RECLAMATION
Managing Water in the West

Draft Environmental Assessment

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

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

November 2017

Mission Statements

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

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

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, 2018 (Table 1). These six interim renewal contracts

would be renewed for a two-year period from March 1, 2018 through February 29, 2020. 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	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-IR15-B	6,260	2/28/2018
Westlands Water District	14-06-200-495A-IR5	1,150,000	2/28/2018
Westlands Water District Distribution District #1 (full assignment from Broadview Water District)	14-06-200-8092-IR15	27,000	2/28/2018
Westlands Water District Distribution District #1 (full assignment from Centinella Water District)	7-07-20-W0055-IR15-B	2,500	2/28/2018
Westlands Water District Distribution District #2 (partial assignment from Mercy Springs Water District)	14-06-200-3365A-IR15-C	4,198	2/28/2018
Westlands Water District Distribution District #1 (full assignment from Widren Water District)	14-06-200-8018-IR15-B	2,990	2/28/2018

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 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
- 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

[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 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, 2018 and ending February 29, 2020. 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, 2018 through February 29, 2020. 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 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. As it is highly unlikely that Pajaro Valley will have the ability to take CVP water through the term of the Proposed Action, water deliveries pursuant to this contract will be analyzed in this EA as solely going to the CVP service areas of Santa Clara and Westlands DD#1, consistent with previous interim renewals for this contract.

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 below, 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, 2018 through February 29, 2020). 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-IR5) is currently on its fifth interim renewal contract. The Proposed Action would be its sixth. The remaining five interim renewal contracts listed in Table 1 are currently on their fifteenth interim renewal contract. The Proposed Action would be their sixteenth. Drafts of the six interim renewal contracts will be released for public review in the fall of 2017 at the following website: https://www.usbr.gov/mp/cvpia/3404c/lt_contracts/2017-int-cts/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 it is unlikely that Pajaro Valley will have the infrastructure in place in order to receive its portion of water by 2019, Reclamation has 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

[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.

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.

THIS PAGE LEFT INTENTIONALLY BLANK

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. As described in Section 1.3, Pajaro Valley does not have the ability to receive CVP water at this time and is not included in this analysis.

