RECLAMATION
Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Widren Water District's Water Quality, Supply, and Drainage Enhancement Pilot Project

FONSI-16-035

U.S. Department of the Interior
Bureau of Reclamation
South-Central California Area Office

November 2017

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.

BUREAU OF RECLAMATION
South-Central California Area Office, Fresno, California

FONSI-16-035

Widren Water District's Water Quality, Supply, and Drainage Enhancement Pilot Project

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Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the South-Central California Area Office of the Bureau of Reclamation (Reclamation), has determined that an environmental impact statement is not required for the one-year Exchange Agreement and/or one-year Warren Act contract and land use authorization to Widren Water District to access the Delta-Mendota Canal in order to implement their Pilot Project. This Finding of No Significant Impact (FONSI) is supported by Reclamation's Environmental Assessment (EA)-16-035, *Widren Water District's Water Quality, Supply, and Drainage Enhancement Pilot Project*, and is hereby incorporated by reference.

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA between October 27, 2017 and November 11, 2017. Reclamation received no comment letters.

Background

Widren Water District has recently constructed a reverse osmosis (RO) Treatment Plant to extract and treat their in-district shallow groundwater, consistent with the Westside Regional Drainage Plan. It has been shown in the region that the removal of shallow groundwater can assist in reducing drainage impacts by lowering poor-quality drain water below the crop root zone. Widren Water District will make this treated water available to others for irrigation purposes outside of federal facilities.

Widren Water District initially requested authorization from Reclamation to use the Delta-Mendota Canal for their proposed long-term (10-year) project to deliver their treated groundwater to South-of-Delta Central Valley Project (CVP) contractors. Treatment of shallow groundwater would occur through Widren Water District's existing RO Treatment Plant. Widren Water District anticipates their RO treated groundwater would meet Reclamation's water quality standards required for introduction of non-Project water into federal facilities.

In order for Widren Water District to move forward with their long-term project, they have requested approval from Reclamation to conduct a one-year Pilot Project in order to collect data on water quality and potential groundwater level impacts. This data would be used to evaluate the potential impacts to water quality, groundwater levels, and federal facilities from a longer-term project.

Proposed Action

Reclamation proposes to issue a one-year Exchange Agreement and/or one-year Warren Act contract to Widren Water District for the introduction and conveyance of up to 1,000 acre-feet (AF) of treated groundwater into the Delta-Mendota Canal as well as potential storage in San Luis Reservoir. The non-Project water would then be provided to willing buyers along the

Delta-Mendota Canal. Reclamation would also issue a land use authorization to Widren Water District for the proposed connection of a new water pipeline to an existing turnout at milepost (MP) 102.04R on the Delta-Mendota Canal. Specific details regarding Widren Water District's Pilot Project are included in Section 2.2 of EA-16-035.

Permitting

Widren Water District currently operates under the State Water Resources Control Board's Waste Discharge Requirements General Order (Order R5-2015-0095) for growers in the Grassland Drainage Area. This Order is part of the Irrigated Lands Regulatory Program and regulates discharge to groundwater.

Environmental Commitments

Widren Water District shall implement the environmental protection measures listed in Table 2 of EA-16-035 to avoid environmental consequences associated with the Proposed Action. Environmental consequences for resource areas assume the measures specified would be fully implemented.

Findings

Reclamation's finding that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following findings:

Resources Eliminated from Detailed Analysis

As described in Table 3 of EA-16-035, Reclamation analyzed the affected environment and determined that the Proposed Action does not have the potential to cause direct, indirect, or cumulative adverse effects to the following resources: air quality, environmental justice, global climate change, Indian Sacred Sites, or Indian Trust Assets.

Biological Resources

There would be no changes in Delta pumping, and water would only be used to support existing land uses. The trench lines would result in temporary disturbance of land that could potentially be used by the San Joaquin kit fox and Western Burrowing Owl. The measures included in the Table 2 of EA-16-035 would prevent any take of owls, and any impacts to the San Joaquin kit fox. Water pumped into the Delta-Mendota Canal would be of a quality that would not present an issue for species living in habitat that also receives water conveyed through the Delta-Mendota Canal (such as the Mendota Wildlife Area, which is used by the giant garter snake). Mercury levels would be so low as to be undetectable, and selenium levels in the water would remain well below two parts per billion. Critical habitat in the Proposed Action Area would not be subject to land use change as a result of the Proposed Action. The San Joaquin kit fox and any migrating birds could continue to use the Proposed Action Area as under the No Action alternative.

With the environmental commitments listed in Table 2 of EA-16-035 and based upon the nature of this Action, Reclamation has determined there would be No Effect to proposed or listed species or critical habitat under the Endangered Species Act of 1973, as amended (16 U.S.C.

§1531 et seq.), and there would be no take of birds protected under the Migratory Bird Treaty Act (16 U.S.C. §703 et seq.).

Cultural Resources

The proposed action of connecting a new pipeline to an existing Delta-Mendota Canal turnout would not alter any physical characteristics of the canal or its berm. Since there would be no alterations to the Delta-Mendota Canal, the CVP would also be unaffected. Reclamation determined that there would be no adverse effects to historic properties pursuant to 36 CFR Part 800.5(b); therefore, no cultural resources would be affected as a result of implementing the Proposed Action.

Land Use

The Proposed Action would provide for supplemental non-Project water to South-of-Delta CVP contractors to irrigate existing agricultural lands in production and minimize the potential for fallowing agricultural lands. No untilled land (fallow for three years or more) would be brought into production. The Proposed Action would only occur for one year and would not be used for development.

Under the Proposed Action, up to 337 acres of dry farmland within Widren Water District could receive blended effluent for salt tolerant crops. This land would most likely receive blended effluent from Widren Water District's RO Treatment Plant regardless of whether the project was implemented or not, to improve drainage impacted lands within Widren Water District. Therefore, no land use changes would occur.

Water Resources

Under the Proposed Action, Widren Water District would pump up to 1,200 AF of groundwater to be treated by their proposed RO Treatment Plant over a one-year Pilot Project. Reclamation would allow up to 1,000 AF of non-Project water to be introduced, conveyed, and/or stored in CVP facilities, when excess capacity is available. This would allow the treated water to be delivered to participating South-of-Delta CVP Contractors' service areas to supplement their CVP water supplies. There would be no construction or modification to the Delta-Mendota Canal and the capacity of the facility would remain the same. The Proposed Action would not interfere with the normal operations of the Delta-Mendota Canal nor would it impede CVP obligations to deliver water to its contractors. Therefore, there would be no impact to water quality or operations of CVP facilities.

