

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Cross-Valley Contractors Interim Renewal Contracts

EA-12-048



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

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

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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the draft Environmental Assessment (EA) and draft Finding of No Significant Impact between September 4, 2013 and October 4, 2013. Four sets of comments were received during the comment period: from Arvin-Edison Water Storage District (AEWSD), from North Coast Rivers Alliance, from the U.S. Fish and Wildlife Service (USFWS), and from a Coalition of interest groups. The comments and Reclamation's responses may be found in Appendix A. Changes from the draft EA that are not minor editorial changes are indicated by vertical lines in the left margin of this document.

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 Central Valley Project (CVP) authorizations 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, 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 Sacramento-San Joaquin River Delta (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. The USFWS became a co-lead agency to the PEIS in August 1999. An extended comment period closed on April 17, 1998. Reclamation and the USFWS released the Final PEIS in October 1999 (Reclamation 1999) and the Record of Decision (ROD) in January 2001. The CVPIA PEIS considered a No Action Alternative, five Main Alternatives, including a Preferred Alternative, and fifteen Supplemental Analyses. The alternatives included implementation of the following programs/provisions:

- 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 addressing 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 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.

Interim renewal contracts (IRCs) 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 contracts as required by the CVPIA. The IRCs reflect current Reclamation Law, including modifications resulting from the Reclamation Reform Act and applicable CVPIA requirements. The initial IRCs were negotiated in 1994 with subsequent renewals for periods not to exceed three years to provide continued water service. Many of the anticipated long-term contract renewal provisions contained in the description of the PEIS Preferred Alternative were incorporated into the IRCs.

The PEIS did not analyze site-specific impacts of contract renewal but rather CVP-wide impacts of long-term contract renewal. Consequently, as contract renewal negotiations were completed, Reclamation prepared environmental documents that tiered from the PEIS to analyze the local effects of contract renewals at the division, unit, or facility level. Tiering is defined as the coverage of general matters in broader environmental impact statements with site-specific environmental analyses for individual actions. This environmental analysis for the IRCs has 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. The PEIS analyzed the differences in the environmental conditions between existing contract requirements (signed prior to CVPIA) and minimum implementation of the CVPIA.

The Cross Valley Canal (CVC) is a locally-owned canal that was constructed in the mid-1970s through a collaborative effort of several local, state and federal water agencies. The CVC allows water to be conveyed between the California Aqueduct (Aqueduct) and the Friant-Kern Canal (FKC). Beginning in 1975, the first Cross Valley (CV) contractors entered into three-party contracts with Reclamation and Department of Water Resources (DWR). Pursuant to these contracts, Reclamation provided long-term water service and DWR provided conveyance for the CV contractors.

Although the CV contractors are situated on the eastside of the San Joaquin Valley amongst the Friant Division CVP contractors (who receive their CVP supplies stored in Millerton Lake via the FKC), the CV contractors' CVP water is pumped from the Delta by DWR and/or Reclamation. Due to direct conveyance hurdles, Reclamation envisioned that the CV contractors would obtain their CVP supplies via exchanges. The exchange arrangements are set forth in Article 5(a) of the CV contractor's water service contract, which in part states that "...the parties acknowledge that Project Water furnished to the Contractor...shall be delivered to the Contractor by direct delivery via the CVC and/or by exchange arrangements involving Arvin-Edison Water Storage District (AEWSD) or others. The parties further acknowledge that such arrangements are not transfers subject to Section 3405(a) of the CVPIA."

Table 1-1 identifies the seven Cross Valley (CV) contractors, their subcontractors (if any), and whether or not they also have a Friant Division CVP contract.

Table 1-1 List of Cross Valley Contractors

¹ County of Fresno
² County of Tulare
⁴ Hills Valley Irrigation District
^{3,4} Kern Tulare Water District
⁴ Lower Tule River Irrigation District
Pixley Irrigation District
⁴ Tri-Valley Water District
¹ County of Fresno includes Fresno County Service Area #34 ² County of Tulare subcontractors include Alpaugh Irrigation District, Atwell Water District, Hills Valley Irrigation District, Saucelito Irrigation District ⁴ , Stone Corral Irrigation District ⁴ , City of Lindsay ⁴ , Strathmore Public Utility District, Styrotek, Inc., and City of Visalia ³ Kern Tulare Water District and Rag Gulch Water District consolidated on January 1, 2009. ⁴ Lower Tule River Irrigation District, Saucelito Irrigation District, Stone Corral Irrigation District, Tri-Valley Water District, Kern-Tulare Water District, Hills Valley Irrigation District, and City of Lindsay receive CVP water under more than one contract, either as a Friant and/or CV Contractors.

The current IRCs for the CV contractors expire on February 28, 2014. The CV contractors and Reclamation are now evaluating the renewal of the IRCs for another two-year period following expiration of the contracts in 2014.



Figure 1-1 Overall Project Area
(Source: Entrix 2009, as presented in Lower Tule River Irrigation District 2013)

1.2 Reclamation's Legal and Statutory Authorities, Jurisdiction, and Related Environmental Documents Relevant to the Proposed Federal Action

Several Federal laws, permits, licenses, policy requirements, and past environmental documents have directed, limited or guided the National Environmental Policy Act (NEPA) analysis and decision-making process of this EA and include the following:

Reclamation Reform Act

The Reclamation Reform Act of 1982 applies to all irrigation land within an irrigation/water district which has a water service contract with Reclamation and is subject to the acreage limitations, reporting, and full-cost provisions of Reclamation law. Under the provisions of the Reform Act, acquisition of irrigation water by exchange shall not subject non-CVP users of such water to Federal Reclamation law and the associated rules and regulations.

Programmatic Environmental Impact Statement for the CVPIA

The PEIS was prepared pursuant to regulations implementing the NEPA by Reclamation and the USFWS for the Department of the Interior to analyze the direct and indirect impacts and benefits of implementing various provisions of the CVPIA in the Central Valley and coastal areas of California over a 30-year study period. The PEIS was finalized in October 1999 and a ROD was signed in January 2001.

Programmatic Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP

The USFWS issued the Programmatic Biological Opinion (BO) on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP (Programmatic BO) (File Number 1-1-98-F-0124) in November 2000 (USFWS 2000). The Programmatic BO presumed the renewal of all existing CVP contracts, and documented nine major areas of commitment covering such considerations such as facility operations, water conveyance, habitat augmentation and others. These commitments and other considerations were the basis of a Programmatic BO finding of "No Jeopardy" to protected species. In addition, the Programmatic BO outlined processes to streamline Endangered Species Act (ESA) compliance and manage circumstances where insufficient information is available to estimate take or make an impact determination.

Biological Opinions for the Continued Long-term Operation of the CVP and SWP

Reclamation and DWR have engaged in ongoing consultation with the USFWS and National Marine Fisheries Service (NMFS) concerning operation of the CVP and State Water Project (SWP). In 2004 the USFWS issued a BO (BO 1-1-04-F-0140) for delta smelt (*Hypomesus transpacificus*), and in 2005 issued another BO (BO 1-1-05-F-0055) for impacts to smelt habitat. In 2006, the southern distinct population of North American green sturgeon was listed as threatened, prompting another round of consultation with USFWS and NMFS. This resulted in BOs issued by NMFS in 2009 and USFWS in 2008 (File No. 08-F-1481-5, USFWS 2008) for the effects of the continued long-term operation of the CVP/SWP. The terms of the current BO are now under review as a result of court remand.

