

RECLAMATION

Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Westlands Water District Groundwater Warren Act Contract

FONSI-15-001



U.S. Department of the Interior
Bureau of Reclamation

June 2015

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

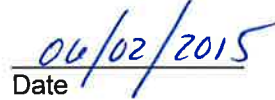
The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.


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

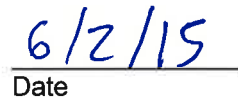
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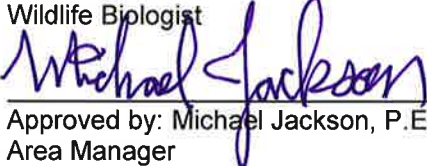
Westlands Water District Groundwater
Warren Act Contract

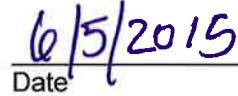

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Date


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Date


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Area Manager


Date

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 issuance of a five-year Warren Act Contract and up to 25-year land use authorization(s) to Westlands Water District. This Finding of No Significant Impact is supported by Reclamation's Environmental Assessment (EA)-15-001, *Westlands Water District Groundwater Warren Act Contract*, which is hereby incorporated by reference.

Reclamation initially offered the public an opportunity to comment on the draft EA/FONSI during a 15-day comment period. By request, the comment period was later extended an additional 15 days. The entire public comment period was from March 11, 2015 to April 10, 2015. Reclamation received three comment letters. The comment letters and Reclamation's response to comments are included in Appendix A of Final EA-15-001.

Background

The State of California is currently experiencing unprecedented water management challenges due to severe drought in recent years. On January 17, 2014, the Governor proclaimed a Drought State of Emergency (State of California 2014). On December 22, 2014, provisions within this proclamation were extended until May 31, 2016. On April 1, 2015, following the lowest snowpack ever recorded in California and the ongoing drought, the Governor proclaimed a second Drought State of Emergency and directed the State Water Resources Control Board to implement mandatory water reductions in cities and towns across California to reduce water usage by 25 percent (State of California 2015). On April 23, 2015 and May 1, 2015 the State Water Resources Control Board issued curtailment notices to junior water rights holders in the San Joaquin River watershed and the Delta, respectively. The curtailment notices require junior water rights holders to stop diverting water from the watershed in order to allow it to flow to more senior water-right holders, as required by state law (State of California 2015).

Both the State and Federal water projects are forecasting very low storage conditions in all major reservoirs. In addition, South of Delta Central Valley Project (CVP) contractors experienced reduced water supply allocations from 2007 to 2013 due to hydrologic conditions and regulatory requirements. Based on hydrologic conditions, Reclamation declared a 0% allocation for South of Delta

CVP contractors for the 2014 Contract Year¹. Although there has been some precipitation in the last few months, the drought is expected to continue into the 2015 Contract Year. As a result, South of Delta CVP contractors, such as Westlands Water District, have a need to make the most and best use of limited available supplies.

In order to better manage available water, Westlands Water District has requested a Warren Act Contract to convey non-CVP water in the San Luis Canal for delivery to their in-district agricultural users. They have also requested the flexibility to perform operational exchanges of their available CVP supplies within San Luis Reservoir for storage of the non-CVP water within the reservoir and/or for delivery to their agricultural users located upstream of the points of introduction. The purpose of the proposed Warren Act Contract is to convey pumped groundwater and other sources of non-CVP water to areas within the district that could not otherwise receive this water, providing greater water management flexibility to the district and their water users.

Proposed Action

Reclamation will enter into a five-year Warren Act Contract with Westlands Water District for introduction of up to 30,000 acre-feet per year (AFY) of non-CVP water into the San Luis Canal, in years in which Westlands Water District's CVP allocation is 20 percent or less. In addition, Reclamation will issue land use authorization(s) for a period of up to 25-years for existing permanent and temporary discharge facilities currently within Reclamation's right-of-way. After the end of the 5-year period, the discharge facilities will not be able to introduce non-CVP water into the San Luis Canal without a new Warren Act contract which would require additional environmental review and approval from Reclamation.

No new facilities or modifications to the San Luis Canal are authorized under the Proposed Action. However, additional wells and temporary, aboveground discharge facilities may be added to the program at a later date as long as there would be no new ground disturbance, and water from the well in question is shown to meet Reclamation's then-current water quality standards.

Specific details of the Proposed Action are included in Section 2.2 of EA-15-001.

Environmental Commitments

Westlands Water District shall implement the environmental protection measures listed in Table 2-2 of EA-15-001 in order to avoid and/or reduce environmental consequences associated with the Proposed Action. Environmental consequences for resource areas assume the measures specified would be fully implemented.

¹ A Contract Year is from March 1 through February 28/29 of the following year.

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 3-1 of EA-15-001, 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, cultural resources, global climate change, Indian Sacred Sites, and Indian Trust Assets.

Water Resources

Surface Water

The Proposed Action would allow groundwater and other non-CVP water to be conveyed and/or stored in CVP facilities when excess capacity is available. The Proposed Action would not interfere with the normal operations of the San Luis Canal (as it would be scheduled prior to introduction), nor would it impede any State Water Project (SWP) or CVP obligations to deliver water to other contractors or to fish and wildlife habitat.

In 2014, in an action similar to the Proposed Action, Westlands Water District was given authorization by the California Department of Water Resources to pump up to 30,000 AF of groundwater from many of the same wells, for conveyance with SWP approval in joint facilities. Total dissolved solids values reported for water from the wells at that time ranged from 530 to 1,180 mg/L (Rhodes, pers. comm. 2015). This is expected to be representative of the groundwater pumped and conveyed under the Proposed Action. In addition, water under the Proposed Action would be required to meet Reclamation's then-current water quality standards prior to approval for introduction into the San Luis Canal (see Table 2-1 and Appendix C of EA-15-001). If a well to be used for pumping water into the San Luis Canal does not meet Reclamation's standards, no water would be allowed to be introduced from that source until water quality improves sufficient to meet the requirements. Reclamation also requires that any wells proposed to pump into Mendota Pool for the Proposed Action would be monitored to show compliance with established water quality standards for the Pool.

Some groundwater wells included in the Proposed Action are located in areas known to be impacted by historic drainage (see Figure 3-2 and Appendix B of EA-15-001). However, these wells are all screened below the Corcoran Clay layer which separates the shallow and deep aquifers. Therefore, the water pumped from these wells would not come from the layers which are drainage-impaired. The groundwater pumped and conveyed under the Proposed Action would also not be used on land known to be drainage-impaired, and therefore would not mobilize contaminants present in those areas.

Groundwater

The Proposed Action could involve the pumping of up to 30,000 AFY of groundwater at various locations within the district, for conveyance in federal facilities, during years in which their CVP allocation is 20 percent or less. The water involved in the Proposed Action is within the range of historical pumping during the irrigation season, and would be pumped regardless of whether Reclamation allowed its conveyance in federal facilities. The Proposed Action only allows Westlands Water District's growers to convey the water to the areas of the district with greatest need.

Westlands Water District shall monitor and report groundwater levels to Reclamation as part of their water quality sampling program.

Subsidence

Groundwater pumping is known to be a leading cause of subsidence in the San Joaquin Valley. However, the groundwater to be conveyed under the Proposed Action is within the range of historical pumping by the district, and would be pumped regardless of whether Reclamation allowed its conveyance in federal facilities. Therefore any subsidence associated with this use of groundwater would take place regardless of Reclamation's decision.

Land Use

The Proposed Action would support current land uses by allowing growers in Westlands Water District to make the most effective use of water that is available to them. Water conveyed in the San Luis Canal would only be used to sustain existing crops. The water would not be used to support new development or convert fallow land for agriculture.

Some groundwater wells included in the Proposed Action are located in areas known to be impacted by drainage (see Figure 3-2 in EA-15-001). However, as described previously, the wells are all screened below the Corcoran Clay layer which separates the shallow and deep aquifers. Therefore the water pumped from these wells would not come from the layers which are drainage-impaired. The groundwater pumped and conveyed under the Proposed Action would also not be used on land known to be drainage-impaired.

Biological Resources

Under the Proposed Action, the water would help to keep agricultural lands in production. No native lands or lands fallowed and untilled for three or more years could be brought into production with the use of the water involved in the Proposed Action. Both Mendota Wildlife Area and Kern National Wildlife Refuge water supplies may mix with groundwater introduced as a result of the Proposed Action, and this would occur partly during times of the year when these refuges would receive water supplies. However, the selenium levels are expected to remain well below the threshold for an effect on wildlife, which is 2 ppb as measured in the water column (Reclamation and San Luis & Delta-Mendota

Water Authority 2009 and references therein). Data from 2014 shows that the selenium level has not exceeded 1 ppb at Check 21 during the time period from April through September. According to calculations performed by Reclamation, using recent baseline data and projecting changes in Lateral 7, the selenium level in Lateral 7 would not exceed 1.34 ppb with the Proposed Action, and according to a model for the California Aqueduct, also including recent data and considering projected flow resulting from the California Department of Water Resources and Reclamation actions, the selenium level would not increase above 1.49 ppb at Check 21, during the months that groundwater would be pumped as part of the Proposed Action. No drainage would be generated that could make its way into aquatic habitat potentially used by the giant garter snake or California least tern.

As a result, 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.). No consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service is required.

Environmental Justice

The Proposed Action would support agriculture by allowing conveyance of groundwater and other sources of non-CVP water to support existing crops. Since farm laborers often come from minority and low-income communities, supporting farm employment is a benefit to those disadvantaged groups.