The total quantity of groundwater that would be pumped into the Delta-Mendota Canal under the Proposed Action would be limited to 1,000 AF over the one-year period. Widren Water District would pump from above the Corcoran Clay, which has the potential to lower a perched saline water table, thus improving local water quality and the otherwise drainage impaired lands in this area.

Widren Water District estimates that up to 200 AF of effluent would be generated from treatment or backflush at the RO Treatment Plant. This effluent would be blended with up to 400 AF of groundwater and then used to irrigate salt tolerant crops on Widren Water District's proposed reuse area. In addition, Widren Water District would follow the Regional Board's Waste Discharge Requirements General Order for discharge to groundwater. No effluent or RO

treatment backflush water would leave Widren Water District. Therefore, there would be no impact to local water supplies.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

Biological Resources

As the Proposed Action would not impact any federally listed species or migratory birds, it would not contribute cumulatively to any impacts to those resources.

Cultural Resources

Reclamation determined that there would be no adverse effects to historic properties pursuant to 36 CFR Part 800.5(b); therefore, there would be no cumulative impacts to cultural resources as a result of implementing the Proposed Action.

Land Use

As the Proposed Action would not change current land use, there would be no cumulative impacts.

Water Resources

Under the Proposed Action, there would be no construction or modification to Reclamation facilities or interference with CVP operations. In addition, groundwater quality would be monitored to insure no impacts occur to the water quality of the Delta-Mendota Canal. Therefore, there would be no adverse cumulative impacts to existing facilities or other contractors.

In addition to the Proposed Action, other actions in the area which could affect water resources include the Grassland Bypass Project, San Joaquin River Water Quality Improvement Program reuse area, and the Delta-Mendota Canal Groundwater Pump-in Program. All of these projects, in addition to the Proposed Action, are consistent with the Westside Regional Drainage Plan. This plan was designed to reduce subsurface drainage in the Grassland Drainage Area. However, the project is only a one-year Pilot Project, and therefore, is not expected to cumulatively impact local drainage.

RECLAMATION
Managing Water in the West

Final Environmental Assessment

Widren Water District's Water Quality, Supply, and Drainage Enhancement Pilot Project

EA-16-035

U.S. Department of the Interior
Bureau of Reclamation
South-Central California Area Office

November 2017

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Contents

Page

Appendix A Pilot Project Monitoring Plan
Appendix B Cultural Resources Determination

Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Finding of No Significant Impact (FONSI) and Draft Environmental Assessment (EA) between October 27, 2017 and November 11, 2017. Reclamation received no comment letters. Changes between the Draft EA and this Final EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

The Grassland Drainage Area encompasses approximately 97,000 acres of irrigated agricultural land on the west side of the San Joaquin Valley in Fresno and Merced Counties. The region is overlain by coastal range sediments that are generally heavy clays and contain a variety of dissolved minerals including boron and selenium. These soil conditions have contributed to a productive agricultural environment, but due to their heavy clay nature has also created a perched water table that threatens this productivity. The perched water table in the Grassland Drainage Area is often managed with subsurface (tile) drain systems and deep earthen channels which provide an outlet for the shallow groundwater (Exchange Contractors 2003). However, the subsurface drain water can be high in dissolved minerals including salt and selenium.

Water agencies and farmers within the Grassland Drainage Area, which includes Widren Water District and its landowners, have implemented several activities aimed at reducing discharge of subsurface drainage waters to the San Joaquin River, including the Grassland Bypass Project which consolidates subsurface drainage flows (among other things), as part of the Westside Regional Drainage Plan (Exchange Contractors 2003). Widren Water District, located in northwestern Fresno County west of the City of Firebaugh (See Figure 1), historically was provided Central Valley Project (CVP) water via the Delta-Mendota Canal (DMC) from Reclamation for agricultural use within the district. However, Widren Water District fully assigned its CVP water to Westlands Water District in 2003 (Contract # 14-06-200-8018-1R8), and now the lands in Widren Water District are currently dry farmed or irrigated with groundwater or imported surface water.

Widren Water District has recently constructed a reverse osmosis (RO) Treatment Plant to extract and treat their in-district shallow groundwater, consistent with the Westside Regional Drainage Plan. It has been shown in the region that the removal of shallow groundwater can assist in reducing drainage impacts by lowering poor-quality drain water below the crop root zone (Reclamation 2008). Widren Water District will make this treated water available to others for irrigation purposes outside of federal facilities.

Widren Water District initially requested authorization from Reclamation to use the DMC for their proposed long-term (10-year) project to deliver their treated groundwater to South-of-Delta CVP contractors (see Figure 2). Treatment of shallow groundwater would occur through Widren

Water District's existing RO Treatment Plant. Widren Water District anticipates their RO treated groundwater would meet Reclamation's water quality standards required for introduction of non-Project water into federal facilities.

In order for Widren Water District to move forward with their long-term project, they have requested approval from Reclamation to conduct a one-year Pilot Project in order to collect data on water quality and potential groundwater level impacts. This data would be used to evaluate the potential impacts to water quality, groundwater levels, and federal facilities from a longer-term project.