Biological Opinion on Bureau of Reclamation Long-Term Contract Renewal of Friant Division and Cross Valley Unit Contractors

USFWS issued a BO in October of 1991, amended in May of 1992, which stated that renewal of the 28 long-term Friant Division CVP contracts would not likely jeopardize the continued existence of 15 threatened and endangered species in the affected portions of the Friant service area (USFWS 1991, 1992). This determination was predicated on Reclamation implementing short- and long-term conservation programs to mitigate the adverse impacts of continued CVP water delivery to the Friant Division. The program also committed the USFWS to participate by providing technical assistance and developing the revised recovery plans needed for the timely resolution of listed species concerns.

In 2001, the USFWS issued another BO (File Number 1-1-01-F-0027; Long-Term Contract Renewal [LTCR] Biological Opinion), which concluded that renewal by Reclamation of water service contracts with the Friant Division and CV Units of the CVP for 25 years was not likely to jeopardize 34 listed species. However, transfers and/or exchanges involving Friant Division or CV contractors were not addressed by the LTCR Opinion. In addition, the LTCR Opinion did not address some of the species and critical habitats covered in this EA, because their listings/designations occurred after the BO was issued. These species and critical habitats are: the vernal pool fairy shrimp, the vernal pool tadpole shrimp, all critical habitats for vernal pool species, and critical habitat for the California tiger salamander.

Biological Opinion on the Operations and Maintenance Program on Bureau of Reclamation Lands within the South-Central California Area Office (SCCAO)

The USFWS issued a BO (1-1-04-F-0368), dated February 17, 2005, for routine O&M activities on SCCAO lands in San Joaquin, Stanislaus, Merced, Madera, Fresno, Santa Clara, San Benito and Contra Costa counties (USFWS, 2005). The 2005 BO addressed potential adverse effects on the California tiger salamander, vernal pool fairy shrimp, valley elderberry longhorn beetle, blunt-nosed leopard lizard, vernal pool tadpole shrimp, San Joaquin woolly-threads, California red-legged frog, giant garter snake, San Joaquin kit fox, and proposed critical habitat for California tiger salamander, and California red-legged frog. Additionally, the USFWS concurred that the Proposed Action was not likely to adversely affect the conservancy fairy shrimp, longhorn fairy shrimp, succulent owl's-clover and its critical habitat, Hoover's spurge and its critical habitat, the giant kangaroo rat, California condor, bald eagle, delta smelt, San Joaquin adobe sunburst, California clapper rail, salt marsh harvest mouse, Greene's tuctoria and its critical habitat, San Joaquin Valley Orcutt grass and its critical habitat and critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp.

Cross Valley Unit Long-Term Contract Renewal Final EA

A Finding of No Significant Impact (FONSI) and Final EA, *Cross Valley Unit Long-Term Contract Renewal*, dated January 19, 2001 (Reclamation 2001a) was prepared by Reclamation to analyze the impacts associated with the renewal of a long-term (25 years) water service contract with the CV contractors. Reclamation determined that further biological analysis was needed, and began analysis for a Supplemental EA and FONSI. Once ESA compliance is completed on the continued long-term operation of the CVP and SWP, Reclamation will update the existing draft environmental documents in anticipation of renewing CV contractors' IRCs.

Cross Valley Interim Renewal Contracts

Previous IRCs were executed to provide a bridge between expiring IRCs and long-term water service contracts per the CVPIA. Since ESA compliance is currently on-going regarding the potential impacts of operating the CVP, Reclamation has historically executed IRCs with the CV contractors, which were analyzed in the following EAs and supplemental EAs (SEAs):

- 2012 EA, which covered Contract Years 2012 and 2013 (Reclamation 2012);
- 2010 EA, which covered Contract Years 2010 and 2011 (Reclamation 2010);
- 2008 EA, which covered Contract Years 2008 and 2009 (Reclamation 2007);
- 2006 SEA, which covered Contract Years 2006 and 2007 (Reclamation 2006);
- 2004 SEA, which covered Contract Years 2004 and 2005 (Reclamation 2004);
- 2002 SEA, which covered Contract Years 2002 and 2003 (Reclamation, 2002);
- 2001 SEA, which covered Contract Year 2001 (Reclamation 2001c);
- 2000 SEA, which covered Contract Year 2000 (Reclamation 2000);
- 1998 SEA, which covered Contract Years 1998 and 1999 (Reclamation 1998); and
- 1994 EA, which covered Contract Years 1994 through 1997 (Reclamation 1994).

Article 5 Exchanges

The CV contractors rely on exchanges with AEWS and/or others in order to receive their CVP water supply from the Delta. These are known as “Article 5 exchanges” for the location of their authorizing language in the long term contracts (see Appendix B). They have been most recently approved in the following EAs:

- 2010 EA, which covered Contract Years 2010 and 2011 (Reclamation 2010a);
- 2009 EA, which covered Contract Year 2009;
- 2008 EA, which covered Contract Year 2008;
- 2007 EA, which covered Contract Year 2007;
- 2006 EA, which covered Contract Year 2006; and
- 2005 EA, which covered Contract Year 2005.

For the first time in 2012, Article 5 Exchanges were incorporated into the EA for the IRCs rather than as a separate EA. This change was made because the two elements are interrelated and it was determined that a combined EA presents a clearer explanation of the overall project.

1.3 Need for the Proposed Action

Environmental documents for long-term contract renewal with the CV Contractors have not been completed, as ESA consultation for the CVP/SWP Coordinated Operations is on-going. The existing IRCs for the CV contractors are set to expire on February 28, 2014 and need to be renewed to maintain service until such time as long-term water service contracts can be executed. Due to geographic differences between the CV contractors’ water supplies and their respective service areas, the Article 5 exchange arrangements are needed in order for the CV contractors to ultimately receive their water supplies.

The purpose of the IRCs, as directed by the CVPIA, are to continue providing water service to the CV contractors who provide water service to their customers, which helps to sustain the regional economy, and in particular the agricultural sector of the economy. The purpose of the Article 5 exchanges is to continue providing a streamlined approval process and mechanism for water delivery to the CV contractors on a demand schedule such that water users have the ability to take delivery of their supplies in large quantities in a timely manner.

1.4 Scope

This EA analyzes the potential direct, indirect, and cumulative impacts resulting from the Proposed Action as well as the effects of the No Action Alternative.

Diversion of water from the Delta is an on-going action, governed by a series of water service and conveyance contracts. The eight water service contracts proposed for interim renewal are listed in Table 2-1. These eight IRCs would be renewed for a two-year period from March 1, 2014 through February 29, 2016. When a new long-term water service contract is executed for each CV contractor, the then-in-effect IRC would be superseded by the long-term water service contract and long-term conveyance agreement after appropriate environmental review is completed by Reclamation and DWR.

