RECLAMATION
Managing Water in the West

Draft Environmental Assessment

Central Valley Project Interim Renewal Contracts for Westlands Water District and Santa Clara Valley Water District 2020-2022

EA-19-043

BUREAU OF RECLAMATION
Interior Region 10 California-Great Basin
California*, Nevada*, Oregon*
*Partial
South-Central California Area Office

November 2019

Mission Statements

The mission of the Department of the Interior is to conserve and manage the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provide scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honor the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

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.

Contents

Page

Section 1 Introduction

1.1 Background

On October 30, 1992, the President signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575) which included Title 34, the Central Valley Project Improvement Act (CVPIA). The CVPIA amended previous authorizations of the Central Valley Project (CVP) to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement as having an equal priority with power generation. Through the CVPIA, the Bureau of Reclamation (Reclamation) is developing policies and programs to improve the environmental conditions that were affected by the operation and maintenance (O&M) and physical facilities of the CVP. The CVPIA also includes tools to facilitate larger efforts in California to improve environmental conditions in the Central Valley and the San Francisco Bay-Delta system.

Section 3404(c) of the CVPIA directs the Secretary of the Interior to renew existing CVP water service and repayment contracts following completion of a Programmatic Environmental Impact Statement (PEIS) and other needed environmental documentation by stating that:

> *… the Secretary shall, upon request, renew any existing long-term repayment or water service contract for the delivery of water … for a period of 25 years and may renew such contracts for successive periods of up to 25 years each ... [after] appropriate environmental review, including preparation of the environmental impact statement required in section 3409 [i.e., the CVPIA PEIS] … has been completed.*

Reclamation released a Draft PEIS on November 7, 1997. An extended comment period closed on April 17, 1998. The U.S. Fish and Wildlife Service (USFWS) became a co-lead agency in August 1999. Reclamation and the USFWS released the Final PEIS in October 1999 (Reclamation 1999a) and the Record of Decision (ROD) in January 2001. The CVPIA PEIS analyzed a No Action Alternative, 5 Main alternatives, including a Preferred Alternative, and 15 Supplemental Analyses. The alternatives included implementation of the following programs: Anadromous Fish Restoration Program with flow and non-flow restoration methods and fish passage improvements; Reliable Water Supply Program for refuges and wetlands identified in the 1989 Refuge Water Supply Study and the San Joaquin Basin Action Plan; Protection and restoration program for native species and associated habitats; Land Retirement Program for willing sellers of land characterized by poor drainage; and CVP Water Contract Provisions for contract renewals, water pricing, water metering/monitoring, water conservation methods, and water transfers.

The CVPIA PEIS provided a programmatic evaluation of the impacts of implementing the CVPIA including impacts to CVP operations north and south of the Sacramento-San Joaquin River Delta (Delta). The PEIS addressed the CVPIA's region-wide impacts on communities, industries, economies, and natural resources and provided a basis for selecting a decision among the alternatives.

Section 3404(c) of the CVPIA further provides for the execution of interim renewal contracts for contracts which expired prior to completion of the CVPIA PEIS by stating that:

> *No such renewals shall be authorized until appropriate environmental review, including the preparation of the environmental impact statement required in section 3409 of this title, has been completed. Contracts which expire prior to the completion of the environmental impact statement required by section 3409* [i.e., the CVPIA PEIS] *may be renewed for an interim period not to exceed three years in length, and for successive interim periods of not more than two years in length, until the environmental impact statement required by section 3409 has been finally completed, at which time such interim renewal contracts shall be eligible for long-term renewal as provided above.*

Interim renewal contracts have been and continue to be undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contracts and the execution of new long-term water service contracts as provided for in the CVPIA.

The interim renewal contracts reflect current Reclamation law, including modifications resulting from the Reclamation Reform Act and applicable CVPIA requirements. The initial interim renewal contracts were negotiated beginning in 1994 for contractors whose long-term renewal contracts were expiring, with an initial interim period not to exceed three years in length, and for subsequent renewals for periods of two years or less to provide continued water service. Many of the provisions from the interim renewal contracts were assumed to be part of the contract renewal provisions in the description of the PEIS Preferred Alternative.

The PEIS did not analyze site specific impacts of contract renewal but rather CVP-wide impacts of execution of long-term renewal contracts. Consequently, as long-term renewal contract negotiations were completed, Reclamation prepares environmental documents that tier from the PEIS to analyze the local effects of execution of long-term renewal contracts at the division, unit, or facility level (see Section 1.1.1). Tiering is defined as the coverage of general matters in broader environmental impact statements with site-specific environmental analyses for individual actions. Environmental analysis for the interim renewal contracts is also tiered from the PEIS to analyze site specific impacts. Consequently, the analysis in the PEIS as it relates to the implementation of the CVPIA through contract renewal and the environmental impacts of implementation of the PEIS Preferred Alternative are foundational and laid the groundwork for this document.

In accordance with Section 3404(c) of the CVPIA, Reclamation proposes to execute six interim renewal contracts beginning March 1, 2020 (Table 1). These six interim renewal contracts

would be renewed for a two-year period from March 1, 2020 through February 28, 2022. In the event a new long-term renewal contract for water service is executed, the interim renewal contract then-in-effect would be superseded by the long-term renewal contract.

Table 1 Contractors, Existing Contract Amounts, and Expiration Dates

Contractor	Existing Contract Number	Contract Quantity (acre-feet per year)	Expiration of Existing Interim Renewal Contract
Pajaro Valley Water Management Agency, Santa Clara Valley Water District, and Westlands Water District Distribution District # 1 (3-way assignment from Mercy Springs Water District)*	14-06-200-3365A-IR16-B	6,260	2/29/2020
Westlands Water District	14-06-200-495A-IR6	1,150,000	2/29/2020
Westlands Water District Distribution District #1 (full assignment from Broadview Water District)	14-06-200-8092-IR16	27,000	2/29/2020
Westlands Water District Distribution District #1 (full assignment from Centinella Water District)	7-07-20-W0055-IR16-B	2,500	2/29/2020
Westlands Water District Distribution District #2 (partial assignment from Mercy Springs Water District)	14-06-200-3365A-IR16-C	4,198	2/29/2020
Westlands Water District Distribution District #1 (full assignment from Widren Water District)	14-06-200-8018-IR16-B	2,990	2/29/2020

*Note: Pajaro Valley no longer has an interest in the 3-way contract assignment and will no longer be a potential recipient of CVP water pursuant to the May 1999 agreement and subsequent contract assignment.

Reclamation has prepared this Environmental Assessment (EA), which tiers from the PEIS, to determine the site-specific environmental effects of any actions resulting from the execution of these six interim renewal contracts. The following previous interim renewal EAs, which tiered from the PEIS, were prepared for these contracts and approved as follows:

- A 2018 EA (Reclamation 2018) which covered March 1, 2018 through February 2020
- A 2017 revised EA (Reclamation 2017a) which covered March 1, 2016 through February 2018
- A 2016 EA (Reclamation 2016a) which covered March 1, 2016 through February 2018[1]
- A 2014 EA (Reclamation 2014) which covered March 1, 2014 through February 2016

[1]This EA (EA-15-023) was challenged by a coalition of environmental organizations led by the North Coast Rivers Alliance. On December 15, 2016, the United States Eastern District Court of California issued an order granting Reclamation a voluntary remand without vacatur of the EA/FONSI and denied a request to rescind the 2016-2018 interim renewal contracts (1:16-cv-00307-LJO-MJS Document 52). Consistent with the United States Court of Appeals for the Ninth Circuit in *Pacific Coast Federation of Fishermen's Associations v. United States Department of the Interior*, Case No. 14-15514, 655 F. Appx. 595 (2016), Reclamation prepared a revised EA (Reclamation 2017a) to include a non-contract renewal No Action Alternative and the consideration of a reduced contract alternative based on an updated Water Needs Assessment.

- A 2012 EA (Reclamation 2012) which covered March 1, 2012 through February 2014
- Two 2010 EAs (Reclamation 2010a and 2010b) which covered March 1, 2010 through February 2012
- A 2008 EA (Reclamation 2008) which covered March 1, 2008 through February 28, 2010
- A 2007 EA (Reclamation 2007a) which covered January 1, 2008 through February 2010
- A 2006 Supplemental EA (Reclamation 2006a) which covered March 1, 2006 through February 2008
- A 2004 Supplemental EA (Reclamation 2004a) which covered March 1, 2004 through February 2006
- A 2002 Supplemental EA (Reclamation 2002a) which covered March 1, 2002 through February 2004
- A 2001 Supplemental EA (Reclamation 2001a) which covered March 1, 2001 through February 2002
- A 2000 Supplemental EA (Reclamation 2000a) which covered March 1, 2000 through February 2001
- A 1998 Supplemental EA (Reclamation 1998) which covered March 1, 1998 through February 2000
- A 1994 Interim Renewal Contracts EA (Reclamation 1994) which covered March 1, 1994 through February 1998

1.1.1 Long-Term Renewal Contracts

CVP water service contracts are between the United States and individual water users or districts and provide for an allocated supply of CVP water to be applied for beneficial use. Water service contracts are required for the receipt of CVP water under federal Reclamation law and among other things stipulates provisions under which a water supply is provided, to produce revenues sufficient to recover an appropriate share of the federal government's capital investment, and to pay the annual O&M costs of the CVP.

The current status of long-term contract renewals and associated environmental documentation by CVP Division is described below.

Friant Division, Hidden Unit, Buchanan Unit

Reclamation completed a site-specific EA/Finding of No Significant Impact (FONSI) in 2001 for long-term contract renewals for the Friant Division, Hidden Unit, and Buchanan Unit of the CVP (Reclamation 2001b). Twenty-five of the 28 Friant Division long-term renewal contracts were executed between January and February 2001, and the Hidden Unit and Buchanan Unit long-term renewal contracts were executed in February 2001. The Friant Division long-term renewal contracts with the City of Lindsay, Lewis Creek Water District, and City of Fresno were executed in 2005. In accordance with Section 10010 of the Omnibus Public Land Management Act of 2009 (Public Law 111-11), Reclamation entered into 24 Friant Division 9(d) Repayment Contracts by December 2010.

Sacramento River Settlement Contracts and Colusa Drain Mutual Water Company

Reclamation completed a site-specific Environmental Impact Statement (EIS)/ROD in 2005 for long-term contract renewals for the Sacramento River Settlement Contracts and the Colusa Drain Mutual Water Company (Reclamation 2005a). The 147 Sacramento River Settlement Contracts

were executed in 2005, and the Colusa Drain Mutual Water Company contract was executed on May 27, 2005. A revised EA/FONSI for the long-term renewal contract for the Feather Water District water-service replacement contract was completed August 15, 2005 (Reclamation 2005b) and the long-term renewal contract was executed on September 27, 2005.

Shasta, Trinity, and Sacramento River Divisions

Reclamation completed site-specific EA/FONSIs in 2005 for long-term contract renewals for the Shasta Division and Trinity River Divisions (Reclamation 2005c) and the Black Butte Unit, Corning Canal Unit, and the Tehama-Colusa Canal Unit of the Sacramento River Division (Reclamation 2005d). All long-term renewal contracts for the Shasta, Trinity and Sacramento River Divisions covered in these environmental documents were executed between February and May 2005. As Elk Creek Community Services District's long-term contract didn't expire until 2007, they chose not to be included at that time. Reclamation continues to work on long-term renewal contract environmental documentation for Elk Creek Community Services District.

Delta Division and U.S. Department of Veterans Affairs

Reclamation completed a site-specific EA/FONSI in 2005 for long-term contract renewals for the Delta Division (Reclamation 2005e) and the U.S. Department of Veterans Affairs (Reclamation 2005f). In 2005, Reclamation executed 17 Delta Division long-term renewal contracts, including the U.S. Department of Veterans Affairs.

Regarding certain long-term contract renewals related to the Sacramento River Settlement contracts and certain Delta Division contracts, the Ninth Circuit recently held that the original Sacramento River Settlement contracts did not strip Reclamation of all discretion at contract renewal, such that Reclamation was not obligated to consult under section 7 of the Endangered Species Act (ESA). The court also held that environmental plaintiffs have standing to challenge the renewal of the Delta Division contracts under section 7 of the ESA, even though the contracts include shortage provisions that allow Reclamation to completely withhold Project water for certain legal obligations. The court additionally found that Reclamation, even though full contract deliveries were analyzed in the 2008 delta smelt biological opinion, has yet to consult on specific contract terms to benefit delta smelt. The matter has been remanded to the District Court. Since that time, Reclamation reinitiated consultation with the USFWS on execution of the Sacramento River Settlement contracts, and the USFWS concurred that the effects of executing the contracts were addressed in the 2008 delta smelt biological opinion. The complaint has since been amended to challenge the USFWS' concurrence and raise new claims related to the 2009 salmon biological opinion issued by the National Marine Fisheries Service (NMFS). The litigation continues, but the contracts remain effective.

Contra Costa Water District

Reclamation completed a site-specific EA/FONSI in 2005 for long-term contract renewal for the Contra Costa Water District (Reclamation 2005g) and executed a long-term renewal contract in 2005.

American River Division

Reclamation completed a site-specific EIS/ROD in 2006 for long-term contract renewals for the majority of the American River Division (Reclamation 2006b). The American River Division has seven contracts that are subject to renewal. The ROD for the American River long-term

renewal contract EIS was executed for five of the seven contractors. Reclamation continues to work on long-term renewal contract environmental documentation for the other two contractors.

San Felipe Division

On March 28, 2007, the San Felipe Division existing contracts were amended to incorporate some of the CVPIA requirements; however, the long-term renewal contracts for this division were not executed. The San Felipe Division contracts expire December 31, 2027. Reclamation continues to work on long-term renewal contract environmental documentation for the San Felipe Division.

Pending Long-term Contracts

Long-term renewal contracts have not been completed for the City of Tracy, Cross Valley contractors, the San Luis Unit (which includes Westlands Water District [Westlands]) and the 3-way partial assignment from Mercy Springs Water District (Mercy Springs) to Pajaro Valley Water Management Agency (Pajaro Valley), Santa Clara Valley Water District (Santa Clara), and Westlands Distribution District #1 (DD#1) pending completion of appropriate environmental documents.

1.2 Need for the Proposed Action

Interim renewal contracts are needed to provide for the continued beneficial use of the water developed and managed by the CVP and for the continued reimbursement to the federal government for costs related to the construction and operation of the CVP. Additionally, CVP water is essential to continue agricultural and municipal viability for these contractors.

As described in Section 1.1.1, execution of long-term renewal contracts for the contracts listed in Table 1 is still pending. The Proposed Action is to execute six interim renewal contracts in order to extend the term of the contractors' existing interim renewal contracts for two years, beginning March 1, 2020 and ending February 28, 2022. Execution of these six interim renewal contracts is needed to continue delivery of CVP water to these contractors, and to further implement CVPIA Section 3404(c), until their new long-term renewal contract can be executed. These long-term renewal contracts have generally been negotiated but cannot be finalized until site specific environmental review is completed.

1.3 Scope

Reclamation has prepared this EA, which tiers from the PEIS, to determine the site-specific environmental effects of executing the six interim renewal contracts listed in Table 1 for the period March 1, 2020 through February 28, 2022. Under the Proposed Action, CVP water would be delivered for existing agricultural and municipal and industrial (M&I) purposes within Westlands and Santa Clara's existing CVP service area boundaries using existing facilities within Reclamation's water right place of use. See Appendix A for contractor-specific service area maps.

This EA does not consider environmental effects for Pajaro Valley. In 1999, Reclamation approved the assignment of 6,260 acre-feet (AF) of Mercy Springs' Delta Division CVP water service contract (Contract No. 14-06-200-3365A-IR15-B) jointly to Pajaro Valley, Santa Clara, and Westlands DD#1 (Reclamation 1999b). As Pajaro Valley did not have infrastructure in place to receive their portion of the CVP water, a May 2009 four-party agreement was prepared between Mercy Springs, Pajaro Valley, Santa Clara, and Westlands which allows Santa Clara and Westlands DD#1 to take delivery of the water on an interim basis until Pajaro Valley is able to take delivery of the CVP water. To date, conveyance facilities to transport CVP water to Pajaro Valley have not been constructed and Pajaro Valley is unable to take delivery of their portion of CVP water that could be allocated to them under the contract. In addition, pursuant to the May 1999 four-party agreement, if Pajaro Valley fails to assume its rights to its portion of the assignment within 20 years from the date of the agreement (i.e. by May 2019), Westlands and Santa Clara shall be the sole beneficiaries of the assignment thereafter. As such, Pajaro Valley no longer has an interest in the 3-way contract assignment and will no longer be a potential recipient of CVP water pursuant to the May 1999 agreement and subsequent contract assignment.

Ongoing CVP operations concerning Delta exports are outside the scope of this EA. No changes to CVP operations in the Delta or upstream are part of the Proposed Action. The diversion of CVP water for export to south-of-Delta contractors was described in the PEIS (see Chapter III of the PEIS). These exports include up to 1,980,000 AF for agricultural contractors, up to 880,000 AF for the San Joaquin River Exchange Contractors and certain other prior rights settlement contractors, and up to 160,000 AF for M&I contractors. In addition, on January 11, 2016, Reclamation issued a ROD (Reclamation 2016b) addressing the environmental effects of implementing reasonable and prudent alternatives (RPAs) affecting the CVP/State Water Project (SWP) long-term operations (LTO). Because the proposed execution of interim renewal contracts is administrative in nature and does not affect the operations of the CVP or SWP, this EA covers the site-specific environmental analysis of issuing the proposed interim renewal contracts over a two year period, with CVP operations continuing as assumed in the PEIS.

1.4 Issues Related to CVP Water Use Not Analyzed

1.4.1 Contract Service Areas

No changes to any contractor's service area are included as a part of the alternatives or analyzed within this EA. Reclamation's approval of a request by a contractor to change its existing service area would be a separate discretionary action. Separate appropriate environmental compliance and documentation would be completed before Reclamation approves a land inclusion or exclusion to any contractor's CVP service area.

1.4.2 Water Transfers and Exchanges

No sales, transfers, or exchanges of CVP water are included as part of the alternatives or analyzed within this EA. Reclamation's approvals of water sales, transfers, and exchanges are separate discretionary actions requiring separate additional and/or supplementary environmental compliance. Approval of these actions is independent of the execution of interim renewal contracts. Pursuant to Section 3405 of the CVPIA, transfers of CVP water require appropriate

site-specific environmental compliance. Appropriate site-specific environmental compliance is also required for all CVP water exchanges.

1.4.3 Contract Assignments

Assignments of CVP contracts are not included as part of the alternatives or analyzed within this EA. Reclamation's approvals of any assignments of CVP contracts are separate, discretionary actions that require their own environmental compliance and documentation.

1.4.4 Warren Act Contracts

Warren Act contracts between Reclamation and water contractors for the conveyance of non-federal water through federal facilities or the storage of non-federal water in federal facilities are not included as a part of the alternatives or analyzed within this EA. Reclamation decisions to enter into Warren Act contracts are separate actions and independent of the execution of interim renewal contracts. Separate environmental compliance would be completed prior to Reclamation executing Warren Act contracts.

1.4.5 Purpose of Water Use

Use of contract water for agricultural and/or M&I use under the proposed interim renewal contracts would not change from the purpose of use specified in the existing contracts. Any change in use for these contracts would be separate, discretionary actions that require their own environmental compliance and documentation.

1.4.6 Drainage

This EA acknowledges ongoing trends associated with the continued application of irrigation water and production of drainage related to that water. It does not analyze the effects of Reclamation's providing agricultural drainage service to the San Luis Unit. The provision of drainage service is a separate federal action that has been considered in a separate environmental document, the *San Luis Drainage Feature Re-Evaluation Final Environmental Impact Statement* [SLDFR FEIS] (Reclamation 2005h). The SLDFR FEIS evaluated seven Action alternatives in addition to the No Action alternative for implementing drainage service within the San Luis Unit. The ROD for the SLDFR-FEIS was signed March 9, 2007 (2007 ROD). The actions considered in this EA would not alter or affect the analysis or conclusions in the SLDFR FEIS or 2007 ROD.

The SLDFR FEIS and 2007 ROD were prepared in response to litigation known as *Firebaugh v. United States* [Cases 1:88-cv-00634-LJO/DLB, and 1:91-cv-00048-LJO/DLB (Partially Consolidated)]. On September 15, 2015 Westlands and the United States reached a settlement (hereafter referred to as the Westlands Drainage Settlement) with regard to the above noted litigation which requires enactment of enabling legislation, and on October 26, 2015 the District Court referenced the 2007 ROD in its Order granting the joint motion for partial stay in recognition of the Westlands Drainage Settlement.

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions in detail: 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. A reduced-quantity alternative was excluded from detailed analysis based on the results of the updated Water Needs Assessment.

2.1 No Action Alternative

Under the No Action alternative, Westlands would no longer be able to receive up to 1,192,948 AF per year and Santa Clara would no longer be able to receive up to 6,260 AF per year of CVP water pursuant to the contracts listed in Table 1. Both Westlands and Santa Clara have other contracts or contract assignments for CVP water that would continue as described below.

Santa Clara has an existing long-term CVP water supply contract (Contract No. 7-07-20-W0023) with Reclamation for up to 152,000 AF per year that does not expire until 2027 and would continue to receive their CVP water supply allocated pursuant to that contract.

Westlands has a long-term contract assignment (Contract No. 14-06-200-7823J) from Oro Loma Water District that provides for up to 4,000 AF per year. This would continue under the No Action alternative. Reclamation would continue to pursue execution of a long-term renewal contract with Westlands, as mandated by Section 3404(c) of the CVPIA. However, until such time as the environmental documentation was completed for the long-term contract, there would be no contractual mechanism for Reclamation to deliver up to 1,192,948 AF per year of CVP water to Westlands and in the interim the existing water supply needs of the District's customers would be unmet.

