

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

San Luis Unit Water Service Interim Renewal Contracts 2010 – 2013

EA-09-101



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
Fresno, California**

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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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List of Acronyms, Abbreviations, and Definition of Terms

AF	acre-feet (the volume of water one foot deep and an acre in area)
AFY	acre-feet per year
APE	Area of Potential Effect
BCID	Banta-Carbona Irrigation District
BO	Biological Opinion
BWD	Broadview Water District
CAA	Clean Air Act
CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
CWD	Centinella Water District
DD#1	Distribution District #1
DD#2	Distribution District #2
Delta	San Joaquin-Sacramento River Delta
DMC	Delta-Mendota Canal
DWR	California Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FWCA	Fish & Wildlife Coordination Act
ITA	Indian Trust Assets
JJWTP	John Jones Water Treatment Plant
MBTA	Migratory Bird Treaty Act
M&I	Municipal and Industrial
mg/L	milligram per liter
MSWD	Mercy Springs Water District
National Register	National Register of Historic Places
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
O&M	Operation and Maintenance
PEIS	Programmatic Environmental Impact Statement
Reclamation	United States Bureau of Reclamation
ROD	Record of Decision
ROW	Right-of-way
SIP	State Implementation Plan
SLC	San Luis Canal
SLDFRE	San Luis Drain Feature Reevaluation
SOD	South of Delta
SWP	State Water Project
TDS	Total Dissolved Solids

USFWS	US Fish and Wildlife Service
Widren	Widren Water District
WSID	West Side Irrigation District
WWD	Westlands Water District

Section 1 Purpose and Need for Action

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) that included Title 34, the Central Valley Project Improvement Act (CVPIA). In accordance with and as required by Section 3404(c) of the CVPIA, the Bureau of Reclamation (Reclamation) proposes to execute interim renewal contracts beginning March 1, 2010, for Westlands Water District (WWD) and the City of Tracy as well as interim renewal contracts beginning March 1, 2011, for the California Department of Fish and Game (CDFG), and the cities of Huron, Coalinga and Avenal. Each of the renewal contracts will be renewed for up to two years. Interim renewal contracts are undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contracts and long-term interim renewal of those contracts.

The City of Tracy's long term contract does not expire until 2014 and is not part of the Proposed Action; however, Tracy does have two partial assignments from West Side Irrigation District (WSID) and Banta-Carbona Irrigation District (BCID). The interim renewal contracts for these assignments expire February 28, 2010. These two assignments were analyzed in Environmental Assessment (EA)-07-75, *Environmental Assessment for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010*, and are hereby incorporated by reference.

WWD's long term contract expired December 31, 2007, while the CDFG and the cities of Huron, Coalinga, and Avenal had long term contracts that expired December 31, 2008. In 2007, Reclamation executed interim renewal contracts for each of the contractors for up to two years and two months (26 months). The interim renewal contracts were analyzed in EA-07-56, *San Luis Unit Water Service Interim Renewal Contracts – 2008-2011*, and are hereby incorporated by reference. The interim renewal contracts expire February 28, 2010, for WWD and February 28, 2011, for the remaining four contracts.

WWD also has one partial and three full assignments from Mercy Springs Water District (MSWD), Centinella Water District (CWD), Widren Water District (Widren), and Broadview Water District (BWD), respectively. The assignments were analyzed under EA-07-75 and are also incorporated by reference. The interim renewal contracts for these assignments expire February 28, 2010.

Section 3409 of the CVPIA required that Reclamation prepare a programmatic environmental impact statement (PEIS) before renewing long-term Central Valley Project (CVP) water service contracts. The PEIS analyzed the implementation of all aspects of CVPIA, contract renewal being one of many programs addressed by this Act. CVPIA Section 3404(c) mandated that upon request all CVP existing contracts be renewed. Implementation of other sections of CVPIA mandated actions and programs that require modification of previous contract articles or new contract articles to be inserted into renewed contracts. These programs include water measurement requirements [Section 3405(b)], water pricing actions [Section 3405(d)], and water

conservation [Section 3405(e)]. The PEIS did not analyze site specific impacts of contract renewal.

The analysis in the PEIS as it relates to the implementation of CVPIA through contract renewal and the environmental impacts of implementation of the Preferred Alternative are foundational to this document. The PEIS has analyzed the differences in the environment between existing contract requirements, signed prior to CVPIA, and the PEIS No Action Alternative which is reflective of minimum implementation of CVPIA.

Reclamation has substantially completed negotiating the provisions of interim renewal contracts with the San Luis Unit contractors. Reclamation recognizes that the capacity to deliver CVP water has been constrained in recent years because of several hydrologic, regulatory, and operational uncertainties, and that these uncertainties may exist or become more constraining in the future as competing demands for water resources intensify. Therefore, the likelihood of contractors receiving the amount of water set out in the draft interim renewal contracts in any given year is uncertain, but likely similar to, or less than levels of historic deliveries.

CVP water service contracts in the San Luis Unit 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. The purposes of a water service contract are to stipulate provisions under which a water supply is provided, to produce revenues sufficient to recover an appropriate share of capital investment, and to pay the annual operations and maintenance (O&M) costs of the CVP.

Reclamation has not yet completed environmental documentation for proposed long-term contracts within the San Luis Unit (West San Joaquin Division). With the exception of one long-term contract (which expires in February 2024) water service contracts in the San Luis Unit expire between February 2010 and February 2011.

1.2 Purpose and Need

The purpose of the Proposed Action is to execute 11 San Luis Unit interim renewal contracts for up to two years each, beginning March 1, 2012, for WWD and the City of Tracy and March 1, 2011, for the other four interim renewal contractors as required by, and to further implement CVPIA Section 3404(c). Execution of these 11 interim renewal contracts will provide the contractual relationship for the continued delivery of CVP water to these contractors pending execution of their long-term renewal contracts.

Interim renewal contracts are needed to provide the mechanism 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 by the contractors. Additionally, CVP water is essential to continue agricultural production and municipal viability for these contractors.

1.3 Scope

This EA analyzes the delivery of CVP water for a two-year period from March 1, 2010, through February 29, 2012, within the service area of WWD and the City of Tracy. The delivery of full or partial assignments of water from six Delta-Mendota Canal Unit Contractors (WSID, BCID, MSWD, CWD, Widren, and BWD) to WWD and the City of Tracy are analyzed in this EA under the districts that receive the assigned water. This EA also analyzes the delivery of CVP water from March 1, 2011 through February 28, 2013 for CDFG and the cities of Avenal, Huron, and Coalinga. In the event long-term renewal contracts are executed, the interim renewal contracts then in effect would be superseded by the long-term renewal contracts.

1.4 Issues Related to CVP Water Use Not Analyzed

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 San Luis Unit contractor's service area.

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.

Contract Assignments

Assignments of CVP contracts are not included as part of the alternatives or analyzed within this EA except as described within the proposed alternatives. Reclamation's approvals of any assignments of CVP contracts are separate, discretionary actions that require their own environmental compliance and documentation. Prior assignments that allow for the delivery of water within the study area were analyzed in previous environmental documents (Reclamation 1999a, 2002a, 2003a, 2003b, 2004b, 2005b, 2006, 2007a, 2007b).