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.

Water Resources

Reclamation has reviewed existing or foreseeable projects in the same geographic area that could affect or could be affected by the Proposed Action since Reclamation and CVP contractors have been working on various drought-related projects, including this one, in order to manage limited water supplies due to current hydrologic conditions and regulatory requirements. This and similar projects would have a cumulative beneficial effect on water supply during this critically dry year.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drive requests for water service actions. Water districts provide water to their customers based on available water supplies and timing, while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. It is likely that over

the course of the Proposed Action, districts will request various water service actions, such as transfers, exchanges, and Warren Act contracts (conveyance of non-CVP water in CVP facilities). Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Surface Water The San Luis Canal carries water from CVP, SWP and other sources, for use by contractors located along the San Luis Canal/California Aqueduct. Poor water quality from multiple sources has the potential to cause a cumulative impact on downstream water users. In order to reduce the risk of cumulative impacts to water quality, all water introduced to the San Luis Canal would be tested prior to introduction, and if water quality standards cannot be met, introductions from that source would not be allowed until water quality standards are met.

Groundwater Many irrigation districts and individual growers in the San Joaquin Valley rely on groundwater as part of their supply, with volumes pumped varying in response to surface water allocations (CVP and SWP), hydrologic conditions and changes in crop patterns. Pumped water may be used directly on-site, sold/transferred, or exchanged for water at another location.

Groundwater overdraft is an ongoing challenge throughout California, and the San Joaquin Valley in particular has been identified as a high priority for establishing a sustainability plan. Overdraft is a cumulative problem, caused by many small actions throughout the basin. However, the Proposed Action only allows conveyance of water that would already be pumped to areas within the district with the greatest need. Therefore there would be no contribution to cumulative impacts to groundwater as a result of the Proposed Action itself.

Subsidence Subsidence in the San Joaquin Valley is a cumulative problem, caused by groundwater pumping at many locations throughout the area. Pumping of the groundwater which would be conveyed under the Proposed Action may contribute to ongoing subsidence trends. However, that water is likely to be pumped for agricultural use in similar volumes regardless of Reclamation's decision. Therefore the Proposed Action itself would not contribute to cumulative subsidence impacts beyond ongoing existing trends.

Land Use

The Proposed Action would allow for more effective use of water supplies in a time of shortage. This helps to mitigate the impacts of external challenges, in particular California's ongoing drought. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to existing land uses.

Since groundwater pumped for the Proposed Action would be drawn from the aquifer below the Corcoran Clay layer, and water would not be applied to the areas known to be drainage-impaired, the Proposed Action is not anticipated to cumulatively contribute to these existing impairments.

Biological Resources

As the Proposed Action would not result in any direct or indirect impacts to biological resources, it would not contribute cumulatively to any impacts.

Environmental Justice

The Proposed Action would allow conveyance of water to support agriculture in a time of shortage. Because of agriculture's importance to the area's economy, any impacts, either positive or negative, tend to have a disproportionate and cumulative effect on employment and wages. Farm laborers often come from low-income and minority populations and they are therefore disproportionately affected by these trends. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to the economic well-being of disadvantaged groups.

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Westlands Water District Groundwater Warren Act Contract

EA-15-001



**U.S. Department of the Interior
Bureau of Reclamation**

June 2015

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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) between March 11, 2015 and April 10, 2015. Reclamation received three comment letters. The comment letters and Reclamation's response to comments are included in Appendix A. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Need for the Proposed Action

The State of California is currently experiencing unprecedented water management challenges due to severe drought in recent years. On January 17, 2014, the Governor proclaimed a Drought State of Emergency (State of California 2014). On December 22, 2014, provisions within this proclamation were extended until May 31, 2016. On April 1, 2015, following the lowest snowpack ever recorded in California and the ongoing drought, the Governor proclaimed a second Drought State of Emergency and directed the State Water Resources Control Board to implement mandatory water reductions in cities and towns across California to reduce water usage by 25 percent (State of California 2015). On April 23, 2015 the State Water Resources Control Board issued curtailment notices to junior water rights holders in the San Joaquin River watershed. The curtailment notices require junior water rights holders to stop diverting water from the watershed in order to allow it to flow to more senior water-right holders, as required by state law (State of California 2015).

Both the State and Federal water projects are forecasting very low storage conditions in all major reservoirs. In addition, South of Delta Central Valley Project (CVP) contractors experienced reduced water supply allocations from 2007 to 2013 due to hydrologic conditions and regulatory requirements. Based on hydrologic conditions, Reclamation declared a 0% allocation for South of Delta CVP contractors for the 2014 Contract Year¹. Although there has been some precipitation in the last few months, the drought is expected to continue into the 2015 Contract Year. As a result, South of Delta CVP contractors, such as Westlands Water District, have a need to make the most and best use of limited available supplies.

In order to better manage available water, Westlands Water District has requested a Warren Act Contract to convey non-CVP water in the San Luis Canal for delivery to their in-district agricultural users. They have also requested the

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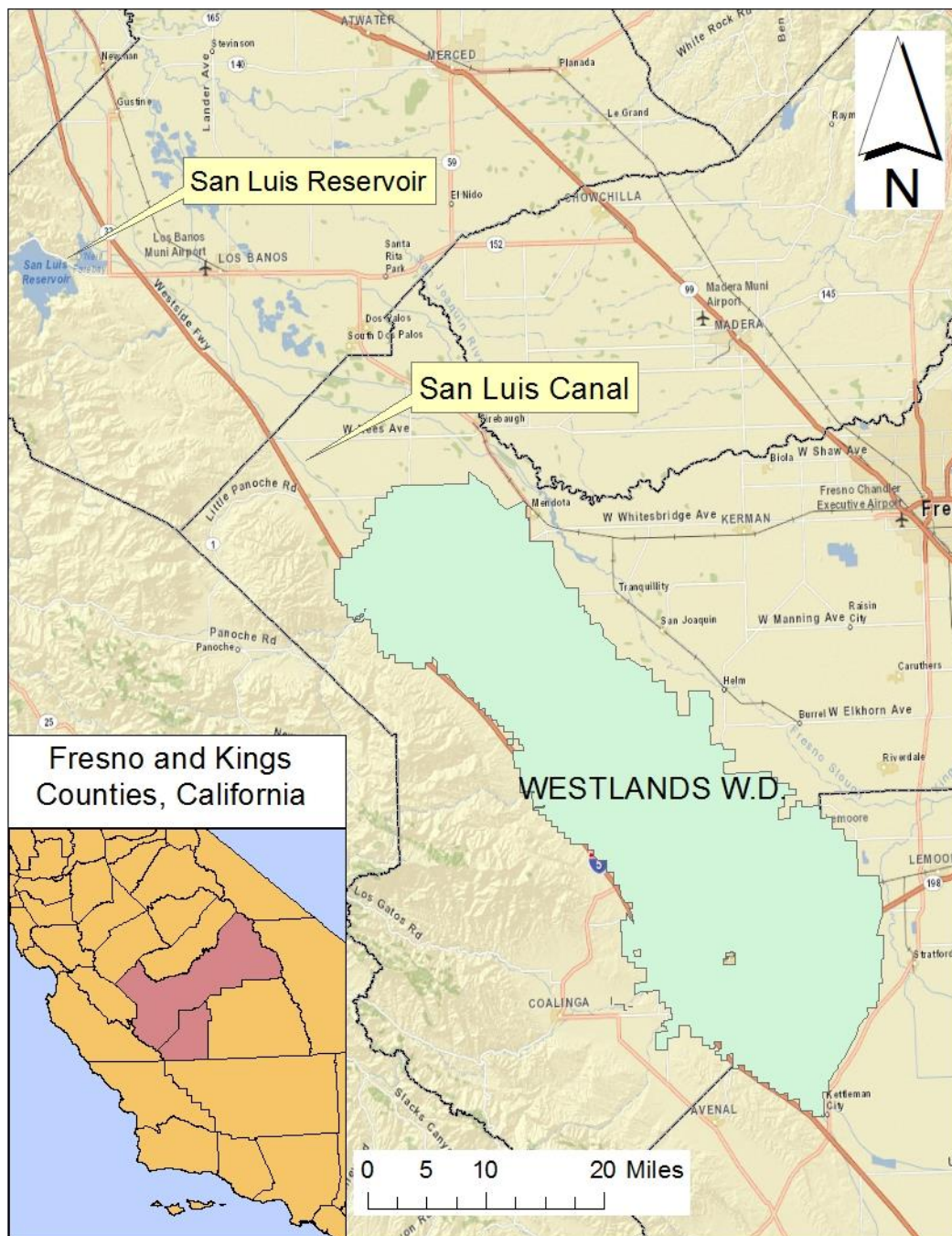


Figure 1-1 Project Location

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 Warren Act Contract to Westlands Water District for the introduction of their non-CVP water into the San Luis Canal. As Westlands Water District has an active groundwater pumping program, groundwater would still be pumped out of the aquifer as it has in the past. However, distribution of the non-CVP water would be limited to only those areas that could normally receive the water and would not enable Westlands Water District to provide water supplies to other areas in-district.