Reclamation would continue to deliver full CVP water contract amounts to south-of-Delta CVP contractors consistent with CVP operations as analyzed in the PEIS, accounting for hydrologic conditions and regulatory and environmental requirements.

In general, for most water year types, Reclamation does not anticipate a change in CVP pumping in the Delta or operations under the No Action alternative, as water would continue to be diverted and stored upstream of the Delta consistent with CVP operations described in the PEIS. However, it is possible that in wetter years the up to 1,192,948 AF that otherwise would have been made available to Westlands would be re-apportioned either by (1) re-allocating to other south-of-Delta CVP contractors including wildlife refuges, (2) retained in upstream CVP storage, (3) released for use by other water rights diverters, and/or (4) passed through the Delta un-diverted by Reclamation. The method by which Reclamation would determine this re-apportionment is outside the scope of this EA. The actual re-apportionment would be dependent on specific hydrologic conditions, as well as regulatory, and environmental requirements at issue.

The amount of water that would actually be available for re-apportionment would depend on the amount that otherwise would have been allocated to Westlands. For example, as shown in Table 7 in Section 3.7.1 of this EA, during the drought in 2012 and 2013, Westlands received allocations of only 40% or 20% of its maximum contract amount, respectively. Therefore, the amount available for re-apportionment under the No Action alternative would have been 40% and 20% of Westlands maximum contract amount in those years.

By contrast, in 2014 and 2015, the amount of CVP water made available to Westlands was 0%. As such, no water would been available for re-apportionment under the No Action alternative. The 2014-15 conditions under an allocation of 0% provide a benchmark for analyzing the environmental effects of the No Action alternative for Westlands in this EA.

2.2 Proposed Action

Under the Proposed Action, Reclamation would execute interim renewal contracts for the contracts listed in Table 1 for a two-year period (March 1, 2020 through February 28, 2022). Westlands would continue to receive up to 1,192,948 AF per year and Santa Clara would continue to receive up to 6,260 AF per year of CVP water pursuant to the new two-year interim renewal contracts.

For purposes of this EA, the following assumptions are included in the Proposed Action:

- Execution of each interim renewal contract is considered to be a separate action;
- The contracts would be renewed with the existing maximum contract quantities shown in Table 1; and
- Reclamation would continue to comply with commitments made or requirements imposed by applicable environmental documents, such as existing biological opinions including any obligations imposed on Reclamation resulting from re-consultations.

Westlands' main contract (14-06-200-495A-IR6) is currently on its sixth interim renewal contract. The Proposed Action would be its seventh. The remaining five interim renewal contracts listed in Table 1 are currently on their sixteenth interim renewal contract. The Proposed Action would be their seventeenth. Drafts of the six interim renewal contracts will be released for public review in the fall of 2019 at the following website: https://www.usbr.gov/mp/cvpia/3404c/lt_contracts/index.html.

The Proposed Action contains only minor, administrative changes to the contract provisions to update the new contract period from the previous interim renewal contracts. In the event a new long-term water service contract is executed, the interim renewal contract then-in-effect would be superseded by the long-term water service contract.

No changes to the contractor service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the six proposed interim renewal contracts can only be used within each designated contract service area (see Appendix A). The contract service area for the

proposed interim renewal contracts have not changed from the existing interim renewal contracts. If the contractor proposes to change the designated contract service area separate environmental documentation and approval will be required. CVP water can be delivered under the interim renewal contracts in quantities up to the contract total as provided in Article 3 of the Interim Renewal Contract.

The six interim renewal contracts contain provisions that allow for adjustments resulting from court decisions, new laws, and from changes in regulatory requirements imposed through re-consultations. Accordingly, to the extent that additional restrictions are imposed on CVP operations to protect threatened or endangered species, those restrictions would be implemented in the administration of the six interim renewal contracts considered in this EA, to the extent allowed by law. As a result, by their express terms, the interim renewal contracts analyzed herein would conform to any applicable requirements imposed under the federal ESA or other applicable environmental laws.

2.2.1 Environmental Commitments

Reclamation, Westlands, and Santa Clara shall implement the environmental protection measures included in Table 2.

Table 2 Environmental Protection Measures and Commitments.

Resource	Protection Measure
Biological Resources	No CVP water would be applied to native lands or land untilled for three consecutive years or more without additional environmental analysis and approval.
Water Resources	CVP water may only be served within areas that are within the CVP Place of Use.
Various	No new construction or modification of existing facilities would take place as part of the Proposed Action.

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

2.3 Alternatives Considered but Eliminated from Further Analysis

The Ninth Circuit, in the decision noted in Section 1, stated it was unreasonable for Reclamation to exclude a reduced quantity alternative in that case because Reclamation had relied upon an outdated water needs assessment. As provided in the Ninth Circuit's decision, "In satisfying the duty [of considering a reduced contract alternative], Reclamation may rely upon any water needs assessment for which the data remain accurate" (Case: 14-15514, 07/25/2016, pg 11).

In seeking a voluntary remand without vacatur of EA-15-023 in litigation regarding the 2016-2018 interim renewal contracts listed in Table 1 (Case 1:16-cv-00307-LJO-MJS), Reclamation stated that it would prepare an updated Water Needs Assessment and decide based on that assessment whether to consider a reduced quantity alternative in detail.

Following the directions provided in the Ninth Circuit's decision, Reclamation reviewed the previous Water Needs Assessments completed for the contractors listed in Table 1 and determined that updates were warranted. Reclamation has applied the Ninth Circuit's direction

in the preparation of the updated Water Needs Assessments and has used the updated assessment in deciding whether or not to consider analyzing a reduced quantity alternative in detail.

Water Needs Assessments were prepared by Reclamation between 2000 and 2004 for each CVP contractor eligible to participate in the CVP long-term contract renewal process. A description of those Water Needs Assessments and the methodology used by Reclamation are included in Appendix B.

Water Needs Assessments are used to show what quantity of water could be beneficially used by a particular contractor given a constant reliable source of water, growing seasons, crop prices, and other ideal water delivery conditions. The Water Needs Assessments serve three purposes:

1. Confirm past beneficial use of CVP water.
2. Provide water demand and supply information under current and future conditions for the environmental documents.
3. Provide an estimate of contractor-specific needs for CVP water by the year 2050 to serve as a starting point for discussions regarding contract quantities in the negotiation process.

2.3.1 Westlands Water District Water Needs Assessment

Following the Ninth Circuit's decision, Reclamation reviewed the previous Water Needs Assessment completed for Westlands and determined that updates to the assessment were warranted. Reclamation prepared an updated Water Needs Assessment for Westlands in 2017 (Appendix C) following the same methodology used in the previous Water Needs Assessments (Appendix B) with the following modifications:

Benchmark Years

As Reclamation is required to provide long-term contract renewals for these contractors (pending site-specific environmental review), and the interim contracts are intended to be the bridge to the long-term contract renewals, Reclamation prepared updated Water Needs Assessments where warranted to cover the long-term contract renewal time period. Reclamation used the year 2050 as a convenient future benchmark since some CVP M&I contracts are eligible for a term of up to 40 years (e.g., Santa Clara's main contract and/or City of Tracy's Interim Renewal Contract as described in Section 1.1.1), and using the same (or nearly same) benchmark period will better enable Reclamation to apply consistent comparisons in its overall environmental analyses as well as affording Reclamation the opportunity to rely on the same updated Water Needs Assessments for a broad range of interim and/or long-term contract renewals that falls within the time period covered.

Reclamation added the benchmark year 2051 to Westlands updated Water Needs Assessment in order to account for the permanent retirement of acreage (an aggregate of not less than 100,000 acres) called for in the Westlands Drainage Settlement.

Water Supply Calculations

Water supply for Westlands, including groundwater supply, is discussed more fully in Section 3.7.1 of this EA. In the updated Water Needs Assessment, Reclamation included groundwater as a source of supply for 2011 but did not include a safe yield reference or groundwater supply for 2050 and 2051 due to ongoing concerns about subsidence and the sustainability of groundwater

pumping at current rates. Reclamation included the maximum contract quantity amounts listed in Table 1 in the sources of water supply (Column 3 and 7 in Appendix C).

Contract assignments (those included as part of the Proposed Action and those outside the Proposed Action) are shown in the "transfers-in" (Column 7 in Appendix C) for 2050 as they involve additional water supply without additional acreage (i.e., using the same acreage and CVP service area provided for under Westlands' main contract [Contract No. 14-06-200-495A-IR5]). However, the 3-way contract assignment (Contract No. 14-06-200-3365A-IR15-B) stipulates that if Pajaro Valley is unable to receive its portion of water within 20 years from date of execution (1999-2019), the contract supply will be split solely between Santa Clara (25%) and Westlands (75%). As Pajaro Valley did not have the infrastructure in place in order to receive its portion of water by 2019, Reclamation assumed that Westlands would receive 75% of the 6,260 AF for the years 2050 and 2051.

As noted above, Reclamation added the benchmark year 2051 to Westlands updated Water Needs Assessment in order to account for the permanent retirement of acreage called for in the Westlands Drainage Settlement. Pursuant to the Westlands Drainage Settlement, water made available to Westlands is limited to 895,000 AF annually of a presumed 1,193,000 AF maximum contract quantity amount. As such, Reclamation limited the total contract deliveries for Westlands in 2051 (Column 3 in Appendix C) to 895,000 AF as opposed to the maximum contract quantity available for 2051 (Column 2 in Appendix C). In addition, as the six contract assignments have been included in the maximum contract quantity amount consistent with the Westlands Drainage Settlement, the "transfers-in" number for 2051 (Column 7 in Appendix C) has been zeroed out compared to 2050.

Water Demand

To determine the volume of water needed by the contractor in 2050, Reclamation assumed the maximum productive acreage for irrigation to be 560,700 acres based on 2011 Reclamation Mid-Pacific Region GIS data that classified irrigable acres in Westlands. Reclamation reduced this amount by 100,000 acres to 460,700 acres for 2051 in order to address permanently retired lands required consistent with the Westlands Drainage Settlement.

Reclamation applied the gallons per capita per day (GPCD) from the 2013 California Water Plan Update (e.g., Volume 1 page 3-79) to calculate M&I contractor needs in the years 2050 and 2051 (State of California 2013). A reduction in population for year 2051 (Column 28 in Appendix C) reflects the removal of Lemoore Naval Air Station water supply otherwise provided by Westlands consistent with the Westlands Drainage Settlement. Reclamation did increase industrial and commercial M&I use from published 2011 numbers for 2050 and 2051 by 8 AF and 4 AF, respectively to take into account anticipated growth in those industries.

As described in Appendix B (methodology), the Water Needs Assessment compares the contractor's water demand to the contractor's water supply (all sources, including CVP maximum contract amounts). The demand in excess of supply is identified as Unmet Demand. If Unmet Demand is "positive or only slightly negative" (meaning that the contractor's need is determined to be above or only slightly below the contract maximum) then the CVP water contractor is deemed to have full future need of the maximum annual CVP supply currently under contract for all year types. Further, "[i]f the negative amount is within 10% for contracts

in excess of 15,000 acre-feet, or within 25% for contracts equal to, or less than, 15,000 acre-feet; the test of full future need of CVP supplies under contract is deemed to be met." If an assessment shows that a contractor has full future need of the maximum contract amount, the contractor is deemed to be able to put maximum contract amount to beneficial use.

As part of the Water Needs Assessment for Westlands, Reclamation reviewed Westlands' most recent Water Management Plan (Westlands 2013), conferred with Westlands to verify current water use, and determined that the new and updated Water Needs Assessment (Appendix C) is a reasonable projection of water use for the years 2050 and 2051.

Each year displayed within the updated Water Needs Assessments represents a snapshot in time showing either (1) the risk-based assumptions coming into the year and what actually occurred (e.g. 2011), or (2) what is projected to reasonably occur for a given set of assumptions (e.g. year 2050 and year 2051).

In the updated Water Needs Assessment, Westlands' water demands were compared to its sources of water supply to determine the need for CVP water. The difference is shown in Column 39 (Unmet Demand).[2] As shown in Column 39 of Appendix C, the updated Water Needs Assessment indicates that Westlands had a surplus of supply above demand of 65,127 AF in 2011 (the most recent year of data available in Westlands 2013 Water Management Plan). This was due in large part to groundwater pumping and purchase of other sources of surface water; however, due to ongoing concerns with subsidence, Reclamation does not assume a safe yield for groundwater pumping or assume it to be sustainable on a long-term basis at current withdrawal rates and does not include it as a source of supply in 2050 and 2051. In the years 2050 and 2051, therefore, Westlands is projected to have unmet demand of 156,014 AF and 259,282 AF, respectively. It should be noted that Westlands 2051 available CVP water supply is 255,000 AF less than what is projected for 2050 and its maximum irrigable acres is 100,000 acres less in 2051 than 2050 consistent with the Westlands Drainage Settlement.

As Westlands is projected to have unmet demand in 2050 and 2051, even after receiving maximum contract amounts, Reclamation has determined that Westlands has the capability to put their maximum contract quantity to beneficial use and will continue to have that capability in the future. As such, Reclamation has determined that detailed analysis of a reduced contract quantity alternative for Westlands is not warranted.

2.3.2 Santa Clara Valley Water District Water Needs Assessment

Santa Clara's main water service contract (Contract No. 7-07-20-W0023) for 152,000 AF per year does not expire until 2027 and is not part of this Proposed Action. Reclamation will prepare an updated Water Needs Assessment and associated environmental review for Santa Clara prior to expiration of the long-term contract. Because Santa Clara may receive only up to 6,260 AF per year under the interim renewal contract considered in this EA, and the water goes to municipal use presumed to be beneficial, Reclamation did not prepare an updated Water Needs Assessment for Santa Clara for purposes of this EA.

[2] Numbers in this column are positive (e.g., 100 AF) if there is an unmet demand and negative (e.g., -100 AF) if there is surplus beyond demand.

Section 3 Affected Environment and Environmental Consequences

This section describes the service area for the contractors listed in Table 1 which receive CVP water from the Delta via Delta Division, San Felipe Division, and San Luis Unit CVP facilities. The study area, shown in Figure 1, includes portions of Fresno, Kings, and Santa Clara Counties. Maps of individual contractor CVP service areas can be found in Appendix A.

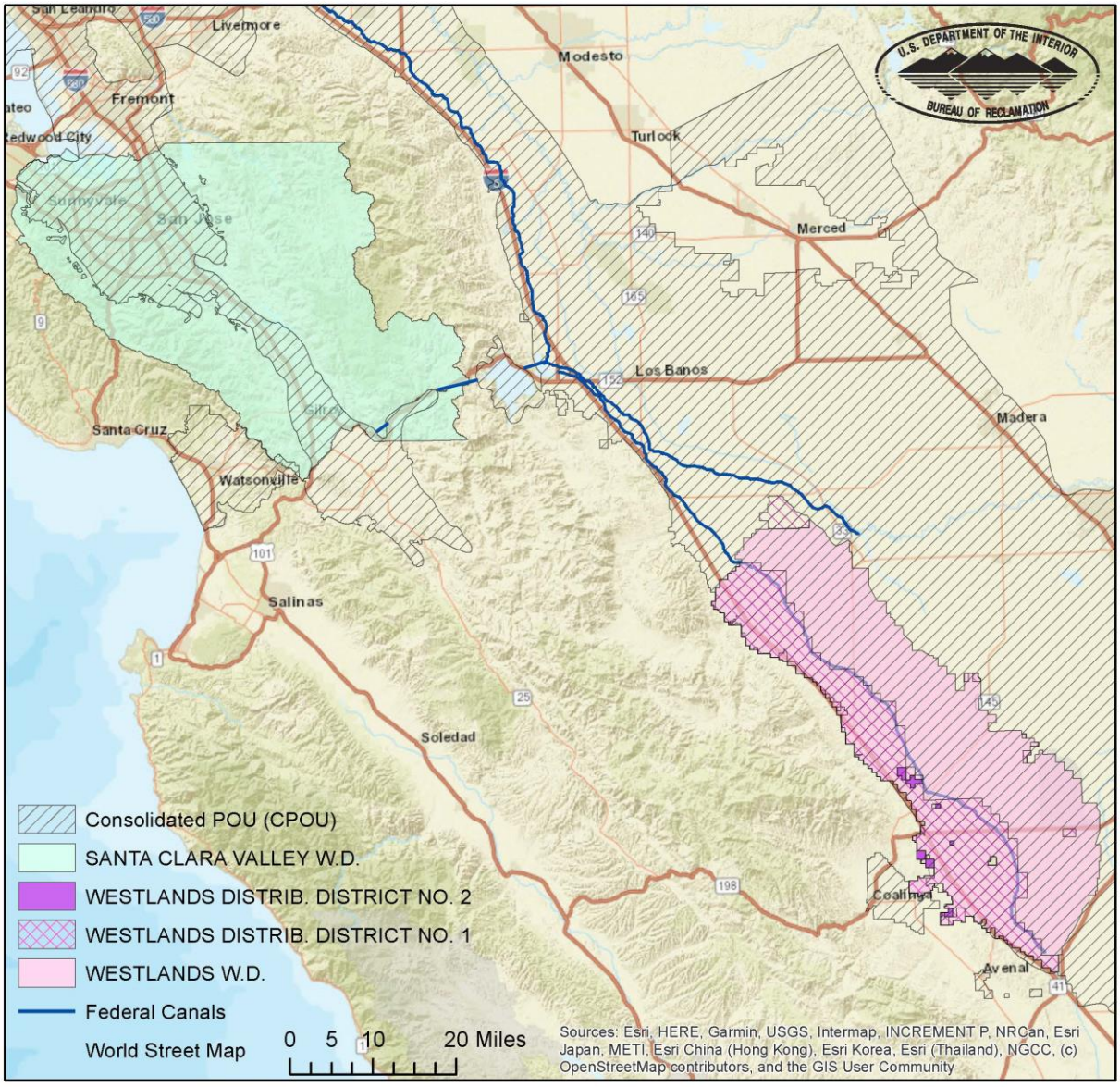


Figure 1 Proposed Action Area

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
Cultural Resources	There would be no impacts to cultural resources as a result of implementing the Proposed Action as the Proposed Action would facilitate the flow of water through existing facilities to existing users. No new construction or ground disturbing activities would occur as part of the Proposed Action. The pumping, conveyance, and storage of water would be confined to existing CVP facilities. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix D for Reclamation's determination.
Global Climate Change	The Intergovernmental Panel on Climate Change (IPCC) recently concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentration" (IPCC 2007). Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions but increasing concentrations of greenhouse gases are anticipated to accelerate the rate of climate change. The National Academy of Sciences has indicated there are uncertainties regarding how climate change may affect different regions. Global climate model predictions indicate that increases in temperature will not be equally distributed but are likely to be accentuated at higher latitudes (IPCC 2007). Increases in temperatures would increase water vapor in the atmosphere and reduce soil moisture, increasing generalized drought conditions, while at the same time enhancing heavy storm events. Although large-scale spatial shifts in precipitation distribution may occur, these changes are more uncertain and difficult to predict. The Proposed Action does not include construction of new facilities or modification to existing facilities. While pumping would be necessary to deliver CVP water, no additional electrical production beyond baseline conditions would occur. As such, there would be no additional impacts to global climate change. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. It is anticipated that climate change would result in more short-duration high-rainfall events and less snowpack runoff in the winter and early spring months by 2030 compared to recent historical conditions (Reclamation 2016b, pg 16-26). However, the effects of this are long-term and are not expected to impact CVP operations within the two-year window of this action. Further, CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility.
Indian Sacred Sites	The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. There would be no impacts to Indian sacred sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.

3.2 Air Quality

Section 176 (C) of the Clean Air Act (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C.

7401 [a]) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable State Implementation Plan before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.2.1 Affected Environment

Santa Clara lies within the San Francisco Bay Area Air Basin under the jurisdiction of the Bay Area Air Quality Management District. The San Francisco Bay Area has been designated under Federal standards as in attainment for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. The Air Basin is in non-attainment for ozone, particulate matter under 10 microns in diameter (PM_{10}), and particulate matter under 2.5 microns in diameter [$PM_{2.5}$] (Bay Area Air Quality Management District 2019).

Westlands lies within the San Joaquin Valley Air Basin under the jurisdiction of the San Joaquin Valley Air Pollution Control District. The Air Basin has been designated under Federal standards as attainment for carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM_{10}. The Air Basin is in non-attainment for ozone (8-hour criteria) and $PM_{2.5}$ although both have seen improvements (San Joaquin Valley Air Pollution Control District 2019).

3.2.2 Environmental Consequences

No Action

Implementation of the No Action Alternative would mean the existing interim renewal contracts listed in Table 1 would expire on February 28, 2018 and Westlands and Santa Clara would no longer receive the CVP water allocated pursuant to these contracts.

Santa Clara is primarily an M&I contractor with a long-term CVP water service contract (Contract No. 7-07-20-W0023) for up to 152,000 AF per year that does not expire until 2027 in addition to groundwater and other imported surface water supplies (see Section 3.7.1 for a description of these water supplies). Water supply from the 3-way partial assignment (up to 6,260 AF per year) is included in the District's overall water supplies and would likely need to be replaced either with additional groundwater pumping and/or purchased surface water supplies from outside the District. Groundwater pumping would temporarily increase criteria pollutants during operation; however, these are existing wells that are used to meet existing needs and are generally part of baseline conditions. Therefore, there would be minimal change in air quality conditions within Santa Clara as a result of the No Action alternative.