Warren Act Contracts

Warren Act contracts between Reclamation and water contractors for the conveyance of non-federal water through federal facilities for the storage of non-federal water in federal facilities are not included as a part of the alternatives or analyzed within this EA. Reclamation's decision 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.

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* [SLDRE-FEIS] (Reclamation 2005a). Reclamation made a decision for that action which is reflected in the Record of Decision (ROD). The actions considered in this EA would not alter or affect the analysis or conclusions in the SLDFRE-FEIS or its ROD.

1.5 Potential Issues

Consistent with previous interim renewal contract EAs for other divisions of the CVP including the 2007 *San Luis Unit Water Service Interim Renewal Contracts -2008-2011* for seven San Luis Unit contractors and the 2007 *Environmental Assessment for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010* for 15 Delta-Mendota and Cross Valley contractors, both of which are hereby incorporated by reference, and with the inclusion of provisions on drainage service and O&M of certain federal facilities in the San Luis Unit irrigation and municipal and industrial (M&I) form of contract, this EA considers the potential effects of these 11 interim renewal contracts on the following resources:

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Land Use
- Socioeconomic Resources
- Environmental Justice
- Global Climate Change
- Cumulative Impacts

Section 2 Alternatives Including Proposed Action

The No Action Alternative and the Proposed Action include the renewal of 11 interim contracts. The 11 interim contracts, their contract entitlements, purpose of use, and expiration dates under both alternatives can be found in Table 1 below.

Table 1 San Luis Unit Contractors, Existing Contract Amounts, and Expiration Dates

Contractor	Contract Entitlement	Expiration of Previous Interim Renewal Contract	Purpose of Use
California Department of Fish and Game	10 acre-feet (AF)	2/28/2011	M&I
City of Avenal	3,500 AF	2/28/2011	M&I
City of Coalinga	10,000 AF	2/28/2011	M&I
City of Huron	3,000 AF	2/28/2011	M&I
City of Tracy (partial assignment from WSID)	2,500 AF	2/28/2010	Ag or M&I
City of Tracy (partial assignment from BCID)	5,000 AF	2/28/2010	Ag or M&I
Westlands Water District	1,150,000 AF	2/28/2010	Ag or M&I
Westlands Water District DD#1 (full assignment from CWD)	2,500 AF	2/28/2010	Ag or M&I
Westlands Water District DD #1 (full assignment from Widren)	2,990 AF	2/28/2010	Ag or M&I
Westlands Water District DD #1 (full assignment from BWD)	27,000 AF	2/28/2010	Ag or M&I
Westlands Water District DD #2 (partial assignment from MSWD)	4,198 AF	2/28/2010	Ag or M&I

For purposes of this EA, the following assumptions are made under each alternative:

- A. Execution of each interim renewal contract is considered to be a separate action;
- B. A two year interim renewal period is considered in the analysis, though contracts may be renewed for a shorter period.
- C. The contracts would be renewed with existing contract quantities as reflected in Table 1 on the following page;
- D. Reclamation would continue to comply with commitments made or requirements imposed by applicable environmental documents, such as existing biological opinions (BOs) including any obligations imposed on Reclamation resulting from reconsultations; and
- E. Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

2.1 No Action

The No Action Alternative is the continued delivery of CVP water under the interim renewal of existing contracts which includes terms and conditions required by non-discretionary CVPIA provisions. The No Action Alternative, therefore, consists of the interim renewal of current

water service contracts that were considered as part of the Preferred Alternative of the CVPIA PEIS (Reclamation 1999b) adapted to apply for an interim period.

The CVPIA PEIS Preferred Alternative assumed that most contract provisions would be similar to many of the provisions in the 1997 CVP interim renewal contracts, which included contract terms and conditions consistent with applicable CVPIA requirements. In addition, provisions in the existing long term contracts that are specific to the San Luis Unit contracts regarding O&M of certain facilities and drainage service under the 1960 San Luis Act would be incorporated into the No Action Alternative without substantial change.

Section 3405(d) of the CVPIA requires tiered pricing to be included in contracts greater than three years in duration. Consequently, if at least 80 percent of the contract total is delivered in any year for contracts greater than three years, in such year incremental charges based on the 80/10/10 pricing structure would be collected and paid to the Restoration Fund.

Differences between the general contract provisions of the No Action Alternative and the Proposed Action are summarized in Table 2 below as compared to the existing long-term contracts. Aspects of the interim renewal contracts that reflect the San Luis Unit specific contract provisions not reflected in the PEIS Preferred Alternative include “Federal Drainage Service” and “O&M of Certain Facilities by the San Luis Unit Contractors”. These provisions were summarized in EA-07-56 and are incorporated by reference.

Other Contract Provisions of Interest

Several applicable CVPIA provisions which were incorporated into the Preferred Alternative of the Final PEIS and which are included in the No Action Alternative include tiered water pricing, defining M&I water users, requiring water measurement, and requiring water conservation. These provisions were summarized in EA-07-56 are incorporated by reference.

In addition, the No Action Alternative includes environmental commitments as described in the BO for the CVPIA PEIS (Reclamation 2000).

2.2 Proposed Action

The Proposed Action evaluated in this document is the execution of 11 interim renewal water service contracts between the United States and the CVP contractors listed in Table 1 (These contracts are the same 11 included in the No Action Alternative). The existing interim renewal contracts listed on Table 1 expire between February 28, 2010 and February 28, 2011. All 11 of these contracts have existing interim renewal contracts. WWD, CDFG, the cities of Avenal, Huron, and Coalinga are on their first interim renewal contract. The Proposed Action would be their second. WWD and the City of Tracy have full or partial assignments from MSWD, CWD, Widren, BWD, WSID, and BCID (see Table 1) which are currently in their eleventh interim renewal contract and the proposed renewal would be the twelfth.

The Proposed Action would continue these existing interim renewal contracts, with only minor, administrative changes to the contract provisions to update the previous interim renewal contracts for the new contract period. In the event that a new long-term water contract is executed, that interim renewal contract would then expire.

No changes to any of the six CVP contractor service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the 11 proposed interim renewal contracts can only be used within each designated contract service area (see Appendix B for service area maps). Contract service areas for the proposed interim renewal contracts have not changed from the existing interim renewal contracts. The proposed interim renewal contract quantities (see Table 1) remain the same as in the existing interim renewal contracts. Water can be delivered under the interim renewal contracts in quantities up to the contract total, although it is likely that deliveries will be less than the contract total. The terms and conditions of the 2008 interim renewal contracts from EA-07-56 and EA-07-75 are incorporated by reference into the Proposed Action.

The 11 interim water service 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 11 interim water service contracts considered in this EA. As a result, by their express terms the interim renewal contracts analyzed herein would conform to any applicable requirements lawfully imposed under the federal Endangered Species Act (ESA) or other applicable environmental laws.