2.2 Proposed Action

Reclamation proposes to enter into a five-year Warren Act Contract with Westlands Water District. Under the terms of the contract, Westlands Water District would introduce up to 30,000 acre-feet per year (AFY) of non-CVP water into the San Luis Canal, in years in which Westlands Water District's CVP allocation is 20 percent or less. The period of introduction would be between April 1 and August 31 of a given year. However, if it is not possible to begin conveyance by April 1, 2015, the conveyance period for this year would be shifted by two months, to between June 1 and October 30. All subsequent years would use the April 1 to August 31 window.

The source of the non-CVP water would be pumped groundwater from deep groundwater wells within Westlands Water District, as well as other sources of non-CVP water by way of the Mendota Pool. Potential groundwater sources and proposed discharge locations are listed in Table 2-1, and shown graphically in Appendix B. The amount of water from each source would vary, but the total quantity introduced under the Proposed Action would not exceed a combined volume of 30,000 AF in a given year. Prior to introduction, all wells would be tested to demonstrate compliance with Reclamation's then-current water quality standards for conveyance of non-Project water in the San Luis Canal. Water coming through the Mendota Pool would be required to meet applicable standards for the Pool.

Non-CVP water introduced into the San Luis Canal would either be directly delivered to agricultural users located downstream of the points of introduction or operationally exchanged with Reclamation for a like amount, less conveyance losses, of Westlands Water District's available water supplies in San Luis Reservoir. Exchanged water would either be delivered to agricultural users located upstream of the points of introduction in Westlands Water District or stored in San Luis Reservoir as non-CVP water for later delivery to Westlands Water District via the San Luis Canal.

Introduction of Westland Water District's non-CVP water and storage of the exchanged water would be scheduled annually with Reclamation and would be subject to excess capacity, operational constraints, and environmental requirements, as applicable. No Project Use Power would be used for the Proposed Action.

It is Westlands Water District's intention to use the water in the same year in which it is introduced to federal facilities. However, if Westlands Water District is unable to make use of water introduced into the facilities within the designated window, up to 15,000 AF could be carried over for later use, in accordance with Reclamation's applicable guidelines.

Table 2-1 Proposed Discharge Locations

#	San Luis Canal Milepost	Facility Type	State Well ID
1	105.00L	Direct Discharge (P)	141202R01
2	105.20L	Direct Discharge (P)	141202R02
3	107.10R	Direct Discharge (P)	141225D01
4	107.63R	Direct Discharge (P)	141319R01
5	108.85L	Direct Discharge (P)	141316N05
6	110.49L	Direct Discharge (P)	141322P01
7	110.52L	Direct Discharge (P)	141323EO2
8	111.02R	Direct Discharge (P)	141327E01
9	111.91R	Direct Discharge (P)	151305D02
10	113.77	Direct Discharge (P)	141628P01
11	114.00R	Direct Discharge (P)	151316L01
12	114.95L	Direct Discharge (P)	151407E01
13	115.43L	Lateral 7	Lateral 7 Reverse Flow
14	116.91R	Direct Discharge (P)	151322M01
15	117.52L	Direct Discharge (P)	151419F01 151419Q01
16	118.46R	Direct Discharge (P)	151431D02
17	119.56R	Direct Discharge (P)	151431D02
18	120.80L	Direct Discharge (P)	161404D01
19	122.59RA	Direct Discharge (P)	161427P01
20	123.05L	Direct Discharge (P)	161403H01

#	San Luis Canal Milepost	Facility Type	State Well ID
21	123.89R	Direct Discharge (P)	161424E01
22	124.18L	Direct Discharge (P)	161412N02
23	125.33R	Direct Discharge (P)	161506P02
24	125.99L	Direct Discharge (P)	161518P04
25	126.65L	Lateral 12L	161520H01
26	127.40L	Direct Discharge (P)	161521L01 161521N03
27	128.49R	Direct Discharge (P)	171413A01
28	128.50L	Direct Discharge (P)	161533J01
29	128.54L	Direct Discharge (P)	161532A06
30	130.81R	Direct Discharge (P)	171510M01
31	132.77L	Direct Discharge (P)	171513A01
32	133.80L	Direct Discharge (P)	171601N03
33	133.81L	Direct Discharge (P)	171623J01 171623M01 181606F01 171614Q01
34	135.48RA	Direct Discharge (P)	171526A01
35	135.96R	Lateral 14R	171526L01
36	136.03L	Direct Discharge (P)	171614Q01 171623J01 171623M01
37	137.00R	Lateral 15R	171536Q02
38	137.31L	Direct Discharge (P)	181606F01
39	137.83L	Direct Discharge (P)	171623J01 171623M01 171614Q01 171601N03
40	138.24L	Direct Discharge (P)	181605N01
41	139.40L	Direct Discharge (P)	181609R01
42	140.55LA	Direct Discharge (P)	181617R02
43	141.02R	Direct Discharge (P)	181620F01
44	141.55L	Direct Discharge (P)	181621Q02
45	142.58R	Direct Discharge (P)	181629N02
46	143.00L	Direct Discharge (P)	181627N01
47	143.20L	Direct Discharge (P)	191610E01
48	146.35L	Direct Discharge (P)	181720N02
49	147.75RC	Direct Discharge (P)	191720B01
50	152.75L	Direct Discharge (P)	191723R01
51	153.10R	Direct Discharge (P)	191726H01
52	154.10L	Direct Discharge (P)	191836N01
53	155.15L	Direct Discharge (P)	191831N01
54	156.36R	Direct Discharge (T)	201714K01 201712H01
55	156.37LA	Direct Discharge (P)	201806Q01
56	156.40L	Lateral 31	201808M01
57	157.98L	Direct Discharge (T)	201817G01
58	158.47R	Lateral 32	201714R01
59	158.95L	Direct Discharge (P)	201820E01

#	San Luis Canal Milepost	Facility Type	State Well ID
60	159.98R	Direct Discharge (T)	201830G02 201831C01
61	160.50RA	Direct Discharge (P)	201734D01
62	160.68L	Direct Discharge (P)	201832E01
63	161.60L	Direct Discharge (P)	211805C01 211809D02
64	162.08L	Direct Discharge (P)	211805C01 211805M01
65	162.10R	Direct Discharge (P)	211806G01
66	162.64L	Direct Discharge (P)	211808B01 211809L01
67	163.18R	Direct Discharge (P)	211807E01
68	163.59L	Direct Discharge (P)	211805M01 211808Q01
69	164.00R	Lateral 27R	211818G01
70	164.11R	Direct Discharge (P)	211818G03
71	164.55L-A	Direct Discharge (P)	211817N03 211816P01 211816N01 211822E01 211823E01 211823D06
72	164.55L-B	Direct Discharge (P)	211816P01 211816N01 211822E01
73	164.63R	Direct Discharge (P)	211818G03
74	164.95R	Direct Discharge (P)	211833G01 211833N02 211829E01
75	166.90R	Direct Discharge (T)	211827K02
76	167.04L	Lateral 37	211823D06 211919C03
77	167.84R	Direct Discharge (P)	221804H01
78	167.86R	Direct Discharge (P)	211833N02 211833G01
79	169.21R	Direct Discharge (P)	221803B01
80	169.48L	Direct Discharge (P)	211835Q01 211835N02
81	169.88L	Direct Discharge (P)	221801E01
82	171.50LA	Direct Discharge (P)	221812R01
Note: Some wells are capable of discharging at multiple locations along the canal. P = Permanent facility T = Temporary facility			

As shown in Table 2-1, there are existing permanent and temporary facilities currently located within Reclamation's right-of-way that propose to introduce non-CVP water under the five-year groundwater pump-in program. Some of these existing discharge facilities have expired licenses, or licenses that will expire soon, or licenses that could not be identified. Under the Proposed Action, Reclamation would issue land use authorization(s) to these facilities for a period of up to 25-years. However, after the end of the 5-year period, the discharge locations would not be able to introduce non-CVP water into the San Luis Canal without a new Warren Act contract which would require additional environmental review and approval from Reclamation.

No new facilities or modifications to the San Luis Canal are authorized under the Proposed Action. However, additional wells and temporary, aboveground discharge facilities may be added to the program at a later date as long as there

would be no new ground disturbance, and water from the well in question is shown to meet Reclamation's then-current water quality standards.

2.2.1 Environmental Commitments

Westlands Water District shall implement the following environmental protection measures to avoid and/or reduce environmental consequences associated with the Proposed Action (Table 2-2). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of all reports and monitoring shall be submitted to Reclamation.

Table 2-2 Environmental Protection Measures and Commitments

Resource	Protection Measure
Multiple	There will be no ground disturbance, new construction or other new installation without further environmental review and approval.
Multiple	In areas known to be impaired by historic drainage, all groundwater pumped shall come only from wells screened below the Corcoran Clay layer.
Multiple	Groundwater conveyed under the Proposed Action shall not be applied to drainage-impaired lands.
Groundwater	Westlands Water District shall comply with all applicable ordinances regarding export of groundwater.
Groundwater	Water quality sampling shall include measurements of groundwater levels. Groundwater levels shall be reported to Reclamation.
Land Use/ Biological Resources	The water shall not be used native lands or lands untilled for three consecutive years or more without additional environmental analysis and approval.
Water Quality	Prior to introduction, all wells shall be tested to demonstrate compliance with then-current water quality standards for conveyance of non-Project water in the San Luis Canal.
Water Quality	All wells pumping into the Mendota Pool shall be tested to demonstrate compliance with then-current water quality standards for the Mendota Pool.
Water Resources	Westlands Water District will coordinate with the Department of Water Resources and the State Water Project's Facilitation Group during the introduction of the non-project water into the San Luis Canal.
Water Quality	Reclamation requires monitoring of selenium levels in the San Luis Canal and at all points of introduction as described in the water quality monitoring plan (see Appendix C). Selenium levels in the San Luis Canal shall not exceed 2 parts per billion (ppb) during periods of introduction. If water quality in the San Luis Canal exceeds 2 ppb, Reclamation and/or its operating entity will require wells to be shut down until selenium levels are below the 2 ppb threshold.