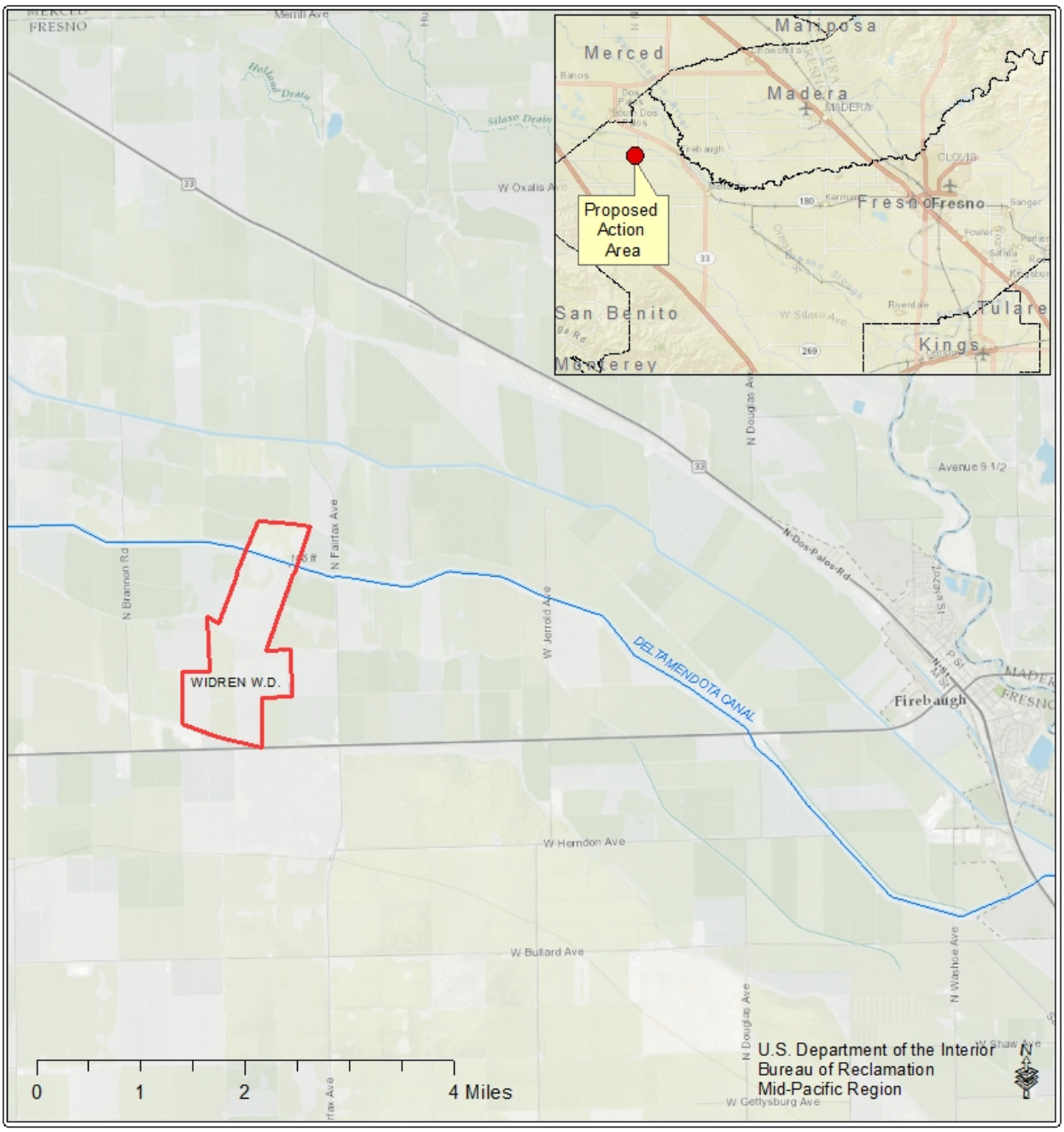

Figure 1 Project Vicinity

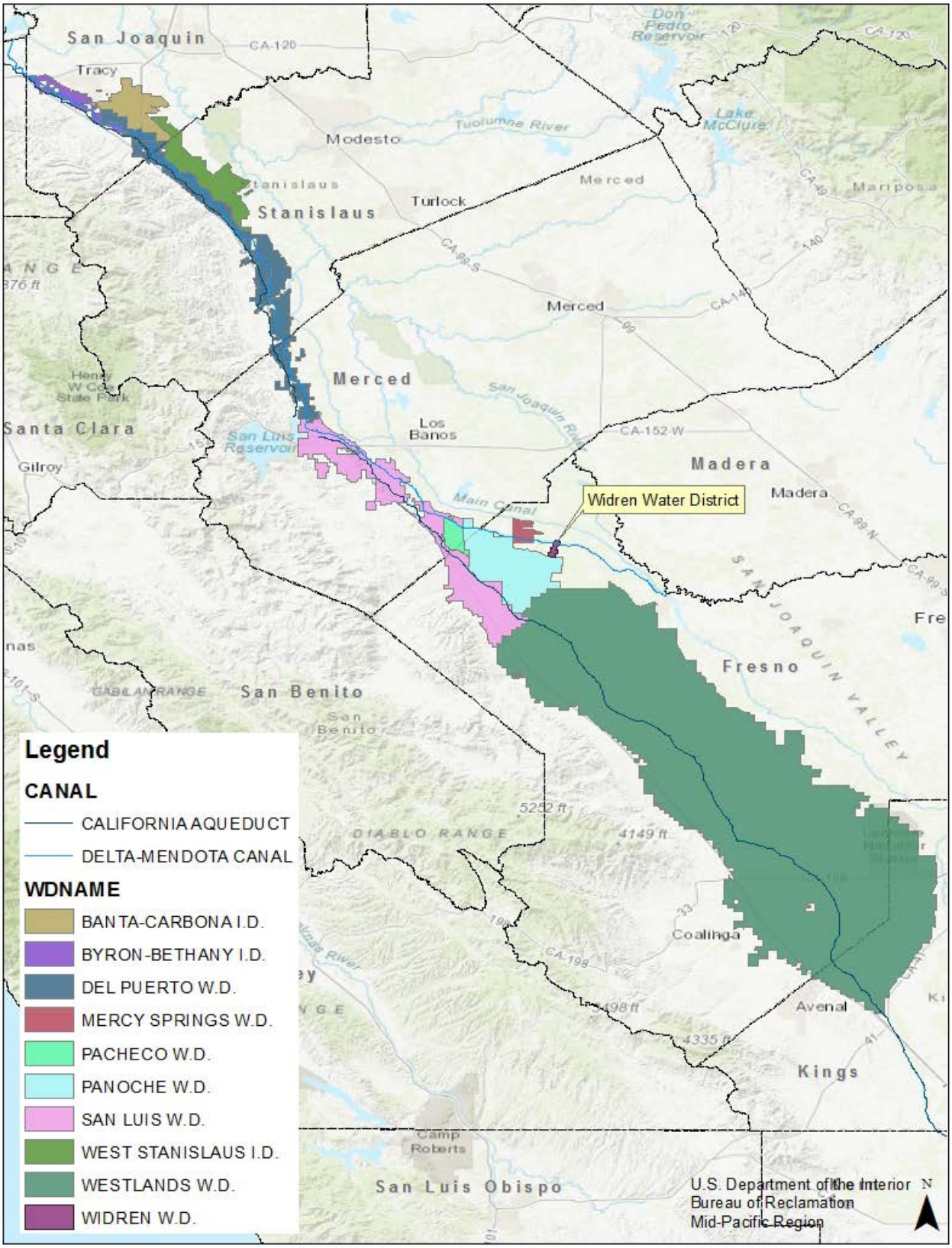

Figure 2 Participating South-of-Delta CVP Contractors

1.1.1 Delta-Mendota Canal Pump-in Program

In 2013, Reclamation authorized a program to allow various CVP contractors located along the DMC to introduce groundwater into the DMC for irrigation use at points along the canal, subject to an up to 50,000 acre-foot (AF) per year cumulative maximum and other requirements. This is referred to as the DMC Pump-In Program, and was evaluated under EA 12-061, *Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the DMC – Contract Years 2013 through 2023 (March 1, 2013 – February 29, 2024)*. A FONSI was issued for the DMC Pump-In Program on January 10, 2013. Widren Water District is located within the same area as the DMC Pump-In Program participants.