The Article 5 exchange arrangements would be approved for a two-year period to coincide with the IRC. Up to 128,300 acre-feet (AF) per year (AF/y) of the CV contractors' contractual CVP water supply from the Delta would be allowed to be exchanged for Friant Division CVP supplies and other sources (other sources of water include rivers, streams, creeks, groundwater, and SWP water). The CV contractors and potential exchange partners (other CVP contractors and non-CVP contractors) are all located within Fresno, Tulare, Kings, and Kern counties. This EA covers the broadest flexibility for Article 5 exchange arrangements known at this time. Proposals for new exchange arrangements not covered in this environmental review process would require additional, separate and/or tiered environmental review to cover the site specific proposal and analysis of environmental impacts to the human environment.

1.5 Issues Related to CVP Water Use Not Analyzed

1.5.1 Contract Service Areas

No change to any contractor's service area is part of the Proposed Action. Any request by a CV contractor to change its existing service area would be a separate action. Separate appropriate environmental compliance and documentation would be completed before Reclamation approves a land inclusion or exclusion to any CVP contractor's service area. No service area boundaries would be changed as a result of the Proposed Action.

1.5.2 Purpose of Water Use

Use of contract water for agricultural irrigation use or municipal and industrial (M&I) use under the proposed IRCs would not change from the purpose of use specified in the existing contracts. However, consistent with current conditions the amount and types of crops planted would vary according to the annual water allocation and farming practices, and a small quantity of irrigation

use may be changed to M&I purposes where the existing contract and governing laws and regulations allow.

1.5.3 Contract Assignments

Contract assignments between CVP contractors could occur; however, such an assignment is considered a separate action and would require appropriate environmental review and Reclamation approval. The Proposed Action includes renewing the existing IRCs with the contract amounts as they are currently stated. Since the last round of IRCs, Tri-Valley Water District, Kern Tulare Water District, and Hills Valley Irrigation District have negotiated contract assignments from Friant Division contractors.

1.5.4 North of Delta Water Actions

Water resources north of the Delta, including the Trinity, Sacramento and American rivers are beyond the scope of this EA, as they have been evaluated elsewhere. The PEIS analyzed the region-wide and cumulative impacts of the CVPIA, including the renewal of CVP water service contracts. The diversion of water for delivery under the interim contracts is an on-going action and the current conditions of that diversion are analyzed in the PEIS. Water deliveries south of the Delta are not made until all legal requirements have been met north of the Delta.

1.6 Resources of Potential Concern

This EA analyzed the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct and indirect impacts and cumulative effects to the following resources:

- Water Resources
- Land Use
- Biological Resources
- Socioeconomic Resources
- Environmental Justice
- Cultural Resources
- Indian Trust Assets
- Indian Sacred Sites
- Air Quality
- Global Climate

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Section 2 Alternatives Considered

For purposes of this EA, the following parameters are included as part of each alternative:

- Each CV contractor would have a separate IRC;
- A two-year interim renewal period is considered in the analysis, though contracts may be renewed for a shorter period;
- Each IRC would be superseded by long-term water service or conveyance contracts if such contracts are approved (after appropriate environmental review and Reclamation approval) during the interim renewal period;
- Each IRC would be renewed with existing contract quantities as reflected in Table 2-1 below;
- Reclamation would continue to comply with existing commitments made or requirements imposed by applicable environmental documents for other approved actions, such as existing BOs, including any obligations imposed on Reclamation resulting from re-consultations; and
- Reclamation would implement obligations resulting from current and future Court Orders issued in actions challenging applicable environmental documents that take effect during the interim renewal period.

Table 2-1 Interim Renewal Contracts Proposed for Renewal

Contractor	Contract Quantity (AF/y)	Purpose of Use	Existing IRC #	Expiration Date
Fresno, County of	3,000	Agriculture and M&I	14-06-200-8292A-IR14	2/28/2014
Hills Valley Irrigation District	3,346	Agriculture and M&I	14-06-200-8466A-IR14	2/28/2014
Kern-Tulare Water District (KTWD)	40,000	Agriculture and M&I	14-06-200-8601A-IR14	2/28/2014
Kern-Tulare Water District (Rag Gulch Water District)	13,300	Agriculture and M&I	14-06-200-8367A-IR14	2/28/2014
Lower Tule River Irrigation District	31,102	Agriculture and M&I	14-06-200-8237A-IR14	2/28/2014
Pixley Irrigation District	31,102	Agriculture and M&I	14-06-200-8238A-IR14	2/28/2014
Tri-Valley Water District	1,142	Agriculture and M&I	14-06-200-8565A-IR14	2/28/2014
Tulare, County of	5,308	Agriculture and M&I	14-06-200-8293A-IR14	2/28/2014
Total	128,300			

2.1 No Action Alternative

The No Action Alternative evaluated in this EA is the execution of up to eight IRCs between Reclamation and the CV contractors listed in Table 2-1, with terms and conditions modeled after the Preferred Alternative of the CVPIA Final PEIS, adapted to apply for an interim period. Therefore, the No Action Alternative is the continued delivery of CVP water under the IRCs which include terms and conditions required by non-discretionary CVPIA provisions for long-term contracts.

The CVPIA PEIS Preferred Alternative assumed that most contract provisions would be similar to many of the provisions in the 1997 CVP IRC, which included contract terms and conditions consistent with applicable CVPIA requirements. The only CVPIA provision which was incorporated into the Preferred Alternative of the Final PEIS and included in the No Action Alternative but has not been incorporated into the previous eight IRCs for the seven contractors is tiered water pricing.

The CVPIA required the implementation of a tiered water pricing component for contracts with terms longer than three years. The tiered pricing component is the incremental amount to be paid for each AF of water delivered, and includes charges for water that would be collected and paid into the Restoration Fund. In general this involves one rate charged for water volumes up to 80% of the contract total, another rate for volumes between 80% and 90% of the contract total, and a third rate for water volumes from 90% to 100% of the contract total. This is known as the 80/10/10 pricing structure.

2.1.1 Article 5 Exchanges

Under the No Action Alternative, historical exchanges between AEWSD and the CV contractors to allow delivery of the CV contractors' contract supplies could continue as in the past. Some of the CV contractors who do not have existing exchange agreements would have to transfer their water as in the past or develop new exchange arrangements, which would require separate Contracting Officer approval and environmental analysis on a case-by-case basis. The delays caused by this process could make it difficult to deliver water in the time period in which it is most useful to the customer.

2.2 Proposed Action

In accordance with and as required by Section 3404(c) of the CVPIA, Reclamation proposes to execute IRCs with the CV contractors. There are up to eight contracts involved in this action because the Kern-Tulare Water District consolidated their boundaries with the Rag Gulch Water District, resulting in two separate IRCs for the Kern-Tulare Water District.

The interim renewal of the CV contracts discussed in this EA represents a portion of the continuing operations of the CVP and as noted, was an action considered in the PEIS pending execution of long-term contracts. Renewal of the contracts is required by Reclamation Law, including the CVPIA, and continues the current use and allocation of resources by CV contractors, within the framework of implementing the overall CVPIA programs.

The Proposed Action includes two components: 1) execution of up to eight IRCs with the seven CV contractors for another two-year interim renewal period and 2) approving the CV contractors' Article 5 exchange arrangements with individually proposed exchange partners to coincide with the IRCs.