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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 does not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 3-1.

Table 3-1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Air Quality	The pumps to be used for the Proposed Action are already existing and in place. They would be operated with or without the Proposed Action, and do not represent a new source of air emissions.
Cultural Resources	The Proposed Action does not have a potential to affect Cultural Resources, as it involves the conveyance of water through existing facilities for existing uses. There would be no new construction or modification of facilities (see Appendix D for Reclamation's determination).
Global Climate	The pumps to be used for the Proposed Action are already existing and in place. They would be operated with or without the Proposed Action, and do not represent a new source of greenhouse gas emissions.
Indian Sacred Sites	The Proposed Action would not limit access to or ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites.
Indian Trust Assets	The Proposed Action does not have the potential to affect Indian Trust assets as there are none in the Action area (see Appendix E for Reclamation's determination).

3.2 Water Resources

3.2.1 Affected Environment

Surface Water

Westlands Water District Westlands Water District encompasses more than 600,000 acres of farmland located in western Fresno and Kings Counties and serves approximately 600 family-owned farms that average 900 acres in size. The district, located on the west side of the San Joaquin Valley, is a part of the San Luis Unit of the CVP, with CVP contracts from the San Luis Unit and the Delta Division totaling 1,150,000 AFY and permanent reassignments totaling 46,948 AF. Westlands Water District receives water from the CVP by way of the Delta-Mendota Canal and the San Luis Canal. Once diverted from federal facilities,

water is delivered to farmers through 1,034 miles of underground pipe and over 3,300 metered delivery outlets.

In addition to CVP supplies, landowners in Westlands Water District rely on groundwater pumping, water transfers, and/or acquisitions on the open market to supplement their CVP supply. If their water portfolio comes up short, land is temporarily taken out of production (i.e., fallowed).

San Luis Reservoir San Luis Reservoir (also known as B.F. Sisk Dam and Reservoir) is a joint Federal/State facility located on San Luis Creek near Los Banos, California. The reservoir primarily stores water from the Delta, for use by CVP contractors in the western portions of Fresno, Kings and Merced Counties. O'Neill Forebay, which is located adjacent to the reservoir, balances flow and facilitates power operations.

San Luis Canal The San Luis Canal is a joint Federal/State concrete-lined canal with a capacity ranging from 8,350 to 13,100 cubic feet per second. It is the federally-built and operated section of the California Aqueduct and extends 102.5 miles from O'Neill Forebay, near Los Banos, in a southeasterly direction to a point west of Kettleman City. The 138-foot-wide channel is 36 feet deep, 40 feet wide at the bottom, and lined with concrete.

Mendota Pool The Mendota Pool is impounded by Mendota Dam, which is owned and operated by Central California Irrigation District. The Pool primarily serves as a conveyance facility but is also used as a short-term storage and re-regulation reservoir. The Pool is supplied with surface water from the Delta-Mendota Canal (its primary source), the San Joaquin River (during restoration and flood releases from Friant Dam), and the Kings River via Fresno Slough (during flood releases from Pine Flat Dam). In addition, local wells owned by the Mendota Pool Group, Tranquillity Irrigation District, and Fresno Slough Water District also pump groundwater into the Pool, and the Mendota Wildlife Area drains its waterfowl ponds into the Pool during the spring. Most of this water is used by the members of the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) to irrigate lands within their service areas, but there are other CVP contractors that divert water from the Pool for irrigation. See Figure 3-1.

Water quality conditions in the Mendota Pool depend on inflows from the Delta-Mendota Canal, groundwater pumped into the pool and, to a limited extent, river inflows. During the irrigation season, most of the water released from the Mendota Pool to the river and to irrigators is imported from the Delta via the Delta-Mendota Canal. This water has higher concentrations of total dissolved solids than water in the upper reaches of the San Joaquin River, and can be affected by runoff and seepage into the canal (Reclamation 2010).

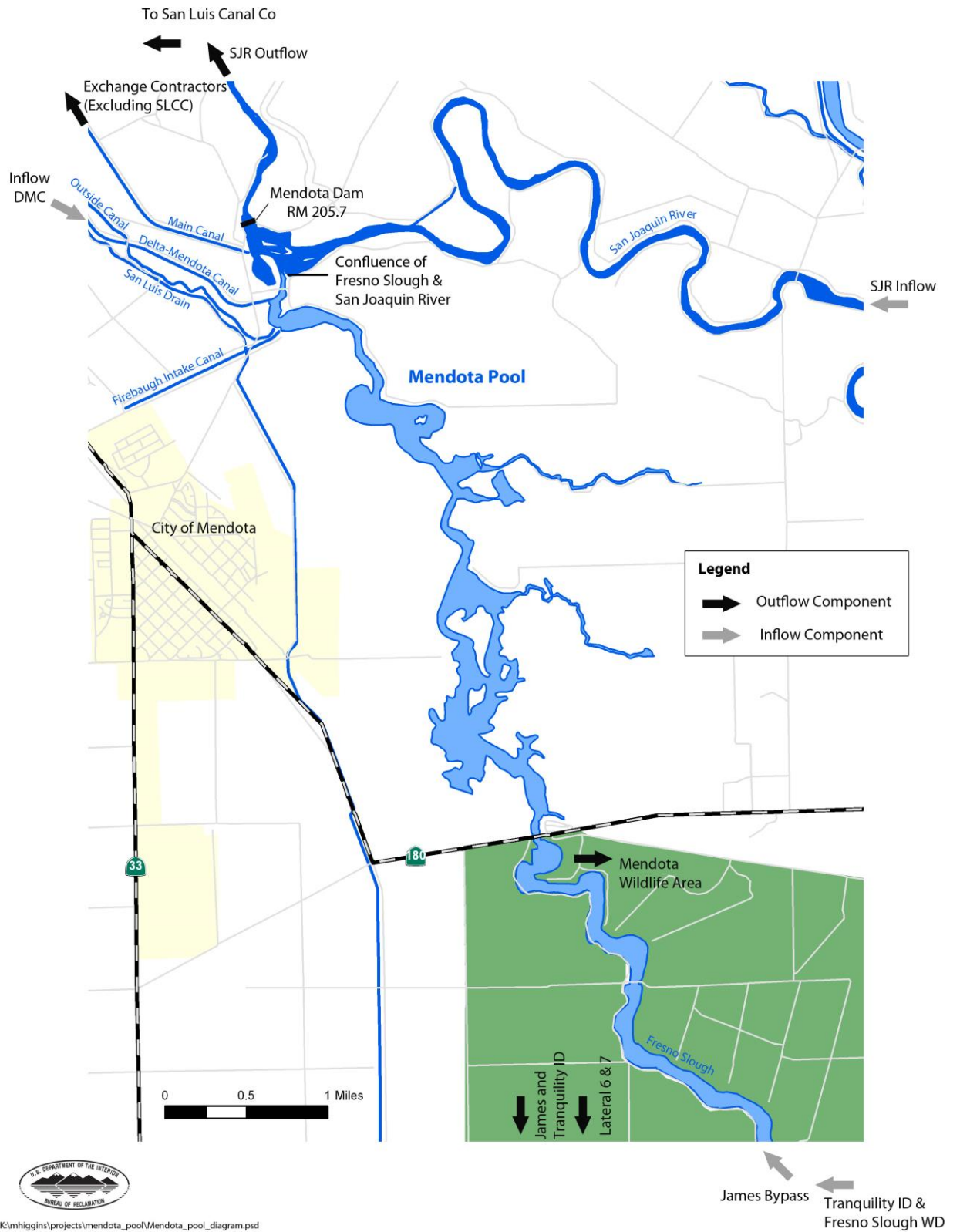


Figure 3-1 Mendota Pool Location
(Reclamation 2010)

Most of the non-CVP water being considered for conveyance to the San Luis Canal by way of the Mendota Pool would come from native groundwater pumped into the pool by districts and landowners located adjacent to it. This is typical of historical operation of the Mendota Pool. According to the San Luis and Delta Mendota Water Authority, 17 different entities pumped groundwater into the pool in 2014, totaling approximately 62,000 AF (Rhodes, pers. comm. 2015).

A portion of the water in the Pool could also come from the Meyers Water Bank. The Water Bank stores surface water underground for use in times of shortage. Since the water comes from surface sources, it is of higher quality than native groundwater.

Groundwater

Groundwater Resources in Westlands The groundwater basin underlying Westlands Water District is comprised generally of two water-bearing zones: (1) an upper zone above a nearly impervious Corcoran Clay layer containing the Coastal and Sierran aquifers and (2) a lower zone below the Corcoran Clay containing the sub-Corcoran aquifer (Department of Water Resources 2003). These water-bearing zones are recharged by subsurface inflow primarily from the west and northeast, and percolation of groundwater, and imported and local surface water. The Corcoran Clay separates the upper and lower water-bearing zones in the majority of Westlands but is not continuous in the western portion of the district.