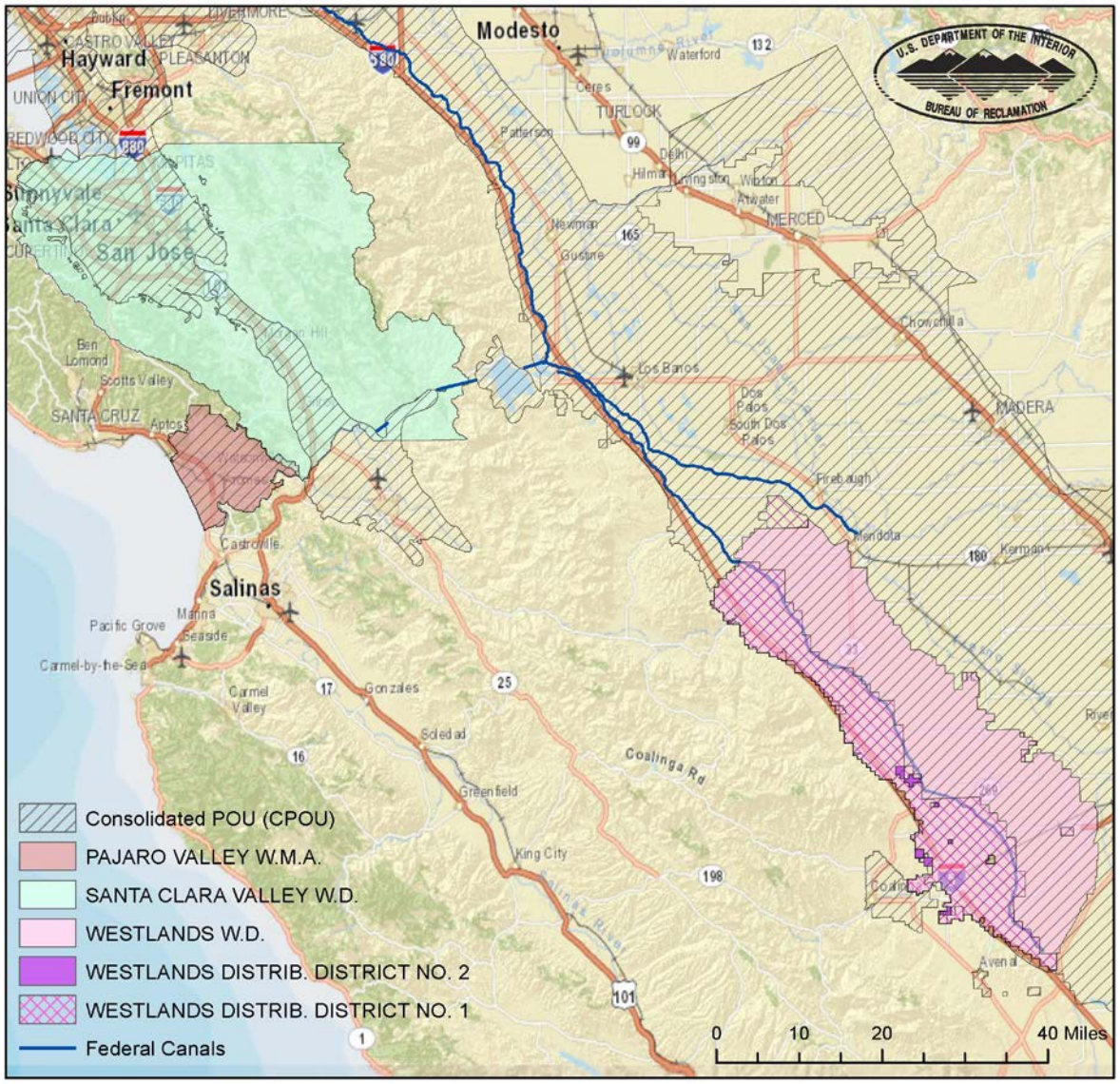

Figure 1 Proposed Action Area

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 2017).

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 $PM_{2.5}$ (San Joaquin Valley Air Pollution Control District 2017).

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 a list obtained on August 3, 2017 by accessing the USFWS Database: http://ecos.fws.gov/ipac/. The list was obtained for Westlands and Santa Clara Counties (USFWS 2017). California Least Tern was added to Table 4 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 2017) 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.
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 2016). Between 1993 and 2016 the number of acres reported as being farmed ranged from 292,111 (2014) and 549,704 (1996) with an average of 461,704. As shown in Figure 2, there is a trend towards farming more permanent crops (orchards and vineyards) over non-permanent crops (Figure 2). 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).

Between 2006 and 2016, permanent crops in Westlands ranged from approximately 20 percent to 49 percent of total crops with an average of 33 percent (Westlands 2016). The vast majority of crops during this same period (greater than 60 percent, annually, except 2014 and 2015 which were 50% and 49%, respectively) were non-permanent field and row crops (Westlands 2016). The acreage of fallowed lands has also generally increased in the last few years within Westlands, especially during the recent drought (see Figure 2).