1.2 Need for the Proposed Action

The Pilot Project is needed so that Reclamation and Widren Water District can collect data in order for Reclamation to evaluate potential effects of the district's proposed long-term project on water resources and federal facilities.

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not issue a one-year Exchange Agreement and/or Warren Act contract to Widren Water District. Also, Reclamation would not issue a land use authorization for Widren Water District to allow access to the DMC for the discharge of treated groundwater. Therefore, Widren Water District would have to rely on using nonfederal facilities to transfer their treated groundwater.

2.2 Proposed Action

Under the Proposed Action, Reclamation would issue a one-year Exchange Agreement and/or one-year Warren Act contract to Widren Water District for the introduction and conveyance of up to 1,000 AF of treated groundwater (non-Project water) into the DMC as well as potential storage in San Luis Reservoir. As Widren Water District is located within the same area as the DMC Pump-in Program participants, Reclamation would include any groundwater introduced into the DMC by Widren Water District under the 50,000 AF per year cumulative total. Reclamation would also issue a land use authorization to Widren Water District for the proposed connection of a new water pipeline to an existing turnout at milepost (MP) 102.04R on the DMC. Data would be collected during the one-year Pilot Project as described in the Monitoring Plan included in Appendix A. A monitoring well would be installed by Widren Water District in order to monitor the perched water table. The collected data would be used by Reclamation to evaluate Widren Water District's proposed longer term project under separate environmental review.

The non-Project water would then be provided to willing buyers along the DMC. The following South-of-Delta CVP contractors could potentially be recipients under the Proposed Action as shown in Figure 2:

- Banta-Carbona Irrigation District
- Byron Bethany Irrigation District
- Del Puerto Water District
- Mercy Springs Water District
- Pacheco Water District
- Panoche Water District
- San Luis Water District
- West Stanislaus Irrigation District
- Westlands Water District

An exchange of water (non-Project for CVP) would need to be done by Reclamation for any non-Project water that would be provided to those contractors located upstream of the introduction point (i.e., MP 102.04R) or for storage in San Luis Reservoir. Under these conditions, Reclamation would use the introduced non-Project water to meet downstream CVP demands and a like amount of CVP water would then be conveyed to CVP contractors located upstream of MP 102.04R and/or stored in San Luis Reservoir for later delivery to participants in the Proposed Action, including Widren Water District.

Introduction and storage of non-Project water is subject to available capacity, water quality requirements and spill.

The treated groundwater would be conveyed in existing facilities to established agricultural lands. No new land would be brought into production as a result of the treated groundwater, and no additional exports of water from the Sacramento/San Joaquin Bay-Delta Estuary would occur.

2.2.1 Construction on Reclamation's Right-of-Way

To transport the treated water from the RO Treatment Plant to the DMC (Figure 3), an approximately 900-ft long by 15-in PVC pipeline (Treated Water Pipeline) would need to be placed in a 900-ft long by 24-in wide by 4-ft deep trench. Approximately 155-ft of the trench containing the 15-in treated water line would be within Reclamation's DMC right of way, terminating at milepost 102.04R. A Reclamation-approved metering section of pipeline contained in an approved water meter box would be installed prior to the existing turnout located at 102.04R. Effluent from the existing RO Treatment Plant or backflush from the media tanks would be conveyed through an existing 10-in PVC pipeline (Effluent Water Pipeline) to approximately 337 acres of reuse lands (See Figure 4).

Construction associated with connecting the RO Treatment Plant to the DMC is anticipated to take less than one week to complete.