Groundwater pumping started in this portion of the San Joaquin Valley in the early 1900s. Prior to delivery of CVP water, the annual groundwater pumpage in Westlands ranged from 800,000 to 1,000,000 AFY during the period of 1950-1968. The majority of this pumping was from the aquifer below the Corcoran Clay, causing the sub-Corcoran groundwater surface to reach an average elevation of more than 150 feet below mean sea level by 1968 (Westlands Water District 2014a).

After delivery of CVP water supplies into Westlands Water District began, groundwater pumping declined to about 200,000 AFY, or less, in the 1970s (Department of Water Resources 2003). The reduction in groundwater pumping stabilized groundwater depths and in most portions of the district, groundwater levels significantly recovered. During the early 1990s, groundwater pumping greatly increased because of the reduced CVP water supplies caused by an extended drought and regulatory actions related to the Central Valley Project Improvement Act. Pumping has since increased and decreased in response to available surface water supplies. Rates for the preceding 10 years are shown in Table 3-2.

Table 3-2 Westlands Water District Historical Groundwater Pumping Data

Water Year	CVP Allocation	Groundwater Pumped (AF)
2005	85%	75,000
2006	100%	25,000
2007	50%	310,000
2008	40%	460,000
2009	10%	480,000
2010	45%	140,000
2011	80%	45,000
2012	40%	355,000
2013	20%	638,000
2014 (est.)	0%	650,000
Source: Westlands Water District 2014b		

Westlands Water District has an approved groundwater management plan and estimates the current safe yield of groundwater underneath the district to be approximately 200,000 AFY. However, this quantity of groundwater is generally only pumped when other supplemental supplies are not available. This is due to the poorer quality of the groundwater compared to surface water. Westlands Water District supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in the district.

Groundwater Regulation In 2014, California enacted the Safe Groundwater Management Act. The Safe Groundwater Management Act requires the formation of local Groundwater Sustainability Agencies, who must develop Groundwater Sustainability Plans for areas designated as medium or high priority. Under this system, the entire San Joaquin Valley is classified as high priority (Department of Water Resources 2014a). In addition to statewide policies, some local jurisdictions have adopted their own groundwater ordinances. Fresno County has an ordinance which restricts transfer of groundwater outside of the county. Kings County does not have an ordinance at this time.

Groundwater Quality Groundwater zones commonly used along a portion of the western margin of the San Joaquin Valley have high concentrations of total dissolved solids, ranging from 500 milligrams per liter (mg/L) to greater than 2,000 mg/L (Bertoldi et al. 1991). The concentrations in excess of 2,000 mg/L commonly occur above the Corcoran Clay layer. These high levels have impaired groundwater for irrigation and municipal uses in the western portion of the San Joaquin Valley.

High selenium concentrations in soils on the west side of the San Joaquin River Hydrologic Region are of concern because of their potential to leach from the soil by subsurface irrigation return flow into the groundwater and into receiving surface waters. Selenium concentrations in shallow groundwater along the west side have been highest in the central and southern area south of Los Banos and Mendota with median concentrations of 10,000 to 11,000 mg/L (Bertoldi et al. 1991). Westlands Water District policy does not allow water to discharge from any irrigated parcel.

Drainage Plans for agricultural drainage from the San Luis Unit began in the 1960s and 1970s. By 1975, construction was completed on a segment of the San Luis Drain, which collected drainage from a 42,000-acre portion of Westlands Water District, and delivered it to Kesterson Reservoir. However, in 1983, embryonic deformities in aquatic birds were discovered at Kesterson, with elevated selenium concentrations identified as the cause. In 1985, discharges to Kesterson Reservoir ceased, and feeder drains to the San Luis Drain were plugged (Reclamation 2007).

As a result of a lawsuit filed by Westlands Water District and landowners in the area, a Federal Court Order was issued in 1986. The Court Order directed Reclamation to develop plans to provide alternate drainage service to the area. A series of studies and additional court actions through 2001 affirmed that Reclamation had an obligation to provide drainage service to the affected area, but determined that the obligation could be met by means other than the originally-envisioned interceptor drain to the Sacramento-San Joaquin River Delta (Reclamation 2007).

A series of studies to identify a preferred approach followed, leading to a Final Environmental Impact Statement in 2006 and Record of Decision in 2007. The alternative selected was the “In Valley/Water Needs Land Retirement” alternative. This alternative included measures to reduce drainage, drainage water reuse/treatment facilities, and retirement of 194,000 acres of irrigated land (Reclamation 2007). The area identified as impaired by drainage is shown below in Figure 3-2.

Since the Record of Decision, Reclamation has evaluated a variety of treatment options for managing selenium-enriched drainage water, and impacts from the drainage. As of early 2015, a demonstration project is underway to use a combination of reverse osmosis, ultrafiltration, biotreatment and other treatment techniques to treat water collected from sumps in Panoche Drainage District (Reclamation 2012). In addition, as of early 2015, over 90,000 acres of drainage-impaired land have been retired from agricultural production.

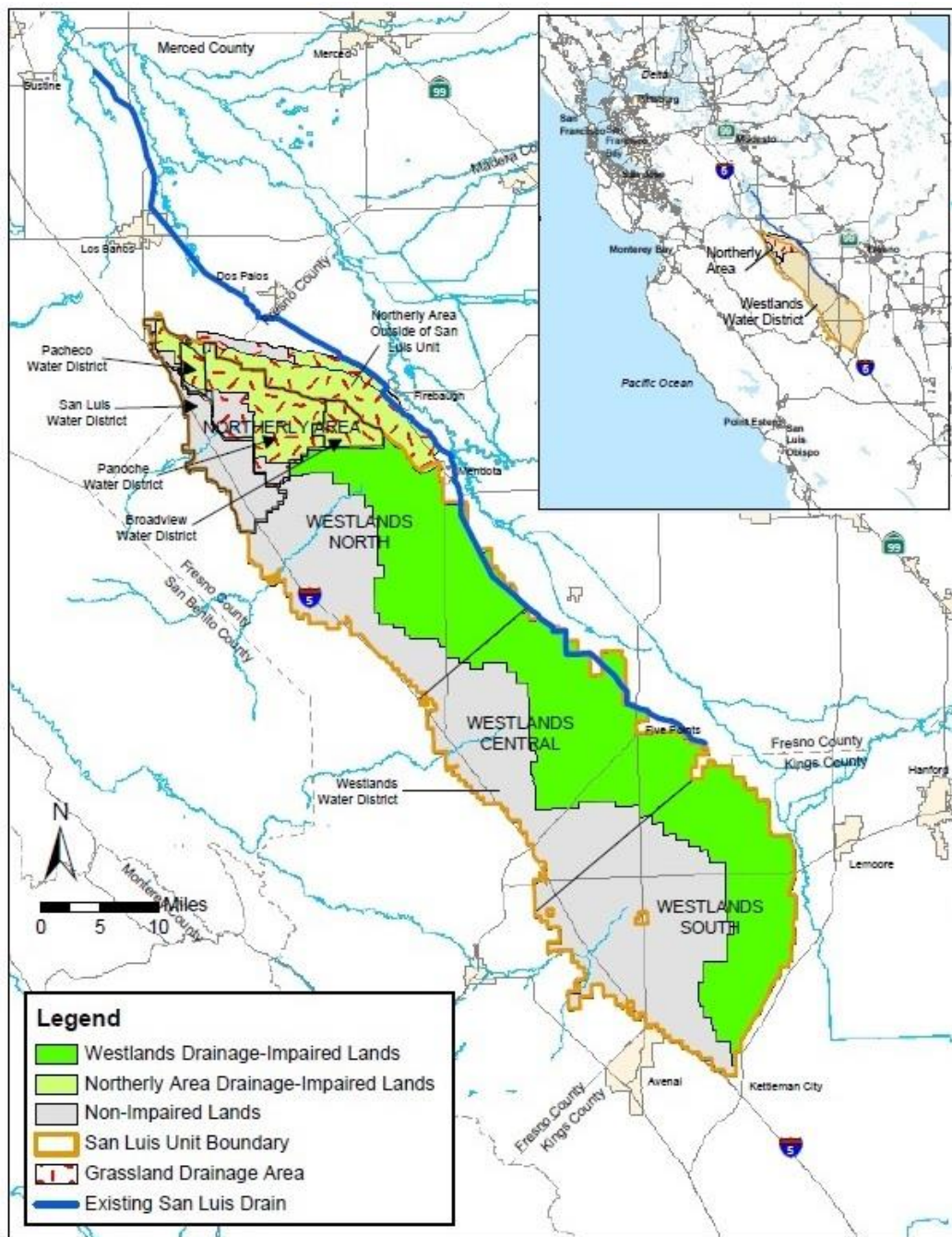


Figure 3-2 Drainage-Impaired Lands
(Reclamation 2006)

Subsidence

Land subsidence is caused by subsurface movement of earth materials. Principal causes of subsidence within the San Joaquin Valley include: aquifer compaction due to groundwater pumping, hydrocompaction caused by application of water to dry soils, and oil mining. Withdrawal of groundwater within the San Joaquin Valley between the 1920s and 1960s for agricultural irrigation caused significant overdraft within the central west side of the valley and most of the southern

valley, causing substantial land subsidence within those areas. Importation of surface water from the CVP and State Water Project (SWP) in the 1970s decreased the rate of groundwater withdrawal, allowing aquifer levels to recover and subsequently reducing subsidence rates (Poland and Lofgren 1984, U.S. Geological Survey 2013). Recently, groundwater pumping rates have increased throughout the San Joaquin Valley due to regulatory and drought-related curtailments placed on water deliveries from the CVP and SWP, resulting in water level declines and renewed compaction.