2.2.1 Execution of Interim Renewal Contracts

The Proposed Action involves the execution of up to eight IRCs between Reclamation and the CV contractors listed in Table 2-1. These contracts are the same eight included in the No Action Alternative. All seven of the CV contractors have an existing IRC, which will expire on

February 28, 2014, and all have had several IRCs executed prior to their existing IRC. The CV contractors are currently in their fourteenth IRC and the proposed renewal would be the fifteenth. The Proposed Action would continue these existing IRCs, with only minor, administrative changes to the contract provisions to update the previous IRC for the new contract period. In the event that a new long-term water contract is executed, that IRC would be superseded.

No changes to any of the CV contractor's respective service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the eight proposed IRCs can only be used within each designated contract service area. The proposed 2014 IRC quantities would also remain the same as in the existing IRCs. Water can be delivered under the IRCs in quantities up to the contract total, although it is likely that deliveries would be less than the contract total.

Comparison of Proposed Action and No Action Alternative

The primary difference between the Proposed Action and the No Action Alternative regarding the IRCs is that the Proposed Action does not include tiered pricing. Section 3405(d) of the CVPIA does not require tiered pricing to be included in contracts of three years or less in duration. Therefore water pricing would be at a fixed rate even if contract quantities delivered exceed 80%, the threshold which would trigger incremental rate modifications under a tiered pricing system.

2.2.2 Article 5 Exchange Arrangements

In addition, Reclamation proposes to approve the CV contractors' exchange arrangements with individually proposed exchange partners for the 2014 and 2015 contract years (March 1, 2014 through February 29, 2016) for up to the full CV contractors' CVP contract supply of 128,300 acre-feet per year (AF/y). The Proposed Action would also include the continued historical exchanges between the CV contractors and AEWS. See Appendix C for a list of possible exchange contractors.

Due to varying hydrological conditions, loss due to evaporation and/or seepage, differences in the value of water, and/or timing, imbalanced exchanges could occur. Consistent with historical practices, imbalanced exchange arrangements (meaning that the volumes of water exchanged are not equal) would be permitted up to a maximum ratio of 2:1. Proposed exchange arrangements exceeding this volume ratio would require additional environmental review and approval. See Appendix D for more information on potential imbalanced exchange scenarios.

Article 55 of SWP contracts allows for DWR to convey non-SWP water for SWP Contractors within available capacity in the Aqueduct. Under this scenario, a SWP contractor could request DWR to convey a CV contractor's CVP water, if capacity exists, in the Aqueduct.

CVP water is tracked from its origin to its final disposition (end use) and does not lose its Federal characteristics under California water rights permits. Water supplies would be used in compliance with the applicable water rights permits and would conform to the applicable purpose and place-of-use of the associated water rights permit.

2.3 Alternatives Considered but Eliminated

2.3.1 Non-renewal of Interim Renewal Contracts

Section 1(4) of the “Administration of Contracts under Section 9 of the Reclamation Project Act of 1939” dated July 2, 1956 provided for the rights of irrigation contractors to a stated quantity of the project yield for the duration of their contracts and any renewals thereof provided they complied with the terms and conditions of those contracts and Reclamation law. Section 2 of the “Renewal of Water Supply Contracts Act of June 21, 1963” provided the same for M&I contractors. Therefore, Reclamation does not have the discretionary authority to not renew CVP water service contracts. Reclamation law mandates renewals at existing contract amounts when the water is being beneficially used. The non-renewal alternative was considered, but eliminated from analysis in this EA because Reclamation has no discretion not to renew existing water service contracts.

2.3.2 Reduction of Interim Renewal Contract Quantities

Reduction of contract water quantities due to delivery constraints on the CVP system was considered in certain cases, but eliminated from the analysis of the eight IRCs for several reasons:

First, the Reclamation Project Act of 1956 and the Reclamation Project Act of 1963 mandated renewal of existing contract quantities when beneficially used. Irrigation and M&I uses are beneficial uses recognized under federal Reclamation and California law. Reclamation has determined that the contractors have complied with contract terms and the requirements of applicable law. It also has performed water needs assessments for all the CVP contractors to identify the amount of water that could be beneficially used by each water service contractor. In the case of each IRC contractor, the contractor’s water needs equaled or exceeded the current total contract quantity.

Second, the analysis of the PEIS resulted in selection of a Preferred Alternative that required contract renewal for the full contract quantities and took into account the balancing requirements of CVPIA (Reclamation 1999, p. 25). The PEIS ROD acknowledged that contract quantities would remain the same while deliveries are expected to be reduced in order to implement the fish, wildlife, and habitat restoration goals of the Act, until actions under CVPIA 3408(j) to restore CVP yield are implemented (Reclamation 1999, pp. 26-27). Therefore, an alternative reducing contract quantities would not be consistent with the PEIS ROD and the balancing requirements of CVPIA.

Third, the shortage provision of the water service contract provides Reclamation with a mechanism for annual adjustments in contract supplies. The provision protects Reclamation from liability from the shortages in water allocations that exist due to drought, other physical constraints, and actions taken to meet legal or regulatory requirements. Reclamation has relied on the shortage provisions to reduce contract allocations to IRC contractors in most years in order to comply with Section 3406(b)(2) of the CVPIA. Further, CVP operations and contract implementation, including determination of water available for delivery, is subject to the requirements of BOs issued under the federal ESA for those purposes. If contractual shortages

result because of such requirements, the Contracting Officer has imposed them without liability under the contracts.

Fourth, retaining the full historic water quantities under contract provides the contractors with assurance the water will be made available in wetter years and is necessary to support investments for local storage, water conservation improvements and capital repairs.

Therefore, an alternative reducing contract quantities would not be consistent with Reclamation law or the PEIS ROD, would be unnecessary to achieve the balancing requirements of CVPIA or to implement actions or measure that benefit fish and wildlife, and could impede efficient water use planning in those years when full contract quantities can be delivered.

2.3.3 Environmental Commitments

Reclamation and the proponents would implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (Table 2-1). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of all reports would be submitted to Reclamation.

Table 2-2 Environmental Protection Measures and Commitments

Resource	Protection Measure
Land Use/Habitat	No native or untilled land (fallow for three consecutive years or more) may be cultivated with this water.
Multiple	No new construction or modification of existing facilities would take place as part of the Proposed Action.
Water	No changes in the point of diversion or places-of-use would be allowed without prior approvals from the State Water Resources Control Board, Reclamation, and/or DWR as applicable.
Water	Exchanges must not alter the quality of water, or the hydrological regime of natural waterways or natural watercourses such as rivers, streams, creeks, lakes, ponds, pools, or wetlands, etc., in a way that may have a detrimental effect on fish or wildlife or their habitat.
Water	Reclamation would review each exchange proposal for compliance prior to approval and execution of the exchange.
Water	Imbalanced exchanges shall not exceed a 2:1 ratio by water volume.