Westlands estimates that District growers temporarily fallowed approximately 125,583 acres (218,211 of non-irrigated acres in 2015 – 92,529 of retired lands = 125,583 acres of temporarily fallowed lands) in 2015 (approximately ¼ the irrigable acres in the District) due to the 0% CVP allocation received that year (Westlands 2017). Per information from Westlands, it is likely that additional fallowing above what occurred in 2015 would occur under the No Action alternative (pers. comm. with R. Freeman May 2017).

Air quality effects due to additional fallowing in Westlands include an increased risk of windblown sand and dust, which would contribute to elevated particulate matter concentrations adversely impacting air quality in an area that is already in non-attainment for $PM_{2.5}$ (Reclamation 2016b, pg 16-13).

These adverse air quality effects may be offset by a corresponding reduction of fallowed areas where other south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes.

Proposed Action

Under the Proposed Action, CVP water would continue to be conveyed through existing facilities either via gravity or electric pumps which would not produce air pollutant emissions that impact air quality. In addition, there would be no construction or modification of facilities that could result in emissions; therefore, the Proposed Action would not exceed *de minimis* levels and a general conformity analysis is not required.

Cumulative Impacts

The Proposed Action would not result in cumulative air quality impacts as there are no direct or indirect air quality impacts.

3.3 Biological Resources

3.3.1 Affected Environment

Table 3 was prepared using lists obtained on August 26, 2019 by accessing the USFWS Database: http://ecos.fws.gov/ipac/. The lists were obtained for Westlands and Santa Clara Counties (USFWS 2019). California Least Tern does not appear on the Westlands list, but was added to Table 4 for Westlands, based upon observation of its nesting near evaporation basins at Kettleman City (at the southern boundary of Westlands) and a few individuals foraging in 1997 and 1998 near sewage ponds associated with the Lemoore Naval Air Station (within the district boundaries of Westlands). In addition to the federally listed species shown in Table 4, Western Burrowing Owl and Swainson's Hawk, both protected by the federal Migratory Bird Treaty Act, may be present. The California Natural Diversity Database (CNDDB 2019) was also queried for the Proposed Action Area. The other fish species (all administered by NMFS), besides the delta smelt and the Central Valley steelhead, did not appear on the USFWS' species list. They have been added in, as they are known to migrate through the Sacramento-San Joaquin Delta.

Table 4 Federally Listed Threatened and Endangered Species

Species	Status[1]	District[2]	Effects [3]
Amphibians			
California red-legged frog (*Rana draytonii*)	T, X	Westlands, Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
California tiger salamander (*Ambystoma californiense*)	T, X	Westlands, Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Birds			
California Clapper Rail (*Rallus longirostris obsoletus*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
California Condor (*Gymnogyps californianus*)	E, X	Westlands	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
California Least Tern (*Sternula antillarum browni*)	E	Westlands, Santa Clara	Not likely to adversely affect. Has been within the action area (some past records near Lemoore Naval Air Station), but not seen during surveys in Westlands. Would not be affected within Santa Clara because no land use change would occur and no drainage is generated.
Least Bell's Vireo (*Vireo bellii pusillus*)	E, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Marbled Murrelet (*Brachyramphus marmoratus*)	T, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Western Snowy Plover (*Charadrius alexandrinus nivosus*)	T, X	Westlands, Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)	T, PX	Westlands, Santa Clara	This species could fly over during migration but nesting habitat is absent.
Fish			
Central California Coastal steelhead (*Oncorhynchus mykiss*)	T, X (NMFS)	Santa Clara	No effect determination; no impact to spawning habitat.
Central Valley spring-run chinook salmon (*Oncorhynchus tshawytscha*)	T (NMFS)	Westlands, Santa Clara	Effects of pumping in the San Joaquin-Sacramento Delta are a result of CVP operations and have been/are being addressed separately under the CVP/SWP Coordinating Operations consultation.
Central Valley steelhead (*Oncorhynchus mykiss*)	T, X (NMFS)	Westlands, Santa Clara	Effects of pumping in the San Joaquin-Sacramento Delta are a result of CVP operations and have been/are being addressed separately under the CVP/SWP Coordinating Operations consultation.
coho salmon - central CA coast (*Oncorhynchus kisutch*)	E, X (NMFS)	Santa Clara	No effect determination; no impact to spawning habitat.
delta smelt (*Hypomesus transpacificus*)	T, X	Westlands, Santa Clara	Effects of pumping in the San Joaquin-Sacramento Delta are a result of CVP operations and have been/are being addressed separately under the CVP/SWP Coordinating Operations consultation.

Species	Status[1]	District[2]	Effects [3]
North American green sturgeon (*Acipenser medirostris*)	T (NMFS)	Westlands, Santa Clara	Effects of pumping in the San Joaquin-Sacramento Delta are a result of CVP operations and have been/are being addressed separately under the CVP/SWP Coordinating Operations consultation.
Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*)	E, X (NMFS)	Westlands, Santa Clara	Effects of pumping in the San Joaquin-Sacramento Delta are a result of CVP operations and have been/are being addressed separately under the CVP/SWP Coordinating Operations consultation.
South Central California steelhead (*Oncorhynchus mykiss*)	T, X (NMFS)	Santa Clara	No effect determination; no impact to spawning habitat.
tidewater goby (*Eucyclogobius newberryi*)	E, X	Santa Clara	No effect determination; suitable habitat not present.
Invertebrates			
bay checkerspot butterfly (*Euphydryas editha bayensis*)	T, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Conservancy fairy shrimp (*Branchinecta conservatio*)	E, X	Westlands, Santa Clara	No effect determination; suitable habitat not present.
San Bruno elfin butterfly (*Callophrys mossii bayensis*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T, X	Westlands, Santa Clara	No effect determination; although suitable habitat may be present, no land use change, conversion of habitat, construction or modification of existing facilities would occur as a result of the Proposed Action.
vernal pool fairy shrimp (*Branchinecta lynchi*)	T, X	Westlands, Santa Clara	No effect determination; suitable habitat not present.
vernal pool tadpole shrimp (*Lepidurus packardi*)	E, X	Westlands, Santa Clara	No effect determination; suitable habitat not present.
Mammals			
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	E, X	Westlands	No effect determination; Proposed Action Area is outside species' range.
giant kangaroo rat (*Dipodomys ingens*)	E	Westlands	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
salt marsh harvest mouse (*Reithrodontomys raviventris*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
San Joaquin kit fox (*Vulpes macrotis mutica*)	E	Westlands, Santa Clara	May affect, not likely to adversely affect. Potentially present within the Action Area. Could be affected by ongoing farming practices.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	E	Westlands	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Plants			
California jewelflower (*Caulanthus californicus*)	E	Westlands	No effect determination; suitable habitat not present.
California sea blite (*Suaeda californica*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.

Species	Status[1]	District[2]	Effects [3]
Contra Costa goldfields (*Lasthenia conjugens*)	E, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Coyote ceanothus (*Ceanothus ferrisae*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
fountain thistle (*Cirsium fontinale* var. *fontinale*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Marin dwarf-flax (*Hesperolinon congestum*)	T	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Menzies' wallflower (*Erysimum menziesii* (includes ssp. *yadonii*))	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
palmate-bracted bird's-beak (*Cordylanthus palmatus*)	E	Westlands	No effect determination; suitable habitat not present.
robust spineflower (*Chorizanthe robusta* var. *robusta*)	E, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
San Joaquin woolly-threads (*Monolopia congdonii*)	E	Westlands	Not likely to adversely affect. Potentially present within the action area. Could be affected by ongoing farming practices.
San Mateo thornmint (*Acanthomintha duttonii*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
San Mateo woolly sunflower (*Eriophyllum latilobum*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Santa Clara Valley dudleya (*Dudleya setchellii*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Santa Cruz tarplant (*Holocarpha macradenia*)	T, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
showy Indian clover (*Trifolium amoenum*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Reptiles			

Species	Status[1]	District[2]	Effects [3]
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	T, X	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
blunt-nosed leopard lizard (*Gambelia sila*)	E	Westlands, Santa Clara	Not likely to adversely affect. Potentially present within the action area. Could be affected by lands being fallowed and then brought back into production.
giant garter snake (*Thamnophis gigas*)	T	Westlands, Santa Clara	Not likely to adversely affect (discountable). In Westlands, with the exception of a heavy rainfall occurrence where floodwater causes sheetflow over district lands, there is no surface discharge of subsurface agricultural drainage within or outside district boundaries. Extensive land retirement along the northern boundary and drainage management under the Grassland Bypass Project have prevented contamination of Grasslands wetlands water supply channels.
East Pacific green sea turtle (*Chelonia mydas*)	T (NMFS)	Santa Clara	No effect determination; no impact to coastal habitat.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	E	Santa Clara	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.

[1] Status = Status of federally protected species protected under the ESA.
E: Listed as Endangered
NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service
T: Listed as Threatened
PX: Proposed critical habitat
X: Critical Habitat designated for this species
[2] Note that lists were for the entire county or counties that encompass the districts.

Santa Clara Valley Water District

There is critical habitat for several species present in Santa Clara as shown in Table 4. In addition, species that potentially occur in Santa Clara include: San Joaquin kit fox, blunt-nosed leopard lizard, and giant garter snake (Table 4). Santa Clara is also a participant in the Santa Clara Valley Habitat Conservation Plan (HCP) which addresses affects to federally listed species in portions of Santa Clara County (ICF International 2012). Between 2000 and 2012, and prior to the completion of the HCP, potential effects to listed species in Santa Clara were addressed in biological opinions that also included other contractors. In 2012, the USFWS concurred with Reclamation's determination that the execution of Santa Clara's interim renewal contract was not likely to adversely affect federally listed or proposed species or critical habitat.

Westlands Water District

The majority of Westlands consists of agricultural lands. A variety of permanent, row, and field crops are grown within Westlands with the majority consisting of row and field crops (Westlands 2018). Between 1993 and 2018 the number of acres reported as being farmed ranged from 357,415 (2015) and 549,704 (1996) with an average of 481,902. As shown in Figure 2, there is a trend towards farming more permanent crops (orchards and vineyards) over non-permanent crops. This change in farming predominates on the western, non-drainage impaired portion of

the district (Phillips 2006). Based on data provided by Westlands, total acres of non-permanent crops farmed in Westlands steadily declined between 1996 and 2009 mirrored by a concurrent increase in permanent crops (Figure 2). The only federally-listed 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).

Over the last 10 years (2008 – 2018), permanent crops in Westlands ranged from approximately 25 percent to 49 percent of total crops with an average of 37 percent (Westlands 2018). The vast majority of crops during this same period (greater than 60 percent, annually, except 2014 and 2015 which were 50 percent and 49 percent, respectively) were non-permanent field and row crops (Westlands 2018). The acreage of fallowed lands has also generally increased in the last few years within Westlands, especially during the recent drought (Figure 2).

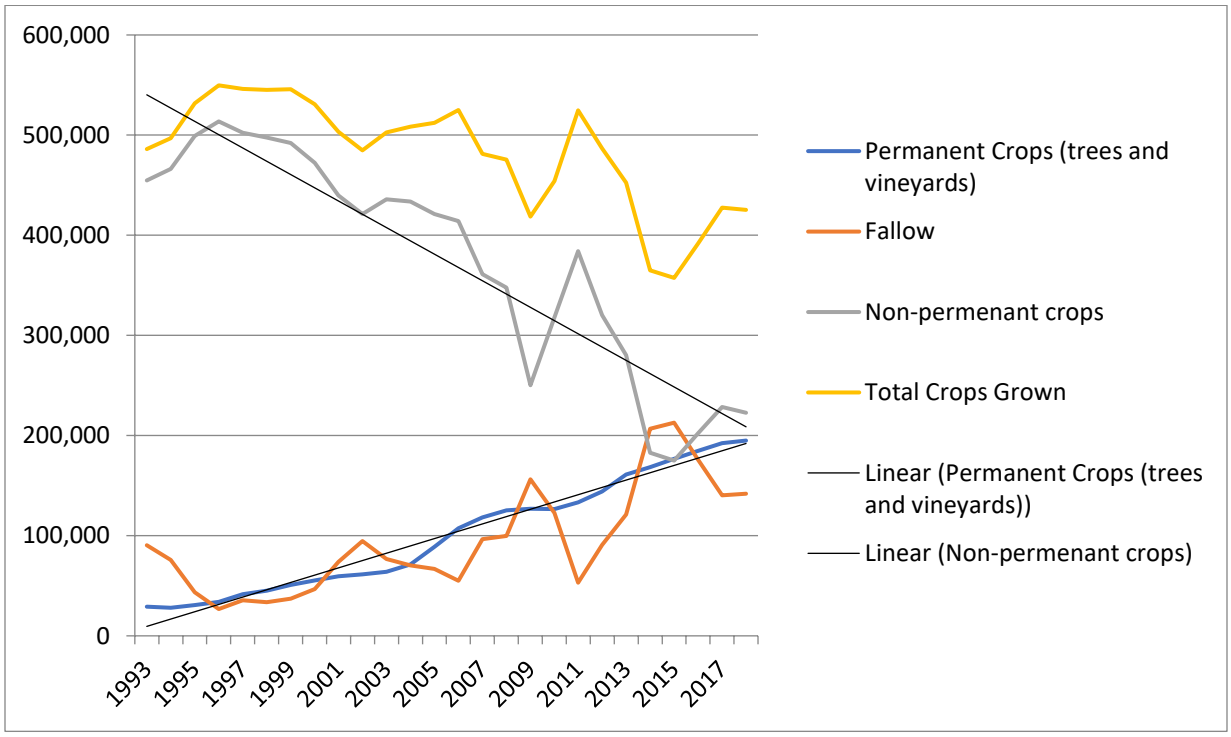


Figure 2 Crop Acreages in Westlands Water District

Special-Status Species and Critical Habitat No critical habitat exists in Westlands. Federally protected species that potentially occur in Westlands include: the Western Burrowing Owl, Swainson's Hawk, San Joaquin kit fox, blunt-nosed leopard lizard, California Least Tern, San Joaquin woolly-threads, and giant garter snake (Table 4). Since most of the lands in the Action Area are either croplands or in urban development, none of the special-status species potentially present can regularly use these lands except for the Western Burrowing Owl, Swainson's Hawk, and San Joaquin kit fox. As such, this section focuses on those species.

Western Burrowing Owls Habitat requirements for burrowing owls include low-stature vegetation, usually grasslands or arid shrubland, in an area generally open without too much tree or shrub cover (California Department of Fish and Game 1995, 2005). They require burrows dug by mammals such as ground squirrels or badgers, or they may use man-made cavities that

provide similar refuge (California Department of Fish and Game 1995, 2005). Western Burrowing Owls sometimes use canal rights-of-way, which may have ground squirrel burrows and are often bare of vegetation.

Swainson's Hawk More than 85 percent of Swainson's Hawk territories in the Central Valley are in riparian systems adjacent to suitable foraging habitats (California Department of Fish and Game 1995). Suitable nest sites may be found in mature riparian forest, lone trees or groves of oaks, other trees in agricultural fields, and mature roadside trees. Swainson's Hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands (California Department of Fish and Game 2005).

San Joaquin Kit Fox San Joaquin kit foxes primarily inhabit grassland and scrubland communities. They also inhabit oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities. Foraging habitat includes grassland, woodland, and open scrub. Denning habitat includes open, flat areas with loose, generally sandy or loamy soils (Egoscue 1956, 1962). Kit foxes excavate their own dens, or use other animals, and human-made structures (culverts, abandoned pipelines, and banks in sumps or roadbeds). Although lands adjacent to natural habitats may be used for occasional foraging (Warrick et al. 2007) agricultural lands are generally not suitable for long-term occupation by kit foxes. There is some suitable and some sub-optimal San Joaquin kit fox habitat (Cypher et al. 2007) present within Westlands; however, these areas remain between the western boundary of Westlands and Interstate 5, a fairly narrow band of land. Fallowed lands may also provide habitat for the San Joaquin kit fox, particularly if left fallow for more than one year and located near natural lands. As shown in Figure 3, fallowed lands in Westlands have increased and decreased overtime, with a steady increase since 2011.

Other Federally protected species Blunt-nosed leopard lizards and San Joaquin woollythreads may occur in small areas of native lands along the western edge of Westlands. Giant garter snakes have been observed in the Mendota Pool and Grasslands wetlands water channels. Westlands does not discharge subsurface drainage directly to these surface water channels or the San Joaquin River. In addition, California Least Tern may occur in Westlands as it was observed foraging at the sewage ponds at Lemoore Naval Air Station in 1997 and 1998; however, no nesting has been documented at this location to date. At Westlake Farms in the San Joaquin Valley, California Least Terns have not been seen since June 7, 2011 (one pair) and haven't nested there since 2010 (J. Seay pers. comm.).

Pursuant to the incidental take statement issued by the USFWS (USFWS 2016), in mid-April 2014 Reclamation surveyed the entire stretch of the San Luis Drain where it runs through or next to Westlands (Reclamation 2016c). All wetted areas were documented and mapped, and the information provided to the USFWS. Areas of shallow water were found and at the request of the USFWS, these areas were re-checked in mid-June. Only one wetted area was found, which contained tailwater from within the James Irrigation District and not from within Westlands. Reclamation voluntarily collected a water quality sample of this tailwater, and an analysis of the sample showed that the selenium concentration was 0.8 µg/L (under the 2 µg/L selenium criteria used by the USFWS for sensitive species). As a result of the lack of persistent water in the San Luis Drain within the Proposed Action Area, and with the written consent of the USFWS, no

surveys for the California Least Tern were conducted in 2016. Reclamation mapped wetted areas in the San Luis Drain during the spring of 2017, and because areas of open water were present during the nesting season, a qualified biologist conducted surveys for California Least Terns from June through July. The surveys were terminated with the USFWS permission after July, as the lack of any observations meant that there were no nestlings to monitor.

Documents Addressing Potential Impacts of Actions of the CVP (Excluding the Proposed Action) to Listed Species

Coordinated Operations of the CVP and SWP In December 2008, USFWS issued a biological opinion analyzing the effects of the coordinated long-term operation of the CVP and SWP in California (USFWS 2008). The USFWS biological opinion concluded that "the coordinated operation of the CVP and SWP, as proposed, was likely to jeopardize the continued existence of the Delta smelt" and "adversely modify Delta smelt critical habitat." The USFWS biological opinion included RPAs for CVP and SWP operations designed to allow the projects to continue operating without causing jeopardy or adverse modification. On December 15, 2008, Reclamation provisionally accepted and then implemented the USFWS RPA.

NMFS issued its biological opinion analyzing the effects of the coordinated long-term operation of the CVP and SWP on listed salmonids, Southern DPS North American green sturgeon, and Southern Resident killer whale in June 2009 (NMFS 2009). The NMFS biological opinion concluded that the long-term operation of the CVP and SWP, as proposed, was likely to jeopardize the continued existence of Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, Southern DPS of North American green sturgeon, and Southern Resident killer whales. Also the NMFS biological opinion concluded that the CVP/SWP Coordinated Operations, as proposed, was likely to destroy or adversely modify critical habitat for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead and the Southern DPS of North American green sturgeon. The NMFS biological opinion included an RPA designed to allow the projects to continue operating without causing jeopardy or adverse modification. On June 4, 2009, Reclamation provisionally accepted and then implemented the NMFS RPA.

However, following their provisional acceptance, both biological opinions were subsequently challenged in Court, and following lengthy proceedings, the United States District Court for the Eastern District of California remanded the biological opinions, and Reclamation was ordered by the Court to comply with the National Environmental Policy Act (NEPA) before accepting the RPAs. In March and December 2014, the biological opinions issued by the USFWS and NMFS, respectively, were upheld by the Ninth Circuit Court of Appeals, although certain requirements (such as an obligation for Reclamation to follow a NEPA process) were left in place. Reclamation completed NEPA on the CVP/SWP Coordinated Operations biological opinions and issued a ROD on January 11, 2016. Reclamation received new biological opinions from the USFWS and NMFS on October 21, 2019.

O&M Program for the South-Central California Area Office Reclamation has consulted under the ESA on the *Operation and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office*, resulting in a biological opinion issued by USFWS on February 17, 2005 (USFWS 2005). The opinion considers the effects of routine O&M of Reclamation's facilities used to deliver water to the study area, as

well as certain other facilities within the jurisdiction of the South-Central California Area Office, on California tiger salamander, vernal pool fairy shrimp, valley elderberry longhorn beetle, blunt-nosed leopard lizard, vernal pool tadpole shrimp, San Joaquin wooly-threads, California red-legged frog, giant garter snake, San Joaquin kit fox, and on proposed critical habitat for the California red-legged frog and California tiger salamander.

3.3.2 Environmental Consequences

No Action

Under the No Action alternative, Reclamation's existing and future environmental commitments addressed in biological opinions, including the CVPIA biological opinion (USFWS 2000) would continue to be met, including continuation of ongoing species conservation programs.

The loss of CVP water supplies in Westlands under the No Action alternative may cause short-term adverse impacts to any wildlife that utilize agricultural lands for foraging and nesting; such as blackbirds, doves, and various species of hawks due to increased fallowing. As described previously, Santa Clara is primarily a M&I contractor that would likely offset the loss of up to 6,260 AF per year through additional groundwater pumping or surface water acquisition and would, therefore, not increase fallowing or impact biological resources as conditions would remain the same as current conditions in the District.

However, Westlands is primarily agricultural and anticipates increased fallowing (approximately 125,583 acres or more) without the availability of CVP water supplies. The increased fallowing could also lead to substantial increases in insect pest populations and noxious weeds in fallowed areas where pest and weed control practices are no longer applied leading to further loss in foraging and nesting habitat for these birds (Westlands 2017).