Various entities, including Reclamation, the U.S. Geological Survey, California Department of Water Resources, San Luis and Delta-Mendota Water Authority, and the Exchange Contractors have been monitoring subsidence trends within the Central Valley. In 2011, Reclamation established the San Joaquin River Restoration Program Geodetic Control Network to begin monitoring subsidence with the Restoration Area. In addition, due to significant subsidence rates along the flood control bypasses that parallel the San Joaquin River (some localized areas showing rates of more than 1 foot per year), Department of Water Resources has collected levee survey data to help further refine the estimated annual rates along the levees of the flood bypasses (Reclamation 2014b).

In 2014, the Department of Water Resources issued a summary of historical and projected future subsidence trends in the state (Department of Water Resources 2014b). The analysis showed that the areas with greatest potential for subsidence are those areas where demand on groundwater is the highest, such as the San Joaquin Valley. Westlands Water District is in an area with historical as well as recent subsidence (see Figure 3-3).

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not permit introduction of non-CVP water into federal facilities. As Westlands Water District has an active groundwater pumping program, groundwater would still be pumped out of the aquifer as it has in the past. However, distribution of the non-CVP water would be limited to only those areas that could normally receive the water and would not enable Westlands Water District to provide water supplies to other areas in-district.

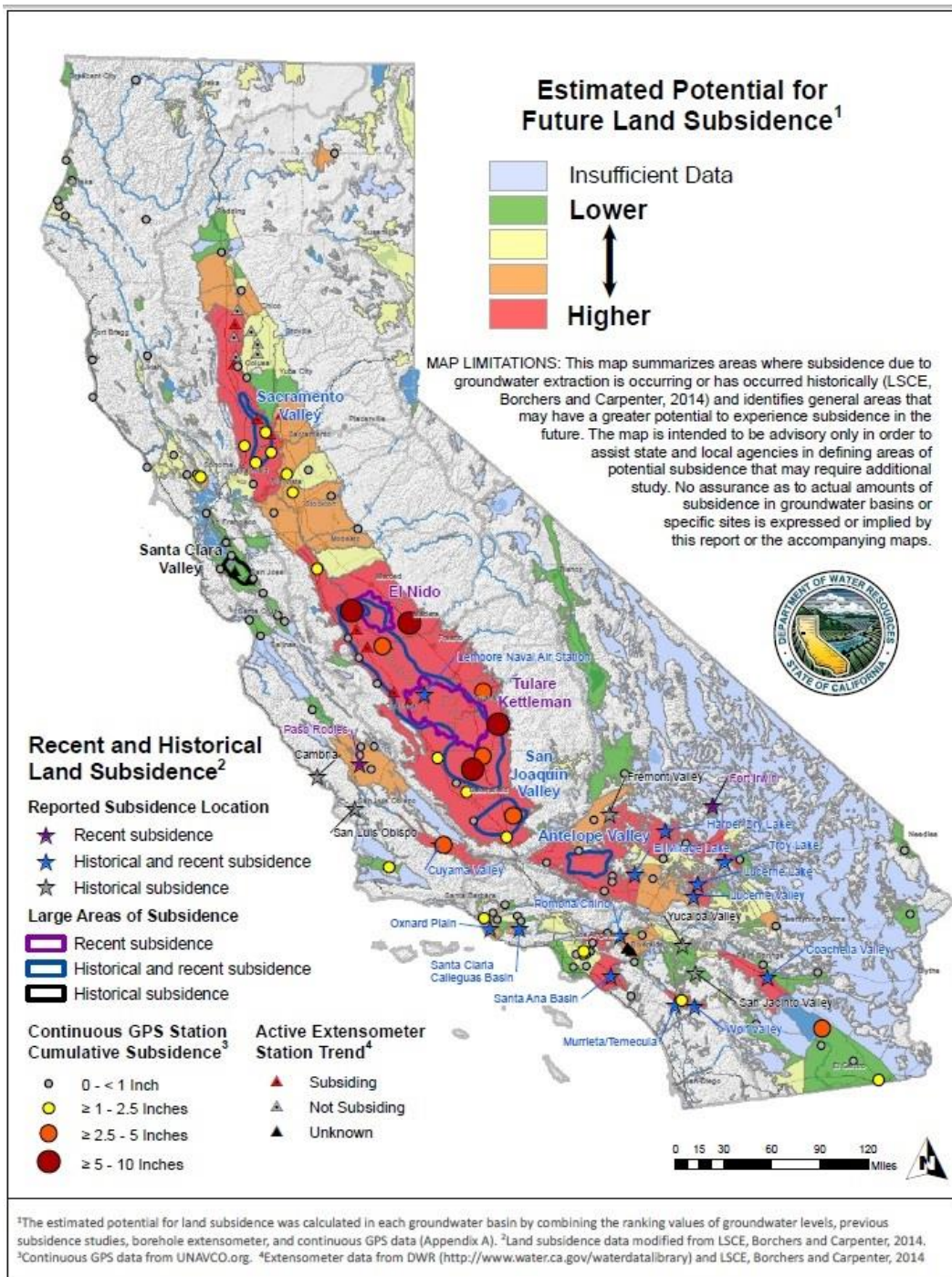


Figure 3-3 Areas of Known Historical and Estimated Future Subsidence (Department of Water Resources 2014b)

Proposed Action

Surface Water The Proposed Action would allow groundwater and other non-CVP water to be conveyed and/or stored in CVP facilities when excess capacity is available. The Proposed Action would not interfere with the normal operations of the San Luis Canal (as it would be scheduled prior to introduction), nor would it

impede any SWP or CVP obligations to deliver water to other contractors or to fish and wildlife habitat.

In 2014, in an action similar to the Proposed Action, Westlands Water District was given authorization by the California Department of Water Resources to pump up to 30,000 AF of groundwater from many of the same wells, for conveyance with SWP approval in joint facilities. Total dissolved solids values reported for water from the wells at that time ranged from 530 to 1,180 mg/L (Rhodes, pers. comm. 2015). This is expected to be representative of the groundwater pumped and conveyed under the Proposed Action. In addition, water under the Proposed Action would be required to meet Reclamation's then-current water quality standards prior to approval for introduction into the San Luis Canal (see Table 2-1 and Appendix C). If a well to be used for pumping water into the San Luis Canal does not meet Reclamation's standards, no water would be allowed to be introduced from that source until water quality improves sufficient to meet the requirements. Reclamation also requires that any wells proposed to pump into Mendota Pool for the Proposed Action would be monitored to show compliance with established water quality standards for the Pool.

Some groundwater wells included in the Proposed Action are located in areas known to be impacted by historic drainage (see Figure 3-2 and Appendix B). However, these wells are all screened below the Corcoran Clay layer which separates the shallow and deep aquifers. Therefore, the water pumped from these wells would not come from the layers which are drainage-impaired. The groundwater pumped and conveyed under the Proposed Action would also not be used on land known to be drainage-impaired, and therefore would not mobilize contaminants present in those areas.

Groundwater The Proposed Action could involve the pumping of up to 30,000 AFY of groundwater at various locations within the district, for conveyance in federal facilities, during years in which their CVP allocation is 20 percent or less. The water involved in the Proposed Action is within the range of historical pumping during the irrigation season, and would be pumped regardless of whether Reclamation allowed its conveyance in federal facilities. The Proposed Action only allows Westlands Water District's growers to convey the water to the areas of the district with greatest need.

Westlands Water District shall monitor and report groundwater levels to Reclamation as part of their water quality sampling program.

Subsidence Groundwater pumping is known to be a leading cause of subsidence in the San Joaquin Valley. However, the groundwater to be conveyed under the Proposed Action is within the range of historical pumping by the district, and would be pumped regardless of whether Reclamation allowed its conveyance in

federal facilities. Therefore any subsidence associated with this use of groundwater would take place regardless of Reclamation's decision.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action or No Action alternative 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. To determine whether cumulatively significant impacts are anticipated from the Proposed Action or the No Action alternative, the incremental effect of both alternatives were examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

Reclamation has reviewed existing or foreseeable projects in the same geographic area that could affect or could be affected by the Proposed Action since Reclamation and CVP contractors have been working on various drought-related projects, including this one, in order to manage limited water supplies due to current hydrologic conditions and regulatory requirements. This and similar projects would have a cumulative beneficial effect on water supply during this critically dry year.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drive requests for water service actions. Water districts provide water to their customers based on available water supplies and timing, while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. It is likely that over the course of the Proposed Action, districts will request various water service actions, such as transfers, exchanges, and Warren Act contracts (conveyance of non-CVP water in CVP facilities). Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Surface Water The San Luis Canal carries water from CVP, SWP and other sources, for use by contractors located along the San Luis Canal/California Aqueduct. Poor water quality from multiple sources has the potential to cause a cumulative impact on downstream water users. In order to reduce the risk of cumulative impacts to water quality, all water introduced to the San Luis Canal would be tested prior to introduction, and if water quality standards cannot be met, introductions from that source would not be allowed until water quality standards are met.

Groundwater Many irrigation districts and individual growers in the San Joaquin Valley rely on groundwater as part of their supply, with volumes pumped varying in response to surface water allocations (CVP and SWP), hydrologic

conditions and changes in crop patterns. Pumped water may be used directly on-site, sold/transferred, or exchanged for water at another location.