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Section 3 Affected Environment and Environmental Consequences

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

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that neither the Proposed Action nor the No Action Alternative have the potential to cause direct, indirect, or cumulative effects to the following resources:

Table 3-1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Cultural Resources	The Proposed Action does not include construction of new facilities or excavation in undisturbed soil. Reclamation determined that there would be no potential to affect historic properties on March 12, 2013. See Appendix E.
Indian Trust Assets	The Proposed Action does not include construction of new facilities or excavation in undisturbed soil. Reclamation determined that there would be no potential to affect Indian Trust Assets on March 12, 2013. See Appendix E.
Indian Sacred Sites	The Proposed Action would not limit access to ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites, since no new construction or ground disturbing activities would occur as part of the Proposed Action. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Air Quality	The Proposed Action does not include construction or modification of new facilities. While pumping would be necessary to execute some exchanges and transfers, the electricity needed would be similar to the historical baseline. Power would be provided from existing generating facilities operating under a variety of air quality laws and regulations. Air emission trends would be unaffected either by the Proposed Action or the no-action alternative.
Global Climate	The Proposed Action does not include construction or modification of new facilities. While pumping would be necessary to execute some exchanges and transfers, the electricity needed would be similar to the historical baseline. Power would be provided from existing generating facilities operating under a variety of air quality laws and regulations. Air emission trends would be unaffected either by the Proposed Action or the no-action alternative.

3.2 Water Resources

3.2.1 Affected Environment

Central Valley Project Water Supply

Under the CVPIA, water from the CVP is used for agriculture, M&I, fish and wildlife protection, restoration, and mitigation. The greatest demand for irrigation water occurs in mid-to-late summer, as crops mature and crop water use increases. During the winter, farmers use water for frost control and pre-irrigation of fields to saturate the upper soil and for irrigation of permanent

crops. Water flows allocated for fish and wildlife protection vary during the year depending on the seasonal needs of special-status species.

Rivers in the project area are managed for flood control and irrigation similar to canals. Releases from the dams occur in response to high water flows or to meet irrigation demands and minimum flow requirements to benefit fish, wildlife and recreational uses. Typically, minimum flow requirements are maintained while hydrological conditions dictate the amount of water diverted to meet irrigation demands. Telemetric systems are used to record flows and the watermasters coordinate with water districts to open or close their gates for diversions of water on a real-time basis to ensure appropriate flows are maintained throughout the course of the rivers. The timing and locations of diversion vary from year-to-year due to hydrological conditions, fluctuating marketing conditions, transfers and/or exchanges of water. Conveyance actions are subject to available capacity, meeting primary requirements, and environmental reviews.

Reclamation makes CVP water available to contractors for reasonable and beneficial uses, but this water is generally insufficient to meet all of the contractors' needs.

Contractor Water Needs Assessments

Water needs assessments have been performed for most CVP contractors. Water needs assessments confirm a contractor's past beneficial use and determine future CVP water supplies needed to meet the contractor's anticipated future demands (see Table 3-2). If the negative amount (unmet demand) is within 10% of a contractor's total supply for contracts of greater than 15,000 AF/y, or within 25% for contracts less than or equal to 15,000 AF/y, the test of full future need of the water supplies under the contract is deemed to be met. Because the CVP was initially established as a supplemental water supply for areas with inadequate supplies, the needs for most contractors were at least equal to the CVP water service contract and frequently exceeded the previous contract amount. Increased total contract amounts were not included in the needs assessment because the CVPIA stated that Reclamation cannot increase contract supply quantities.

The analysis for the Water Needs Assessment did not consider that the CVP's ability to deliver water has been constrained in recent years and may be constrained in the future because of many factors, including hydrologic conditions and implementation of federal and state laws. The likelihood of contractors actually receiving the full contract amount in any given year is uncertain. No new water needs assessments are anticipated.

Table 3-2 Water Needs Assessment

Contractor	2025 Project Unmet Demand (AF)
County of Fresno	1,122
County of Tulare	Water Needs Assessment not required ¹
Hills Valley Irrigation District	3,092
Kern-Tulare Water District	7,517
Lower Tule River Irrigation District	23,318
Pixley Irrigation District	112,507
Tri-Valley Water District	Water Needs Assessment not required ²
¹ The ten subcontractors for the County of Tulare each have less than the minimum irrigable acreage required for completion of a Water Needs Assessment	

²Tri-Valley Water District has less than the minimum irrigable acreage required for completion of a Water Needs Assessment

Cross Valley Contractors

CV contractors are CVP contractors that are geographically located within the Friant Division (see Section 1.1 and Table 1-1). Annual CV contractors' supply allocations are based on Reclamation's south-of-Delta CVP allocations, which are a percentage of each CVP contractors' respective contract total. Water deliveries to the CV contractors are made available by Reclamation in the Delta, and are diverted through the Banks Pumping Plant of the SWP or the Jones Pumping Plant of the CVP. These deliveries can be unpredictable due to operational constraints in the Delta.

The CVC delivers water from the Aqueduct near Taft, California, through a series of six pump lifts to the east side of the San Joaquin Valley near the city of Bakersfield. Delta CV contractors' CVP water supply was designed to be delivered to AEWSD in exchange for a portion of their Friant Division CVP water supply available from Millerton Lake. In order for the CV contractors to obtain their Delta supplies through an exchange with the Friant Division Contractors, the runoff on the San Joaquin River must be sufficient to declare a full Class 1 and a minimum percent of Class 2 supply. If these conditions are not met, the CV contractors do not have the ability to exchange their CV supplies. These combined conditions result in higher overall costs of water for the CV contractors compared to neighboring Friant Division contractors.

Friant Division CVP Contractors and non-CVP Contractors

Friant CVP contractors are located on the eastern side of the San Joaquin Valley and are included in this EA as potential exchange partners under the Article 5 exchanges. CVP water for these contractors comes from Millerton Lake via the FKC or the Madera Canal. Water conveyed to these contractors is categorized as Friant Class 1 or Class 2 water depending on its reliability and allocation circumstances.

It is anticipated by February 28, 2014, four assignment contracts will be executed between the following contractors:

- Lewis Creek Water District assignment to Hills Valley Irrigation District of 250 AF of Class 1 water
- Tea Pot Dome Water District assignment to Saucelito Irrigation District of 300 AF of Class 1 water
- Porterville Irrigation District assignment to Hills Valley Irrigation District of 1,000 AF of Class 1 water
- Exeter Irrigation District assignment to Tri-Valley Water District of 400 AF of Class 1 water

There are a total of 33 Friant Division CVP contractors. Of the 33, 23 have been identified as potential exchange partners, although others may be added later if additional assignments are executed. Contractors and exchange partners are listed and described in Appendix C.

Groundwater Resources

Usable groundwater storage capacity has been estimated to be approximately 24 million AF for the San Joaquin River Hydrologic Region and 28 million AF for the Tulare Lake Hydrologic Region, the two hydrologic regions overlain by the CV contractors and most of the potential exchange partners.

Recharge of the area's aquifers is primarily derived from streams and canals, infiltration of applied water, subsurface inflow and, to a limited extent, precipitation in the valley floor. In wetter years the groundwater stores are recharged, and in dry years groundwater levels drop. Groundwater levels, available supplies and safe yield are difficult to quantify due to variances in soil types, geography and subsurface groundwater gradients. Generally the groundwater safe yield is estimated to be approximately 1 AF per acre of land, but under certain conditions, some locations may have a safe yield as low as 0 AF. Over the long term, DWR has estimated the total safe perennial yield to be approximately 3.3 million AF for the San Joaquin River Hydrologic Region and 4.6 million AF for the Tulare Lake Hydrologic Region. Overdraft of groundwater is a region-wide problem throughout the lower San Joaquin Valley and although ameliorated to some extent by the import of surface water, all hydrologic basins in the San Joaquin Valley continue to be overdrafted.