These adverse effects to foraging and nesting habitat for birds, including migratory birds, may be offset by a subsequent reduction of fallowed areas where other south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes. It is also possible that beneficial effects to biological resources, including listed species and/or their associated habitat, could occur if water that would have been made available to Westlands is instead re-allocated to wildlife refuges or re-apportioned to pass through the Delta un-diverted by Reclamation; however, these effects would also be dependent on how much of Westlands' otherwise available water supply is available for re-apportionment.

Proposed Action

CVP-wide impacts to biological resources were evaluated in the PEIS, and a USFWS biological opinion addressing potential CVP-wide impacts of the CVPIA was completed on November 21, 2000. In addition, the programmatic biological opinion and Essential Fish Habitat Conservation Recommendations prepared by NMFS for the CVPIA were completed on November 14, 2000. The Proposed Action would meet environmental commitments in existence as a result of existing biological opinions, including those for the CVPIA and the coordinated long-term operations of the CVP and SWP.

As described previously, interim renewal contracts contain provisions that allow for adjustments resulting from court decisions, new laws, and from changes in regulatory requirements that may

be imposed through re-consultations. Accordingly, to the extent that additional restrictions are imposed on CVP operations to protect threatened or endangered species, those restrictions would be implemented in the administration of the six interim water service contracts considered in this EA. As such, the Proposed Action would not impact the efforts of the San Joaquin River Restoration Program and would conform to any applicable requirements imposed under the federal ESA or other applicable environmental laws.

Renewal of the existing interim renewal contracts would not provide the long-term water supply reliability required for conversion from agriculture to M&I uses as it only covers a two-year time period. The Proposed Action would not result in any change in existing water diversions from the Delta nor would it require construction of new facilities or modification of existing facilities for water deliveries. The CVP water supply for Westlands and Santa Clara pursuant to the six interim renewal contracts listed in Table 1 would continue to be used for agricultural and M&I purposes within their respective CVP service areas (see Appendix A) as it has in the past. In addition, as described in Table 2, no native or untilled land (fallow for three consecutive years or more) may be cultivated with CVP water without additional environmental analysis and approval. Therefore, conditions of special status species and habitats are assumed to remain the same as current conditions described in the Affected Environment over the two-year period of the Proposed Action.

Reclamation anticipates that drainage production from the study area during the interim renewal period would continue to decrease based on existing trends, caused by the implementation of regional projects, separate from the interim renewal contracts, which increase irrigation efficiency and utilization of reuse areas for the application of drainwater in accordance with existing permits.

Reclamation also anticipates that ongoing trends toward use of higher efficiency irrigation systems and related changes in cropping (generally away from row crops and toward permanent crops) would continue under the Proposed Action. This is due in part because those trends are spurred by water shortages from the implementation of laws and regulations that reduce the quantity of CVP water available for delivery to south-of-Delta contractors. Consequently, species that utilize orchards and other permanent crops would benefit and those preferring row crops would be adversely affected. However, over the short interim period, these changes are not likely to be substantial.

Migratory Birds Changes in crop patterns toward more permanent crops and increased fallowing of land could result in less habitat for the Swainson's Hawk and Western Burrowing oOwl; however, these effects have occurred previously and are likely to continue to occur in the future under either alternative. The Proposed Action would deliver water through existing facilities to existing irrigated agricultural lands which already receive delivered water. As delivery of CVP water under this alternative would support existing land use patterns, take would not occur as defined by the Migratory Bird Treaty Act.

Federally-listed Species Under the Proposed Action direct effects on federally listed species are related to ongoing farm practices such as pesticide use and choice of crops grown, which are not within the control or authority of Reclamation. Although orchards have been shown to allow

greater kit fox foraging and movement (Warrick et al. 2007) than row crops, management of orchards to reduce rodent damage (e.g., use of anticoagulant baits) could make orchard operations harmful to kit fox. In addition, the resumption of agricultural activities on lands fallowed for more than one year has the potential to remove dens, reduce prey and force kit foxes into unfamiliar areas (Cypher 2006). Discing of lands near native lands could also impact the blunt-nosed leopard lizard and San Joaquin woolly-threads if present as they may overlap slightly with the adjoining lands. These effects have occurred previously and are likely to continue to occur in the future under either alternative as they are the effect of farming practices and not an effect of the Proposed Action.

The Land Retirement Demonstration Project demonstrated groundwater level declines following land retirement in Westlands (Reclamation 2005i). These lands lie in the area through which, if any subsurface drainage passed from Westlands to the giant garter snake habitat in the Grassland wetlands, it would have to pass. Reclamation (2005i) showed a water table decline of over five feet within two years of land retirement. Groundwater modeling by Williamson and others (1989) describe the pre-developed groundwater flow system as having a large horizontal gradient and much smaller vertical gradient with groundwater moving from southwest to northeast. The average vertical gradient within the northern section of Westlands is approximately 20 times that of the horizontal-gradient. This allows drain water to move in a predominantly vertical direction, rather than horizontal direction. In addition, the transition of Westlands lands to efficient irrigation systems, in concert with land retirement and fallowing, has significantly reduced the volume of drain water being produced. As a result, the giant garter snake is extremely unlikely to be adversely affected by the Proposed Action.

As explained earlier, the California Least Tern has not been found to occur in the Proposed Action Area in the surveys conducted during the past few years, and none have been found in the region in seven years. As a result, they also are extremely unlikely to be adversely affected by the Proposed Action.

There would be no effects to salmonid species' designated critical habitat or green sturgeon since none inhabit or exist in Westlands or Santa Clara. Additionally, impacts to salmonid species and green sturgeon in the Delta from CVP operations are addressed in the CVP/SWP Coordinating Operations consultation. CVP operations are outside the scope of this EA.

Cumulative Impacts

The Proposed Action, when added to other past, present, and reasonably foreseeable future actions, represents a continuation of existing conditions which are unlikely to result in cumulative impacts on the biological resources of the study area. The Proposed Action provides for the delivery of the same contractual amount of water to the same lands for existing purposes without the need for facility modification or construction.

3.4 Environmental Justice

Executive Order 12898 (February 11, 1994) mandates Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Santa Clara lies entirely within Santa Clara County and Westlands falls primarily within Fresno County with a smaller portion in Kings County. As shown in Table 5, the predominately urban Santa Clara County has a very different demographic and socioeconomic setting than Fresno or Kings Counties. Unemployment rates for Fresno and Kings Counties ranged from 6.7% to 7.9% between 2018 and 2019, compared to 2.7% to 2.8% for Santa Clara County and 4.2% and 4.3% for the State of California. In 2018, the Hispanic community was substantially greater within Fresno (53.5%) and Kings (55.0%) Counties than Santa Clara County (25.3%) and the State (39.3%). The number of people below the poverty level was also substantially higher in Fresno and Kings Counties (21.1% and 18.4%, respectively) than Santa Clara County (7.5%) and the State (12.8%).

Table 5 Fresno, Kings, and Santa Clara County Demographics

Demographics	Fresno County	Kings County	Santa Clara County	California
Total Population (2018 estimate)	994,400	151,366	1,937,570	39,557,045
White, non-Hispanic	29.0%	31.8%	31.0%	36.8%
Black or African American	5.8%	7.3%	2.8%	6.5%
American Indian or Alaska Native	3.0%	3.2%	1.2%	1.6%
Asian	11.0%	4.5%	38.3%	15.3%
Native Hawaiian/Pacific Islander	0.3%	0.3%	0.5%	0.5%
Hispanic or Latino	53.5%	55.0%	25.3%	39.3%
Median Household Income, 2013-2017	$48,730	$49,742	$106,761	$67,169
Annual per capita income, 2013-2017	$22,234	$19,835	$48,689	$33,128
Persons in poverty	21.1%	18.4%	7.5%	12.8%
August 2018 Unemployment rate (not seasonally adjusted)	6.7%	6.7%	2.8%	4.3%
June 2019 Unemployment rate (not seasonally adjusted)	7.0%	7.9%	2.7%	4.2%

Source: U.S. Census Bureau 2018, State of California Employment Development Department 2019

There are several Disadvantaged Incorporated Communities and Disadvantaged Unincorporated Communities (DACs/DUCs) within and adjacent to the boundaries of Westlands, including, but not limited to, the cities of Huron, Coalinga, Avenal, Mendota, and the communities of Cantua Creek, El Porvenir, and Kettleman City. There are approximately 60,000 residents living in these DICs/DUCs and many of these residents depend on the permanent and seasonal employment supported by District growers, processing and packing operations. Within Fresno and Kings Counties, Westlands directly accounts for some $3.6 billion of economic output and nearly 30,000 jobs. This impact is through direct crop production and through the wide range of secondary and support activities that are possible because of the fruit and produce grown on farms within the District (Westlands 2017).

3.4.2 Environmental Consequences

No Action

Implementation of the No Action Alternative would mean the existing interim renewal contracts listed in Table 1 would no longer be in effect and Westlands and Santa Clara would no longer receive the CVP water allocated pursuant to these contracts.

Santa Clara does not have a large minority or disadvantaged population (Table 5), therefore, there would be no disproportionate impacts to economically disadvantaged or minority populations in Santa Clara under the No Action alternative. However, Westlands is primarily an agricultural District with a substantial economically disadvantaged and minority population (Table 5). Although Westlands would continue to receive up to 4,000 AF per year from Contract No. 14-06-200-7823J, this would not provide enough water to meet all of its M&I demands (see Appendix C). The loss of the majority of Westlands' CVP water supply would impact Westlands ability to provide good quality water supplies to the DACs/DUCs and to the Lemoore Naval Air Base located within its District boundaries. Row crops would also likely be taken out of production, severely impacting the availability of seasonal jobs. The decrease in employment opportunities for low-income wage earners and minority population groups would have a substantially adverse impact to minority and disadvantaged populations due to additional financial burdens placed on an already economically disadvantaged area.

These adverse effects to low-income wage earners and/or minority population groups may be offset by a subsequent reduction of fallowed areas where other south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes.

Proposed Action

As the Proposed Action would be a continuation of current conditions, it would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations as there would be no changes to existing conditions.

Cumulative Impacts

The Proposed Action would not differ from current or historical conditions, and would not disproportionately affect minority or low income populations in the future; therefore, there would be no cumulative impacts as a result of the Proposed Action.

3.5 Land Use

3.5.1 Affected Environment

The Affected environment includes the CVP service areas for Santa Clara and Westlands.

Santa Clara Valley Water District

Santa Clara encompasses the same geographic boundaries as Santa Clara County totaling approximately 1,300 square miles with the majority of development and water use located within 350 square miles of the valley floor (Santa Clara 2011). Agricultural use is important within the southern portion of the county while urbanization has replaced many of the orchards in the north. Santa Clara anticipates that land use will remain fairly stable over the next few years with the majority of new construction likely to be infill within existing urban centers and continued moderate urbanization in the south county area (Santa Clara 2011).

Westlands Water District

Westlands comprises approximately 614,700 acres on the west side of the San Joaquin Valley in Fresno and Kings Counties. Substantially all the land within Westlands has historically been in agricultural production; from 2001-2011, irrigated acres in Westlands ranged from 559,744 to 568,700 (Westlands 2013); however, for the purposes of the updated Water Needs Assessment Reclamation assumed that 560,700 acres are irrigable based on 2011 Reclamation Mid-Pacific Region GIS data that classified irrigable acres in Westlands.

Westlands "allocates" CVP water made available by Reclamation in a given year to about 467,000 acres due to an internal settlement (aka Sagouspe Settlement) between landowners in Westlands. Under the settlement, Westlands acquired the landowners right to receive the CVP water allocation from 93,000 acres within Westlands in order to make the annual CVP water allocation rate (i.e., AF/acre) the same for the 467,000 acres noted above. However, while 36,000 acres of the 93,000 acres have non-irrigation covenants, there are still irrigation demands on approximately 57,000 acres that can still be farmed with CVP water transferred internally from other lands within Westlands, groundwater, and/or other available water supplies.

It should be noted that growers within Westlands periodically plant and harvest crops two times per year on a given parcel of land (often referred to as "double cropping") that approximately doubles the water demand on the same acreage. For example, over a 10-year period (2001-2011) double cropping has ranged between 6,330 acres (2009) and 20,312 (2006) acres (Westlands 2013).

Permanent crops occupy roughly 31% of the irrigable acres that receive an allocation, but as CVP water supply has decreased in recent years, farmers have fallowed more land in response to the reduction in supply (Westlands 2017).

Solar development has increased within the last few years as utility companies advance to meet the State's new Renewable Portfolio Standard requirements for green energy. Since 1999, Westlands has purchased approximately 93,000 acres of land within its District boundaries due to legal settlements and other Westlands' programs. Approximately 5,000 acres of this land has been sold to solar developers and other private parties by Westlands and Westlands currently has approximately 16,500 acres of such land under option to be sold for utility scale solar development or other purposes. Several individual water users have also installed smaller scale solar projects to reduce their energy demand. Westlands delivers water to these solar developments during construction and provides M&I water when the solar plants are commissioned (Westlands 2017).

3.5.2 Environmental Consequences

No Action

Santa Clara would likely offset the loss of up to 6,260 AF per year with additional groundwater pumping and/or surface water acquisition in order to reduce potential impacts to their overall water supply availability. Therefore, the No Action alternative would not lead to land use changes as conditions would remain the same as current conditions in the District.

Westlands estimates that approximately ¼ of its irrigable acres would be fallowed under the No Action alternative, similar to what occurred in 2015. In addition, the lack of CVP water would adversely impact Westlands ability to deliver M&I water to existing and planned solar plants and could hamper or preclude future solar development (Westlands 2017).

Changes in land use due to fallowing may be offset by a subsequent reduction of fallowed acres in other areas where south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes.

Proposed Action

The continuation of the interim renewal contracts listed in Table 1 would not result in a change in contract water quantities or a change in water use and would continue water deliveries within the contractors' respective service areas. Westlands is primarily agricultural and intends to remain so. In addition, the two year period of the Proposed Action does not provide any additional water supplies that could act as an incentive for conversion of native habitat or increased agricultural production acreage. Therefore, land use within each district would continue as it has in the past and there would be no impacts compared to the No Action alternative.

Cumulative Impacts

The Proposed Action would maintain the status quo of delivering the same contractual amount of CVP water for existing purposes within each district without the need for additional facility modification or construction. As such, there would be no cumulative adverse impacts to land use.

3.6 Socioeconomic Resources

3.9.1 Affected Environment

Demographic information for Fresno, Kings County, and Santa Clara County is summarized in Table 5 and described in Section 3.4. The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. During 2018 farmers in Westlands planted and harvested 371,575 acres of crops with a total gross value of approximately $2.2 billion (Table 6).

Table 6 Calendar Year 2018 Crop Values for Westlands

Crop Name	Acres	Value	Type
Alfalfa-Hay	3,738	$6,156,486	Annual
Alfalfa-Seed	804	$1,716,741	Annual
Asparagus	130	$894,608	Annual
Barley	575	$111,320	Annual
Beans-Dry	616	$32,916	Annual
Beans-Garbanzo	7,240	$59,613,081	Annual
Beans-Jojoba	50	$276,375	Annual
Broccoli	1,165	$5,289,158	Annual

Crop Name	Acres	Value	Type
Cantaloupes	13,781	$79,415,907	Annual
Carrots-Bulk	465	$3,828,741	Annual
Corn-Sweet	4,885	$22,487,511	Annual
Cotton-Lint-Acala	3,352	$4,979,195	Annual
Cotton-Lint-Pima	38,627	$90,380,227	Annual
Flowers	38	$110,940,050	Annual
Garlic	15,193	$260,916,074	Annual
Honeydews	2,345	$19,036,147	Annual
Lettuce-Fall	3,711	$25,641,117	Annual
Lettuce-Spring	4,987	$23,388,980	Annual
Oats	265	$51,304	Annual
Onions-Dehy.	5,085	$98,718,665	Annual
Onions-Fresh	5,206	$101,067,722	Annual
Parsley	1,499	$12,342,543	Annual
Pasture	5,234	$279,678	Annual
Peppers-Misc.	72	$764,291	Annual
Pumpkins	10	$82,339	Annual
Seed-Crop-Misc.	1,286	$1,827,272	Annual
Spinach	313	$2,577,195	Annual
Squash	16	$106,178	Annual
Tomatoes-Fresh	3,326	$8,199,721	Annual
Tomatoes-Proc.	62,213	$238,980,041	Annual
Watermelons	3,489	$40,036,135	Annual
Wheat	14,592	$8,606,508	Annual
Almonds	88,163	$391,528,356	Permanent
Apples	106	$585,916	Permanent
Apricots	1,027	$13,691,964	Permanent
Blueberries	200	$4,831,550	Permanent
Cherries	585	$5,283,112	Permanent
Grapefruit	50	$431,648	Permanent
Grapes-Raisin	952	$3,188,457	Permanent
Grapes-Table	762	$13,659,856	Permanent
Grapes-Wine	15,976	$65,482,589	Permanent
Lemons	574	$7,009,057	Permanent
Nectarines	319	$4,838,991	Permanent
Oranges	1,651	$15,839,100	Permanent
Peaches	815	$6,139,917	Permanent
Pistachios	50,935	$397,789,616	Permanent
Plums	402	$3,790,667	Permanent
Pomegranates	2,228	$22,421,144	Permanent

Crop Name	Acres	Value	Type
Prunes	163	$900,984	Permanent
Tangerines	1,840	$17,471,904	Permanent
Walnuts	519	$1,152,850	Permanent
Total Annual/Row Crops	204,308	$1,228,744,225	
Total Permanent Crops	167,267	$976,037,676	
Total Crops	**371,575**	**$2,204,781,901**	

Source: Westlands 2018

3.9.2 Environmental Consequences

No Action

Santa Clara would offset the loss of up to 6,260 AF per year by pumping additional groundwater and/or purchasing additional surface water on the open market. The cost of water on the open market is usually much greater than CVP water and would, therefore, increase the cost of water for its customers. However, as Santa Clara's overall water supply availability would be unaffected, the additional cost is not expected to be very large and conditions are expected to remain similar to current conditions.

Westlands acquires supplemental water on behalf of its water users in order to offset reduced surface water supplies. These supplies are typically much more expensive than CVP water. For example, in 2015, the supplemental water rate was $1,220/AF, and the 2016 supplemental water rate is estimated at $695/AF. In comparison, Westlands CVP agricultural water rate was $86.29/AF in 2011 and $300.21/AF in 2016 (Westlands 2017). Westlands 2015 supplemental water cost of $1,220/AF, was almost four times the highest applicable CVP cost of service rate ($315.28) for CVP contract supplies in 2015. As described in Section 3.4, the loss of a CVP water supply in Westlands would likely result in row crops being taken out of production, severely impacting the availability of seasonal jobs and the associated revenue, which in 2018 was $976,037,676 for annual/row crops (Table 6). The loss of irrigated acreage from fallowing row crops would further concentrate the District's cost of delivery on an ever-smaller farmed acreage leading to further increased water costs. There would also be direct and indirect detrimental economic effects on related business operations in the surrounding communities as District growers would not purchase equipment, vehicles, fuel, parts and agricultural supplies/services from local businesses that they normally do (Westlands 2017).

Assuming that District growers could pump up to 225,000 AF of groundwater and the District could provide approximately 150,000 to 200,000 AF of supplemental water, the total farmed acres in Westlands could be reduced up to 150,000 to 170,000 acres, suggesting that roughly two-thirds of the District would not be able to sustain agriculture, resulting in estimated losses of gross farm income of $2,700/acre for District growers (Westlands 2017). In addition, land value would plummet, and significant investments in orchards, vineyards, wells, high-efficiency irrigation systems, and other improvements would be lost. Given that the District currently has an estimated 700 water user operations, at least two-thirds could be expected to fail. The loss of the majority of Wesltands' CVP contract supplies would have substantial adverse impacts on socioeconomics within Westlands and California as a whole due to the loss in agricultural revenue.

These adverse socioeconomic effects may be offset by a subsequent reduction of fallowed areas and groundwater pumping where other south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes.

Proposed Action

The continuation of the interim renewal contracts listed in Table 1 would not result in a change in contract water quantities or a change in water use and would continue water deliveries within the contractors' respective service areas. As a result, the viability of farming practices would be maintained and there would be beneficial impacts to socioeconomics under the Proposed Action compared to the No Action alternative.

Cumulative Impacts

The Proposed Action would maintain the status quo of delivering the same contractual amount of CVP water for existing purposes within each District without the need for additional facility modification or construction. As such, there would be no cumulative adverse impacts to socioeconomics.

3.7 Water Resources

3.7.1 Affected Environment

The Proposed Action area includes the CVP service areas of Westlands and Santa Clara as well south-of-Delta CVP facilities.

Central Valley Project

Reclamation makes CVP water available to contractors for reasonable and beneficial uses, but CVP water supply varies widely from year to year and sometimes even within a given year due to hydrologic conditions and/or regulatory constraints, and is often insufficient to meet all of the irrigation water service contractors' water needs. As shown in Table 7 below, the south-of-Delta CVP agricultural allocations ranged from 0% and 100% of contract amounts and averaged 44% of contract amounts between 2005 and 2018. For 8 out of the last 14 years, the south-of-Delta CVP agricultural allocation was less than 50% due to drought conditions and regulatory requirements. Consequently, CVP contractors, including Westlands, adaptively manage water supplies based on current and projected hydrologic conditions (as well as regulatory and environmental requirements) in order to proactively assess their risk in making business, economic, cropping, planting, and irrigation decisions.