Comparison of Alternative Differences

The primary difference between the Proposed Action and the No Action Alternative 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 and negotiations between Reclamation and the six San Luis Unit contractors concluded with a form of contract which does not include tiered pricing. Consequently, if at least 80 percent of the contract total is delivered in any year during the term of the interim renewal contracts, in such year no incremental charges for water in excess of 80 percent of the contract total would be collected and paid to the Restoration Fund.

Table 2 provides a comparison of the differences in the terms and conditions between the No Action Alternative and the Proposed Action in relation to the existing, expired long-term contract.

Table 2 Comparison of Contract Provisions

Contract Provision	Existing Long-term Contract (expired)	No Action Alternative Based on PEIS Preferred Alternative	Proposed Action – Negotiated Contract
Explanatory Recitals	Assumes construction of an interceptor drain	No similar language in recitals	Assumes provision of drainage service
Definitions:			
Category 1 and Category 2	Not addressed	Tiered Pricing as in PEIS	No Tiered Pricing and No definition of Category 1 and Category 2
Contract Total	Not addressed	Contract Total described as Total Contract	Assumes maximum entitlement

Contract Provision	Existing Long-term Contract (expired)	No Action Alternative Based on PEIS Preferred Alternative	Proposed Action – Negotiated Contract
M&I water	Not addressed as definition – Addressed within an article – Article assumes obtaining a rate for M&I when delivered	Same as Existing Contract	Assumes provision of water for irrigation of land in units less than or equal to five acres as M&I water unless Contracting Officer is satisfied use is irrigation
Terms of contract – right to use contract	Assumes that contracts may be renewed	Same as Existing Contract	Assumes that contracts would be renewed if Contractor has been compliant with contract
	Assumes convertibility of contract to a 9(d) contract same as existing contracts	Same as Existing Contract	Similar to No Action Alternative but preserves positions re: convertibility to 9(d) contract
Water to be made available and delivered to the contractor	Assumes water availability in accordance with existing conditions	Same as Existing Contract	Similar to No Action Alternative but makes it more explicit that water to be made available is subject to operational constraints
	Assumes compliance with BOs and other environmental documents for contracting	Same as Existing Contract	Similar to No Action Alternative; Requires contractor to be within legal authority to implement.
	Assumes drain built and allows connection of district built drainage facilities	Same as Existing Contract	Assumes SLDFRE ROD Implementation (WWD only)
Rates and method of payment for water	Assumes Contractor must pay for all water made available under the Contract whether it is all taken or not	Assumes Tiered Pricing is total water quantity; assumes advanced payment for rates for two months; payment only for water taken	Same as No Action Alternative in terms of payment and take or pay; however, tiered pricing is not applicable to contracts less than 3 years
Application of payments and adjustments	Assumes credits or refunds	Same as Existing Contract	Similar to No Action Alternative except requires \$1,000 or greater overpayment for refund
Opinions and determinations	Assumes the Contractor expressly reserves the right to relief from any arbitrary, capricious or unreasonable opinion or determination	PEIS recognizes that CVP will operate in accordance with existing rules; opinions will not be arbitrary, capricious or unreasonable	Same as No Action Alternative with additional clarifications on the right to seek relief and legal effect of section
Coordination and cooperation	Not addressed	Not addressed	Assumes that communication, coordination, and cooperation between CVP operations and users should participate in CVP operational decision making discussions however parties retain exclusive decision-making authority
Points of Diversion and Responsibility	Assumes interceptor drain built and allows for discontinuation	Assumes drainage service	Assumes no indemnity for United States for lack of

Contract Provision	Existing Long-term Contract (expired)	No Action Alternative Based on PEIS Preferred Alternative	Proposed Action – Negotiated Contract
for Distribution of Water	of service for maintenance		drainage service
Drainage Studies and Facilities	Assumes Contractor groundwater studies and reports. Assumes Districts construction of in-district drainage facilities	Assumes status quo of addressing drainage	Recognizes that the Secretary shall provide drainage service
O&M by non-federal entity	Assumes that the United States may transfer the O&M and does not affect the rights or obligations of either party to the contract	Assumes that CVP will operate in accordance with existing rules and no additional changes to operation responsibilities	Similar to No Action Alternative; however, recognizes role of certain operating Non-Federal Entity/Entities
Resolution of disputes	Not addressed	Not addressed	Assumes a Dispute Resolution Process
Changes in contractor's service area	Assumes no changes in absent Contracting Officer consent	Assumes no change in CVP water service areas absent Contracting Officer consent	Assumes changes to limit rationale used for non-consent and sets time limit for assumed consent.
Confirmation of contract	Assumes Court confirmation of contract for assurance relating to validity of contract	Same as Existing Contract	No requirement for court confirmation of contract on contracts of short duration

Note: Table 2 contains a summary of many but not all of the terms and conditions of the referenced contracts. Also the “Existing Contract” reflected in the above table is based upon Contract No. 14-06-200-495A (Reclamation 1963). Other San Luis Unit existing contracts may have some minor differences however this contract is believed to be representative. Finally, the above table is also generally descriptive of contract provisions within the three predominantly irrigation contract forms; however, for the precise contract language and an exact comparison, the specific contracts should be referenced.

2.3 Alternatives Considered but Eliminated from Further Analysis

Non-Renewal of Contracts

Non-renewal of existing contracts is considered infeasible based on Section 3404(c) of the CVPIA which states that “...the Secretary **shall**, upon request renew any existing long-term repayment of water service contract for the delivery of water from the CVP...” (emphasis added). 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.

Reduction in Interim Renewal Contract Water Quantities

Reduction of contract water quantities due to the current delivery constraints on the CVP system was considered in certain cases, but rejected from the analysis of the 11 interim renewal contracts for several reasons:

1. The Reclamation Project Act of 1956 and the Reclamation Project Act of 1963 mandate 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 San Luis Unit contractor, the contractor's water needs equaled or exceeded the current total contract quantity.

2. 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 (PEIS ROD, 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 (PEIS ROD, pages 26-27). Therefore, an alternative reducing contract quantities would not be consistent with the PEIS ROD and the balancing requirements of CVPIA.
3. 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 San Luis Unit 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.
4. Retaining the full historic water quantities under contract provides the contractors with assurance the water would 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.

Section 3 Affected Environment & Environmental Consequences

This section describes the service area for the six contractors analyzed in this EA that receive CVP water from the Delta-Mendota Canal (DMC), the San Luis Canal (SLC), and the Mendota Pool and that are part of the San Luis Unit. The study area, shown in Figure 1, includes portions of Fresno, Kings, and San Joaquin Counties. Specifically, the study area includes the CVP service areas of the following six San Luis Unit contractors:

- City of Avenal
- City of Coalinga
- City of Huron
- City of Tracy
- Westlands Water District
- California Department of Fish and Game

Maps of individual Contractor service area boundaries can be found in Appendix B.