Figure 3 Construction Area for Reverse Osmosis Treatment Plant

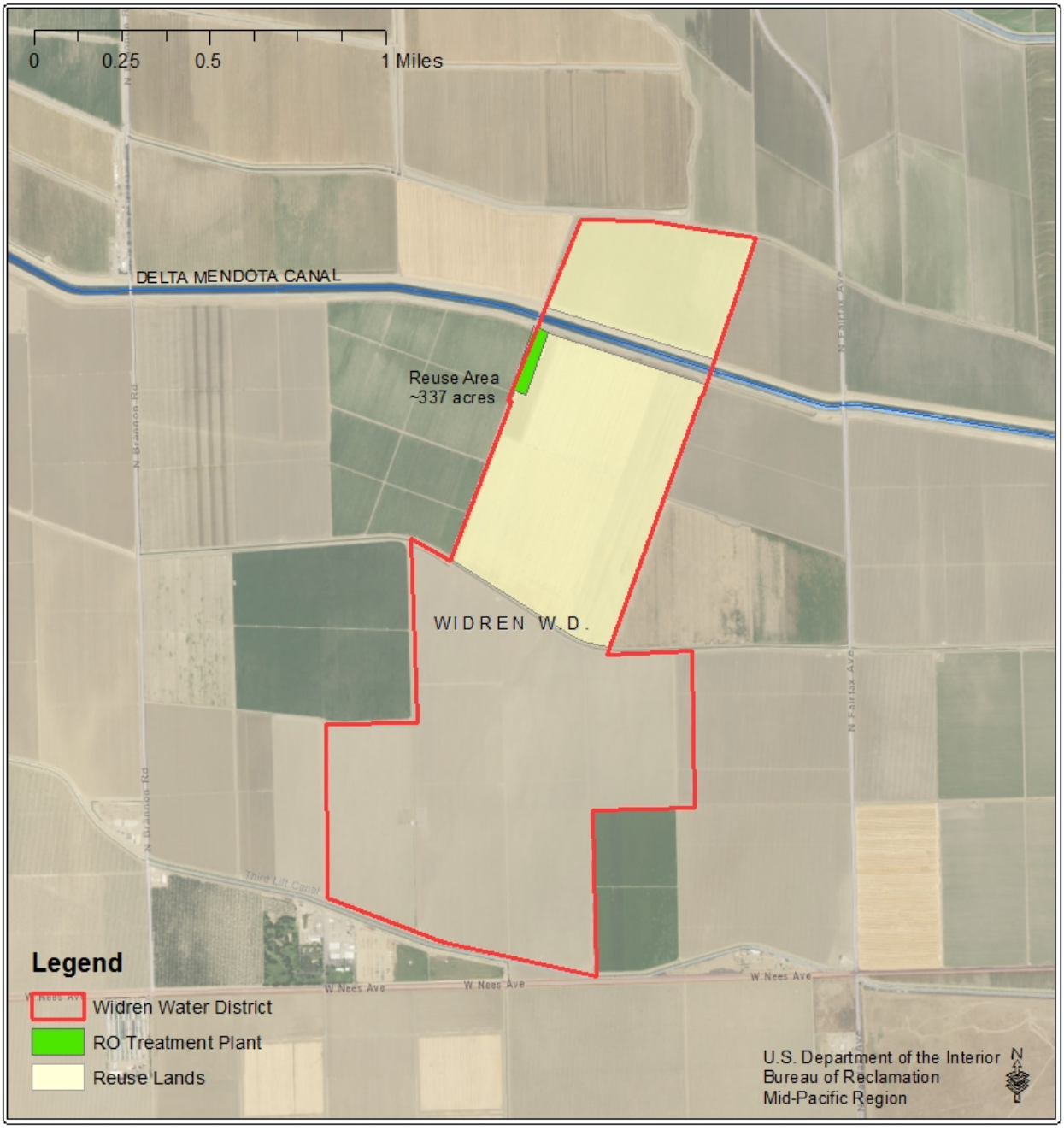

Figure 4 Widren Water District's Reuse Lands

2.2.2 Operation of the RO Treatment Plant

Over the one-year Pilot Project, up to 1,200 AF of groundwater would be pumped from one existing groundwater well and conveyed through the Raw Water Pipeline (Figure 3) to the RO Treatment Plant. At the Treatment Plant, the raw groundwater would be pretreated under high pressure (~80 pounds per square inch [psi]) using high performance multi-media filtration (NextSand Media[1]) to remove suspended solids down to 3-5 microns. Then, the (3-5 microns) filtered water would pass through a multi-bag filtration system (150 psi), removing suspended

[1] http://www.nextsand.com/

solids down to 1 micron. An antiscalant chemical would be injected into the water at low levels (3-5 milligram/liter) to prevent precipitation of natural soluble salts in the treated water. The water would then be sent to the RO membranes which would remove any remaining dissolved constituents in the water. The RO treated groundwater would be tested in accordance with the requirements described in Appendix A prior to being conveyed in the Treated Water Pipeline (Figure 3) that would be connected to the existing turnout at milepost 102.04R on the DMC.

The effluent or backflush water produced by the RO Treatment Plant (estimated at 200 AF) would be blended with up to 400 AF of groundwater from the same existing well within existing underground piping, and then utilized within Widren Water District for irrigation of salt tolerant crops in the reuse area.

Water quality for the existing well, as well as estimates of the treated water and blended water, and Reclamation's water quality standards are included in Table 1.

Table 1 Water Quality Projections for Reverse Osmosis Treatment Plant

Analyte	Units[1]	Well Water[2]	Blended Effluent Water[3]	Treated Water[4]	DMC Standards[5]
Barium	mg/L	0.026	0.08 – 0.10	6.06E-05	no standard
Bicarbonate	mg/L	170	560 - 600	1.779	61
Boron	mg/L	2	5.3 – 5.8	0.455	0.7
Calcium	mg/L	360	1,050 – 1,600	0.839	80
Chloride	mg/L	735	2,000 – 2,400	3.906	40
Chlorpyrifos	µg/L	ND	ND	ND	0.025
Chromium, total	µg/L	ND	ND	ND	50
Diazinon	µg/L	ND	ND	ND	0.16
Fluoride	mg/L	0.2	0.50 - 0.10	0.0028	no standard
Magnesium	mg/L	160	500 - 600	0.373	16
Mercury	µg/L	ND	ND	ND	2
Molybdenum	µg/L	ND	ND	ND	10
Nickel	µg/L	ND	ND	ND	100
Nitrate (as NO_3)	mg/L	ND	ND	ND	45
Nitrite	mg/L	not tested	not tested	not tested	1
pH		7.6	7.9 – 8.0	5.563	5.0 - 7.0
Potassium	mg/L	6.8		0.062	4.5
Sodium adsorption ratio		not tested	Not tested	not tested	1
Selenium	µg/L	18	56	0.09	2
Sodium	mg/L	401.2	1,200 – 1,400	2.595	69
Specific Conductivity	µS/cm	4,654	1,2000 – 1,4000	27.1	1230
Sulfate	mg/L	1,200	3,500 – 3,800	2.498	250
Total dissolved solids	mg/L	3,037	7,000 – 9,000	12.51	800

1 Units: mg/L = milligrams per liter, µg/L = micrograms per liter, µS/cm = micro Siemens per centimeter
2 Water Quality Data from Widren Water District's pre-treatment well water on April 22, 2015
3 Estimated water quality of blended effluent from the RO Treatment Plant for use on reuse lands
4 Estimated water quality of treated well water
5 Data from the Appendix A Pilot Project Monitoring Plan, but may change during the life of the project.

2.2.3 Permitting

Widren Water District currently operates under the State Water Resources Control Board's Waste Discharge Requirements General Order (Order R5-2015-0095) for growers in the

Grassland Drainage Area. This Order is part of the Irrigated Lands Regulatory Program and regulates discharge to groundwater.

2.2.4 Environmental Commitments

Widren Water District must implement the following environmental protection measures to avoid environmental consequences associated with the Proposed Action (Table 2). These commitments are in addition to any commitments listed in the Pilot Project Monitoring Plan (Appendix A). Copies of all reports shall be submitted to Reclamation.

Table 2 Environmental Commitments

Resource	Protection Measure
Biological Resources	No native or untilled land (fallow for three years or more) may be cultivated with the water involved with these actions. .
Biological Resources	The following avoidance measures for San Joaquin kit fox (Service 2011) shall be implemented: • 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 would be minimized to the extent possible. However if it does occur, then the speed limit shall be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited. • 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 two feet deep shall 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. • 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 four inches or greater that are stored at a construction site for one or more overnight periods shall be stored in a manner that prevents a kit fox from entering them (e.g. by placing a board against the edge of the stack). • 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. • No firearms shall be allowed on the project site. • 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. • An employee education program shall be conducted. The program shall 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 shall 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 prevent 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.

Resource	Protection Measure
Biological Resources	Measures to protect Western Burrowing Owls from take would be implemented, including a preconstruction survey (CDFG 2012).
Biological Resources	All preconstruction survey report(s) shall be submitted to Reclamation prior to the start of ground disturbance.
General	• The treated water 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 law, and requirements imposed for protection of the environment and Indian Trust Assets. • No land conversions may occur as a result of the Proposed Action.
Water Resources	Widren Water District shall adhere to their Regional Board's Waste Discharge Requirements General Order for discharges to groundwater.

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

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Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 3.

Table 3 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Air Quality	No new facilities would be needed as a result of the Proposed Action that would cause substantive air pollutant emissions from construction activities. Only some minor trenching is necessary to connect the RO Treatment Plant to the DMC, and would not significantly contribute to air quality impacts to the San Joaquin Valley Air Basin.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Global Climate Change	The Proposed Action would involve temporary ground disturbance that would not contribute to global climate change. Therefore, there would be no impacts to global climate change.
Indian Sacred Sites	The Proposed Action would not limit access to ceremonial use of Indian Sacred Sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.