Table 7 South-of-Delta CVP Contract Allocations between 2005 and 2018

Contract Year	Agricultural Allocations (%)	M&I Allocations (%)
2018	50	75
2017	100	100
2016	5	55
2015	0	25
2014	0	50
2013	20	70
2012	40	75
2011	80	100
2010	45	75
2009	10	60
2008	40	75
2007	50	75
2006	100	100
2005	85	100
Average	**44**	**74**

Source: http://www.usbr.gov/mp/cvo/vungvari/water_allocations_historical.pdf

CVP Water Delivery Criteria The amount of CVP water available each year for CVP contractors is based, among other considerations, on the storage of winter precipitation and the control of spring runoff in the Sacramento and San Joaquin River basins. Reclamation's delivery of CVP water diverted from these rivers is determined by state water right permits, judicial decisions, and state and federal obligations to maintain water quality, enhance environmental conditions, and prevent flooding. The CVPIA PEIS considered the effects of those obligations on CVP contractual water deliveries. Experience since completion of the CVPIA PEIS has indicated that there are more instances of severe contractual shortages applicable to south-of-Delta water deliveries (Reclamation 1999a) than was estimated in the period of review, and this information has been incorporated into the modeling for the current CVP/SWP Coordinated Operations of the Delta (Reclamation 2004b).

Contractors' Water Needs Assessments

As discussed in Section 2.3, an updated Water Needs Assessment (Appendix C) was developed for Westlands. As shown in Appendix C, Westlands has an unmet demand of 156,014 AF for the year 2050 and 213,899 AF for the year 2051; therefore, Westlands is deemed to have full future need of the maximum annual CVP water supply currently under contract for all year types.

Santa Clara's water needs analysis completed by Reclamation in 2000 estimated that there would be an unmet M&I demand of 156,874 AF for 2025. Prior to renewal of Santa Clara's long-term contract, Reclamation will prepare an updated Water Needs Assessment and associated environmental review.

Santa Clara Valley Water District

Santa Clara, a San Felipe Division contractor, is a water supply wholesaler that conserves, imports, treats, distributes, and is responsible for the quality of water within Santa Clara County for M&I and agricultural purposes. CVP water is conveyed from the Delta through the Delta-Mendota Canal to O'Neill Forebay. The water is then pumped into San Luis Reservoir and diverted through the 1.8 miles of Pacheco Tunnel Reach 1 to the Pacheco Pumping Plant. At the pumping plant, the water is lifted to the 5.3-mile-long high-level section of Pacheco Tunnel

Reach 2. The water flows through the tunnel and, without additional pumping, through the Pacheco Conduit to the bifurcation of the Santa Clara and Hollister Conduits to serve the CVP service areas of Santa Clara and San Benito County Water District. As shown in Figure 1, CVP water may only be served within the areas of Santa Clara that are within the CVP Consolidated Place of Use (CPOU). Santa Clara has requested an expansion of the CPOU to include its entire service area as well as additional points of delivery for its CVP water, including the South Bay Aqueduct. Reclamation and Santa Clara are currently preparing separate environmental documents to address this request.

Total annual water use in Santa Clara County is currently estimated to be 350,000 AF of which only a portion is CVP water as described below. Approximately 10 percent of this use is for agricultural purposes. Most of the remaining use is for M&I purposes, which includes residential, commercial, industrial, and institutional water use. Water is also used to meet environmental needs, such as maintenance of minimum stream flows to meet fishery needs.

Santa Clara owns and operates 17.3 miles of canals, 8.4 miles of tunnels, 142 miles of pipelines, 3 pumping stations and 3 treatment plants as part of the overall water treatment, distribution and recharge systems.

CVP Contracts In 1977, Santa Clara entered into a long-term contract with Reclamation for 152,000 AF per year (Contract No. 7-07-20-W0023) of CVP water (Reclamation 1977). This contract was amended to incorporate repayment options and to address CVPIA provisions (Reclamation 2007b). As described in Section 2.3, renewal of this contract is not part of the Proposed Action since the long-term water service contract does not expire until December 31, 2027. In 2013, Santa Clara and Reclamation began negotiations on a second amendment to Santa Clara's long-term contract to add additional points of delivery for its CVP water. Negotiations are ongoing.

Assignments As described previously, Santa Clara is one of the recipients of the three-way partial assignment (Contract No. 14-06-200-3365A-IR15-B) analyzed in this EA; however, Santa Clara is limited to only 25% of the total contract supply made available by Reclamation over 20 years since the date of execution (1999) or 20,000 AF, whichever is greater. As shown in Table 8, Santa Clara has received 14,398 AF of the total water made available by Reclamation, or 26.8%, since its execution and has only 5,602 AF that they could potentially receive over the next couple of years. The four-party agreement also stipulates that if Pajaro Valley is unable to receive its portion of water within 20 years from execution of the assignment, the contract supply will be split solely between Santa Clara (25%) and Westlands (75%).

Table 8 Santa Clara and Westlands Allocation from Contract No. 14-06-200-3365A-IR16-B

Year	CVP Allocation	Santa Clara	Westlands	Total (AF)
1999	70	0	3,642	3,642
2000	65	0	4,069	4,069
2001	49	0	3,067	3,067
2002	70	4,382	0	4,380
2003	75	0	4,695	4,695
2004	70	0	4,382	4,382
2005	85	0	5,321	5,321
2006	100	0	0	0
2007	50	3,130	0	3,130

Year	CVP Allocation	Santa Clara	Westlands	Total (AF)
2008	40	2,504	0	2,504
2009	10	626	0	626
2010	45	0	2,817	2,817
2011	80	0	5,008	5,008
2012	40	2,504	0	2,504
2013	20	1,252	0	1,252
2014	0	0	0	0
2015	0	0	0	0
2016	5	0	313	313
2017	100	0	6,260	6,260
2018	50	0	3,130	3,130
Total	-	14,398	42,704	57,100

CVP water, including the portion from this interim renewal contract, may only be served in the areas in Santa Clara that are within the CPOU (Figure 1).

Groundwater Resources in Santa Clara The three major groundwater basins in the Santa Clara service area, which are interconnected and occupy nearly 30 percent of the total county area, are Santa Clara Valley, Coyote and Llagas Basins. Groundwater supplies nearly half of the total water used in Santa Clara County and nearly all use in the Coyote and Llagas basins (Santa Clara 2007).

Historically, Santa Clara County has experienced as much as 13 feet of subsidence caused by excessive groundwater withdrawal. The rate of subsidence slowed in 1967 when imported water was obtained to replenish groundwater supplies. Santa Clara was created partially to protect groundwater resources and minimize land subsidence. Santa Clara operates a comprehensive groundwater management program, including onstream and offstream recharge facilities and extensive monitoring. Recharge to the groundwater basins consists of both natural groundwater recharge and artificial recharge through local surface and imported water. Santa Clara owns and operates more than 30 recharge facilities and six major recharge systems with nearly 400 acres in recharge ponds. These facilities percolate both local and imported water into the groundwater aquifer. Santa Clara does not have its own groundwater extraction facilities but does levy a charge for all groundwater extractions by local retailers and individual users overlying the Santa Clara Valley Groundwater Basin. Today, Santa Clara reduces the demand on groundwater and minimizes subsidence through conjunctive use of surface water and groundwater. Santa Clara monitors land subsidence through benchmark surveying, groundwater elevation monitoring, and data from compaction wells.

Other Available Water Supplies Santa Clara owns and operates 10 storage reservoirs with a combined storage capacity of approximately 169,000 AF (Santa Clara 2019a). These reservoirs are located on most of the major streams in the Santa Clara service area. Local surface water supplies include the stream flows that feed into and out of Santa Clara's reservoirs, stream flows that are not captured by reservoirs, and water that flows overland into reservoirs.

Santa Clara also has a contract with the California Department of Water Resources (DWR) for a maximum of 100,000 AF per year from the SWP. Water is delivered via the Banks pumping plant in the southern Delta and the South Bay Aqueduct to a terminal tank at the Penitencia Water Treatment Plant in east San Jose. In addition, Santa Clara has established rights to 35

percent of the existing Semitropic Groundwater Banking Program in Kern County which is used to offset shortfalls in annual water supplies. The agreement reserves for Santa Clara up to 350,000 AF of storage, and improves Santa Clara's supply reliability by enabling storage of wet-year water for use during future dry years.

On April 18, 2006, Reclamation approved the long-term (through contract year 2027) groundwater banking of up to 100,000 AF per year of Santa Clara's available CVP surface water supplies within the Semitropic Water Storage District. The approval of this banking program was analyzed under EA-05-126 (Reclamation 2006c).

Santa Clara's available water supplies delivered in 2018 are included in Table 9.

Table 9 Santa Clara's Available Water Supplies

Source of Water Supply	2018 Amount (acre-feet)
CVP contract supplies	114,050
SWP contract supplies	35,000
Local Surface Water Inflow	32,350
Local Surface Water Storage Releases	1,870
Prior year carryover	73,580
Semitropic Groundwater Bank withdrawals	0
Water transfers and exchanges	17,530
Groundwater pumped	0
Returned to District from San Francisco Public Utilities Commission via intertie	1,590
Total	**275,970**

Source: Santa Clara 2019b

Westlands Water Districts

Westlands, a San Luis Unit contractor, receives CVP water both from the Delta-Mendota Canal and the San Luis Canal with the majority diverted from the San Luis Canal. The Delta-Mendota Canal delivers Delta water to the west side of the San Joaquin Valley, ending at the Mendota Pool, 30 miles west of the City of Fresno. The San Luis Canal, which originates at O'Neill Forebay, is a joint use facility with the SWP. Facilities utilized to convey water to Westlands include the O'Neill Pumping-Generating Plant and Intake Canal, San Luis Dam and Reservoir (for storage as needed), Dos Amigos Pumping Plant, Coalinga Canal, the Pleasant Valley Pumping Plant, and the San Luis Canal from O'Neill Forebay to Kettleman City.

All water is metered at the point of delivery through more than 3,200 agricultural and 250 M&I meter locations. Westlands' permanent distribution system consists of 1,034 miles of closed, buried pipeline. The district also operates and maintains the 12-mile-long, concrete-lined, Coalinga Canal, the Pleasant Valley Pumping Plant, and the laterals that supply CVP water to the communities of Coalinga and Huron.

Westlands delivers M&I water from its CVP contracts to several DUCs, including Three Rocks, El Porvenir, Cantua Creek and several labor camp housing areas. Westlands also delivers nonagricultural water to the Lemoore Naval Air Station, area businesses, labor facilities, cotton gins, crop grading stations, processing plants and private homes. The commercial and industrial customers include tomato and nut processing plants, other agricultural related facilities, and solar

developments. There are highway commercial centers, hotels, and convenience stores that also receive surface water from Westlands.

CVP Contracts On June 5, 1963 Westlands entered into a long-term contract (Contract No. 14-06-200-495A) with Reclamation for 1,008,000 AF of CVP supply from the San Luis Canal, Coalinga Canal, and Mendota Pool (Reclamation 1963. In a stipulated agreement dated September 14, 1981 the contractual entitlement to CVP water was increased to 1.15 million AF. The long-term contract expired December 31, 2007 and has been succeeded by a series of interim renewal contracts pending completion of site-specific environmental analysis for the long-term contract renewal.

Assignments In 1999, Reclamation approved the three-way partial assignment (Contract No. 14-06-200-3365A-IR2) of 6,260 AF per year to Santa Clara, Westlands DD#1, and Pajaro Valley from Mercy Springs as described previously (Reclamation 1999b). The allocated water supply available under this contract either goes fully to Westlands or fully to Santa Clara. As shown in Table 8, Westlands has received 33,001 AF of the available water supply under this contract since its execution.

Between 2004 and 2006, Reclamation approved three other contract assignments from Delta Division contractors to DD#1. These include: (1) 27,000 AF per year from Broadview Water District (Contract No. 14-06- 200-8092-IR8), (2) 2,990 AF per year from Widren Water District (Contract No. 14-06-200-8018-1R7), and (3) 2,500 AF per year from Centinella Water District [Contract No. 7-07-20-W0055] (Reclamation 2006d, 2005j 2004c). In 2003, Reclamation approved the partial assignment of 4,198 AFY from Mercy Springs (Contract Number 14-06-200-3365A) to Westlands Distribution District #2 (Reclamation 2002b). These assignments are included as interim renewal contracts analyzed in this EA as shown in Table 1. The water from these interim renewal contracts is included as "transfers in" under Westlands updated Water Needs Assessment (Appendix C).

In 2012, Reclamation executed the partial assignment (Contract No. 14-06-200-7823J) of 4,000 AFY to Westlands from Oro Loma Water District (Reclamation 2012b). As this was an assignment from a long-term contract that does not expire until February 28, 2030, it is not included in the Proposed Action; however, it is included as a "transfer in" in Westlands updated Water Needs Assessment (Appendix C).

Groundwater Resources in Westlands Westlands is located within the Westside groundwater subasin (5-022.09) identified by DWR as critically overdrafted with significant, on-going and irreversible subsidence (DWR 2017, pg 13 and 15, Reclamation 2016b, pg 7-12).

The groundwater basin underlying Westlands 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 (DWR 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 AF 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 the average elevation of more than 150 feet below mean sea level by 1968. The large quantity of groundwater pumped prior to delivery of CVP water caused substantial land subsidence in some areas (DWR 2003, Reclamation 2016b, pg 7-43) Westlands has implemented a groundwater management program to reduce the potential for future extreme subsidence.

After delivery of CVP water supplies into Westlands began, groundwater pumping declined to about 200,000 AF per year, or less, in the 1970s (DWR 2003). The reduction in groundwater pumping stabilized groundwater depths and in most portions of Westlands, 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 CVPIA. Groundwater pumping quantities are estimated to have reached 600,000 AF per year during 1991 and 1992 when Westlands received only 25 percent of its contractual entitlement of CVP water. The increase in pumping caused a decline in groundwater levels which later recovered. Normal or near normal CVP water supplies from 1995 to 1999 reduced the estimated annual quantity of groundwater pumped to approximately 60,000 AF per year, resulting in an increase in groundwater elevations. However, since 2000, Westlands' CVP water supply has been significantly reduced and groundwater pumping has steadily increased. Groundwater has become the primary source of water supply within the District since 2007. In 2015, approximately 660,000 AF of groundwater was pumped by private landowners to meet in-district demands.

Westlands has operated its District under the concept of conjunctive use where CVP water is used to alleviate groundwater overdraft in the area. Based on the conjunctive use concept, water users are expected to continue mixed use of CVP, other surface water supplies, and groundwater, with greater emphasis on groundwater use during dry periods when surface water is limited or expensive and use surface water during wetter periods in lieu of groundwater in order to allow recharge of the groundwater basin. Westlands also monitors grower/landowner well pumping and submits groundwater pumping data to the California Statewide Groundwater Elevation Monitoring Program (Westlands 2017). As shown in Figure 3, groundwater supplies have never been sufficient to meet demands within the District.

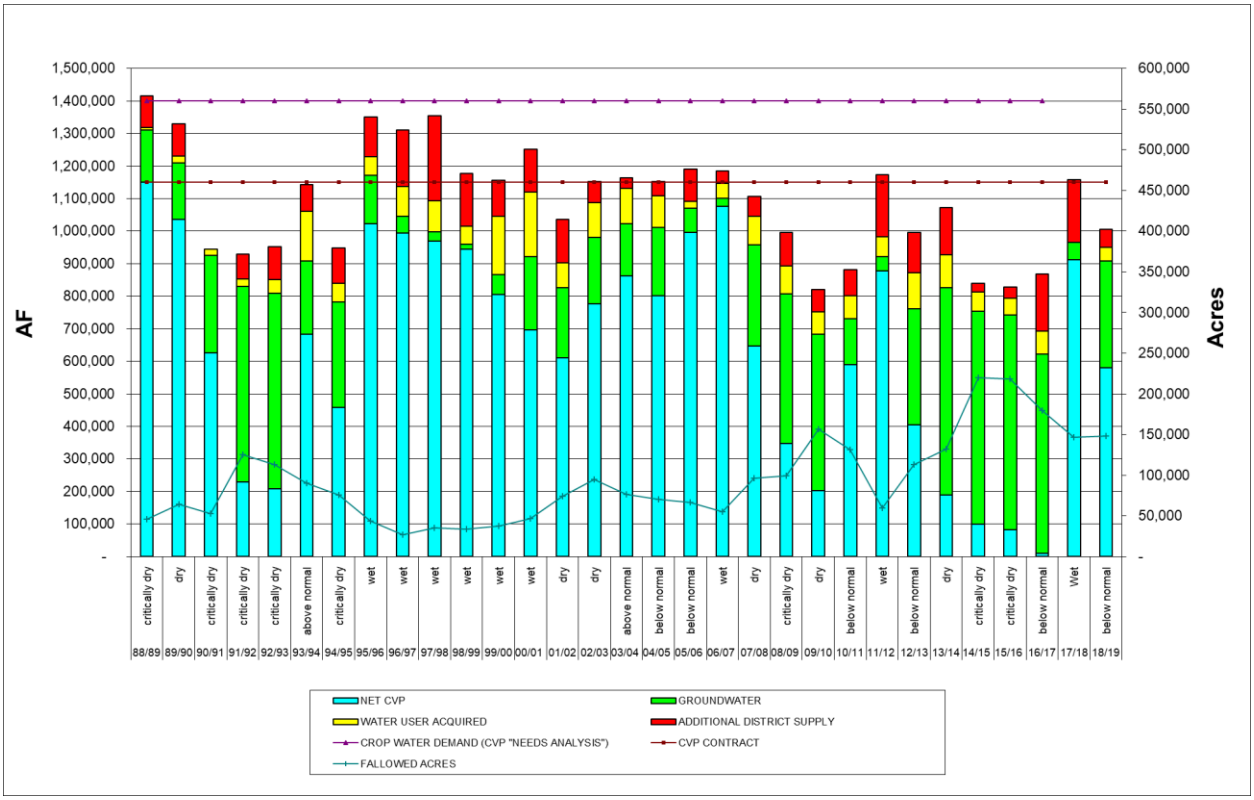


Figure 3 Westlands Available Water Supplies 1988 through 2016 (Source: Westlands 2017)

A 2017 National Aeronautical and Space Administration (NASA) report prepared for DWR (Farr et al. 2017) has documented that the two main subsidence bowls in the San Joaquin Valley (centered on Corcoron and El Nido) previously identified in 2015 has grown wider and deeper between March 2015 and September 2016 and that a third area, near Tranquillity in Fresno County has also intensified. The maximum total subsidence in these areas during that time was: 22 inches near Corcoran, 16 inches southeast of El Nido, and 20 inches in the new area near Tranquillity. In addition, the report found that the section of the San Luis Canal/California Aqueduct located in Westlands near the City of Avenal in Kings County has dropped two feet due to subsidence caused by excessive groundwater pumping (Farr et al. 2017).

California enacted SGMA in 2014 which requires a formation of a Groundwater Sustainability Agency (GSA) by June 30, 2017. Westlands posted its notice of its GSA designation on February 9, 2017 (DWR 2017). The Westlands Water District GSA (5-022.09 San Joaquin Valley Westside) includes the entire district boundaries. Westlands will need to provide an approved Groundwater Sustainability Plan by January 1, 2020. Westlands estimates that when SGMA groundwater pumping restrictions are implemented, average annual pumping will range from 200,000 AF to 250,000 AF (Westlands 2017).

Given the severity of the subsidence referenced in the 2017 NASA report, it is unknown what level of groundwater pumping in the Westlands area is sustainable and as such any associated assumption(s) would be speculative.

Other Available Water Supplies Other water supply sources in the District include flood flows from the Kings River, which are available periodically and diverted from the Mendota Pool as well as transfers of supplemental water from other sources.

Westlands' water supplies delivered in 2018 are included in Table 10.

Table 10 Westlands Available Water Supplies in 2018

Source of Water Supply	2018 Amount (acre-feet)
CVP contract supplies (agricultural and M&I)	548,769
State Water Project Water Transfers	2,511
Mendota Pool groundwater transfers	0
In-district groundwater	328,000
Mendota Pool Exchange Agreements	19,212
Transfers and Exchanges with other CVP contractors	87,519
Total	**986,011**

Source: Westlands 2019

3.7.2 Environmental Consequences

No Action

Santa Clara would likely offset the loss of up to 6,260 AF per year by pumping additional groundwater and/or purchasing additional surface water on the open market. As described previously, imported surface water, including CVP water, was brought into Santa Clara to offset overdraft and reduce the rate of subsidence in the County. Additional groundwater pumping to make up for the lost CVP water could lead to additional overdraft and subsidence within the County; however, as the majority of Santa Clara's water supply would be unchanged the likelihood of overdraft and subsidence trends being changed over the next two years is small.

Under the No Action alternative, Westlands would no longer have CVP contracts that could provide up to 1,192,948 AF per year of surface water supplies. Although Westlands would continue to receive up to 4,000 AF per year from Contract No. 14-06-200-7823J, this would not provide enough water to meet M&I and agricultural demands in the District. This would have substantially adverse impacts to available water supplies for agricultural and M&I users within the District and would impact the ability of groundwater recharge in the District. Although groundwater pumping would likely occur over the next two years it is insufficient to meet M&I demands due to lack of available infrastructure and/or water quality or to sustain agriculture. As described previously, groundwater pumping in the District was approximately 660,000 AF in 2015 (nearly 3 times what is estimated would be allowed under SGMA) when Westlands received a 0% CVP allocation, and that amount was insufficient to meet demands (Westlands 2017). Further, the increased groundwater pumping in the Valley due to the recent drought has substantially increased the rate of subsidence within the San Joaquin Valley. Under the No Action Alternative, is it anticipated that increased groundwater withdrawals due to loss of CVP water supplies would result in increased irreversible land subsidence (Reclamation 2016b, pg 7-118). These trends would continue under the No Action alternative, potentially causing severe impacts to existing water conveyance infrastructure and impacting other water users outside the District.