Conveyance Facilities and Waterways

Facilities and waterways involved with the exchanges under consideration include:

- The Banks and Jones Pumping Plants
- The FKC
- The SLC/Aqueduct
- The CVC
- The Kern Water Bank Canal
- The O'Neill Forebay
- The Kings, St. Johns, Tule, Kaweah and Kern Rivers
- Various small local creeks and streams
- Various facilities within each exchange partner's internal distribution system

More information on these facilities is available in Appendix F. The proposed exchanges would not involve any modifications to these existing facilities and waterways.

3.2.2 Environmental Consequences

No Action

Interim Renewal Contracts Under the No Action Alternative, the tiered pricing structure described in Section 2.1 would be applied, resulting in higher water rates in years when allocations exceed 80% of contract quantities. According to the most recent modeling, this would happen approximately 22 to 24% of the time, meaning that tiered pricing would be used only once out of every four to five years.

Since water supplies do not typically meet demands for most of the IRC contractors, they are very active on the water market purchasing additional water. Many of the contractors' service

areas are planted in permanent crops, and in very dry years they have shown a willingness to pay rates above what would be expected in a tiered pricing structure, to preserve their crop planting investment. Therefore it is not expected that switching to a tiered pricing structure would prompt CV contractors to change water use patterns.

In certain years the CV contractors purchase or exchange additional water supplies beyond what is allocated in accordance with historic water rights. These additional supplies could come from San Luis Reservoir, the Delta, or Friant. The purchases or exchanges do not represent a new water source, but rather, part of the water supply described and evaluated in the PEIS. No diversions beyond the contract totals would be authorized under either alternative.

Article 5 Exchanges Under the No Action Alternative, exchanges would be reviewed and approved on a case-by-case basis. Each exchange would undergo individual environmental and administrative review. The same volume of water could theoretically be exchanged as under the Proposed Action, but the individual administrative review of each exchange action would delay delivery of water and increase cost to the CV contractors.

Groundwater Under the No Action Alternative, surface water would become more expensive and less convenient to transfer to areas where it is needed from areas where it is available. This could prompt water users to determine that groundwater pumping is a more cost-effective or timely way of meeting their needs than buying or exchanging water on the open market. This would exacerbate existing overdraft conditions.

Tiered pricing is unlikely to affect demand on groundwater resources. This is because tiered pricing would only be used in relatively wet years, when allocations exceed 80% of contract amounts. Tiered pricing would not be in effect in dryer years when limited surface water supplies could make groundwater pumping more attractive.

Proposed Action

Interim Renewal Contracts Impacts to water resources associated with the Proposed Action would be comparable to those described under the No Action Alternative. Renewal of the IRC with only minor administrative changes to the contract provisions would not result in a change in contract water quantities or a change in water use. Water delivery during the IRC period would not exceed historic quantities. Therefore, there would be no effect on surface water supplies or quality.

The delivery of the same quantities of water under the IRCs that have historically been put to beneficial use would not induce growth that would increase water demands. Therefore, the Proposed Action would have no adverse impacts on water resources.

Article 5 Exchanges The O&M of the CVP and SWP were addressed in the CVPIA PEIS and BO for the continued long-term operation of the CVP and SWP included the entire 128,300 AF/y of the CV contractor's water supplies. This water was assumed to be pumped and conveyed in each year for deliveries via exchanges to the CV contractors. The proposed Article 5 exchanges would not result in any changes to diversion from the Delta or pumping and conveyance of water beyond what was already addressed in the CVPIA PEIS and the BO for the continued long-term operation of the CVP and SWP.

The maximum amount of water exchanged would be up to 128,300 AF/y and would be comingled in the conveyance facilities as capacity is available. The water involved in the proposed exchanges is already allocated, and no additional water supplies would be diverted from rivers or lakes. No new construction or points of diversions would be required. However, changes in timing and locations of when and where water is diverted could occur.

Conveyance of CVP water under Article 55 of the SWP contracts in the Aqueduct could result in the CV contractors receiving a higher rank on the SWP hierarchy for pumping. However, Reclamation policy limits the amount of CV contractors' supplies conveyed under Article 55 to be that of each CV contractors' south-of-Delta allocation, to prohibit impact to the CVP as a whole. This prevents impacts to other users of the delivery system from the exchanges being considered.

The value and timing of water supplies is considered in exchange agreements between the parties, since contractors' allocated water may not be available at the time when it is most valuable to them. In lieu of paying a higher price for water when it is exchanged and delivered at a more useful/valuable time, agreements commonly allow for an imbalanced exchange of the CV contractors' water supplies to compensate for the differential value of the exchanged water when it is delivered. These imbalanced exchanges are allowed up to a maximum ratio of 2:1, meaning that half of the water volume exchanged would be delivered, and the remaining half would be retained by the entity executing the exchange. This results in CV contractors receiving less than their contracted/allocated amount. However, receiving a reduced amount of water provides better use and management of the water than receiving supplies outside of the growing season.

Under the Proposed Action, the water management practices for the CV contractors would not change dramatically. CV contractors would receive between 50% and 100 % of their CVP supply when it is needed, without needing case-by-case approval for each exchange. The CV contractors would receive the benefit of having lower priced water with deliveries on a convenient schedule which allows for advanced planning of crops.

The Proposed Action would not contribute to or interfere with flood control management and operations. The Proposed Action and imbalanced exchanges would not increase or decrease the availability of flood water nor inhibit or contribute to decisions to accept or reject this source of water.

Groundwater Because the San Joaquin Valley is in overdraft conditions, water districts strive to discourage groundwater pumping by providing surface water at affordable prices. Making water exchanges more efficient makes surface water sources more cost-effective, which reduces demand on stressed groundwater resources. It also can make groundwater banking more attractive in areas where storage facilities are available. Banking results in a temporary increase in groundwater during wet years, which is then extracted for use in dryer years when surface water sources are expensive or unavailable. Any banking proposal would require separate review and approval.

Cumulative Impacts

Cumulative impacts relating to diversion of water and CVP operations were considered in the CVPIA PEIS. Both the Proposed Action and the No Action Alternative would, in essence maintain the environmental status quo, since the same amount of water would go to the same areas for the same uses (albeit under different legal arrangements). Because the renewals of the contracts under either alternative maintain current conditions, they do not contribute to cumulative impacts in any substantive manner.

In recent years, other exchanges between CV contractors and CVP contractors or other water entities have undergone environmental reviews and short-term approvals. It is anticipated these other exchanges would occur over the term of the CV contractors' future water service contracts. These exchanges, when considered together, are not anticipated to create cumulative impacts beyond those already covered by the PEIS or other environmental evaluations.

3.3 Land Use

3.3.1 Affected Environment

The San Joaquin Valley is one of the world's most productive farming regions, with 2011 agricultural receipts of more than \$20 billion in the four counties of the study area (California Farm Bureau Federation 2011). Leading products include milk, almonds, grapes, cattle and citrus crops.