For ease of discussion in this document, the analysis will be addressed in groups of contracts related to one entity. For example, two of the interim renewal contracts that will be analyzed in this document are previous partial assignments to the City of Tracy from two separate original contractors [WSID and BCID] (Reclamation 2003a, 2003b). The service areas and thus the affected environment for both contracts is the City of Tracy; therefore, the City of Tracy's receipt of CVP water from both of these contracts will be addressed in the analysis based on an evaluation of these contract quantities in the City of Tracy service area. The same is true of the assignments and partial assignments to WWD Distribution District #1 [DD#1] (BWD, CWD, and Widren) and Distribution District #2 [DD#2] (MSWD) (Reclamation 2002a, 2004b, 2005b, 2006). These Interim Renewal Contracts will be analyzed with the WWD interim renewal contract as a unified analysis of the total water quantity going to WWD and their affects in the WWD's service area.

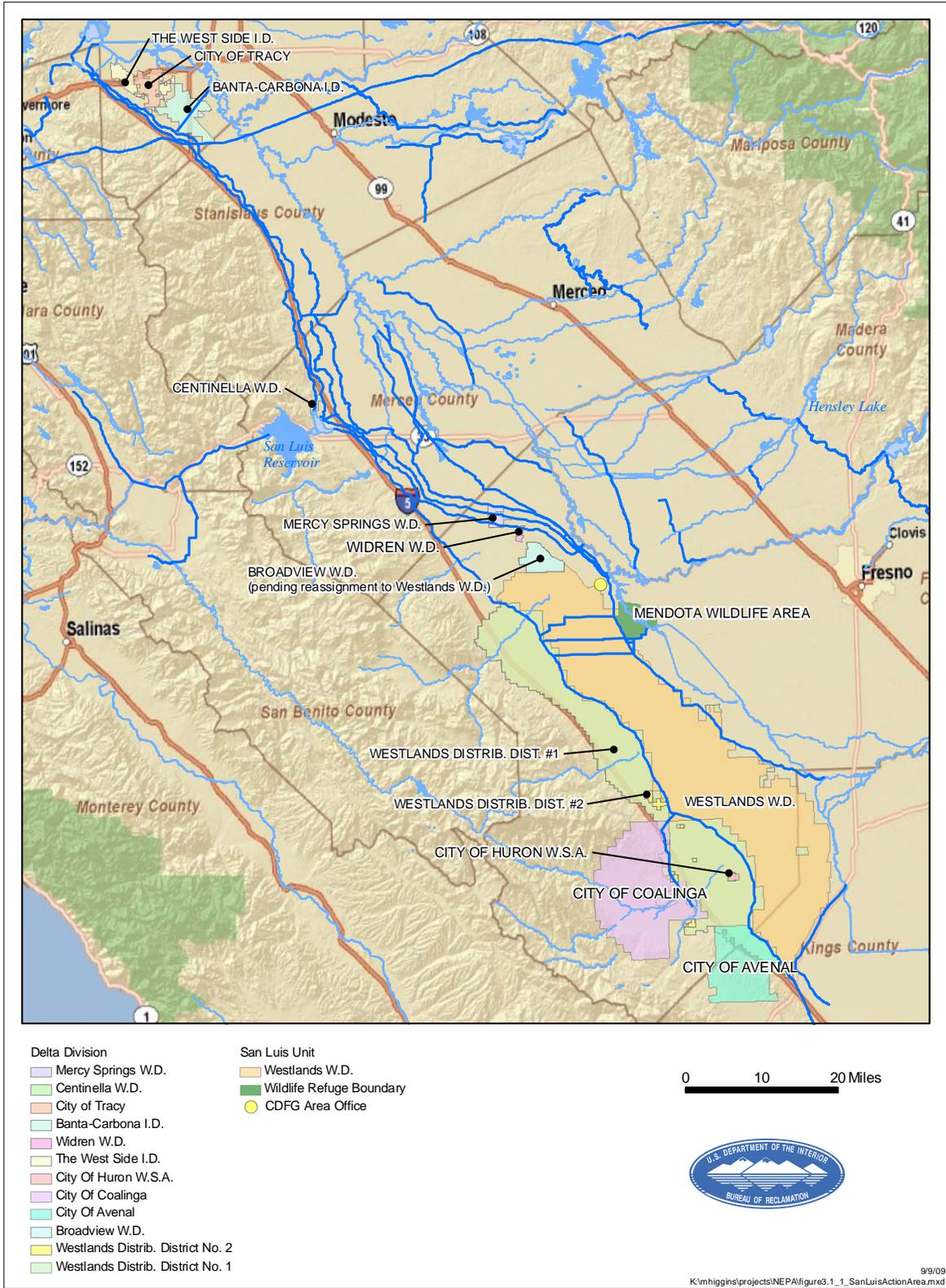


Figure 1 Contractor Water District Service Areas

3.1 Water Resources

3.1.1 Affected Environment

Surface Water Resources

Central Valley Project Water Supply

CVP water is used for the irrigation of agricultural areas, for M&I uses, for the restoration of fisheries and aquatic habitat in the waterways that have been affected by water development, for wildlife refuges, and for other purposes. The largest use of CVP water is for agricultural irrigation. The greatest demand for irrigation water occurs in mid- to late summer, as crops mature and crop water use increases. During the winter, farmers also use water for frost control and pre-irrigation of fields to saturate the upper soil.

Water Delivery Criteria

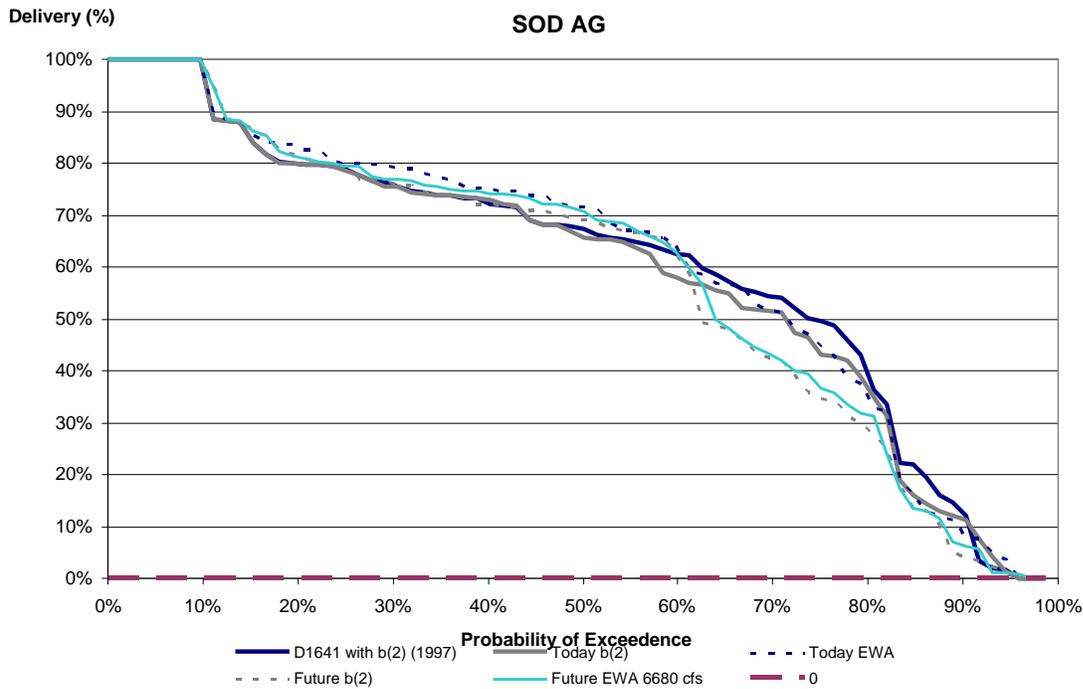
The amount of CVP water available each year for contractors is based, among other considerations, on the storage of winter precipitation and the control of spring runoff in the Sacramento and San Joaquin River basins. Reclamation's delivery of CVP water diverted from these rivers is determined by state 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 even more severe contractual shortages applicable to South-of-Delta (SOD) water deliveries (Reclamation 1999b), and this information has been incorporated into the modeling for the current CVP/State Water Project (SWP) Coordinated Operations (Reclamation 2004a).