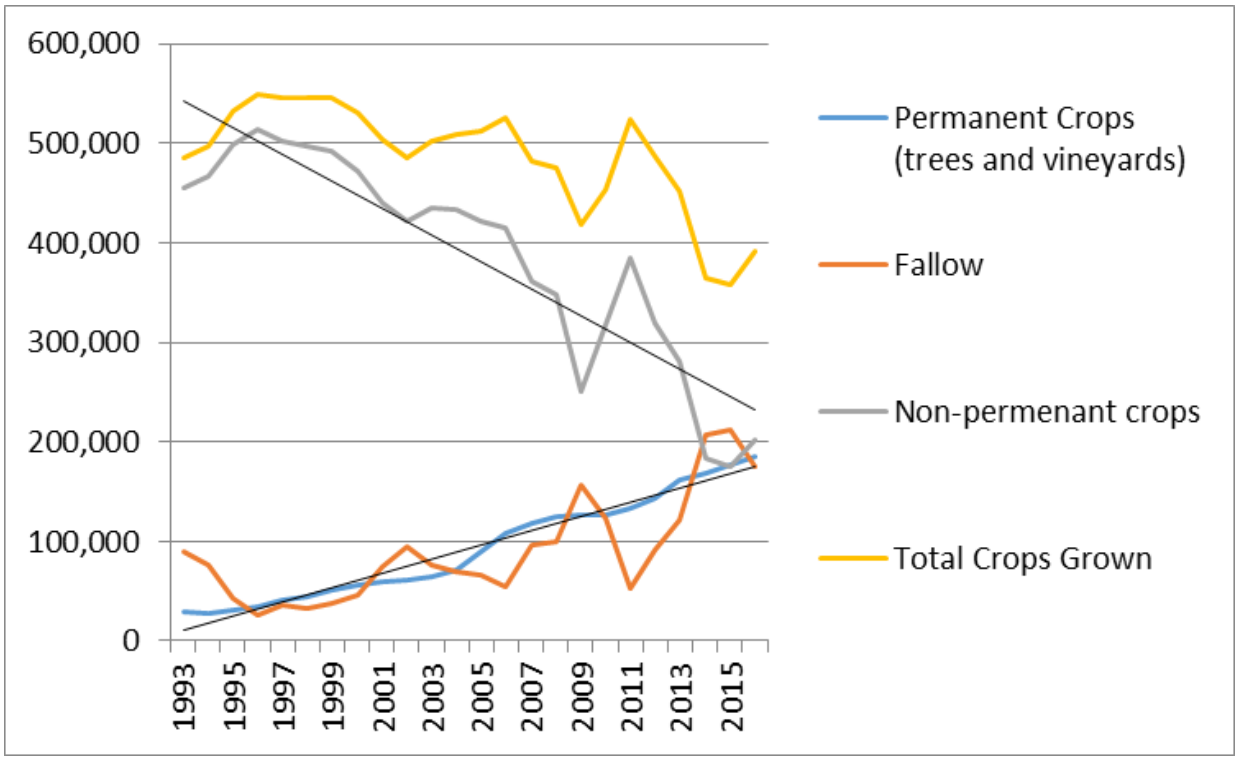

Figure 2 Crop Acreages in Westlands Water District

Special-Status Species and Critical Habitat No critical habitat exists in Westlands. 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 special-status 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 for the current interim contract renewals, 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. Since then, Reclamation has re-initiated consultation with USFWS on the CVP/SWP Coordinated Operations. That process is ongoing.

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 owl; 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 9.5% to 10.7% between 2015 and 2016, compared to 3.3% to 3.8% for Santa Clara County and 5.2% and 5.9% for the State of California. In 2015, the Hispanic community was substantially greater within Fresno (52.4%) and Kings (53.6%) Counties than Santa Clara County (26.3%) and the State (38.8%). The number of people below the poverty level was also substantially higher in Fresno and Kings Counties (26.8% and 22.6%, respectively) than Santa Clara County (9.5%) and the State (16.3%).

Table 5 Fresno, Kings, and Santa Clara County Demographics

Demographics	Fresno County	Kings County	Santa Clara County	California
Total Population (2015 estimate)	974,861	150,965	1,918,044	39,144,818
White, non-Hispanic	30.4%	33.2%	32.8%	38.0%
Black or African American	5.9%	7.2%	2.9%	6.5%
American Indian or Alaska Native	3.0%	3.0%	1.3%	1.7%
Asian	10.7%	4.5%	35.6%	14.7%
Native Hawaiian/Pacific Islander	0.3%	0.3%	0.5%	0.5%
Hispanic or Latino	52.4%	53.6%	26.3%	38.8%
Median Household Income, 2011-2015	$45,233	$46,481	$96,310	$53,889
Annual per capita income, 2011-2015	$20,408	$18,707	$43,880	$28,930
Persons in poverty (2015 estimate)	25.2%	22.4%	8.3%	13.5%
December 2015 Unemployment rate	10.2%	10.7%	3.8%	5.9%
December 2016 Unemployment rate	9.5%	9.9%	3.3%	5.2%
Total Population Below Poverty Level (2011-2015)	26.8%	22.6%	9.5%	16.3%