Cities and smaller agricultural communities are located throughout the area, particularly along major transportation routes. Notable urban centers include Fresno, Bakersfield, Madera and Delano.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, water would still be delivered to individual CV contractors, but each water action would require separate evaluation and approval. This reduced efficiency would have a marginal negative financial impact on water districts and their customers. This could result in isolated decisions to make different investments in crops or infrastructure, but large-scale development patterns would be similar to current conditions.

Proposed Action

The Proposed Action is consistent with current land uses, and would not result in changes in development patterns. No native grasslands or shrub land would be tilled or cultivated. Water would be delivered to established croplands and used for irrigation purposes on lands irrigated within the last three years or for existing M&I uses. Exchange arrangements that result in short-term imbalanced exchanges could result in short-term fallowing of lands until such time as the water is delivered.

All exchanges would occur within existing facilities. Exchanges requiring additional construction to convey the water are not within the scope of this EA and would undergo separate environmental review.

Cumulative Impacts

The trend of development in the San Joaquin Valley is toward gradual urbanization as the population grows and rising home prices encourage residential construction in new areas. Changes in land use are subject to approval by city or county planning agencies and the Local Agency Formation Commission, and changes in water service must be approved by Reclamation. Environmental review is required at each stage of these approvals.

A variety of water service transactions routinely occur within the project area, depending on water availability and demand for crops with different water needs. These water service transactions are for the efficient management of water resources and do not contribute to long-term or reliable water supplies that would result in land use changes. Temporary fallowing of lands could also occur, especially during dry and drought seasons.

These conditions are likely to occur under either the Proposed Action or the No Action Alternative. The Proposed Action is not anticipated to affect the overall land use trends in the San Joaquin Valley, either individually or cumulatively.

3.4 Biological Resources

Due to the size of the Proposed Action's Action Area, the list of endangered, threatened and sensitive species includes species that may occur within the Counties of Fresno, Kings, Tulare and Kern (San Joaquin Valley portion). The species list was obtained from the USFWS's Endangered Species Lists website at http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm on August 20, 2013 (document number: 130315032345). Additional data was obtained in April 2013 from the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDDB). Table 3-3 below contains the above list and includes common and scientific names, current federal listing status, and critical habitats. The list also includes species addressed in the LTRC Opinion such as the riparian brush rabbit and riparian woodrat. Critical habitat exists in the affected environment for the following species: Buena Vista Lake shrew, California condor, California tiger salamander, Hoover's spurge, San Joaquin Valley Orcutt grass, succulent owl's-clover, vernal pool fairy shrimp, and vernal pool tadpole shrimp.

The BOs described in Chapter 1.2 contain more detailed descriptions of biological resources in the contractors' service areas and boundaries. The CVP contractors associated with this Action have already undergone consultation with the USFWS and NMFS and are implementing the measures in the applicable BOs. Kern County has an existing Habitat Conservation Plan for portions of its service area, more specifically for the Kern Water Bank and the Metropolitan Bakersfield area.

Most of the lands in the affected environment are agricultural lands. Of the federally listed species only a few can use this type of land. 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. It may be possible for Tipton kangaroo rats to colonize fallowed lands within as little as eight months when they occur on adjacent habitat. The Fresno kangaroo rat has been reported as being able to colonize fallowed agricultural lands (Culbertson

1946) and Stephens' kangaroo rats have been observed to recolonize land after discing was stopped (Thomas 1975), even within as little as eight months (Moore-Craig 1984). Ornate shrews may reside on actively farmed ground, and/or may have a relatively good ability to disperse (Williams and Harpster 2001). There are two instances in which San Joaquin woolly-threads were found in low densities in areas that had been previously disced, which were adjacent to undisturbed populations (Lewis 1993); the species' primary dispersal method is probably by wind. The Kern mallow, while not an aggressive disperser, has been known to occasionally reinvade disturbed sites, when the species is found on adjacent land (Mitchell 1989 as cited in Service 1998). Kern mallow seeds may be carried by dust devils, which do not seem to necessarily move in the direction of the prevailing wind (E. Cypher, pers. comm.). In 2005, the species was seen at the edges of fallow agricultural fields at the northern edge of Lokern, approximately a meter into the fields, north of occupied habitat; the interiors of the fields were not surveyed (E. Cypher, pers. comm.).

The delta smelt, the Sacramento River winter run Chinook salmon, the Central Valley spring run Chinook salmon, and their critical habitats did not appear on the list but are relevant due to their occurrence in the Delta. Also relevant is Essential Fish Habitat for fall run and late fall run Chinook salmon. All of these species and habitats were addressed however by the BOs on coordinated long-term operations of the CVP and SWP and associated documents. Listed salmonids are not expected to return to the upper San Joaquin during this interim renewal period and so don't require consultation/conferencing.

Within the Action Area the existing critical habitat consists of undeveloped lands. Reclamation has determined that no delivery of CVP water to these lands would be allowed unless and until the landowner demonstrates existing compliance with the ESA, including consultation with the USFWS for critical habitat.

Table 3-3 Federally Threatened and Endangered Species and Critical Habitat

Common Name	Scientific Name	Federal Status	Critical Habitat	Effects
Bakersfield cactus	<i>Opuntia treleasei</i> (= <i>Opuntia basilaris treleasei</i>)	Endangered	None	No effect
blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered	None	No effect
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	Endangered	Designated*	May affect, not likely to adversely affect
California condor	<i>Gymnogyps californianus</i>	Endangered	Designated*	No effect
California jewelflower	<i>Caulanthus californicus</i>	Endangered	None	No effect

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Common Name	Scientific Name	Federal Status	Critical Habitat	Effects
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened	Designated	No effect
California tiger salamander	<i>Ambystoma californiense</i>	Threatened	Designated*	No effect
Central Valley steelhead (National Marine Fisheries Service)	<i>Oncorhynchus mykiss</i>	Threatened	Designated*	No effect
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	Endangered	Designated	No effect
fisher	<i>Martes pennant</i>	Candidate	N/A	No effect
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	Endangered	Designated	No effect
giant garter snake	<i>Thamnophis gigas</i>	Threatened	None	No effect
giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered	None	No effect
hairy Orcutt grass	<i>Orcuttia pilosa</i>	Endangered	Designated	No effect
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	Endangered	None	No effect
Hoover's spurge	<i>Chamaesyce hooveri</i>	Threatened	Designated	No effect
Keck's checker-mallow (=checkerbloom)	<i>Sidalcea keckii</i>	Endangered	Designated	No effect
Kern mallow	<i>Eremalche kernensis</i>	Endangered	None	May affect, not likely to adversely affect
Kern primrose sphinx moth	<i>Euproserpinus euterpe</i>	Threatened	None	No effect
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>	Threatened	None	No effect
least Bell's vireo	<i>Vireo belli pusillus</i>	Endangered	Designated	No effect