Westlands may be able to acquire supplemental water supplies as it has in the past but these resources are unreliable and expensive. Westlands estimates that with groundwater pumping at levels likely required under SGMA (about 225,000 AF) and about 150,000 to 200,000 AF of

supplemental water, the total farmed acres could be reduced to 150,000 to 170,000 acres, suggesting that roughly two-thirds of the District would not be able to sustain agriculture (Westlands 2017).

Adverse impacts to agricultural production, decrease in groundwater levels, and increase in rates of subsidence may be offset by a subsequent reduction of fallowed areas and groundwater pumping where other south-of-Delta CVP contractors irrigate; however, this would be dependent on how much of Westlands' otherwise available water supply is re-allocated to other contractors for irrigation purposes.

It is also possible that beneficial effects to overall water supply availability and water quality in the Delta could occur if water that would have been made available to Westlands is instead re-allocated to south-of-Delta CVP contractors and wildlife refuges or remains un-diverted in the Delta; however, these effects would also be dependent on how much of Westlands' otherwise available water supply is re-apportioned for these purposes.

Proposed Action

Based in part on the updated Water Needs Assessment for Westlands, there would be no change from conditions under the existing interim renewal contracts as CVP water would be placed to beneficial use within the authorized CVP place of use as it has in the past. Water delivery during the interim renewal contract period would be up to the respective contract totals and would not exceed historic quantities. Continuation of the interim renewal contracts would provide needed CVP water to help meet M&I and agricultural demands in both Districts. As the delivery of CVP water would be done through existing infrastructure for existing uses within both Districts, the Proposed Action would not result in impacts to water resources.

Cumulative Impacts

The CVPIA PEIS included full contract deliveries in the assumptions regarding future use. By including full deliveries, the impact assessments were able to adequately address the hydrologic, operational, and system-wide cumulative conditions expected under future conditions. The Proposed Action would maintain the status quo of delivering the same contractual amount of CVP water for existing purposes within each District without the need for additional facility modification or construction. As such, there would be no cumulative adverse impacts to water resources.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft EA during a 30-day public review period.

4.2 List of Agencies and Persons Consulted

Reclamation has consulted with the following regarding the Proposed Action:

- Santa Clara Valley Water District
- U.S. Fish and Wildlife Service
- Westlands Water District

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

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

Effects to Delta species and critical habitats, such as the Delta smelt, salmonids, and green sturgeon which are the result of CVP operations, are addressed in the CVP/SWP Coordinated Operations consultation. As such, Reclamation has determined that there would be no effects to species and critical habitats for the Proposed Action under the jurisdiction of NMFS that have not already been addressed.

Reclamation will consult with USFWS on the Proposed Action. This EA will not be finalized until consultation is complete.

THIS PAGE LEFT INTENTIONALLY BLANK

Section 5 References

Bay Area Air Quality Management District (BAAQMD). 2019. Air Quality Standards and Attainment Status. Website: http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed: August 26, 2019.

Bureau of Land Management. 2012. Final Environmental Impact Statement. Clark, Lincoln, and White Pine Counties Groundwater Development Project Final Environmental Impact Statement. FES-12-22. August. Pp. 3.1-10.

Bureau of Reclamation (Reclamation). 1963. Contract Between the United States and Westlands Water District for Providing Water Service. Contract No. 14-06-200-495A. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 1977. Contract between the United States and Santa Clara Valley Water District for Water Service and Operation and Maintenance of Certain Works of the San Felipe Division. Contract No. 7-07-20-W0023. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 1994. Environmental Assessment/Finding of No Significant Impact for Interim Renewal Contracts. Mid-Pacific Region Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 1998. Environmental Assessment/Finding of No Significant Impact for the Renewal of 54 Interim Water Service Contracts through February 29, 2000. Mid-Pacific Region Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 1999a. Central Valley Project Improvement Act, Final Programmatic Environmental Impact Statement. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 1999b. Environmental Assessment/Finding of No Significant Impact for for the Partial Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Pajaro Valley Water Management Area, Santa Clara Valley Water District, and WWD. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2000. Supplemental Environmental Assessment/ Finding of No Significant Impact for the Renewal of 54 Interim Water Service Contracts through February 28, 2001, Central Valley Project, California. Mid-Pacific Region Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 2001a. Supplemental Environmental Assessment/ Finding of No Significant Impact for the 2001 Renewal of Interim Water Service Contracts Through February 29, 2002, Central Valley Project. Mid-Pacific Region Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 2001b. Environmental Assessment/Finding of No Significant Impact for the Long-term Contract Renewals in the Friant Division. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2002a. Supplemental Environmental Assessment/ Finding of No Significant Impact for the 2002 Renewal of Interim Water Service Contracts Through February 29, 2004, Central Valley Project, California. Mid-Pacific Region Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 2002b. Environmental Assessment/Finding of No Significant Impact for the Partial Assignment of CVP Water Supply Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Westlands Water District Distribution District #2 (EA-00-84). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2004a. Supplemental Environmental Assessment/ Finding of No Significant Impact for the 2004 Renewal of Interim Water Service Contracts Through February 28, 2006, Central Valley Project, California. Mid-Pacific Regional Office. Sacramento, California. Website: https://www.usbr.gov/mp/cvpia/3404c/env_docs/final_ea_fonsi/2004_renewal_cts/index.html.

Bureau of Reclamation (Reclamation). 2004b. Long-Term Central Valley Project Operations Criteria and Plan, CVP-OCAP. Sacramento, California. Website: https://www.usbr.gov/mp/cvo/OCAP/OCAP_6_30_04.pdf.

Bureau of Reclamation (Reclamation). 2004c. Environmental Assessment/Finding of No Significant Impact for the Approval of CVP Water Supply Contract Assignment from Centinella Water District (Contract 7-07-20-W0055) to Westlands Water District (EA-03-116). Mid-Pacific Region South Central California Area Office. Fresno, California

Bureau of Reclamation (Reclamation). 2005a. Record of Decision for the Long-term Contract Renewals for the Sacramento River Settlement Contractors. Mid-Pacific Region Northern California Area Office. Website: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=22.

Bureau of Reclamation (Reclamation). 2005b. Revised Environmental Assessment/Finding of No Significant Impact for Long-term Contract Renewals for the Feather Water District. Mid-Pacific Region Northern California Area Office. Shasta Lake, California. Website: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=302.

Bureau of Reclamation (Reclamation). 2005c. Environmental Assessment/Finding of No Significant Impact for the Long-term Contract Renewals in the Shasta Division and Trinity River Divisions. Mid-Pacific Region Northern California Area Office. Shasta Lake, California. Website: https://www.usbr.gov/mp/cvpia/3404c/env_docs/final_ea_fonsi/shasta_trinity/index.html.

Bureau of Reclamation (Reclamation). 2005d. Environmental Assessment/Finding of No Significant Impact for Long-term Contract Renewals in the Black Butte Unit, Corning Canal Unit, and Tehama-Colusa Canal Unit of the Sacramento River Division, Central Valley Project. Mid-Pacific Region Northern California Area Office. Shasta Lake, California. Website: https://www.usbr.gov/mp/cvpia/3404c/env_docs/final_ea_fonsi/sac_river/index.html.

Bureau of Reclamation (Reclamation). 2005e. Environmental Assessment/Finding of No Significant Impact for the Long-term Contract Renewals in the Delta-Mendota Canal Unit. Mid-Pacific Region South Central California Area Office. Fresno, California. Website: https://www.usbr.gov/mp/cvpia/3404c/env_docs/final_ea_fonsi/dmc/index.html.

Bureau of Reclamation (Reclamation). 2005f. Environmental Assessment/Finding of No Significant Impact for Long-term Contract Renewal for the U.S. Department of Veterans affairs, San Joaquin Valley National Cemetery. Mid-Pacific Region South Central California Area Office. Fresno, California. Website: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=1333.

Bureau of Reclamation (Reclamation). 2005g. Environmental Assessment/Finding of No Significant Impact for Long-term Renewal Contract for the Contra Costa Water District. Mid-Pacific Region South Central California Area Office. Fresno, California. Website: https://www.usbr.gov/mp/cvpia/3404c/env_docs/final_ea_fonsi/ccwd/index.html.

Bureau of Reclamation (Reclamation). 2005h. Final Environmental Impact Statement for the San Luis Drainage Feature Re-evaluation. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2005i. Land Retirement Demonstration Project Five-Year Report. Bureau of Reclamation. Fresno, CA. 184 pp + appendices.

Bureau of Reclamation (Reclamation). 2005j. Environmental Assessment/Finding of No Significant Impact for the CVP Water Supply Contract Assignment from Widren Water District (Contract 04-06-200-8018) to Westlands Water District. Mid-Pacific Region South Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2006a. Supplemental Environmental Assessment/ Finding of No Significant Impact for the 2006 Renewal of Interim Water Service Contracts Through February 29, 2008. Mid-Pacific Regional Office. Sacramento, California.

Bureau of Reclamation (Reclamation). 2006b. Record of Decision for the American River Division Long-term Central Valley Project Water Service Contract Renewals. Mid-Pacific Region Central California Area Office. Folsom, California. Website: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=13.

Bureau of Reclamation (Reclamation). 2006c. Environmental Assessment/Finding of No Significant Impact for the Santa Clara Valley Water District Long-term Groundwater Banking

Project Storage and Exchange of Central Valley Project Water with Semitropic Water Storage District (EA-05-126). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2006d. Environmental Assessment/Finding of No Significant Impact for the Broadview Water District Contract Assignment and Annexation to Westlands Water District (EA-05-43). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2007a. Environmental Assessment/Finding of No Significant Impact for the San Luis Unit Water Service Interim Renewal Contracts (EA-07-56). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2007b. First Amendment to Contract between the United States and Santa Clara Valley Water District for Water Service and Operation and Maintenance of Certain Works of the San Felipe Division. Contract No. 7-07-20-W0023A. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2008. Environmental Assessment/Finding of No Significant Impact for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010 (EA-07-75). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2010a. Environmental Assessment/Finding of No Significant Impact for the San Luis Unit Water Service Interim Renewal Contracts 2010-2013 (EA-09-101). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2010b. Environmental Assessment/Finding of No Significant Impact for the 2010 Renewal of Cross Valley Interim Water Service Contracts and Delta Division/San Felipe Contracts through February 29, 2010 (EA-09-126). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2012a. Environmental Assessment/Finding of No Significant Impact for the Three Delta Division and Five San Luis Unit Water Service Interim Renewal Contracts 2012-2014 (EA-11-049). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2012b. Environmental Assessment/Finding of No Significant Impact for the Oro Loma Water District Partial Assignment of 4,000 acre-feet of Central Valley Project Water to Westlands Water District (EA-11-092). Central Valley Project, California. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2014. Environmental Assessment/Finding of No Significant Impact for the Central Valley Project Interim Renewal Contracts for Westlands Water District, Santa Clara Valley Water District, and Pajaro Valley Water Management Agency 2014-2016 (EA-13-023). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2016a. Environmental Assessment/Finding of No Significant Impact for the Central Valley Project Interim Renewal Contracts for Westlands Water District, Santa Clara Valley Water District, and Pajaro Valley Water Management Agency 2016-2018 (EA-15-023). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2016b. Record of Decision and Environmental Impact Statement for the Coordinated Long-Term Operation of the Central Valley Project and State Water Project. Mid-Pacific Region Bay-Delta Office. Sacramento, CA. Website: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=21883.

Bureau of Reclamation (Reclamation). 2016c. Report to the USFWS on compliance with the Consultation on the Interim Renewal Water Service Contract for Westlands Water District, and the 3-way Partial assignment from Mercy Springs Water District to Pajaro Valley Water Management, Santa Clara Valley Water District and Westlands Water District for March 1, 2016- February 28, 2018. December 5, 2016.

Bureau of Reclamation (Reclamation). 2017a. Revised Environmental Assessment/Finding of No Significant Impact for the Central Valley Project Interim Renewal Contracts for Westlands Water District, Santa Clara Valley Water District, and Pajaro Valley Water Management Agency 2016-2018 (EA-15-023A). Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2018. Environmental Assessment/Finding of No Significant Impact for the Central Valley Project Interim Renewal Contracts for Westlands Water District, Santa Clara Valley Water District, and Pajaro Valley Water Management Agency 2018-2020 (EA-17-021). Mid-Pacific Region South-Central California Area Office. Fresno, California.

California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation. 10 pp.

California Department of Fish and Game. 2005. The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000-2004.

California Department of Water Resources (DWR). 2003. California's Groundwater. Bulletin 118. Update 2003. Available at http://www.water.ca.gov/groundwater/bulletin118/index.cfm Accessed: September 17, 2009.

California Department of Water Resources (DWR). 2016. California's Groundwater. Bulletin 118. Interim Update 2016. Website: http://www.water.ca.gov/groundwater/bulletin118/index.cfm. Accessed: November 15, 2017.

California Department of Water Resources (DWR). 2017. Westlands Water District (5-022.09 San Joaquin Valley Westside). Website: https://sgma.water.ca.gov/portal/gsa/print/40. Accessed: March 13, 2017.

California Employment Development Department. 2019. Links to LMI by County. Website: http://www.labormarketinfo.edd.ca.gov/data/interactive-labor-market-data-tools.html. Accessed: October 2, 2019

California Natural Diversity Database (CNDDB). 2017. CNDDB personal computer program updated August 1, 2016. Sacramento, CA. Website: http://www.dfg.ca.gov/biogeodata/cnddb/rf_ftpinfo.asp. Accessed: March 9, 2017.

Cypher, B.L. 2006. DRAFT Kit Fox conservation strategy in the San Luis Drainage Study Unit: Ecological considerations relevant to the development of a conservation strategy for kit foxes. California State University--Stanislaus, Endangered Species Recovery Program, Fresno, CA. 8pp.

Cypher, B. L., S. E. Phillips, and P. A. Kelly. 2007. Habitat suitability and potential corridors for San Joaquin kit fox in the San Luis Unit, Fresno, Kings, and Merced Counties, California. Prepared for the U.S. Bureau of Reclamation, South-Central California Area Office, and the U.S. Fish and Wildlife Service, Endangered Species Program, Fresno, CA.

Egoscue, H. J. 1956. Preliminary studies of the kit fox in Utah. *Journal Mammalogy* 37: 351-357.

Egoscue, H.J. 1962. Ecology and Life History of the Kit Fox in the Toole County, Utah. *Ecological Society of America* 43: 481-497.

Farr, Tom G., Cathleen E. Jones, and Zhen Lui. 2017. Progress Report: Subsidence in California, March 2015 – September 2016. Prepared for DWR. Website: https://water.ca.gov/LegacyFiles/waterconditions/docs/2017/JPL%20subsidence%20report%20final%20for%20public%20dec%202016.pdf. Accessed: March 13, 2017.

ICF International. 2012. Final Santa Clara Valley Habitat Plan. Prepared for the City of Gilroy, City of Morgan Hill, City of San Jose, County of Santa Clara, Santa Clara Valley Transportation Authority, and Santa Clara Valley Water District. August. Website: https://water.ca.gov/LegacyFiles/waterconditions/docs/2017/JPL%20subsidence%20report%20final%20for%20public%20dec%202016.pdf.

Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: Synthesis Report. Website: https://www.ipcc.ch/report/ar4/syr/.

National Marine Fisheries Service (NMFS). 2009. Final biological opinion and conference opinion on the long-term operations of the Central Valley Project and State Water Project. June 4, 2009.

Phillips, S.E. 2006. In Progress Draft Environmental Baseline of the San Luis Unit Fresno, Kings and Merced Counties, California. California State University-Stanislaus, Endangered Species Recovery Program, Fresno, CA, 22 pp.

San Joaquin Valley Air Pollution Control District. 2019. About the District – Making Progress. Website: www.valleyair.org/General_info/aboutdist.htm. Accessed: August 26, 2019.

Santa Clara. 2007. Santa Clara Valley Water District Draft Pipeline Maintenance Program Environmental Impact Report/Environmental Assessment (SCH No. 2005101047) submitted June 29, 2007.

Santa Clara. 2011. CVPIA Water Management Plan. December.

Santa Clara. 2019a. Santa Clara Valley Water District Draft Water Supply Master Plan 2040. Website: https://www.valleywater.org/sites/default/files/Draft%20WSMP%202040%20Complete.pdf.

Santa Clara. 2019b. Email message to Erma Leal regarding updated water supply information.

Santa Clara. 2016. 45th Annual Report on the Protection and Augmentation of Water Supplies. February 26.

Seay, J. 2015. Email message from Jeff Seay to Shauna McDonald.

State of California. 2013. California Water Plan – Volume 1 – The Strategic Plan, Chapter 3 – California Water Today, p 3-79. Website: https://water.ca.gov/LegacyFiles/waterplan/docs/cwpu2013/Final/04_Vol1_Ch03_Ca_Water_Today.pdf.

State of California Employment Development Department. 2019. Labor Force and Unemployment Rates for Cities and Census Designated Places. Website: http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html. Accessed: October 2019

U.S. Census Bureau. 2018. QuickFacts – California. Website: https://www.census.gov/quickfacts/table/PST045216/06. Accessed: October 2, 2019

U.S. Fish and Wildlife Service (USFWS). 2000. Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP. Sacramento Fish and Wildlife Office, California. 143 pp.

U.S. Fish and Wildlife Service (USFWS). 2005. Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office (1-1-04-0368). Sacramento Fish and Wildlife Office, California.

U.S. Fish and Wildlife Service (USFWS). 2008. Biological Opinion on the Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP) (81420-2008-F-1481-5). Sacramento Fish and Wildlife Office, California.

U.S. Fish and Wildlife Service (USFWS). 2016. Consultation on the Interim Renewal Water Service Contract for Westlands Water District, and the 3-way Partial Assignment from Mercy Springs Water District to Pajaro Valley Water Management Area, Santa Clara Valley Water District and Westlands Water District for March 1, 2016- February 28, 2018.

U.S. Fish and Wildlife Service (USFWS). 2019. Endangered Species Lists. Website: http://ecos.fws.gov/ipac/. Accessed: August 26, 2019.

Warrick, G.D., H.O. Clark, Jr., P.A. Kelly, and D.F. Williams, and B.L. Cypher. 2007. Use of agricultural lands by San Joaquin kit foxes. *Western North American Naturalist* 67:270-277.

Westlands Water District (Westlands). 2013. Water Management Plan 2012. April 19, 2013.

Westlands Water District (Westlands). 2017. Response to Reclamation's Request for Information Regarding Effects of Non-Renewal of Water Service Contract. March 8.

Westlands Water District (Westlands). 2018. Crop reports. http://wwd.ca.gov/news-and-reports/crop-acreage-reports/.

Appendix A: Contractor Service Area Maps

Contractor's Service Area

Pajaro Valley W.M.A. - Santa Clara Valley W.D.
Westlands W.D. Distribution District #1
(3-Way Assignment From Mercy Springs W.D.)