Groundwater overdraft is an ongoing challenge throughout California, and the San Joaquin Valley in particular has been identified as a high priority for establishing a sustainability plan. Overdraft is a cumulative problem, caused by many small actions throughout the basin. However, the Proposed Action only allows conveyance of water that would already be pumped to areas within the district with the greatest need. Therefore there would be no contribution to cumulative impacts to groundwater as a result of the Proposed Action itself.

Subsidence Subsidence in the San Joaquin Valley is a cumulative problem, caused by groundwater pumping at many locations throughout the area. Pumping of the groundwater which would be conveyed under the Proposed Action may contribute to ongoing subsidence trends. However, that water is likely to be pumped for agricultural use in similar volumes regardless of Reclamation's decision. Therefore the Proposed Action itself would not contribute to cumulative subsidence impacts beyond ongoing existing trends.

3.3 Land Use

3.3.1 Affected Environment

Westlands Water District is located in Fresno and Kings Counties, in California's Central Valley. The valley is generally rural and agricultural in nature, with several medium-sized cities located along major transportation corridors. The leading agricultural products in each county are outlined below in Table 3-3.

Table 3-3 Agricultural Products by County

County	Major Agricultural Products
Fresno	Almonds, livestock, raisins, milk, tomatoes
Kings	Milk, cotton, cattle, tomatoes, walnuts
Source: California Farm Bureau Federation 2014	

Certain areas in the San Joaquin Valley are impacted by historical drainage practices which left elevated levels of various constituents (primarily selenium) in the shallow soil layers. As a result, the agricultural productivity of those areas is limited, and application of new water to the affected areas raises a risk that contaminants could become soluble and travel to other areas.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not permit introduction of the non-CVP water into federal facilities. As Westlands Water District has an active groundwater pumping program, groundwater would still be pumped out of the aquifer as it has in the past. However, distribution of the non-CVP water would be limited to only those areas that could normally receive the water and

would not enable Westlands Water District to provide water supplies to other areas in-district.

Proposed Action

The Proposed Action would support current land uses by allowing growers in Westlands Water District to make the most effective use of water that is available to them. Water conveyed in the San Luis Canal would only be used to sustain existing crops. The water would not be used to support new development or convert fallow land for agriculture.

Some groundwater wells included in the Proposed Action are located in areas known to be impacted by drainage (see Figure 3-2). However, as described previously, the wells are all screened below the Corcoran Clay layer which separates the shallow and deep aquifers. Therefore the water pumped from these wells would not come from the layers which are drainage-impaired. The groundwater pumped and conveyed under the Proposed Action would also not be used on land known to be drainage-impaired.

Cumulative Impacts

The Proposed Action would allow for more effective use of water supplies in a time of shortage. This helps to mitigate the impacts of external challenges, in particular California's ongoing drought. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to existing land uses.

Since groundwater pumped for the Proposed Action would be drawn from the aquifer below the Corcoran Clay layer, and water would not be applied to the areas known to be drainage-impaired, the Proposed Action is not anticipated to cumulatively contribute to these existing impairments.

3.4 Biological Resources

3.4.1 Affected Environment

A species list was obtained from the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 2015) on February 10, 2015 (document number: 150210122721). Reclamation utilized that list, records from the California Natural Diversity Database (CNDDB 2015) and other information on file to compile Table 3-4 below.

The Proposed Action Area consists of San Luis Reservoir, the San Luis Canal, Mendota Pool, and lands within Westlands Water District. The only federally listed species that may occur in the area are the Buena Vista Lake shrew, San Joaquin kit fox, blunt-nosed leopard lizard, giant garter snake, California least tern, and San Joaquin woolly-threads. The only one of these species that can use agricultural lands at all is the San Joaquin kit fox, which can forage (but not den)

in crop fields where the fields lie close to native lands (Warrick et al. 2007). The majority of the Proposed Action Area consists of agricultural lands.

The Mendota Wildlife Area receives water from Lateral 7, and the giant garter snake occurs at that location, as well as a number of migratory bird species. Kern National Wildlife Refuge receives water from the California Aqueduct, via approximately 12 miles of Buena Vista Water Storage District facilities. The Buena Vista Lake shrew is found at Kern National Wildlife Refuge, which also supports a number of migratory birds.

Table 3-4 Federally Listed Species and Critical Habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	Endangered	Designated	Found in turbid vernal pools.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	Endangered	Designated	Occurs in multiple types of vernal pools.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	Designated	Occurs in a variety of vernal pools or other depressions that have a similar hydrology	Vernal pools and other similar depressions are absent from the Proposed Action Area	No effect; no effect on critical habitat
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	Designated	Requires elderberry shrubs with stems one inch or greater in diameter at ground level	Elderberry shrubs do not occur around the edge of San Luis Reservoir or in actively farmed lands or at Meyers Water Bank	No effect; no effect on critical habitat
vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Endangered	Designated	Found in a wide range of vernal pool types; has a disjunct range.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Proposed Action Area	Impacts
North American green sturgeon	<i>Acipenser medirostris</i>	Threatened	Designated	Inhabits the Sacramento-San Joaquin Delta and spawns in the Sacramento River.	The Proposed Action Area is outside of the species' range. White sturgeon have been found in San Luis Reservoir, but not green sturgeon.	No effect; no effect on critical habitat
Owens tui chub	<i>Gila bicolor snyderi</i>	Endangered	Designated	Found only in a limited number of populations in the Owens River Valley, where it inhabits standing water or low-gradient rivers and streams.	The Proposed Action Area is outside of the species' range.	No effect; no effect on critical habitat
delta smelt	<i>Hypomesus transpacificus</i>	Threatened	Designated	Occurs in the Sacramento-San Joaquin Delta.	The Proposed Action Area is outside of the species' range.	No effect; no effect on critical habitat
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>	Threatened	None	Found in cold-water habitats in the Lahontan Basin.	The Proposed Action Area is outside of the species' range.	No effect
Paiute cutthroat trout	<i>Oncorhynchus clarki seleniris</i>	Threatened	None	Currently found in a few populations in the Inyo and Sierra National Forests; eliminated from its historic range within the Humboldt-Toiyabe National Forest.	The Proposed Action Area is outside the of the species' range.	No effect

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Proposed Action Area	Impacts
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Threatened	Designated	Occurs in the Sacramento and San-Joaquin Delta, and spawns and rears in parts of the Sacramento and San Joaquin River systems.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat
Central Valley spring-run chinook salmon	<i>Oncorhynchus tshawytscha</i>	Threatened	Designated	Occurs in the Sacramento and San-Joaquin Delta, and spawns and rears in parts of the Sacramento River system; is being re-introduced to the upper San Joaquin River.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat
Sacramento River winter-run chinook salmon	<i>Oncorhynchus tshawytscha</i>	Endangered	Designated	Occurs in the Sacramento and San-Joaquin Delta, and spawns and rears in parts of the Sacramento River system.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat
California tiger salamander (central population)	<i>Ambystoma californiense</i>	Threatened	Designated	Breeds in vernal pools and other similar ponds and uses rodent burrows in surrounding grasslands for refugia during the non-breeding season.	Vernal pools and other suitable breeding ponds do not occur in the Proposed Action Area.	No effect; no effect on critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Proposed Action Area	Impacts
California red-legged frog	<i>Rana draytonii</i>	Threatened	Designated	Uses foothill streams and ponds; has been eliminated from the San Joaquin Valley floor. The species and its critical habitat occur just to the west of San Luis Reservoir, but not in the reservoir itself.	The Proposed Action Area does not include any suitable habitat for this species and is outside of its critical habitat.	No effect; no effect on critical habitat
Mountain yellow-legged frog (northern population)	<i>Rana muscosa</i>	Endangered	Proposed	Occurs in high mountain streams in parts of the Sierra Nevada (south of the Monarch Divide), mostly on National Park or National Forest lands.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat
Sierra Nevada yellow-legged frog	<i>Rana sierrae</i>	Endangered	Proposed	Occurs in high mountain streams in parts of the Sierra Nevada (north of the range of the mountain yellow-legged frog), and parts of the eastern slope of the Sierra Nevada.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat
Yosemite toad	<i>Anaxyrus canorus</i>	Threatened	Proposed	Uses wet meadows and surrounding forest in parts of the Sierra Nevada.	The Proposed Action Area is outside the of the species' range.	No effect; no effect on critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered	None	Found in alkali scrub and arid grassland habitat in parts of the San Joaquin Valley and adjacent areas (such as the Carrizo Plain).	Blunt-nosed leopard lizards may occur on the western-most edges of Westlands Water District, but not on actively-farmed lands	No effect; the water involved in the Proposed Action cannot be used to bring native lands into production.
giant garter snake	<i>Thamnophis gigas</i>	Threatened	None	Found in and near wetland habitat in Mendota Pool and the Grasslands.	Occurs at Mendota Wildlife Area, which receives water from Lateral 7.	No effect. Selenium would not rise above 1.34 ppb in Lateral 7.
western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	Designated	A coastal shorebird; occasionally found inland at evaporation ponds.	Not known to occur in the Proposed Action Area, which is outside of the typical range. Not expected due to lack of evaporation ponds.	No effect; no effect on critical habitat
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Threatened	Proposed	Uses extensive cottonwood-willow forests; currently restricted in California to a portion of the Sacramento River, the Kern River, and the Colorado River.	The species could fly overhead on its migration to and from breeding habitat along the Sacramento River and wintering grounds in South America, but would not otherwise use the Proposed Action Area.	No effect; no effect on critical habitat
California condor	<i>Gymnogyps californianus</i>	Endangered	Designated	Forages for carrion in large expanses of foothill and oak savanna ringing the southern San Joaquin Valley floor.	This species' habitat does not occur in the Proposed Action Area and there are no records of its occurrence in the area.	No effect; no effect on critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
California least tern	<i>Sternula antillarum browni</i>	Endangered (recommended for downlisting to Threatened)	None	Normally nests on sandy coastal habitat and forages for small fish. Sometimes can be found inland where open water with small fish is found.	Has been documented foraging at sewage ponds on Lemoore Naval Air Station. Monitoring in 2014 of the San Luis Drain in and adjacent to Westlands Water District did not result in any least tern observations.	No effect. Least terns would not be affected because the Proposed Action would not contribute to any drainage that could contaminate potential foraging habitat, such as the San Luis Drain.
giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered	None	Occurs in arid grasslands and saltbush scrub in Kern County and a few other south San Joaquin Valley locations. The closest population to the Proposed Action Area is the Kettleman Hills in Kings County.	Does not occur in the Proposed Action Area.	No effect
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	Endangered	Designated	Uses alkali sink and arid grassland habitat; historical occurrences at and near the Alkali Sink Ecological Reserve and Madera Ranch. A possible Fresno/Tipton hybrid population may still occur at Lemoore Naval Air Station.	Does not occur in the Proposed Action Area.	No effect; no effect on critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
Tipton kangaroo rat	<i>Dipodomys nitratoideus nitratoideus</i>	Endangered	None	Generally only occurs south of the Proposed Action Area, although there may be a very small Fresno/Tipton hybrid population near the Proposed Action Area (see above).	Does not occur in the Proposed Action Area.	No effect
Sierra Nevada bighorn sheep	<i>Ovis canadensis californiana</i>	Endangered	Designated	Found in remote arid mountain habitat in the southern Sierra Nevada.	Proposed Action Area is outside the species' range.	No effect; no effect on critical habitat
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	Endangered	Designated	Uses riparian/wetland habitat. Critical habitat occurs near but outside of Westlands Water District.	Occurs at Kern National Wildlife Refuge.	No effect; no effect on critical habitat. Selenium would not rise above 1.49 ppb at Check 21.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	None	Prefers saltbush scrub and arid grassland habitat, but can use agricultural lands for foraging within a mile or so of occupied habitat.	Records of the species are known from the Proposed Action Area.	No effect. The Proposed Action would not result in any land use change.
fisher	<i>Pekania pennanti</i>	Proposed Threatened	None	Occupies montane forest habitat	Proposed Action Area is outside the species' range.	No effect
Mariposa pussy-paws	<i>Calyptridium pulchellum</i>	Threatened	None	Occurs on decomposed granite in foothills of south-central Sierra Nevada.	Proposed Action Area is outside the species' range.	No effect