3.2 Biological Resources

3.2.1 Affected Environment

Reclamation requested an official species list from the U.S. Fish and Wildlife Service (Service) on October 28, 2016 (https://ecos.fws.gov/ipac/) (Service 2016). The California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB) was also queried for records of Federally protected species near the Action area (CNDDB 2016). The information collected above, in addition to information within Reclamation's files, was combined to determine the likelihood of protected species occurrence within the Action area. In addition to the federally listed species in Table 4, other migratory birds, such as the Western Burrowing Owl and Swainson's Hawk could forage and nest in the Proposed Action Area. The Federally listed fishes other than the delta smelt and Central Valley steelhead were added by Reclamation to the

list. Critical habitat for the California red-legged frog, Contra Costa goldfields, and vernal pool fairy shrimp overlap the Proposed Action Area.

Table 4 Special Status Species with the Potential to Occur in the Action Area

Species	Status[1]	Effects[2]	Occurrence in the Study Area[3]
INVERTEBRATES			
Conservancy fairy shrimp *Branchinecta conservatio*	E, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
Longhorn fairy shrimp *Branchinacta longiantenna*	E, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
Vernal pool fairy shrimp *Branchinecta lynchi*	T, X	NE	**Possible.** There is some critical habitat in the Proposed Action Area that is considered occupied, but none of this land would be converted as a result of the Proposed Action.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T, X	NE	**Possible.** This species may be present in elderberry bushes growing along Delta waterways. The Proposed Action would only involve construction within a dirt road, and would not require any removal/disturbance of vegetation, or conversion of native or fallowed lands.
San Bruno elfin butterfly *Incisalia mossii bayensis*	E	NE	**Absent.** This species uses stonecrop as a larval food plant, and only occurs in mountainous areas near San Francisco Bay.
Vernal pool tadpole shrimp *Lepidurus packardi*	E, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
FISH			
Green sturgeon *Acipenser medirostris*	T, X, NMFS	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
Delta smelt *Hypomesus transpacificus*	T, X	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
Central Valley steelhead *Oncorhynchus mykiss*	T, X, NMFS	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
South Central California steelhead *Oncorhynchus mykiss*	T, X, NMFS	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	T, X, NMFS	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
Winter-run Chinook salmon, Sacramento River *Oncorhynchus tshawytscha*	E, X, NMFS	NE	**Absent.** The Proposed Action would not affect the Delta, as there would be no change at all in Delta pumping.
AMPHIBIANS			
California tiger salamander, Central population *Ambystoma californiense*	T, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
California red-legged frog *Rana draytonii*	T, X	NE	**Possible.** There is some critical habitat in the Proposed Action Area that is considered occupied, but none of this land would be converted as a result of the Proposed Action.
REPTILES			
Blunt-nosed leopard lizard *Gambelia sila*	E	NE	**Absent.** Blunt-nosed leopard lizards need arid grassland or alkali scrub/saltbush scrub habitat, which is absent from the Proposed Action Area.
Alameda whipsnake *Masticophis lateralis euryxanthus*	T, X	NE	**Absent.** Only occurs in Bay Area chaparral habitat, outside the Proposed Action Area.

Species	Status[1]	Effects[2]	Occurrence in the Study Area[3]
Giant garter snake *Thamnophis gigas*	T	NE	**Present.** This species occurs in areas such as the Mendota Wildlife Area, which receives water from the DMC. However, water quality would remain high and this species would not be impacted.
BIRDS			
Western Yellow-billed Cuckoo *Coccyzus americanus occidentalis*	T, X, MBTA	NE	**Possible.** This species could fly over the Proposed Action Area while migrating to and from breeding habitat on a section of the Sacramento River, but it would not nest in the Proposed Action Area, because it requires extensive cottonwood-willow forests, which are lacking.
Least Bell's Vireo *Vireo bellii pusillus*	E, X, MBTA	NE	**Possible.** Needs riparian habitat with a well-developed understory for nesting. This habitat is lacking in the Proposed Action Area. However, birds could pass overhead while migrating (there are recent records from the San Joaquin River National Wildlife Refuge and a record from Santa Clara County).
MAMMALS			
Giant kangaroo rat *Dipodomys ingens*	E	NE	**Absent.** Uses arid grasslands and saltbush scrub; the nearest populations are in western Fresno and San Benito Counties, outside the Proposed Action Area.
Fresno kangaroo rat *Dipodomys nitratoides exilis*	E, X	NE	**Absent.** This species historically may have had a range that extended north into part of Merced County, but no longer occurs there.
Riparian woodrat *Neotoma fuscipes riparia*	E	NE	**Absent.** Currently, there are only two known populations of this species, one in Caswell Memorial State Park and one in the San Joaquin River National Wildlife Refuge, both outside the Proposed Action Area.
Riparian brush rabbit *Sylvilagus bachmani riparius*	E	NE	**Absent.** There are only a few extant occurrences of this species, in the Delta, and along the San Joaquin and Stanislaus Rivers. The Proposed Action would not impact the Delta.
San Joaquin kit fox *Vulpes macrotis mutica*	E	NE	**Present.** There are several CNDDB records of this species in and within 10 miles of the Proposed Action Area. This species can forage within, but do not den in agricultural lands when they are near enough to occupied native lands (Warrick et al. 2007).
PLANTS			
Large-flowered fiddleneck *Amsinckia grandiflora*	E, X	NE	**Absent.** Historically occurred in the northern Diablo Range in grassland habitat, but is now only found in two introduced populations (Lawrence Livermore National Laboratory in southwestern San Joaquin County and Lougher Ridge in Contra Costa County) , outside the Proposed Action Area.
Hoover's spurge *Chamaesyce hooveri*	T, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
succulent owl's-clover *Castilleja campestris* ssp. *succulenta*	T, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
palmate-bracted bird's-beak *Cordylanthus palmatus*	E	NE	**Absent.** Occurs in alkali sink habitat, outside the Proposed Action Area.
Contra Costa goldfields *Lasthenia conjugens*	E, X	NE	**Possible.** There is some critical habitat in the Proposed Action Area that is considered occupied, but none of this land would be converted as a result of the Proposed Action.
Colusa grass *Neostapfia colusana*	T, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.

Species	Status[1]	Effects[2]	Occurrence in the Study Area[3]
Antioch Dunes evening-primrose *Oenothera deltoides* ssp. *howellii*	E, X	NE	**Absent.** This species only occurs in very limited remnants of suitable dune habitat in its former range, such as at the Antioch Dunes National Wildlife Refuge.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	T, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
hairy Orcutt grass *Orcuttia pilosa*	E, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.
Greene's tuctoria *Tuctoria greenei*	E, X	NE	**Possible.** There is some vernal pool habitat in the northern part of the Proposed Action Area. None of this land would be converted as a result of the Proposed Action.