RECLAMATION
Managing Water in the West

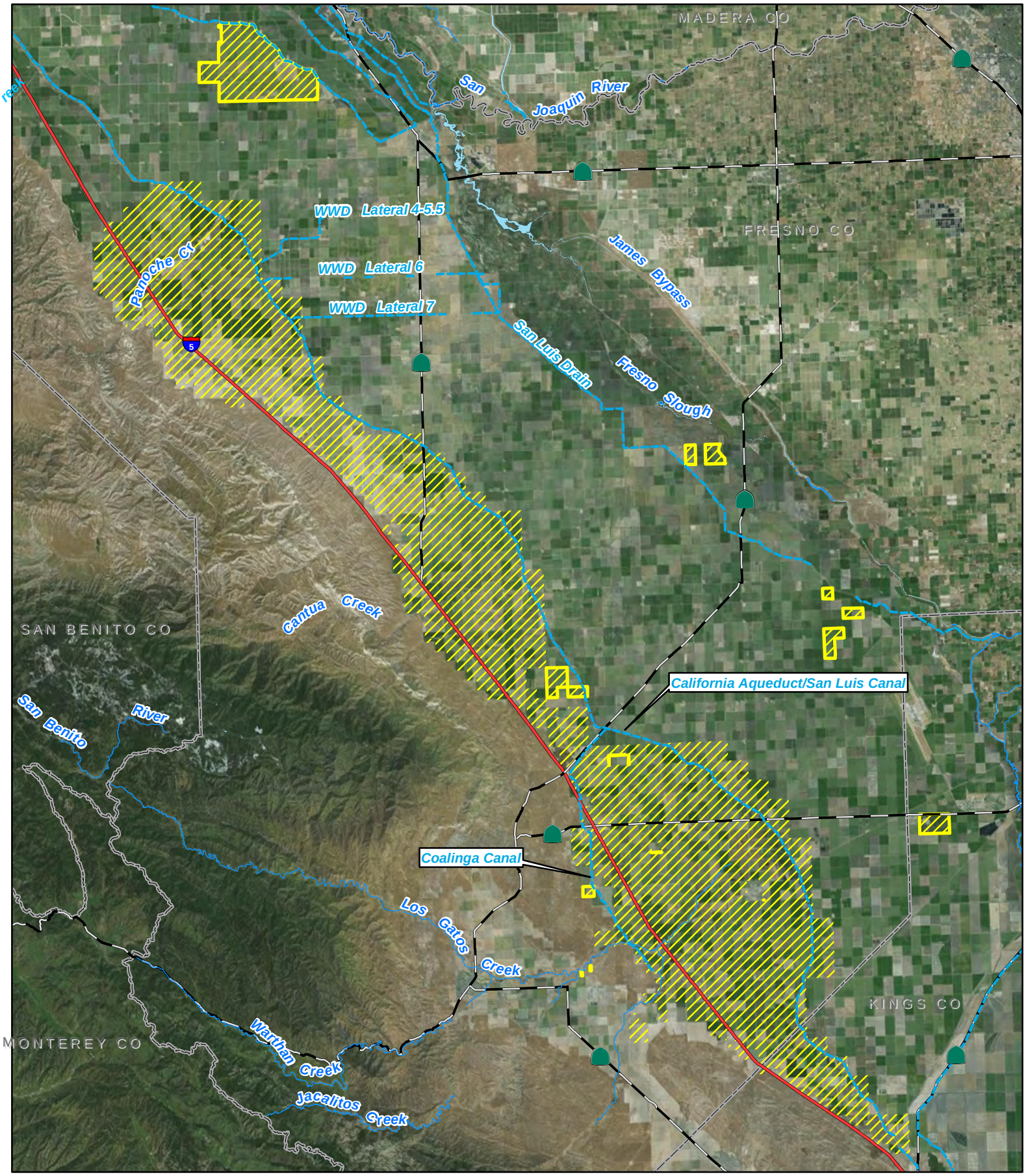
14-06-200-3365A-IR15-B

Date: September 16, 2015
File Name: N:\districts\contracts\pajaro-santaclara-westdd#1\pajaro-santaclara-westdd#1 IR 15.mxd

0 5 10 20 30 Miles

N

805-202-104



Full Assignment from:
Broadview W.D. 14-06-200-8092-IR15
Centinella W.D. 7-07-20-W0055-IR15-B
Widren W.D. 14-06-200-8018-IR15

Contractor's Service Area

Westlands W.D. Distribution District #1

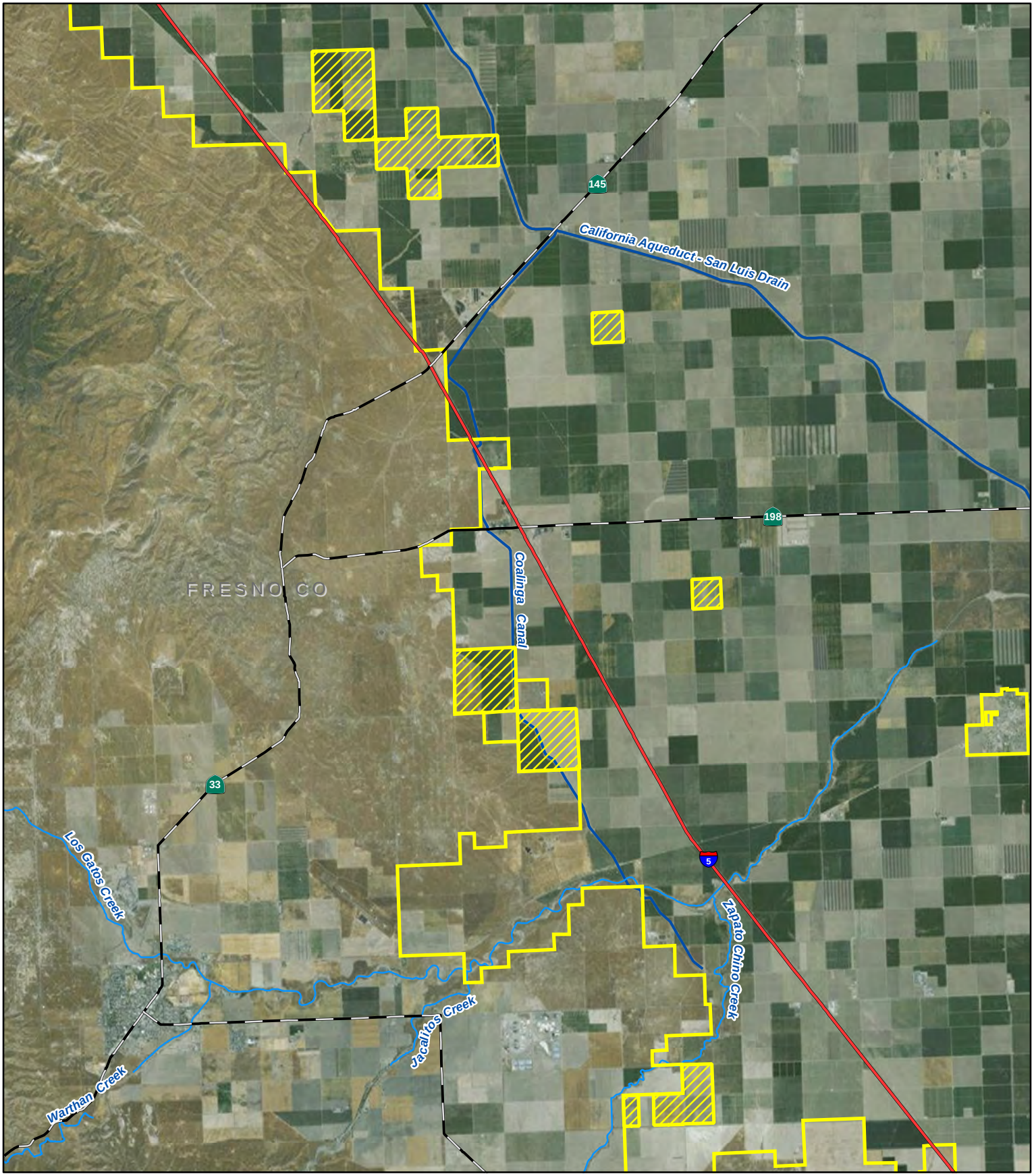
0 2.5 5 10 Miles

N

RECLAMATION
Managing Water in the West

Date: September 16,2015
File Name: N:\Districts\Contracts\westlands_distribution_district_1\AssignFromBroadviewCentinellaWidren2015.mxd

805-202-105



Contractor's Service Area
Westlands Water District

Westlands Water District
Distribution District No. 2
(Partial Assignment From Mercy Springs W.D.)

14-06-200-3365A-IR15-C

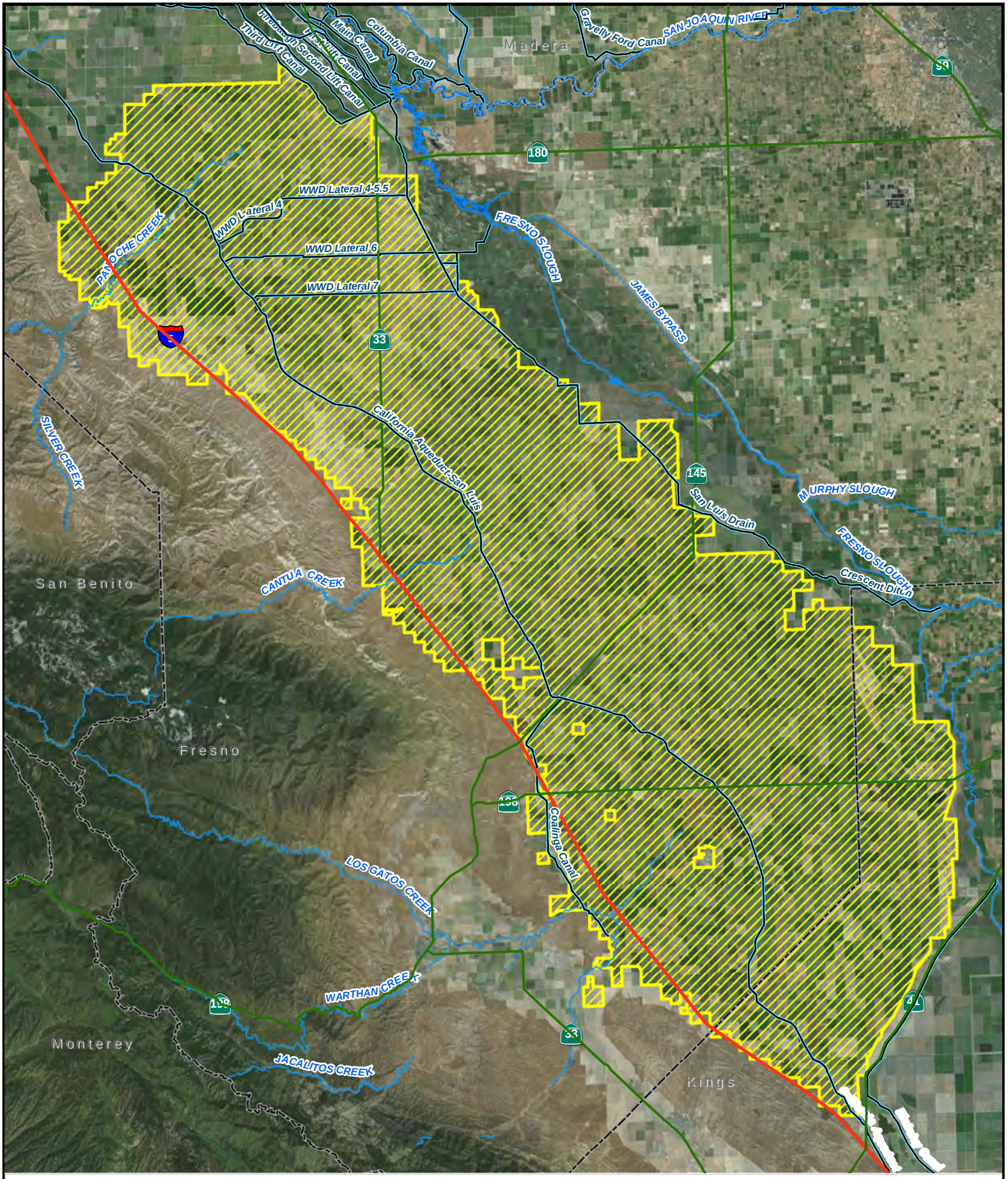
0 1 2 4 6 Miles

N

RECLAMATION
Managing Water in the West

Date:September 16, 2015
File Name: N:\Districts\Contracts\westlands_dd#2\westlands_dd2_AssignFromMercySprings_2015.mxd

805-202-107



Westlands Water District

14-06-200-495-IR5

Contractor's Service Area

5 2.5 0 5 Miles

N

RECLAMATION
Managing Water in the West

Date: September 16, 2015
File Name: N:\Districts\Contracts\westlands\Westlands_14_06_200_495_IR5.mxd

805-202-106

Appendix B: Purpose and Methodology for Water Needs Assessments

ATTACHMENT 1

CENTRAL VALLEY PROJECT (CVP) WATER NEEDS ASSESSMENTS:
PURPOSE AND METHODOLOGY

Purpose:

Water needs assessments have been performed for each CVP water contractor eligible to participate in the CVP long-term contract renewal process. These water needs assessments serve three purposes:

1. Confirm past beneficial use of CVP water;

2. Provide water demand and supply information under current and future conditions for the environmental documents; and

3. Provide an estimate of contractor-specific needs for CVP water by the year 2025 to serve as a starting point for discussions regarding contract quantities in the negotiation process.

Small Contractors exempt from Detailed Water Needs Assessments:

In order to minimize the informational burdens on CVP water contractors with small amounts of CVP supply under contract, an exemption from the requirement for detailed water needs assessments has been provided to these contractors. The exemption applies to contractors who provide agricultural water to a service area of 2000 irrigable acres, or less, and/or provide urban water now, or in the future, in the amount of 2000 acre-feet annually, or less. A contractor may be exempt from the water needs assessment requirement for its urban water service, but not for its agricultural water service, or vice-a-versa. These contractors are assumed to demonstrate future need if they have beneficially used their CVP supplies in the past.

Approach to Confirm Past Beneficial Use and Depict Current Conditions:

Originally, Reclamation requested water demand and supply information for the 1979 through 1997 timeframe. Reclamation believes that evaluations of beneficial use, current and future CVP needs based on information for a 19-year period of record, including both wet and dry periods, is a scientifically defendable way of conducting water needs assessments. However, the concerns of the CVP water contractors with respect to the magnitude of the information request persuaded Reclamation to perform the assessments using a representative snapshot year approach, instead. Although less scientifically rigorous, the snapshot year approach appears adequate for cursory evaluations of water needs.

The year 1989 is the snapshot year chosen to confirm past beneficial use of CVP water for the American, Delta, Contra Costa, Sacramento, and San Felipe regions (refer to the definitions below). This year was chosen because the majority of CVP water contractors received full delivery of their requested water supplies and the total annual precipitation for most CVP regions was in the normal range. Since 1989 was a drought year in the Friant region, 1996 is the snapshot

year selected to calculate past beneficial use for this region. Water Need Assessments for the Stanislaus Region have been deferred pending the resolution of operational issues in the Stanislaus River basin. Some contractors have elected to deviate from the selected snapshot year because of the unavailability of information for that year. Following is a description of the regions:

American: American River Division

Delta: Delta Division combined with West San Joaquin Division, but not the Contra Costa Unit

Contra Costa: Contra Costa Unit

Stanislaus: East Side Division

Friant: Friant Division combined with Hidden Unit, Buchanan Unit, and Cross Valley Canal

Sacramento: Sacramento River Division combined with Trinity River and Shasta Divisions

San Felipe: San Felipe Division

Following is a description of the process to evaluate past beneficial use of CVP water supplies:

For contractors who supply water to meet agricultural demands, Reclamation estimated the district irrigation efficiency associated with the crop water information provided for the snapshot year. Both the district irrigation efficiency and the amount of intra-district conveyance losses are evaluated for reasonableness. Past beneficial use of CVP supplies is confirmed if the district irrigation efficiency is close to the current statewide average of 75 percent, or if a trend towards increasing district irrigation efficiencies over time is apparent; **and** if intra-district conveyance losses total 10 percent, or less, of the district's total water supply. In situations where some, or all, of these conveyance losses contribute to groundwater recharge for later use by the contractor, these "conveyance losses" are shown as groundwater recharge rather than conveyance losses.

For contractors who supply municipal and industrial water, the primary test of past beneficial use of CVP supplies is whether the calculated per capita demand in column 36 is reasonably close to the reference per capita demand value in column 35. Acceptable explanations for calculated per capita demands that significantly exceed the reference number might include a large industrial water demand, or a significant percentage of residences on larger than average-size city lot parcels.

The environmental documentation associated with the CVP long-term contract renewals specifies 1995 as the base year. Therefore, water supply and demand information is indicated on the water needs assessments for the 1995 level of development, if available. In many cases, the

information provided to demonstrate past beneficial use is also reasonably representative of 1995 level water supplies and demands.

Definition of Need for CVP Water Supplies:

An important function of these assessments is the estimation of year 2025 CVP water needs. The assessments compare all demands and all supplies (including CVP supplies) estimated for the 2025 level of development for a normal hydrologic year. The results are displayed in Column 39 as Unmet Demand. If the number in this column is positive or only slightly negative[1] then the CVP water contractor is deemed to have full future need of the maximum annual CVP supply currently under contract for all year types.

Demands include agricultural, urban and, on occasion, environmental water demands.
CVP supplies in the assessments are set at the maximum annual contractual amount for each water contractor, except in the Friant Division. The Friant Division's Class II contract amounts are based on a wet hydrologic year. To reflect a normal hydrologic year, CVP supplies for the Friant Division are set at the maximum annual Class I contract amount plus 40% of the maximum annual Class II contract amount.

Dry year and critically dry year analyses were only performed for urban contractors who did not demonstrate full future need of their CVP contract supply in a normal hydrologic year.

The methodology used to estimate agricultural and urban water demands as well as to estimate the availability of non-CVP supplies is described in the following sections.

Agricultural Water Demand:

Agricultural water demand is defined as the sum of the district's irrigation water demand and the intra-district conveyance losses, where irrigation water demand is the product of the irrigated acreage in a district and the average farm delivery requirement. The farm delivery requirement is defined as the unit amount of water necessary to supply crop water needs in excess of effective precipitation and varies based on crop type, climate, irrigation water quality, soil salinity and irrigation method. The district's irrigation water demand is not necessarily the sum of all the on-farm irrigation water demands because such measures as recycling of intra-district return flows are effective in reducing the overall district irrigation water demand. The assumption for this analysis is that the continued implementation of water use efficiency measures between now and the year 2025 will further reduce the unit amount of water needed to grow crops in the future. Often, it is also assumed that district conveyance losses will decrease in the future. Specifically, district irrigation efficiencies are assumed to increase from an average of 75 percent currently to 85 percent by the year 2025, where district irrigation efficiency is defined as follows:

[1] If the negative amount is within 10% for contracts in excess of 15,000 acre-feet, or within 25% for contracts equal to, or less than, 15,000 acre-feet; the test of full future need of CVP supplies under contract is deemed to be met.

District Irrigation Efficiency= Supply - Non Recoverable Losses to the District[2]
Supply

Or, approximately =

Sum of On-farm Crop Water Requirements of Applied Water (ETAW) + Intra-District Reuse
District's Irrigation Water Demand

Certain districts, such as those with large elevation differences within their boundaries, have target district irrigation efficiencies of 80 percent based on the unavailability of certain water management options to increase overall district irrigation efficiency.

Estimating Crop Water Requirements:

Generally, the CVP water contractors' Water Management Plans provide historical information on crop water requirements. This information was used in the snapshot year analyses to confirm past beneficial use of CVP supplies and to reflect the base condition in the environmental documents.

Reclamation estimated crop water requirements for the year 2025 level of development based on the CVP water contractors' estimates of future crops and acreage planted multiplied by estimates of the farm delivery requirements for each crop. Reclamation staff initially estimated crop water requirements for all regions using evapotranspiration (ET) and effective precipitation (EP) data from several sources: 1) California Department of Water Resources (DWR) Bulletin 160-98, 2) DWR Bulletin 113-3, and 3) Reclamation knowledge and experience. The ET and EP information was tabulated on a Detailed Analysis Unit (DAU) basis and then proportioned to each district based on the district's area in a DAU. The data was then used in combination with other traditional methodologies for determining crop water requirements to estimate each district's total irrigation water demand in the year 2025.

In February 2000, representatives of the Friant and Delta Region CVP water contractors expressed the following concerns with using this methodology:

• The crop water requirements estimated are too low;

• The effective precipitation component to meeting crop water requirements is too high for some areas.

In order to address these concerns a number of evaluations were performed.

[2] The general equation for district efficiency includes conveyances losses; however, for these assessments intra-district conveyance losses are not included in the district efficiency equation because these are treated as a separate parameter for the purposes of evaluating beneficial use of CVP supplies.

One analysis compared the agricultural water demand calculations performed by a private consultant to CVP contractors and those performed by Reclamation staff for the water districts in the Delta Region. This analysis indicated that Reclamation's and the consultant's estimation of these water demands on a regional basis is close (within 8%). However, the results of the agricultural water demand determinations diverge as the regional area is broken into sub-regions and especially when the comparison is made at the district level.

A comparison of calculations of ET and EP for alfalfa in the Friant Region using the methodologies of Bulletin 160-98, Reclamation and the Natural Resources Conservation Service (NRCS) indicates that Bulletin 160-98 consistently estimates EP higher than the other two methods at the district level. One reason for this difference appears to be that the Bulletin 160-98 methodology estimates the contribution of rainfall to the soil moisture profile in the non-irrigation season in a different way than the other two methodologies. Similarly, a comparison of ET values shows that the Bulletin 160-98 values are consistently lower than the NRCS values at the district level. This difference is most likely the result of Bulletin 160-98's use of "actual" ET values. "Actual" ET is potential ET modified to reflect regional agricultural practices by farmers. The NRCS method uses potential ET values without modification.

Based on discussions with DWR, the affected CVP water contractors and their consultants; Reclamation concluded that the regional agricultural practices taken into account by Bulletin 160-98 may not be reflective of current and/or future practices by the CVP water contractors. For this reason, Reclamation determined that it was more prudent to use potential ET values than the "actual" ET values from Bulletin 160-98 in evaluating 2025 crop water requirements for water districts located in the Friant and Delta Regions.

In addition, Reclamation and representatives of the Friant and Delta Region water contractors agreed on a different methodology to estimate EP than the one used in Bulletin 160-98 because of the lack of dependable rainfall. The bulletin assumes rainfall is effective if it can be stored in the soil moisture profile, or directly meet crop water needs during any month. However, in actual practice to effectively manage farm operations, a farmer may need to pre-irrigate one or more fields earlier in the month only to have a major precipitation event occur later in the month, thus reducing the effectiveness of the rainfall during that month.

Revised Agricultural Water Demand Methodology for the Friant and Delta Regions:

Following is a description of the revised methodology for estimating ET and EP:

• EP is estimated to be 50 percent of long-term average annual rainfall with the exception of citrus EP. For citrus groves, it is estimated that one inch of the initial rainfall is stored before the soil seals over and the runoff begins; then about 10% of the additional rainfall for the season is estimated to be effective.

• ET is determined using California Irrigation Management Information System (CIMIS) potential ET data and crop coefficients supplied by the University of California Cooperative Extension.

No change was made to the ET and EP determinations for the CVP water contractors in the other regions because these regions are located in areas of higher precipitation not as sensitive to the issues raised in the comparative analyses.

Urban Water Demand:

Urban water demand is defined as the sum of residential, nonresidential and distribution system demands. The components of residential demand include indoor and outdoor demand. Originally, information on residential and a portion of nonresidential demand was requested in terms of these two components; however, most CVP water contractors were unable to provide the information in that format. Therefore, the information request was revised to a combined figure for indoor and outdoor use. Nonresidential demand includes commercial, institutional and industrial demands. Distribution system demands consist of unaccounted beneficial use and distribution system losses where:

• Unaccounted beneficial use includes water for such uses as firefighting, mainline flushing, storm drain flushing, sewer and street cleaning, construction site use, water quality testing and other testing.