Water Delivery Conditions under CVPIA Implementation

Modeling done for the CVPIA PEIS predicted that, with the implementation of the CVPIA PEIS Preferred Alternative and under conditions in the late 1990s, SOD CVP agricultural water service contractors would receive an average of 59 percent of their current total contract amounts (Reclamation 1999b). These conditions would result in the delivery of total contract amounts to agricultural water service contractors located SOD approximately 15 percent of the time. Minimum deliveries of zero would occur only in critically dry years.

Additionally, tables from the CVP/SWP Coordinated Operations (Reclamation 2004a) also show that deliveries of over 80 percent of the contract total for agricultural purposes would occur between 22 and 24 percent of the time (Figure 2). Under these conditions, modeling predicts that tiered pricing (if it were required) would apply once every fourth or fifth year.

Figure 2 CVP SOD Agricultural Allocation Exceedance Chart



Source: Reclamation 2004a.

Contractor Water Needs Assessment

In 2007, a Water Needs Assessment was developed in order to identify the beneficial and efficient future water needs and demands for each interim renewal contractor (Appendix D). The demands were compared to available non-CVP water supplies to determine the need for CVP water. If the negative amount (unmet demand) was within 10 percent of the total supply for contracts greater than 15,000 AF per year (AFY), or within 25 percent for contracts less than or equal to 15,000 AFY, the test of full future need of the water supplies under the contract was 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 CVP 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.

San Luis Unit Facilities

The San Luis Unit is part of the West San Joaquin Division of the CVP and also part of the State of California Water Plan. The principal federal facilities of the San Luis Unit include four storage dams that form reservoirs with a total active capacity of 2,013,370 AF, 115 miles of canals, 1.8 miles of tunnels, 26 pumping plants, 84 miles of drains, two pumping-generating plants, and three substations.

Reclamation constructed the San Luis Unit, certain facilities of which are operated jointly by Reclamation and the State of California. Of the joint-use facilities, 55 percent of the total cost is attributed to the State of California and the remaining 45 percent to the United States. The joint-use facilities are O'Neill Dam and Forebay, B.F. Sisk (San Luis) Dam, San Luis Reservoir, William R. Gianelli Pumping-Generating Plant, Dos Amigos Pumping Plant, Los Banos and Little Panoche Reservoirs, and SLC from O'Neill Forebay to Kettleman City, together with the necessary switchyard facilities.

The federal-only facilities that are within the San Luis Unit include the O'Neill Pumping Plant and Intake Canal, Coalinga Canal Pumping Plant, and San Luis Drain. San Luis Reservoir serves as the major storage reservoir and the O'Neill Forebay acts as an equalizing water basin for the upper stage, dual-purpose pumping-generating plant. Pumps located at the base of O'Neill Dam take water from the DMC through an intake channel (a federal feature) and discharge it into the O'Neill Forebay. The California Aqueduct (a state feature) flows directly into O'Neill Forebay. The Gianelli pumping-generating units lift the water from the O'Neill Forebay and discharges it into San Luis Reservoir. When not pumping, these units generate electric power by reversing flow through the turbines. Water for irrigation is released into the SLC and flows by gravity to Dos Amigos Pumping Plant, where it is lifted more than 100 feet to permit gravity flow to its terminus at Kettleman City. During irrigation months, water from the California Aqueduct flows through the O'Neill Forebay into the SLC instead of being pumped into the San Luis Reservoir. Two detention reservoirs, Los Banos and Little Panoche Reservoirs, control cross drainage along the SLC. The reservoirs provide recreation and flood control benefits.

Other San Joaquin-Sacramento River Delta (Delta) and SOD CVP facilities utilized for providing water to the San Luis Unit consist of the Jones Pumping Plant and the DMC, used to pump and convey water to the O'Neill Pumping-Generating Plant, where it is placed in storage in the San Luis Reservoir.

City of Avenal's Water Use

Description of District Facilities The City of Avenal's sole water supply source is CVP water from the SLC. All of Avenal's CVP water supply is used for M&I purposes. Under a formal agreement, Avenal supplies Avenal State Prison with 1,411 AF of water annually. The City of Avenal also provides water service to the urbanized portions of Avenal and a limited number of connections in the northern portion of the community. Avenal does not pump any groundwater. The poor quality of the groundwater and its high concentrations of sulfate, nitrates, and sodium preclude its use for domestic purposes.

The City of Avenal's water needs analysis completed by Reclamation in May 2006 estimated that there would be an unmet demand of 391 AF for 2025 (see Appendix D).

CVP Contracts On November 20, 1969 the City of Avenal signed a long-term contract (Contract 14-06-200-4619A) with Reclamation for up to 3,500 AF of CVP water annually (Reclamation 1969). This contract expired December 31, 2008. An interim renewal contract (Contract 14-06-200-4619A-IR1) was issued in 2007 and remains in effect until February 28, 2011 (Reclamation 2007b).

City of Coalinga's Water Use

Description of District Facilities The City of Coalinga's sole water supply source is CVP water obtained at a single turnout from the Coalinga Canal, which is fed by the SLC. Because WWD operates the United States owned pipeline, the City of Coalinga pays an O&M charge to WWD for transporting CVP water to obtain its CVP supply. The City of Coalinga supplies potable water to almost all of the residences within its service area. Of the approximately one dozen farmers in and near the City of Coalinga's water service area, none receive water from the City for farming purposes, but domestic water is provided because of the very poor domestic quality of the groundwater.

The current long-term contract required Coalinga to abandon its former source of water supply (e.g., pumping water from groundwater wells) and to depend on its CVP supply as its M&I water supply.

The City of Coalinga's water needs analysis completed by Reclamation in May 2006 estimated that there would be no unmet demand for 2025 (see Appendix D).

CVP Contracts On October 28, 1968 the City of Coalinga signed a long-term contract (Contract 14-06-200-4173A) with Reclamation for up to 10,000 AF of CVP water annually (Reclamation 1968). This contract expired December 31, 2008. An interim renewal contract (Contract 14-06-200-4173A-IR1) was issued in 2007 and remains in effect until February 28, 2011 (Reclamation 2007b).