Source: U.S. Census Bureau 2017a and 2017b, State of California Employment Development Department 2017

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 2015 farmers in Westlands planted and harvested 350,000 acres of crops with a total gross value of approximately $1.58 billion (Westlands 2017). The 10 crops with the highest value grown in 2015 are included in Table 6.

Table 6 Calendar Year 2015 Crop Values for Westlands

Crop	Acres Planted	Value
Almonds	82,278	$518,351,400
Tomatoes – Processing	61,555	$263,126,696
Garlic	10,534	$114,430,842
Cantaloupes	10,795	$78,992,089
Pistachios	35,048	$65,599,342
Tomatoes – Fresh	4,949	$64,708,373
Grapes – Wine	14,493	$55,152,532
Lettuce – Fall	3,234	$45,472,304
Tangerines	2,107	$34,077,438
Cotton – Lint – Pima	16,770	$30,963,457
Permanent Crops	133,926	$673,180,712
Annual/Row Crops	107,837	$597,693,761
Total	241,763	$1,270,874,473

Source: Westlands 2017

Note: Permanent crops = almonds, pistachios, wine grapes, and tangerines. Annual/row crops = tomatoes (processing and fresh), garlic, cantaloupes, lettuce, and cotton.

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 2015 was $597,693,761 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 2017. For 8 out of the last 13 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 2016

Contract Year	Agricultural Allocations (%)	M&I Allocations (%)
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 400,000 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-IR15-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
Total	-	18,4767	29,245	47,710

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 170,000 AF (Santa Clara 2013). 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 actual water supplies delivered in 2016 are included in Table 9.

Table 9 Santa Clara's Delivered Water Supplies

Source of Water Supply	2016 Amount (acre-feet)
CVP contract supplies	60,000
SWP contract supplies	73,160
Local Surface Water Inflow	102,020
Local Surface Water Storage Releases	-25,240
Prior year carryover	52,270
Semitropic Groundwater Bank withdrawals	0
Water transfers and exchanges	37,780
Groundwater pumped	110,800
Returned to District from San Francisco Public Utilities Commission via intertie	720
Total	**411,510**

Source: Santa Clara 2017
*The negative number represents surface water received by Santa Clara, but was stored to be delivered at a later date.

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.