1 Status= Listing of Federally special status species
E: Listed as Endangered
MBTA: Protected under the Migratory Bird Treaty Act
NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service
T: Listed as Threatened
X: Critical Habitat designated for this species
2 Effects = Effect determination
NE: No Effect from the Proposed Action to Federally listed species
3 Definition Of Occurrence Indicators
Absent: Species not recorded in Action Area and/or habitat requirements not met
Possible: Species not recorded in or near Action Area, but suitable habitat is present.
Present: Species recorded in or near Action Area and habitat present

3.2.2 Environmental Consequences

No Action

Under the No Action, land uses and Delta pumping would be unchanged. The San Joaquin kit fox could use agricultural lands for foraging, and migratory birds would be unaffected.

Proposed Action

Under the Proposed Action, there would be no changes in Delta pumping, and water would only be used to support existing land uses. The trench lines would result in temporary disturbance of land that could potentially be used by the San Joaquin kit fox and Western Burrowing Owl. The measures included in Table 2 would prevent any take of owls, and any impacts to the San Joaquin kit fox. Water pumped into the DMC would be of a quality that would not present an issue for species living in habitat that also receives water conveyed through the DMC (such as the Mendota Wildlife Area, which is used by the giant garter snake). Mercury levels would be so low as to be undetectable, and selenium levels in the water would remain well below two parts per billion. Critical habitat in the Proposed Action Area would not be subject to land use change as a result of the Proposed Action. The San Joaquin kit fox and any migrating birds could continue to use the Proposed Action Area as under the No Action alternative.

With the environmental commitments listed in Table 2 and based upon the nature of this Action, Reclamation has determined there would be No Effect to proposed or listed species or critical habitat under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq.), and there would be no take of birds protected under the Migratory Bird Treaty Act (16 U.S.C. §703 et seq.).

Cumulative Impacts

As the Proposed Action would not impact any federally listed species or migratory birds, it would not contribute cumulatively to any impacts to those resources.

3.3 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the National Historic Preservation Act requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects, determine if historic properties are present within that area of potential effects, determine the effect that the undertaking would have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.3.1 Affected Environment

Reclamation proposes to approve Widren Water District's Pilot Project through the issuance of a one-year Exchange Agreement and/or Warren Act contract to Widren Water District. In addition, Reclamation would issue a land use authorization to allow Widren Water District to discharge pumped and treated groundwater into the DMC, approximately 2 miles west of Firebaugh, California. This is the type of action that has the potential to cause effects to historic properties pursuant to 36 CFR §800.3 of the Section 106 implementing regulations. As a result of this determination, Reclamation implemented the steps in the Section 106 process as outlined at §800.3 to §800.6.

The historic property identification efforts included a review of Reclamation project records, internal records of cultural resources surveys, sites, and project data. A Reclamation archaeologist conducted a site inspection and survey of the area of potential effect (APE) on March 17, 2017 to verify the extent of the built environment and to identify any other cultural resources that might be present. The only cultural resource identified in the APE is the DMC. No other cultural resources were identified other than contemporary infrastructure.

The DMC was completed in 1951 as part of the Delta Division of Reclamation's CVP to convey irrigation water southeast from the Tracy Pumping Plant along the west side of the San Joaquin

Valley. Reclamation treats the DMC as significant under the theme of development, construction, and operation of the CVP, with a period of significance of 1946-1971. Under this theme and within this period, the DMC, as a water conveyance component of the CVP, contributed to California's economic and agricultural development and growth.

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Big Sandy Rancheria, Cold Springs Rancheria of Mono Indians, Picayune Rancheria of the Chukchansi Indians of California, Santa Rosa Rancheria, Table Mountain Rancheria, and Tule River Indian Tribe as Indian tribes who might attach religious and cultural significance to historic properties within the APE, and sent letters to invite their participation in the Section 106 process pursuant to 36 CFR § 800.4(a)(4). Reclamation also sent letters to the Choinumni Tribe, North Valley Yokuts Tribe, Dumna Wo-Wah Tribal Government, Dunlap Band of Mono Indians, North Fork Mono Tribe, Southern Sierra Miwuk Nation, and Wuksache Indian Tribe of Eshorn Valley, which are identified as Native American organizations likely to have knowledge or concerns with historic properties in the area, requesting their assistance in identifying historic properties which may be affected by the proposed undertaking pursuant to 36 CFR § 800.4(a)(3). No such properties have been identified through consultations with these Indian tribes.

Reclamation entered into consultation with SHPO on June 22, 2017, notifying them regarding a finding of "no adverse effects to historic properties pursuant to 36 CFR Part 800.5(b)." SHPO responded on June 19, 2017 concurring with Reclamations' findings and determination.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no impacts to cultural resources since there would be no change in operations and no ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

Proposed Action

The proposed action of connecting a new pipeline to an existing DMC turnout would not alter any physical characteristics of the canal or its berm. Since there would be no alterations to the DMC, the CVP would also be unaffected. Reclamation determined that there would be no adverse effects to historic properties pursuant to 36 CFR Part 800.5(b); therefore, no cultural resources would be affected as a result of implementing the Proposed Action.

Cumulative Impacts

Reclamation determined that there would be no adverse effects to historic properties pursuant to 36 CFR Part 800.5(b); therefore, there would be no cumulative impacts to cultural resources as a result of implementing the Proposed Action.

3.4 Land Use

3.4.1 Affected Environment

The affected land use for those South-of-Delta CVP contractors that would receive water under the Pilot Project is the same as described in Section 3.2 of the DMC Groundwater Pump-in

Program EA-12-061 (Reclamation 2013), which is incorporated by reference into this EA. Rather than repeating the affected environment and environmental consequences here, this section will instead focus on any land use updates or changes not covered in EA-12-061.

Westlands Water District

Westlands Water District is primarily an agricultural water district. The current size of the district is 604,000 acres, with over 570,000 acres of annual and permanent crops in Fresno and Kings Counties.

Widren Water District

Widren Water District is an agricultural water district located within Fresno County. Widren Water District is approximately 835 acre in size, with 805 acres irrigated. There are currently 467 acres of irrigated pistachios, 120 acres of irrigated Jose tall wheatgrass, 97 acres of irrigated grains, and 120 acres of dry farmed grains.

Pistachios are the predominate crop grown in Widren Water District. Up to 337 acres of salt tolerant crops such as Jose tall wheatgrass would be the secondary crop grown.

Current land use within the proposed 337 acre Treatment Plant and reuse area are 120 acres of Jose tall wheatgrass irrigated with reuse drain water. The balance of the acreage is dry farmed.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no change to land use within Widren Water District. Widren Water District plans to provide any effluent produced from the RO Treatment Plant to the proposed reuse area planted with salt tolerant crops.