City of Huron's Water Use

Description of District Facilities The City of Huron's sole water supply is CVP water received from a lateral connection to the SLC. Water is transported to Huron via Lateral 27, which is operated by WWD. Huron pays WWD O&M costs for transportation of their CVP supply. Huron does not pump groundwater. Groundwater in the area is very deep, of poor quality, and almost non-potable.

The City of Huron's water needs analysis completed by Reclamation in May 2006 estimated that there would be no unmet demand for 2025 (see Appendix D).

CVP Contracts On September 26, 1972 the City of Huron signed a long-term contract (Contract 14-06-200-7081A) with Reclamation for a maximum of 3,000 AF of CVP water annually (Reclamation 1972). This contract expired December 31, 2008. An interim renewal contract (Contract 14-06-200-7081A-IR1) was issued in 2007 and remains in effect until February 28, 2011 (Reclamation 2007b).

City of Tracy's Water Use

Description of District Facilities The City of Tracy receives its CVP supply from a turnout on the DMC. Because the CVP water is used for M&I purposes, it must be treated before delivery. The treatment process for the CVP supply consists of chemical oxidation, coagulation, flocculation, filtration, and chlorination. In addition, chloramines (the combination of chlorine and a small amount of ammonia) are used as the residual disinfectant in the water distribution system. The CVP water is transferred by pipeline to the water treatment plant and, after treatment, transferred by pipeline to M&I users. Tracy provides water service to all of its

approximately 78,000 residents and to approximately 400 residents of the Larch-Clover County Services District. Tracy also provides water service to the unincorporated Patterson Business Park. Tracy currently delivers approximately 18,000 AFY within its service territory and expects that demand will grow to 27,000 AFY by the year 2020 (Tracy 2005).

The City of Tracy's water needs analysis completed by Reclamation in May 2006 estimated that there would be no unmet demand for 2025 dependent on continuation of transfers from other water districts such as BCID and WSID (see Appendix D).

CVP Contracts On July 22, 1974 the City of Tracy signed a long-term contract (Contract 14-06-200-7858A) with Reclamation for 10,000 AF of CVP water (Reclamation 1974). Renewal of this contract is not part of the Proposed Action since the long-term water service contract with Reclamation does not expire until 2014; however, Tracy and Reclamation are in ongoing negotiations for contract renewal.

Tracy also has two partial contract assignments: WSID has assigned 2,500 AFY (Contract Number 14-06-200-4605A-IR12-B), with an option for an additional 2,500 AFY, and BCID has assigned 5,000 AFY to Tracy [Contract Number 7-07-20-W0045-IR12-B] (Reclamation 2007a). These are the two interim renewal contracts analyzed within this document. The two assignments from BCID and WSID increased Tracy's CVP water supply from 10,000 AF to 17,500 AF and converted the use of these water supplies from agricultural to M&I. This conversion was previously analyzed within the contract assignment EA (Reclamation 2003a, 2003b).

Other Available Water Supplies The City of Tracy's water system includes CVP water from the DMC and groundwater pumped from nine groundwater wells located throughout the city. The City of Tracy pumps an annual maximum of 6,700 AFY comprising 40 percent of Tracy's water supply. There are no other water supply sources serving the city besides CVP water. As noted above, the City of Tracy has negotiated a permanent transfer of a portion of WSID's and BCID's CVP supply to help meet Tracy's growing demand. Plainview Water District also provides up to 1,000 AFY. In normal and wet hydrologic years, Tracy's combined water resources are in excess of their current demand (Tracy 2005).

In addition, the South County Water Supply Program, which is a cooperative effort of the South San Joaquin Irrigation District and the Cities of Manteca, Escalon, Lathrop, and Tracy, has been designed to provide supplemental water supplies to the cities. Phase I construction of facilities necessary to provide the supplemental supply was completed July 14, 2005. Phase II is scheduled for completion in 2012 (South San Joaquin Irrigation District 2009).

Westlands Water District's Water Use

Description of District Facilities WWD's permanent distribution system consists of 1,034 miles of closed, buried pipeline that conveys CVP water from the San Luis and Coalinga Canals and 7.4 miles of unlined canal that conveys CVP water from the Mendota Pool. The area served by the system encompasses approximately 88 percent of the irrigable land in the district. 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 Coalinga and Huron.

WWD provides water via gravity water service and pumping from the SLC depending on location. All water is metered at the point of delivery through more than 3,200 agricultural and 250 M&I meter locations. WWD contains three water service areas; these areas, referred to as priority areas, receive varying amounts of available water supply.

WWD's water needs analysis completed by Reclamation in May 2006 estimated that there would be an unmet demand of 74,287 AF for 2025 dependent on continuation of transfers from other water districts such as BCID and WSID (see Appendix D).

CVP Contracts On June 5, 1963 WWD entered into a long-term contract (Contract 14-06-200-495-A) with Reclamation for 1,008,000 AF of CVP supply from the SLC, 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. An interim renewal contract (Contract 14-06-200-495A-IR1) was issued in 2007 and remains in effect until February 28, 2010 (Reclamation 2007b).

When WWD was originally organized, it included approximately 376,000 acres. In 1965, WWD merged with its western neighbor, Westplains Water Storage District, adding 210,000 acres. Additionally, lands comprising about 18,000 acres were annexed to WWD after the merger to total 604,000 acres. In 2006, WWD purchased 9,100 acres of lands previously owned by Broadview Water District and now encompasses the current 613,100 acres within its boundary (Reclamation 2006).

WWD has executed three full or partial CVP contract assignments from DMC contractors to DD#1 over the last decade. WWD requested and received approval from Reclamation on the contract assignments of 27,000 AFY from BWD (Contract Number 14-06-200-8092-IR8), 2,990 AFY from Widren (Contract Number 14-06-200-8018-1R7), and 2,500 AFY from CWD [Contract Number 7-07-20-W0055] (Reclamation 2006, 2005b, 2004b). The environmental effects of issuing interim renewal contracts for these previous contract assignments was previously analyzed under EA-07-75, and it was determined that there was no adverse effect, and are incorporated by reference (Reclamation 2007a). Additionally, on March 1, 2003, Reclamation approved a partial contract assignment of 4,198 AFY from MSWD (Contract Number 14-06-200-3365A) to WWD DD#2 (Reclamation 2002a). The interim renewal of this contract assignment to WWD DD#2 is also part of EA-07-75 (Reclamation 2007a).

Other Available Water Supplies As noted above, in addition to the CVP supply, groundwater is available to some of the lands within WWD. The safe yield of the aquifer underlying WWD is approximately 200,000 AF of water. WWD supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in WWD. Other water supply sources available to the district for purchase include floodwater diverted from the Mendota Pool in periods of high runoff and transfers of supplemental water from other sources.

California Department of Fish and Game's Water Use

Description of CDFG Facilities The CDFG currently receives 10 AF of M&I water for domestic use at the headquarters of the Mendota Wildlife Area. The CVP supply is the CDFG's

only long-term water supply used at this facility. No water needs assessment was developed for CDFG since the quantity of water was below the threshold requirement.