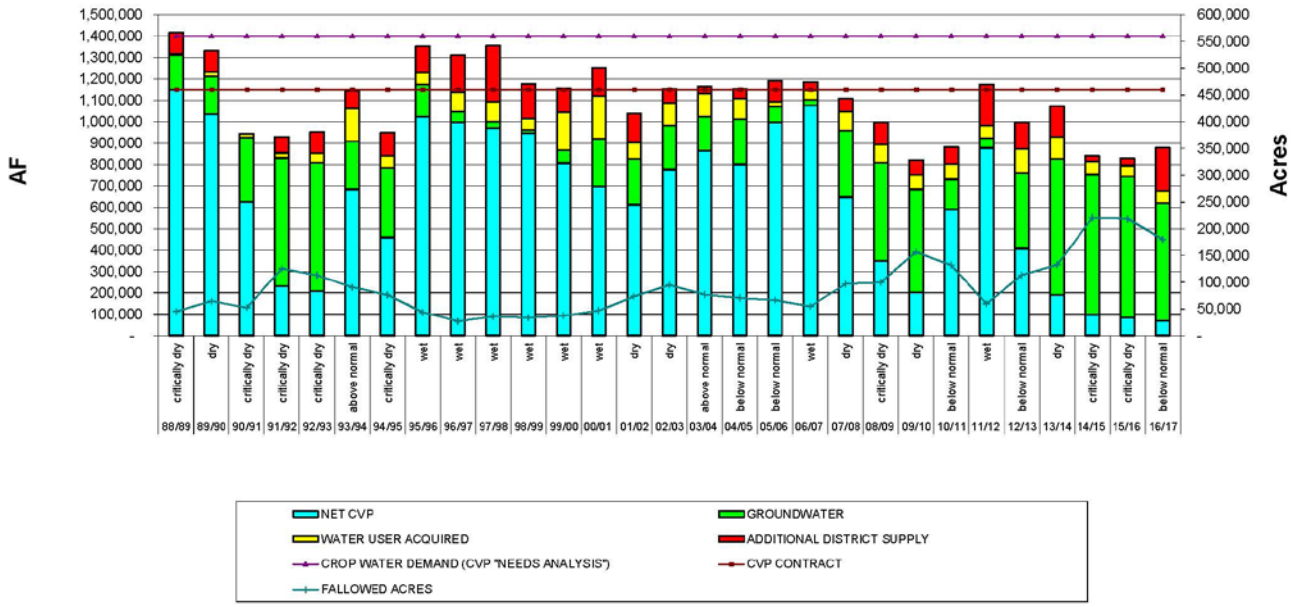

Figure 3 Westlands Available Water Supplies 1988 through 2016 (Source: Westlands 2017)

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 2016 are included in Table 10.

Table 10 Westlands Available Water Supplies in 2016

Source of Water Supply	2016 Amount (acre-feet)
CVP contract supplies (agricultural and M&I)	70,019
2014 Placer County Water Agency water stored in San Luis Reservoir	245,658
State Water Project Water Transfers	45,266
Mendota Pool groundwater transfers	18,237
In-district groundwater	612,00
Mendota Pool Exchange Agreements	21,301
Transfer of Panoche Water District's pre-1914 water supplies under Warren Act	4,687
Transfers and Exchanges with other CVP contractors	66,755
Total	

Source: Westlands 2017b

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.

THIS PAGE LEFT INTENTIONALLY BLANK

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft FONSI and 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.

Reclamation has initiated consultation with the 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). 2017. Air Quality Standards and Attainment Status. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed: March 13, 2017.

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: http://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_projdetails.cfm?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_projdetails.cfm?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_projdetails.cfm?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_projdetails.cfm?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: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?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.

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: http://sgma.water.ca.gov/portal/gsa/print/40. Accessed: March 13, 2017.

California Employment Development Department. 2017. Links to LMI by County. Website: http://www.labormarketinfo.edd.ca.gov/data/interactive-labor-market-data-tools.html. Accessed: March 7, 2017.

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: http://www.water.ca.gov/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: http://www.scv-habitatplan.org/www/site/alias__default/346/final_habitat_plan.aspx.

Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: Synthesis Report. Website: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

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. 2017. About the District – Making Progress. Website: http://www.valleyair.org/General_info/aboutdist.htm. Accessed: March 13, 2017.

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. 2013. Water Supply. Website: http://www.valleywatercompplan.org/water_supply.

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: http://www.water.ca.gov/waterplan/docs/cwpu2013/Final/04_Vol1_Ch03_Ca_Water_Today.pdf.

State of California Employment Development Department. 2017. 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: January 2017.

U.S. Census Bureau. 2017a. QuickFacts – California. Website: https://www.census.gov/quickfacts/table/PST045216/06. Accessed: March 7, 2017.

U.S. Census Bureau. 2017b. American Fact Finder. Website: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed: March 7, 2017.

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). 2017. Endangered Species Lists. Website: http://ecos.fws.gov/ipac/. Accessed: March 9, 2017.

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). 2016. Crop reports. http://wwd.ca.gov/news-and-reports/crop-acreage-reports/.

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