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
San Benito evening-primrose	<i>Camissonia benitensis</i>	Threatened	None	Found on serpentine-derived alluvial soils in western Fresno and San Benito Counties.	Proposed Action Area is outside the species' range.	No effect
succulent owl's-clover	<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Threatened	Designated	Occurs in vernal pool habitat in southern Sierra Nevada foothills.	Vernal pools are absent from the Proposed Action Area.	No effect; no effect on critical habitat
California jewelflower	<i>Caulanthus californicus</i>	Endangered	None	Occurs in saltbush scrub and arid grasslands; there are three known naturally-occurring populations: Carrizo Plain, Santa Barbara Canyon, and the Kreyenhagen Hills in Fresno County.	Does not occur in the Proposed Action Area. Has been eliminated from the area, although still found in the Kreyenhagen Hills.	No effect
Hoover's spurge	<i>Chamaesyce hooveri</i>	Threatened	Designated	Found in vernal pools (usually deeper pools) in the Sierra Nevada foothills.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	Endangered	None	Occurs in alkali sink habitat.	Suitable habitat no longer occurs in the Proposed Action Area.	No effect
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	Endangered	None	Found in arid grasslands and saltbush scrub habitat.	May still occur on the western fringes of Westlands Water District.	The Proposed Action would not result in any land use change.

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/Habitat Use	Occurrence in Proposed Action Area	Impacts
Colusa grass	<i>Neostapfia colusana</i>	Threatened	Designated	Occurs in vernal pools; some of the known locations are spread far apart and it may occur in other localities where it hasn't been verified yet.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
San Joaquin Valley Orcutt grass	<i>Orcuttia inaequalis</i>	Threatened	Designated	Found in vernal pools in the southern Sierra Nevada foothills.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
hairy Orcutt grass	<i>Orcuttia pilosa</i>	Endangered	Designated	Occurs in vernal pools. Known both from the northeastern Sacramento Valley and the southern Sierra Nevada foothills.	Vernal pools are absent from the Proposed Action Area	No effect; no effect on critical habitat
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	Endangered	None	Found in grasslands and oak woodlands on the east side of the San Joaquin Valley and foothills. Usually on fine-textured soils with Mima mounds present.	Proposed Action Area is outside the species' range.	No effect
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	Threatened	None	Found in grasslands along the eastern side of the southern San Joaquin Valley	Proposed Action Area is outside the species' range.	No effect
Keck's checker-mallow	<i>Sidalcea keckii</i>	Endangered	Designated	Found in grasslands in the Sierra Nevada foothills.	Proposed Action Area is outside the species' range.	No effect; no effect on critical habitat
Greene's tuctoria	<i>Tuctoria greenei</i>	Endangered	Designated	Found in different types of vernal pools.	Vernal pools are absent from the Proposed Action Area.	No effect; no effect on critical habitat

3.4.2 Environmental Consequences

No Action

Under the No Action, lands in Westlands Water District would either continue to be farmed with other water supplies or would be fallowed. It is unlikely that this would change the current distribution or abundance of federally listed species in the Proposed Action Area, as the fallowed fields would typically be regularly disced, and so would not revert to a more suitable condition for the few species in the area, such as the San Joaquin kit fox.

Proposed Action

Under the Proposed Action, the water would help to keep agricultural lands in production. No native lands or lands fallowed and untilled for three or more years could be brought into production with the use of the water involved in the Proposed Action. Both Mendota Wildlife Area and Kern National Wildlife Refuge water supplies may mix with groundwater introduced as a result of the Proposed Action, and this would occur partly during times of the year when these refuges would receive water supplies. However, the selenium levels are expected to remain well below the threshold for an effect on wildlife, which is 2 ppb as measured in the water column (Reclamation and San Luis & Delta-Mendota Water Authority 2009 and references therein). Data from 2014 shows that the selenium level has not exceeded 1 ppb at Check 21 during the time period from April through September. According to calculations performed by Reclamation, using recent baseline data and projecting changes in Lateral 7, the selenium level in Lateral 7 would not exceed 1.34 ppb with the Proposed Action, and according to a model for the California Aqueduct, also including recent data and considering projected flow resulting from DWR and Reclamation actions, the selenium level would not increase above 1.49 ppb at Check 21, during the months that groundwater would be pumped as part of the Proposed Action. No drainage would be generated that could make its way into aquatic habitat potentially used by the giant garter snake or California least tern.

As a result, 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.). No consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service is required.

Cumulative Impacts

As the Proposed Action would not result in any direct or indirect impacts to biological resources, it would not contribute cumulatively to any impacts.

3.5 Environmental Justice

3.5.1 Affected Environment

Westlands Water District is located in Fresno and Kings Counties. The demographics of the counties are comparable to California's, except that the proportion of the population who identify as Hispanic or Latino is higher, and the percentage who identify as Asian is lower. See Table 3-5 below for more information.

Table 3-5 Demographic Data, 2013

	Total Population	White	Black or African American	American Indian	Asian	Native Hawaiian/ Pacific Islander	Hispanic or Latino
Fresno County	955,272	77.4%	5.9%	3.0%	10.5%	0.3%	51.6%
Kings County	150,960	81.4%	7.4%	3.0%	4.3%	0.3%	52.7%
California	38,332,521	73.5%	6.6%	1.7%	14.1%	0.5%	38.4%
Source: U.S. Census Bureau 2014							

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not permit Westlands Water District to introduce pumped groundwater and other sources of non-CVP water into the San Luis Canal. Growers would have to find alternative supplies of water, provide for alternative conveyance path(s), and/or temporarily take land out of production. Farm laborers often come from minority and low-income communities. Therefore reductions in agricultural productivity would have a disproportionate, adverse impact on those communities.

Proposed Action

The Proposed Action would support agriculture by allowing conveyance of groundwater and other sources of non-CVP water to support existing crops. Since farm laborers often come from minority and low-income communities, supporting farm employment is a benefit to those disadvantaged groups.

Cumulative Impacts

The Proposed Action would allow conveyance of water to support agriculture in a time of shortage. Because of agriculture's importance to the area's economy, any impacts, either positive or negative, tend to have a disproportionate and cumulative effect on employment and wages. Farm laborers often come from low-income and minority populations and they are therefore disproportionately affected by these trends. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to the economic well-being of disadvantaged groups.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation initially offered the public an opportunity to comment on the draft EA/FONSI during a 15-day comment period. By request, the comment period was later extended an additional 15 days. The entire public comment period was from March 11, 2015 to April 10, 2015. Reclamation received three comment letters. The comment letters and Reclamation's response to comments are included in Appendix A.

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