• Distribution system losses accounts for water lost because of leaks in storage and distribution systems, evaporation, illegal connections, and water theft.

Projected M&I water demand will be influenced over time by many factors, including future land use changes, population shifts, and improvements in residential and distribution system efficiencies over time. As is the case for agricultural water demands, the methodology assumes that the implementation of water conservation measures in the next 25 years will increase the efficiency of urban water use and reduce unit M&I water demands. Specifically, the reference average per capita usage upon which the urban beneficial use evaluation is based decreases from 5% to 14% by the year 2025, depending on the location in the state.

Non-CVP Water Supplies:

Non-CVP water supplies can include groundwater including the conjunctive use of surface and groundwater, State Water Project (SWP} supplies, local surface water supplies, recycled water, inter-district return flows and water transfers. The methodology considers water transfers a beneficial use of water. Water transfers are, therefore, included in the 2025 level assessments if there is evidence of a commitment by both parties to engage in the transfer in this timeframe.

Average values for SWP and local surface supplies are used in the 2025 level assessments unless the analysis is for dry or critically dry year conditions. Often the source of information is the 10-year average surface water supply from the contractor's Water Management Plan. If there is an indication that surface water supplies will decrease in the future because of increased upstream diversions or increased environmental requirements, the surface water supply is reduced to reflect these considerations in the 2025 level assessment.

Where available, groundwater safe yields are used to estimate future groundwater pumping. Safe yield is defined as the amount of groundwater a district can pump on a long-term average and not cause the long-term decline of groundwater levels leading to excessive depths for pumping or leading to degradation of groundwater quality. A safe yield value is the result of a complex interaction between many factors; a change in any one of the factors can have an impact on the value obtained from safe yield computations. The main factors involved in safe yield computations can include, but are not limited to, water supply, consumptive use, losses to the system, and water quality. Adding to the complexity of the analysis is that many, if not most, of the factors involved in a safe yield computation are time dependent, and have both short-term and long-term trends--which may be quite different. If a safe yield analysis is not available for the contractors' groundwater resources, groundwater pumping and recharge, if applicable, is estimated from historical information for the 2025 level assessments.

Originally, groundwater pumping for the Friant Region was estimated based on historical estimates of groundwater pumping for 1996 from the water contractors' Water Management Plans. During the February 2000 discussions with representatives of the Friant Region water contractors, the issue of groundwater was raised. Specifically, Reclamation was requested to evaluate the possibility of using the original safe yields estimated by Reclamation as the supply available from groundwater in the 2025 level assessments. Reclamation agreed to investigate the use of these original safe yields because the original safe yields were developed for ultimate build-out and included CVP groundwater recharge. Following is a summary of the analysis performed to estimate groundwater pumping for the Friant Region in the 2025 level assessments.

Analysis of Groundwater Pumping in the Friant Region:

Groundwater technical studies were conducted by Reclamation in the 1940's and 1950's to characterize the geohydrology, groundwater occurrence and groundwater conditions in each district, and to determine each district's safe yield. Prior to the delivery of CVP water supplies, farmers irrigated mainly with groundwater, although some local surface water sources were also used. Because recharge of groundwater could not keep pace with the use of water primarily for agricultural purposes, groundwater levels had declined in many areas, and groundwater overdraft was common throughout the region.

A review of Reclamation's original safe yields for the Friant Region shows that these safe yield estimates are generally less than the estimated amounts of groundwater pumping for 1996. Reclamation's original safe yield estimates are also generally less than the updated safe yield estimates performed by Reclamation for some of the districts in the early 1990's. However, the 1990's safe yield estimates are considered preliminary numbers and were never adopted by Reclamation nor accepted by the Friant water contractors. Historical estimates of groundwater pumping indicate that these water contractors are pumping groundwater in excess of the original safe yields.

The groundwater pumping in excess of safe yield has resulted in the continued decline in the groundwater tables underlying most of the districts. A review of hundreds of individual well hydrographs shows that this increase in pumping has not been supported by the aquifer. Most districts are still experiencing declining groundwater levels since the inception of CVP

deliveries. With the exception of five districts (Delano Earlimart, Exeter, Lindmore, Lindsay-Strathmore and Orange Cove), cumulative groundwater storage has decreased in the remaining 19 Friant districts since the CVP began importing water into those districts. The five districts that show overall rises in groundwater storage change have unique geohydrologic conditions and were evaluated individually to determine appropriate levels of groundwater pumping for the 2025 level assessments.

From the analysis performed, it can be concluded that CVP deliveries since 1986, as evidenced by a continuous decline in storage from 1986 to 1992, have not been sufficient to maintain reasonably stable groundwater levels, nor have CVP deliveries supported an increase in groundwater levels in wet years under the conjunctive use operations practiced by most districts. Safe yield pumping in combination with surface water supplies should have sustained or raised groundwater levels to some stable level. However, historical groundwater pumping has been higher than the safe yield values. In addition, unforeseen factors in the original safe yield analysis such as the magnitude of groundwater use by non-district entities primarily for urban needs within the boundaries of the district, the magnitude of groundwater and surface water use by adjacent districts, changes in the type of crops, droughts and reductions in CVP water deliveries may render even the original safe yield values as too high. However, the unavailability of critical information and the lack of time to perform an analysis make the determination of new safe yields for the Friant Region infeasible at this time. Therefore, Reclamation concurs that the original safe yields are appropriate to depict groundwater pumping for 19 contractors in the Friant Region for the 2025 level assessments unless recharge is significantly higher than under the pre-project condition. In that case, groundwater pumping is assumed to be the safe yield plus a certain percentage of recharge. It is assumed that up to 10% of a district's supply may be lost in conveyance or recharge losses; the remainder of the recharge is assumed to be available for groundwater pumping.

Sources of Information

The Water Management Plans that most water districts have prepared in response to the mandates of the Central Valley Project Improvement Act and the Reclamation Reform Act provide information on agricultural, urban and environmental water demands as well as on water supplies available to meet these demands. In most cases, these plans depict information for a representative year, although some plans provide a number of years of historical information as well as projections for the future. Fortunately, the representative year for many of these plans is either 1989, or 1996. The water contractors were asked to verify that information contained in these plans may be used to calculate past beneficial use and/or to depict current conditions for the purposes of the environmental documentation. In addition, the agricultural water contractors were requested to provide projections of types of crops planted, irrigated acres and amounts and types of non-CVP water supplies for the year 2025. Similarly, the urban water contractors were asked to provide population projections, projections of nonresidential water demand and amounts and types of non-CVP water supplies for the year 2025. Department of Finance population projections were used to assess whether the contractors' population projections appear reasonable.

Other sources of information included DWR Bulletin 160-98, DWR Bulletin 113-3, CIMIS information, crop coefficients from various sources, Reclamation's annual crop reports, the January 2000 Water Forum Agreements for the American River, Reclamation's groundwater safe yield studies and miscellaneous planning and environmental documents.

WATER NEEDS ASSESSMENTS FOR CENTRAL VALLEY PROJECT LONG TERM RENEWAL

Purpose

Section 3406 (c) of the Central Valley Project Improvement Act states that upon request, the Secretary shall renew any existing long-term repayment or water service contract for the delivery of water from the Central Valley Project for a period of twenty-five years and may renew such contract for successive periods of up the 25 years each. In response to this provision, the Region submitted a Basis of Negotiation (BON) to the Commissioner on January 26, 1999 which required the Region to conduct water needs demand assessments for as many as 113 Long Term Renewal Contacts. As stated in the BON, the water demands in conjunction with information on available water supplies will be used to demonstrate historic beneficial use of both CVP and non-CVP water for each contractor. Also, a determination of future need for CVP will be made water based on comparisons of future water demands and the determination of non-CVP water supplies for each contractor.

Background

On October 23, 1998, Reclamation's Mid-Pacific Region announced its intent to undertake a water needs assessment for each contactor as part of the CVP long term contract renewal process. The letter requested written comments on the draft water needs assessment methodologies be submitted to Reclamation by December 11, 1998. As part of the scoping process, four public workshops were held in early November 1998 to address the development of water demand methodologies for both irrigation and M&I purposes. The various proposed steps to assess potential water needs for irrigation and M&I purposes and subsequent total potential demands for CVP water are detailed in the document entitled "Proposed Water Need Methodologies, LTRC, Central Valley Project."

On December 30, 1998, Reclamation requested information for water needs assessment for Long Term Contract Renewal from All CVP Interim Renewal Irrigation and M&I Contractors, and All CVP Irrigation and M&I Contractors Subject to Binding Agreement. The request stated that although Reclamation recognized the water demand methodologies where still in draft form and the comment period had been extended to January 8, 1999. Reclamation believed the required information would likely be needed irrespective of any changes in methodologies. The information was to be provided by February 19, 1999.

On January 29, 1999, Reclamation held technical discussions on the proposed irrigation contractor methodology for the needs assessment. As an outcome of this meeting, Reclamation committed to perform comparisons in order to streamline the irrigation water demand analysis. 1) Evaluate crop water needs plus distribution system water requirement for the years 1979 through 1997 for six representative districts to arrive at an "average" beneficial use of water for that time frame to establish a correlation between scientifically calculated beneficial use and actual deliveries. 2) Compare the result to determine if a close correlation between scientifically calculated beneficial use and actual deliveries can be made. 3) Using the districts' Water Management Plans, calculate the crop water needs and distribution system water

requirements for the "representative" year (either 1989 or 1996) and compare that with the actual water deliveries in that year. 4) Determine whether the "representative year" method appears to be a scientifically credible substitute for the "average year" method.

Based on Reclamation's analysis, a letter was sent out February 22, 1999, to update Reclamation's December 30 1998, request for information from the irrigation contractors. The letter extended the deadline for the submittal of information and provided contractors with the findings of the comparative analysis described in the previous paragraph. The conclusion in the comparative analyses was that the information provided in the water management plans was sufficient to meet the current water demand and supply information and the determination whether the historical water deliveries were beneficially used. Therefore, contractors were provided the opportunity to have the information presented in their water management plans as the basis for the analysis of historic and current use. If that information was not available, contractors where requested to submit information for 1995.

A similar letter was also sent to M&I contractors on February 22, 1999. This letter extended the deadline for submittal of water needs assessment information to March 19, 1999, and provided the contractors with the option of using information provided in their water management plan or current Integrated Resource Plan if that plan contained information corresponding to that information in Reclamation's December 30, 1998 information request.

A follow up letter dated June 3, 1999 was sent to those contractors which had not yet submitted the water assessment information requesting. The letter requested that the information be submitted by close of business June 25, 1999.

In the fall of 1999, Reclamation staff completed development of an Access© Data Base Program which was used to analyze the data submitted by the contractors. An output file was developed which provided information on the contractors' water supply, and agricultural and/or urban water demands. A summary column on the output provided information on the amount of water by which the contractors' water demands exceeded or were less than its supplies. Information was input for each contractor for a historic year to demonstrate beneficial use and for a future year (2025) to demonstrate future need. Between November 1999 and March 2000 this information was sent to most of contractors in draft form with results of the assessment. The contractors were asked to review the assessment to determine if all the information and assumptions were accurate.

Future demand was projected in most cases for year 2025. The data requested from the districts in December 1998, was for the future year 2025 because it was believed at that time the contracts would be finalized by 2000 and the irrigation contracts would be for 25 years. Although M&I water service contracts are for 40 years, it was assumed build out would occur by 2025. In the few instances in which an M&I contractor could demonstrate that build out would not occur by 2025, those contractors were allowed to provide projection to the year 2040.

Although all of the contracts were executed after 2000, it was assumed that the cropping patterns initially projected for 2025 would still be valid after that date since additional information to

discern annual out year cropping pattern changes was not available. Therefore, any estimated changes in cropping patterns after 2025 would be highly speculative.

The assessments were performed by technical staff in the Mid-Pacific Region's Resources Division and Reclamation's Technical Service Center. Reclamation used expertise from the California Department of Water Resource and the TSC to perform the urban water assessments. The Reclamation technical staff used to perform the agricultural needs analysis included agricultural engineering staff from the Region and the TSC and water conservation staff from the Region. These staff interacted with contractors and other stakeholders to develop the assessment tools based on a combination of technical literature and personal knowledge. When background information such as crop evapotranspiration information was in dispute, Reclamation funded consultants with technical expertise in the field to service as an independent source of information.

Resources that Reclamation staff used to substantiate estimates provided by the contractors included, the State Water Plan Bulletin 160-98 for (urban and agricultural water use trends and water use efficiency estimates), California Department of Finance (population trends), County Master Plans and Land Use Planning Reports (population trends, water supplies, and land use trends), Agricultural Commissioners Annual County Crop Reports (agricultural crop acreages) and Bulletin 113-3 (crop evapotranspiration).

The methodology for the water needs assessments was finalized in May of 200 I with the inclusion of provisions for the Friant Unit (attachment). M&I contractors with a contracted water supply of 2,000 acre feet or less, and Irrigation contractors with an irrigable acreage of 2,000 acre feet or less were exempted from the needs assessment. Along with general assumptions for all of the needs assessments, the methodology contained specific assumptions on evapotranspiration and effective precipitation for the Friant and Delta Regions and an assessment of groundwater conditions in the Friant Region resulting in the assumptions used to determine the safe yield of groundwater.

Reclamation began sending final water needs assessments to CVP contractors starting in September 2000. The majority of the assessments were sent under cover letter for each of the major divisions in the CVP. The divisions included the Sacramento Division, Tehama-Colusa Canal; Friant Division, Buchanan Unit, Hidden Unit, and Cross Valley Canal; Delta Division; Delta Mendota Canal, Delta Mendota and San Luis Unit. These assessments were analyzed as groups since data and methodology developed for the analysis were unique to each of these divisions. Contractors with a majority of their supplies used for M&I purposes each went out under an individual cover letter. The last final needs assessment was completed in December 2004.

Transmittal letters sent with each water needs assessment included a determination of whether the contractor had been beneficially using its past water supplies and if it was anticipated that the contractor needed its current allocation of CVP water to meet future demands.

Revisions to final needs assessments were made in a few cases. These revisions were required when new information was either presented by the contractors or identified by Reclamation that

would impact either the contractor's water demand or water supply. New information could include an anticipated change in water use such as agricultural or urban, or a change in the future amount of local water supply that will be available to the contractors. In each case, a letter identify the revised information was sent to the specific contractor.

Sacramento River Settlement Contractors Water Needs Assessments

Water needs assessments were performed for 11 settlement contractors participating in the Basin-wide Water Management Plan and 8 other settlement contractors on the Sacramento River.

For other areas of the CVP, Reclamation requested actual historic water demand and supply information to determine a contractor's past beneficial use and the contractor's estimated cropping pattern to determine future beneficial use. In the case of the Sacramento River Settlement Contractors Reclamation was able to use information developed as part of the BWMP which used a representative "normal" year approach based on normalized data for 1995 and 2020. The normal year approach allowed for a consistent and fair WNA for the SRSCs.

WNA's for water service contracts included non-contract water supplies such as groundwater including the conjunctive use of surface and groundwater, State Water Project (SWP) supplies, local surface water supplies, recycled water, inter-district return flows and water transfers. Due to the nature of the settlement contracts, Reclamation used the full contract quantities the year 2020 analysis as the contractors' only water supply because the settlement contracts were negotiated in lieu of the contractors exercising their water rights on the Sacramento River and its tributaries. Furthermore, The Settlement Contracts are different than water service contracts. These contracts were negotiated to settle disputes over the respective rights of the contractors and the United States. The contractors' use of water during the contract period is not to be used as a reference to how the contractors would have used the water under their water right(s). The contractors would have exercised due diligence to fully protect or prove their water rights. Existing language in the Settlement Contracts provides that the contractors' water use during the term of the contract cannot be construed as an admission that such water use was not water it would have been entitled to under their water rights.

Two SRSC's, Anderson-Cottonwood Irrigation District and Sutter Mutual Water Company, did not meet the criteria for renewing their contracts for the full amount. Long term historic cropping patterns and water diversions were analyzed to determine the highest reasonable annual diversions. The calculated annual diversion was used to negotiate the contract quantities for these two SRSC's.

Appendix C: Contractor Water Needs Assessments

Division: **West San Joaquin**

Water Needs Assessment

District: 203220

Date: 5/25/2017

Agricultural and M&I Water Supply

WESTLANDS WD

Contractor's Water Supply Sources and Quantities (acre-feet)

Timeframe 1	Surface Water Supply: Reference Delivery 2		USBR Total Deliv/Max 3	SWP 4	Local 5	Local Source	Trsfr/Rtrn /Recycle In 7	Trsfr/ Out 8	Groundwater Supply: District 9	Private 10	Safe Yield 11	Recharge 12	Total Supply 13
2011	1,150,000	*	983,306	0	0	6	115,615	1,440	0	69,000	200,000	0	1,166,481
2050 FIA	1,150,000	*	1,150,000	0	0		45,383	0	0	0		0	1,195,383
2051 Settlement	1,193,000	*	895,000	0	0		0	0	0	0		0	895,000

Maximum Productive Acres for Years 2011, 2050= 560,700

Contractor's Agricultural Water Demands

Possible Maximum Productive Acres for Year 2051= 460,700

Timeframe 1	Crop Water Requirement (acre-feet) 15	District Irrig. Efficiency (%) 16	Effective Precip (acre-feet) 17	Reference Effective Precip (acre-ft) 18	Calculated Net Crop Water Req (acre-feet) 19	USBR Net Crop Water Req (acre-feet) 20	Average Irrigated Acres (acres) 21	Reference Irrigated Acres (acres) 22	Calculated FDR (AF/acre) 23	USBR FDR (AF/acre) 24	Conveyance Loss (acre-feet) 25	Total Ag Demand (acre-feet) 26
2011	995,441	78	140,514	138,365	1,096,060	1,240,341	460,884	460,884	2.38	2.40	196	1,096,256
2050	1,314,025	85	168,209	168,209	1,348,019	1,397,355	560,700	560,700	2.40	2.32	193	1,348,212
2051	1,117,740	85	138,211	138,211	1,152,387	1,239,909	460,700	460,700	2.50	2.40	193	1,152,580

Contractor's M&I Water Demands

Timeframe 1	Residential Water Demand: Population 28	Per Capita Demand (gpcd) 29	Total Demand (acre-feet) 30	Nonresidential Water Demand: Industrial (acre-feet) 31	Comm/ Instit (acre-feet) 32	Total Demand (acre-feet) 33	Loss: Unacc /Distr (acre-feet) 34	Ref Urban Per Capita Dmd (gpcd) 35	Calc Urban Per Capita Dmd (gpcd) 36	Total M&I Demand (acre-feet) 37	Total Ag+ M&I Dmd (acre-feet) 38	Unmet Demand (acre-feet) 39
2011	7,415	410.3	3,408	1,126	564	1,690	0	198.0	613.8	5,098	1,101,354	-65,127
2050	7,975	166.0	1,483	1,134	568	1,702	0	166.0	356.5	3,185	1,351,397	156,014
2051	0	0.0	0	1,134	568	1,702	0	0.0	0.0	1,702	1,154,282	259,282

* Represents Maximum Contract Amount

Notes: Year 2011 data is derived from the Westlands water management plan dated April 19, 2013. The acronym FIA stands for the full irrigable acreage at project build out.

Years 2050 and 2051 transfer in, column #7, amounts are from the following contract assignment no.'s:

14-06-200-3365A-IR14-B	4,695 acre feet	(amount pursuant to the 3-way partial assignment after 20 years from date of execution [1999])
14-06-200-8092-IR14	27,000 acre feet	
7-07-20-W0055-IR14-B	2,500 acre feet	
14-06-200-3365A-IR14-C	4,198 acre feet	
14-06-200-8018-IR14-B	2,990 acre feet	
14-06-200-7823J	4,000 acre feet	

Maximum productive acres for years 2011 and 2050 is current as of 2011 Reclamation Mid-Pacific Region GIS mapping data.
Acreage has been reduced 100,000 acres for year 2051 pursuant to the Westlands Drainage Settlement.
The population numbers in years 2011 and 2050 solely reflect Lemoore Naval Stations active duty and civilian population.
A zero population in year 2051 reflects the Westlands Drainage Settlement. Year 2011 reference irrigated acres is from table 34 in the Westlands water management plan dated April 19, 2013.

Appendix D: Reclamation's Cultural Resource Determination

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 20-SCAO-026

Project Name: Central Valley Project Interim Renewal Contracts for Westlands Water District and Santa Clara Valley Water District 2020-2022

NEPA Document: EA-19-043

NEPA Contact: Rain Emerson, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: BranDee Bruce, Architectural Historian

Date: November 12, 2019

Reclamation proposes to execute six interim renewal contracts for Westlands Water District and Santa Clara Water District for a two-year period (March 1, 2020 through February 28, 2022). There will be no change in contractor service area, amount of water delivered per year, or water purpose as part of these two-year interim renewal contracts. In the event a new long-term renewal contract for water service is executed, the interim renewal contract then-in-effect would be superseded by the long-term renewal contract. This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) regulations codified at 36 CFR § 800.3(a)(1). Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(1).

No new construction or modification of existing facilities or ground disturbance will occur as a result of the proposed action. Reclamation has determined that water transfers using existing facilities with no proposed changes is the type of activity that does not have the potential to cause effects on historic properties pursuant to 36 CFR § 800.3(a)(1). I have reviewed EA-19-043 and the proposed action would result in no impacts to cultural resources. I have no edits on the EA. As such, Reclamation has no further obligations under Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108).

This document conveys the completion of the cultural resources review and Section 106 process for this undertaking. Please retain a copy with the administrative record for this action. Should the proposed action change, additional review under Section 106, possibly including consultation with the State Historic Preservation Officer, may be required.