CVP Contracts On January 1, 1976 the CDFG signed a long-term contract (Contract 14-06-200-8033A-LTR1) with Reclamation to supply 10 AF of supply for domestic use at the Mendota Wildlife Area headquarters, near the City of Mendota (Reclamation 1976). This contract expired December 31, 2008. An interim renewal contract (Contract 14-06-200-8033A-IR1) was issued in 2007 and remains in effect until February 28, 2011 (Reclamation 2007b).

Groundwater Resources

The San Joaquin Valley groundwater basin underlies 3.73 million acres and is divided into nine subbasins (DWR 2003). Within the San Joaquin Valley, approximately 30 percent of the groundwater is relied on annually to supply water for agricultural and urban uses (DWR 2003).

Much of the western portion of the San Luis Unit is underlain by the Corcoran clay layer, which divides the groundwater system into two major aquifers: a confined aquifer below the clay and a semi-confined aquifer above the clay (Williamson et al. 1989). The groundwater aquifers under the San Luis Unit include three zones of water: (1) a semi-confined zone of water of varying quality; (2) a confined zone of water of varying quality; and (3) a saline body of water underlying the confined zone of freshwater (Belitz and Heimes 1990).

The California Department of Water Resources (DWR) estimates an annual overdraft of approximately 205,000 AF of groundwater. This over-drafting of groundwater has caused ground subsidence since the mid-1920s. By 1970, 5,200 square miles of the valley were affected and maximum subsidence exceeded 28 feet in an area west of Mendota. Much of this area is now served by the CVP's San Luis Unit (DWR 2003; Reclamation 2005a).

The large-scale groundwater use during the 1960s and 1970s, combined with the introduction of imported surface water supplies, has also modified the natural groundwater flow pattern. Flow largely occurs from areas of recharge toward areas of lower groundwater levels due to groundwater pumping (Bertoldi et al. 1991). The vertical movement of water in the aquifer has been altered in this region as a result of thousands of wells constructed with perforations above and below the Corcoran clay layer, which, where present, provide a direct hydraulic connection (Bertoldi et al. 1991).

Groundwater Storage and Production

The aquifer system below the Corcoran clay has historically been the most important source of groundwater in the San Luis Unit. Before deliveries from the SLC began, about 85 to 90 percent of the total groundwater pumpage came from this aquifer system. Once surface water became available, pumping dropped significantly, except during the drought of 1976–1977, when more than 400,000 AF of groundwater was pumped (Belitz and Heimes 1990). Prior to 1991, seasonal pumping estimates varied from 80,000 to 700,000 AF, depending on available surface water supplies (Reclamation 2007b).

The more than 1,000 active irrigation wells reported in the Los Banos-Kettleman City area tap the upper (semi-confined) and lower (confined) freshwater-bearing zones (Miller et al. 1971). The depth of wells into the groundwater reservoir generally decreases from west to east. They

range in depth from less than 200 feet near Fresno Slough to more than 1,000 feet in the southwestern part of the area along the west border of the valley.

The Tracy groundwater storage basin underlying the city is 600 square miles with a safe yield reported to be 9,000 AFY (Tracy 2002). The City of Tracy pumps an annual maximum of 6,700 AFY from nine groundwater wells. Five of the nine wells are located in the main portion of Tracy. Water from these wells is pumped directly into the primary water main after chlorination and mixed with treated water from the John Jones Water Treatment Plant (JJWTP). The remaining four wells are located at the JJWTP and pump directly into the JJWTP clear wells, where the groundwater is blended with treated surface water after chlorination. The long-term objectives of the City of Tracy are to only utilize groundwater for emergency and peak demand needs and to utilize the aquifer for water storage to improve water quality and increase water system reliability for Tracy's water customers (Tracy 2005; 2006).

WWD and the City of Tracy are the only contractors under the Proposed Action that pump groundwater. Both have approved groundwater management plans. The remaining contractors do not pump groundwater and rely on CVP water as their sole source of water.

Impacts of Agriculture on Groundwater

During the past 40 years, recharge increased dramatically as a result of imported irrigation water. Increased rates of recharge resulting from percolation of irrigation water, combined with the rapid post-1967 decrease in pumping, caused a rise in the height of the water table over much of the western valley (Belitz and Heimes 1990).

Percolation of irrigation water past crop roots, pumping of groundwater from deep wells, and imported surface water used for irrigation have combined to create large downward hydraulic-head gradients. The salts in the irrigation water, and soil salts leached from the unsaturated zone, increased salt and selenium concentrations in groundwater (Dubrovsky and Deverel 1989). In low-lying areas of the valley, and where the water table is within seven feet of land surface, evaporation from the shallow water table further increased salt and selenium concentrations.

A US Geological Survey report indicated that irrigation had affected the upper 20 to 200 feet of the saturated groundwater zone (Dubrovsky and Deverel 1989). This poor quality groundwater zone is moving downward in response to recharge from above the water table and pumping from deep wells.

Groundwater Quality

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

Significant portions of the groundwater in the San Luis Unit exceed the California Regional Water Quality Control Board's recommended TDS concentration. Calcium, magnesium, sodium, bicarbonates, selenium, sulfates, and chlorides are all present in significant quantities as well (Reclamation 2005a).

Contractors in the San Luis Unit with drainage-impacted lands have developed aggressive programs to manage salts in the root zone and to minimize deep percolation through the use of high-efficiency irrigation techniques, such as sprinklers and advanced drip technologies, shortened rows, and the installation of groundwater monitoring wells.

The high TDS content of west side groundwater is due to recharge of stream flow originating from marine sediments in the Coast Range. The high TDS content in the trough of the valley is the result of concentration of salts due to evaporation and poor drainage. Nitrates may occur naturally or as a result of disposal of human and animal waste products and fertilizer. Boron and chloride are likely a result of concentration from evaporation near the valley trough. Organic contaminants contributed by agriculture have been detected in groundwater throughout the region but primarily in areas east of the San Luis Unit where soil permeability is higher and depth to groundwater is shallower. In the central and west-side portions of the valley, where the Corcoran Clay confining layer exists, water quality is generally better beneath the clay than above it.

3.1.2 Environmental Consequences

No Action Alternative

Contract provisions under the No Action Alternative stipulate that a tiered pricing structure (80/10/10 tiered pricing) would be applied. Tiered pricing is mandated under the water conservation section of the CVPIA for contracts of more than three years. Due to chronic shortages in CVP contract deliveries in the San Luis Unit, modeling predicts that the number of years when tiered pricing is applicable would be limited to approximately 22 or 24 percent of the time [or one year out of four or five] (see Figure 2) for interim contracts greater than three years. Water supplies do not typically meet demands for most contractors and many contractors are very active on the water market purchasing water supplies. Most of the San Luis Unit is planted in permanent crops and the contractors from this area, to make up for shortages and preserve their crop investment, have paid prices for water that exceed the maximum amount that would be paid if tiered pricing were applied. For that reason, increasing water prices due to tiered pricing would not likely change water use trends.