Common Name	Scientific Name	Federal Status	Critical Habitat	Effects
Little Kern golden trout	<i>Oncorhynchus mykiss</i> (= <i>aguabonita</i>) <i>whitei</i>	Threatened	Designated	No effect
longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	Endangered	Designated	No effect
Mariposa pussy-paws	<i>Calyptidium pulchellum</i>	Threatened	None	No effect
mountain yellow-legged frog	<i>Rana muscosa</i>	Proposed	None	No effect
Paiute cutthroat trout	<i>Oncorhynchus clarki seleniris</i>	Threatened	None	No effect
palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	Endangered	None	No effect
Ramshaw sand-verbena	<i>Abronia alpine</i>	Candidate	None	No effect
riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	Endangered	None	No effect
riparian woodrat (San Joaquin Valley woodrat)	<i>Neotoma fuscipes riparia</i>	Endangered	None	No effect
San Benito evening-primrose	<i>Camissonia benitensis</i>	Threatened	None	No effect
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	Threatened	None	No effect
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	None	May affect, not likely to adversely affect
San Joaquin Valley Orcutt grass	<i>Orcuttia inaequalis</i>	Endangered	Designated*	No effect
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	Endangered	None	May affect, not likely to adversely affect
Sierra Nevada bighorn sheep	<i>Ovis canadensis californiana</i>	Endangered	Designated	No effect

Common Name	Scientific Name	Federal Status	Critical Habitat	Effects
southwestern willow flycatcher	<i>Empidonax trailli extimus</i>	Endangered	Designated	No effect
Springville clarkia	<i>Clarkia springvillensis</i>	Threatened	None	No effect
succulent owl's-clover	<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Threatened	Designated*	No effect
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	Endangered	None	May affect, not likely to adversely affect
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	Designated	No effect
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	Designated*	No effect
vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	Endangered	Designated*	No effect
western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	Designated	No effect
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Candidate	N/A	No effect
Yosemite toad	<i>Bufo canorus</i>	Proposed	None	No effect

3.4.1 Environmental Consequences

No Action

The No Action Alternative is similar to the Proposed Action. The same amounts of water would be diverted from rivers and reservoirs based on hydrological conditions. Deliveries would occur in existing facilities. The operations of the CVP and SWP would continue as in the past within constraints and limitations. Croplands would remain the same. Decisions to fallow or not fallow lands would be based on hydrological and agricultural marketing conditions.

Proposed Action

Under the Proposed Action, only minor indirect impacts would occur to biological resources. The species detailed in the third paragraph of the affected environment section above may be subject to minor impacts due to routine farming activities. Critical habitat and other native lands would not be affected due to restrictions on land use, or because in some cases, the critical habitat lies outside the Proposed Action Area.

Reclamation received a memorandum from the USFWS on February 12, 2014 (Appendix G), concurring with our determination that the Proposed Action is not likely to adversely affect the Buena Vista Lake shrew, San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, Kern mallow, the San Joaquin woolly-threads or critical habitat designated for these species.

Cumulative Impacts

As the Proposed Action and No Action Alternative would only result in minor impacts to biological resources, they are not expected to contribute to any cumulative impacts.

3.5 Socioeconomic Resources

3.5.1 Affected Environment

The total 2010 population for the study area was 2,365,242, with most located in Fresno and Kern Counties. Median incomes are similar among the four counties, but all are below California's statewide median. See Table 3-4.

Table 3-4 Economic and Population Data

Area	Median Income	Population
Fresno County	\$46,903	930,450
Kern County	\$48,021	839,631
Kings County	\$48,838	152,982
Tulare County	\$43,550	442,179
California	\$61,632	37,253,956

Source: Census Bureau 2013

Agricultural production is one of the largest economic drivers of the San Joaquin Valley economy. As described in Section 3.3, farming and related industries bring billions of dollars to the area every year. Any action which affects agriculture, therefore, has the potential to have a large effect on the area's employment and economic patterns.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation may not have a streamlined environmental review process for water exchanges, resulting in inefficiency and increased administrative costs. Exchange requests may not be approved in a timely manner to be implemented when water is available and needed. This could cause water prices to increase slightly for the local area, putting a burden on affected businesses.

Proposed Action

Although the water to be delivered under the Proposed Action is similar to historical trends, the Proposed Action would allow the CV contractors to plan water deliveries and avoid unnecessary delays in executing exchanges. This helps maintain the stability of the agricultural market and associated industries.

Cumulative Impacts

The Proposed Action is intended to maintain and encourage current economic trends. Stable agricultural markets increase employment opportunities for residents of the San Joaquin Valley. Wages paid to farm laborers have ripple effects in the economy of the area’s communities, producing a cumulative benefit.

3.6 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.

3.6.1 Affected Environment

The four counties in the study area have higher poverty rates than the state of California as a whole. The percentage of those who describe themselves as Hispanic or Latino is also higher than the rate for California’s overall population. See Table 3-5 below.

Table 3-5 Environmental Justice Data

Area	Households Below Poverty Line	Hispanic/Latino Population
Fresno County	23.4%	50.9%
Kern County	21.4%	50.0%
Kings County	19.3%	51.4%
Tulare County	23.8%	61.3%
California	14.4%	38.1%

Source: Census Bureau 2013

Farm laborers often come from disadvantaged or minority populations. Therefore actions which affect agricultural businesses can disproportionately affect employment opportunities in those communities.

3.6.2 Environmental Consequences

No Action

The No Action Alternative would make water exchanges less efficient, which could result in a marginal increase in the cost of water for agricultural users. This could result in reduced farm employment opportunities for disadvantaged and minority populations.

Proposed Action

The Proposed Action represents a continuation of current conditions. The IRCs would help maintain stability of agricultural markets, which improves farm employment opportunities for disadvantaged and minority populations.

Cumulative Impacts

The Proposed Action is intended to maintain and encourage current economic trends. Stable agricultural markets increase employment opportunities for residents of the San Joaquin Valley. Wages paid to farm laborers have ripple effects in the economy of the area’s communities, producing a cumulative benefit.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft EA between September 4, 2013 and October 4, 2013.

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

Section 7 of the Endangered Species Act 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 received a memorandum from the USFWS on February 12, 2014 (File Number: 08ESMF00-2014-I-0040) (Appendix G), concurring with our determination that the Proposed Action is not likely to adversely affect the Buena Vista Lake shrew, San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, Kern mallow, the San Joaquin woolly-threads or critical habitat designated for these species.

For species under NMFS responsibility Reclamation discussed the Proposed Action with NMFS and it was determined that federally listed salmonids would not require consultation/conferencing for this interim renewal (documented via electronic mail on May 6, 2013).

4.3 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on any migratory birds.

Section 5 Preparers and Reviewers

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Section 6 Acronyms and Abbreviations

AEWSD	Arvin-Edison Water Storage District
BO	Biological Opinion
CNDDB	California Natural Diversity Database
CV	Cross Valley
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DWR	Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impacts
FWCA	Fish and Wildlife Coordination Act
IRC	Interim Renewal Contract
KTWD	Kern-Tulare Water District
LTCR	Long-Term Contract Renewal
MBTA	Migratory Bird Treaty Act
M&I	Municipal and Industrial
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
O&M	Operations and Maintenance
PEIS	Programmatic Environmental Impact Statement
Reclamation	United States Bureau of Reclamation
ROD	Record of Decision
SCCAO	South Central California Area Office
SEA	Supplemental Environmental Assessment
SWP	State Water Project
USFWS	US Fish and Wildlife Service

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