Proposed Action

The Proposed Action would provide for supplemental non-Project water to South-of-Delta CVP contractors to irrigate existing agricultural lands in production and minimize the potential for fallowing agricultural lands. No untilled land (fallow for three years or more) would be brought into production. The Proposed Action would only occur for one year and would not be used for development.

Under the Proposed Action, up to 337 acres of dry farmland within Widren Water District could receive blended effluent for salt tolerant crops. This land would most likely receive blended effluent from Widren Water District's RO Treatment Plant regardless of whether the project was implemented or not, to improve drainage impacted lands within Widren Water District. Therefore, no land use changes would occur.

Cumulative Impacts

As the Proposed Action would not change current land use, there would be no cumulative impacts.

3.5 Water Resources

3.5.1 Affected Environment

The affected water resources in the Pilot Project are the same as described in Section 3.1 of EA-12-061 (Reclamation 2013), which are incorporated by reference into this EA. Rather than repeating the affected environment and environmental consequences here, this section will instead focus on any updates or changes to water resources not covered in EA-12-061.

Westlands Water District

Westlands Water District has a CVP water service contract for 1,150,000 AF per year. Current municipal and industrial deliveries are estimated to be approximately 2,000 AF per year and account for only a small percentage of Westlands Water District's CVP supplies.

Widren Water District

Widren Water District previously had a CVP water service contract for 2,990 AF per year of CVP water, however they assigned their contract to Westlands Water District in 2003. They are now considered a non-Project contractor. Currently, Widren Water District relies on imported surface water or groundwater for their irrigation needs. No drain water leaves Widren Water District, but instead is currently used for irrigation on reuse lands. This includes part of the proposed reuse area shown in Figure 4 where some drain water is used on existing salt tolerant crops.

Groundwater Resources

The Groundwater Management Plan for the Southern Agencies (including Widren Water District) in the DMC Service Area were updated in 2011 and revised in 2014 (SLDMWA 2014). Changes to the plan included updating current groundwater conditions and management components to address recent changes in regulations, policies, and groundwater conditions. The plans still provide the San Luis & Delta-Mendota Water Authority the responsibility to monitor the regional groundwater conditions within the basin and manage resources so as to not adversely impact water quality and yield.

Regional groundwater in the DMC Service Area occurs in three water-bearing zones: a lower zone, which contains confined fresh water; an upper zone which contains confined, semi-confined, and unconfined water; and a shallow zone which contains unconfined water within about 25 feet below the land surface (SLDMWA 2012, 2014). Groundwater quality in this subbasin is highly variable due to the sources of water (natural or agriculture) and the geochemical nature of the sediments.

As previously described in Section 2.2.2, there is a shallow groundwater well that would be pumped under the Proposed Action. The current depth of this well is 410 feet. The well is perforated between 220 feet - 240 feet and 280 feet -340 feet. The static water level as of September of 2017 was 72 feet. This well has not been pumped for approximately 10 years. A water quality analysis of the groundwater from this well was recently completed showing elevated dissolved minerals, including salt and selenium (Table 1).

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no impacts to water resources since there would be no change in operations. Conditions related to water resources would remain the same as existing conditions.

Proposed Action

Under the Proposed Action, Widren Water District would pump up to 1,200 AF of groundwater to be treated by their proposed RO Treatment Plant over a one-year Pilot Project. Reclamation would allow up to 1,000 AF of non-Project water to be introduced, conveyed, and/or stored in CVP facilities, when excess capacity is available. This would allow the treated water to be delivered to participating South-of-Delta CVP Contractors' service areas to supplement their CVP water supplies. There would be no construction or modification to the DMC and the capacity of the facility would remain the same. The Proposed Action would not interfere with the normal operations of the DMC nor would it impede CVP obligations to deliver water to its contractors. Therefore, there would be no impact to water quality or operations of CVP facilities.

The total quantity of groundwater that would be pumped into the DMC under the Proposed Action would be limited to 1,000 AF over the one-year period. Widren Water District would pump from above the Corcoran Clay, which has the potential to lower a perched saline water table (SJVDP 1990), thus improving local water quality and the otherwise drainage impaired lands in this area.

Widren Water District estimates that up to 200 AF of effluent would be generated from treatment or backflush at the RO Treatment Plant. This effluent would be blended with up to 400 AF of groundwater and then used to irrigate salt tolerant crops on Widren Water District's proposed reuse area (Figure 4). In addition, Widren Water District would follow the Regional Board's Waste Discharge Requirements General Order for discharge to groundwater. No effluent or RO treatment backflush water would leave Widren Water District. Therefore, there would be no impact to local water supplies.

Cumulative Impacts

Under the Proposed Action, there would be no construction or modification to Reclamation facilities or interference with CVP operations. In addition, groundwater quality would be monitored to insure no impacts occur to the water quality of the DMC. Therefore, there would be no adverse cumulative impacts to existing facilities or other contractors.

In addition to the Proposed Action, other actions in the area which could affect water resources include the Grassland Bypass Project (Reclamation 2009), San Joaquin River Water Quality Improvement Program reuse area (Reclamation 2012), and the DMC Groundwater Pump-in Program (Reclamation 2013). All of these projects, in addition to the Proposed Action, are consistent with the Westside Regional Drainage Plan (Exchange Contractors 2003). This plan was designed to reduce subsurface drainage in the Grassland Drainage Area. However, the project is only a one-year Pilot Project, and therefore, is not expected to cumulatively impact local drainage.

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Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA between October 27, 2017 and November 11, 2017. No comments were received.

4.2 List of Agencies and Persons Consulted

Reclamation has consulted with the following regarding the Proposed Action:

- State Historic Preservation Office

Reclamation and Widren Water District are coordinating the Proposed Action with the San Luis Delta & Mendota Water Authority, Banta-Carbona Irrigation District, Byron Bethany Irrigation District, Del Puerto Water District, Mercy Springs Water District, Pacheco Water District, Panoche Water District, San Luis Water District, West Stanislaus Irrigation District, and Westlands Water District.

4.3 National Historic Preservation Act (Title 54 USC § 306108)

The National Historic Preservation Act of 1966, as amended (Title 54 USC § 306108), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register. The 36 CFR Part 800 regulations implement Section 106 of the National Historic Preservation Act.

Reclamation initiated Section 106 consultation with the SHPO, and made a finding of "no adverse effects to historic properties" pursuant to 36 CFR Part 800.5(b), for the proposed undertaking. SHPO responded on June 19, 2017 concurring with Reclamations' findings and determination, which concludes the Section 106 process for the proposed undertaking (See Appendix B).

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