than those impacts already considered in the Districts' CVP contract.

Cumulative Impacts

Under the Proposed Action, impacts to water quality would not be significant and continual monitoring would occur along with any follow-on actions required under the WQMP. Therefore, the Proposed Action would not contribute to cumulative impacts to water quality.

3.3 Biological Resources

3.3.1 Affected Environment

The habitats present at the Refuge are natural valley grasslands and developed marsh. The Refuge is managed primarily for migratory waterfowl, shorebirds, marsh and water birds, and their associated habitat types as well as for listed species. The Refuge provides wetland habitat as a major wintering ground and migratory stopover point for large concentrations of waterfowl, shorebirds and other waterbirds (Service 2012a). A rich botanical community of native bunchgrasses, native and exotic annual grasses, forbs, native shrubs, trees, and a variety of animal species are found within these areas.

Managed heavily for migratory waterfowl and their associated habitat types, the Refuge has additional implications with the Migratory Bird Treaty Act (MBTA). Many species of birds protected under the MBTA occur within the Proposed Action project area.

Riparian

There are no large or sensitive riparian habitats that occur in the Proposed Action area or near the water delivery areas.

Agricultural Lands

Agricultural lands within and adjacent to the study area include flood irrigated pastures, orchards, and row crops. Pastures are typically cultivated in alfalfa (Medicago sativa), rescue grass (Bromus catharticus), Johnson's grass (Sorghum halepense), tall fescue (Festuca arundinaceae), and Italian ryegrass (Festuca perennis). Some of the key orchard crops in the vicinity of the Proposed Action are apricot (Prunus armeniaca), English walnut (Juglans regia), and almond (Prunus dulcis) cultivars. Row crops include broccoli (Brassica oleracea), corn (Zea mays), and tomatoes (Solanum lycopersicum), among others. Flood irrigated pastures provide food, cover, and nesting grounds for wildlife species; the value of the habitat varies with crop type and agricultural practices. Bird diversity can be high in irrigated pastures. Species commonly utilizing pasture lands include red-winged blackbird (Agelaius phoeniceus), Brewer's blackbird (Euphagus cyanocephalus), western meadowlarks (Sturnella neglecta), European startling (Sturnus vulgaris), house finch (Carpodacus mexicanus), killdeer (Charadrius vociferous), American crow (Corvus brachyrhynchos), and American kestrel (Falco sparverius). Some pasture lands and crop fields provide suitable breeding habitat for northern harrier (Circus cyaneus). Small mammals in flood irrigated pasture and row crops provide important prey resources for raptors such as redtailed hawk (Buteo jamaicensis) and Swainson's hawk (Buteo swainsoni).

Wildlife

The list of Federally listed, proposed and candidate species is included in **Appendix** C and was obtained by accessing the U.S. Fish and Wildlife Service (USFWS) database at http://www.fws.gov/sacramento/es species/Lists/es species listsoverview.htm (USFWS 2016). Accessed on June 21, 2016: Consultation Code: 08ESMF00-2016-SLI-1704. Event Code: 08ESMF00-2016-E-03710. Although there are 14 species identified in the list, only those species that could potentially occur in the action area are analyzed in detail.

Giant Garter Snake

The giant garter snake (GGS) inhabits wetland habitats and vegetated permanent water channels in scattered subpopulations in the Central Valley from Butte County in the north to Fresno County in the south. It is believed extirpated from the vicinity of Buena Vista and Tulare Lakes south of Fresno County.

Giant garter snakes are always found in close proximity to permanent or semipermanent water with vegetated perimeters. The GGS is an aquatic feeder specializing in capturing small fish and frogs in or under water. The giant garter snake spends the winter in upland retreats above the high water level.

Swainson's Hawk

This species is the most migratory of all North American Buteos. It breeds and summers in the arid and semiarid regions of western North America and winters on the pampas of Argentina. The breeding population in California has declined by an estimated 90 percent. In 1979, the breeding population in California was estimated at 375 pairs.

San Joaquin Kit Fox

The San Joaquin kit fox, a State-listed threatened and Federally-listed endangered species, is a small nocturnal canid which now occurs in scattered populations from Contra Costa County south to Kern County. Historically, this species occupied extensive areas of semiarid lands in the San Joaquin Valley. Flat topography in valley bottoms with valley sink scrub, valley saltbush scrub, interior coast range saltbush scrub, nonnative grassland and alkali playa plain communities (described in Holland, 1986) are the typical habitat, but substantial populations have always inhabited the surrounding low foothills where slopes do not exceed 40 degrees (O'Farrell 1983). Agricultural, industrial, and urban developments have caused rapidly increasing rates of habitat loss.

The San Joaquin kit fox is an obligate year-round burrow dweller which feeds largely upon lagamorphs and kangaroo rats (but would utilize whatever prey is locally abundant). Numerous dens are excavated and inhabited in the course of a year and individuals may cover great distances while foraging and/or dispersing.

The San Joaquin kit fox is considered here because of the potential foraging habitat (irrigated pasture and seasonally flooded grassland and alkali sink scrub). No known active or potential kit fox dens have been observed within the study area.

3.3.2 Environmental Consequences

No Action

Conditions would remain the same as existing conditions if no action were taken. There would be no impacts to wildlife, including threatened and endangered species, their critical habitat, or general habitat types.

Proposed Action

The conveyance of treated water from Gallo Farms to the Refuge would not adversely affect aquatic species or their habitat. Habitat for Delta smelt, Chinook salmon (spring and winter run), central valley steelhead, or green sturgeon would not be affected because no construction or major flow modifications are proposed on natural waterways. There would be no effect to federally listed fish species mentioned above and there would be no modification of critical habitat for the species as a result of the Proposed Action.

Water is expected to continue to be of suitable quality for other aquatic species at the Refuge. Water quality would be tested during the Proposed Action at the discharge point from Gallo Farms and at the Refuge pumping plant's intake. If

water quality is determined to be of unsuitable quality, pumping into the Refuge conveyance system would be modified or curtailed.

Overall, the Proposed Action would provide a benefit to waterfowl, shorebirds, and raptors, as the water would be used for refuge management. The Proposed Action would not adversely affect any riparian habitats. Delivering Refuge L2 water to the Districts would not trigger new biological resources impacts or impacts of greater magnitude than those impacts already considered in the Districts' CVP contract and existing BOs.

Cumulative Impacts

Implementation of the Proposed Action would not result in adverse effects to biological resources, and therefore could not contribute to cumulative impacts.

Section 4 Consultation and Coordination

4.1 Public Review Period

This EA was made available for a two week period from August 17, 2016 through August 31, 2016. A comment letter dated August 30, 2016 was received from California Department of Fish and Wildlife (CDFW). This letter presented comments and questions regarding the project description, surface water resources, water quality analysis, biological resources, and included a request to include economic analysis. CDFW requested that a revised Draft EA be prepared and recirculated. Reclamation considered every aspect of this comment letter in the decision to enter into an exchange agreement with the Districts. The Finding of No Significant Impact document includes a discussion of the substantive issues raised regarding the analysis and how it was used in Reclamation's decision. Reclamation's decision is whether or not to enter into an exchange agreement that will allow for: (1) tertiary treated recycled water to be provided to the EBC Refuge, (2) IL4 water to be provided to SOD CVPIA refuges, and (3) L2 water to be provided to the Districts.

4.2 Resource Management Agencies

Reclamation has coordinated closely with USFWS during the planning and development of the short term project. USFWS has reviewed and provided input on the WQMP.

Section 5 References

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