Additionally, water users within the San Luis Unit have been installing high efficiency irrigation systems without the incentive of CVPIA tiered pricing in order to manage drainage and to maximize available supplies during times of shortage. The systems are frequently utilized to sustain permanent crops, and it is unlikely that the systems would be abandoned on such crops even in years of full supplies. Much of the San Luis Unit is drainage impacted, so high efficiency irrigation is implemented as a mechanism for reducing deep percolation and subsurface drainage production.

Groundwater as an alternate source may contain salts or boron unsuitable for irrigation of permanent crops depending on location. For those areas where groundwater is of suitable quality and therefore available for irrigation or M&I, CVP water is considered to be a supplemental supply for most contractors and therefore these contractors already rely on groundwater supplies and in some cases water transfers to meet their needs. In areas such as WWD and the City of Tracy, where groundwater is already utilized to meet M&I and crop demands, individuals would

have no alternative but to pay the additional tiered pricing costs as any further reduction in water supplies would lead to further overdraft and potentially for subsidence.

For CDFG and the cities of Huron, Coalinga, and Avenal, where the CVP supply is the only water supply available, there is no opportunity to make cost comparisons and switch to alternate water supplies. The cities have a greater proportion of low income families who already are struggling to afford their water service charges. Tiered pricing may cause families to minimize water use to basic health and safety levels or below.

In summary, the No Action Alternative is not likely to result in the application of tiered pricing during the term of the contracts because of the short duration of interim renewal contracts and the reasonable expectation that sufficient CVP allocation to trigger the tiers would occur in only every fourth or fifth year. Further, even if tiered pricing were to apply, it is unlikely to result in a reduction in surface water use, a change in groundwater, or other actions that could affect water resources. The contractors continue to have less water supply (surface water and groundwater) than demanded, conditions that exist notwithstanding their careful water management (e.g., installation and use of high efficiency irrigation systems). For those reasons, and others discussed in this EA, implementation of the No Action Alternative is not likely to cause an adverse impact to water resources.

The contract provisions under the No Action Alternative also stipulate that a definition of M&I water would be applied. Having water use on a less than five acre parcel defined as M&I would not result in a change in water use but would have an impact on the rates Reclamation collects. It is unlikely with the small number of parcels involved, the small size of the parcels, and the small quantities of water involved that changing this definition would have any effects on water resources.

Reclamation does not anticipate that the No Action Alternative would cause any changes from historical values in the quantity, quality, or discharge of drainage emanating from or within the San Luis Unit during the two years of the interim renewal contracts.

Each of the San Luis Unit Contractors for which interim renewal contracts are proposed would continue to operate and maintain facilities related to their individual water delivery activities, including turnouts from pumping stations on the SLC and DMC, and in the case of WWD, the Coalinga Canal and pumping plant, on terms substantially the same as the existing long-term contracts. These activities relate to already constructed facilities on federal rights-of-way (ROW) with no anticipated changes in activity level or use.

Proposed Action

Impacts to water resources associated with the Proposed Action would be comparable to those described under No Action Alternative although tiered pricing provisions are not included in these contracts. For reasons similar to why the tiered pricing provisions of the No Action Alternative were concluded to have no impact on water use, the lack of tiered pricing in the Proposed Action is also not likely to have an impact on water use.

Execution of the 11 interim renewal contracts would not change contract water quantities from the quantities in the existing contracts, and would not lead to any increased water use.

Therefore, there would be no effect on surface water supplies or quality. Since water quantities and deliveries would not change there would not be a shift to groundwater due to the interim renewal contracts. Therefore, there would be no adverse impact on groundwater supplies or quality.

3.2 Biological Resources

This section analyzes the potential impacts to listed and non-listed (under the Federal ESA) species and habitats with the potential to occur in the study area and other portions of the San Luis Unit. The study area is located in the San Joaquin Valley and includes those portions of Fresno, Kings, and Merced counties comprising the service areas of the San Luis Unit contractors.

Baseline information on biological resources in the San Luis Unit Study Area was compiled primarily from literature and information gathered from water district general managers and staff. Data sources included but were not limited to appendices to the CVPIA PEIS (Reclamation 1997a, 1997b), Draft EA for Eastside/Westside Water Transfer/Exchange (Tetra Tech 2000), BO on Operation of the CVP and Implementation of the CVPIA (Reclamation 2000), *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988), vegetation categories derived from CALVEG data (Matyas and Parker 1980), the Grassland Bypass Project Environmental Impact Statement/Environmental Impact Report (Reclamation 2001, 2008), the California Department of Fish and Game California Natural Diversity Database (2009), and the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (California Native Plant Society 2009). A USFWS species list (Document Number 070521020847) was generated on March 5, 2007 for the previous San Luis Unit Interim Renewal Contract (Appendix E). The list includes species identified on the following U.S. Geological Survey 7½ minute quadrangles surrounding the Proposed Action area including: Kettleman Plain, Garza Peak, Stratford, Westhaven, Kettleman City, Huron, Gujarral Hills, Avenal, La Cima, Coalinga, Alcalde Hills, Curry Mountain, Kreyenhagen Hills, Burrel, Vanguard, Five Points, Westside, Harris Ranch, and Calflax.

3.2.1 Affected Environment

The San Luis Unit encompasses approximately 1,322 square miles of land situated on arid plains and low hills on the west side of the San Joaquin Valley. It lies between the lowlands of the valley trough on the east, the foothills of the Diablo Range on the West. The San Luis Unit lies north and west of the Tulare Lake bed and just south of the Grasslands wetland areas. At present, approximately 14 percent of the San Luis Unit's land area remains undeveloped. Most remaining undeveloped lands are along the foothills of the Diablo Range at the western edge of the San Luis Unit.

Development of land within the San Luis Unit began many decades ago, and is continuing through the present. Undeveloped lands on the valley floor are now restricted to small habitat patches that are fragmented and isolated from each other. As a result of the conversion of natural habitats, many species have been displaced or extirpated from the region. Most of the species that occurred historically are now restricted to habitat patches that are fragmented and isolated, making it difficult for viable populations to exist. Some species have adapted to portions of the

new landscape and are able to maintain populations. However, as a result of the largely fragmented habitats, the potential for expansion or growth of these populations is greatly reduced. Because of the reduction in habitat available to these species, remnants of habitat such as wetlands and riparian forests are increasingly valuable and important to resident and migratory wildlife species.

The most dominant habitat in the San Luis Unit is agricultural land, including active, temporarily fallowed, and retired croplands, and orchards/vineyards. Croplands in the San Joaquin Valley are generally concentrated along the central, flatter portion of the valley, with orchards and vineyards extending into the western foothills. The mix of crops varies from year to year depending on economic factors and predicted water supplies. Cotton and row vegetables historically have been the dominant crops, but current trends are toward increasing acreages of higher-value permanent crops in the San Luis Unit. Harvesting practices, crop selections, the proximity and amount of nearby undisturbed vegetation, and the types of food and foraging cover provided by the crops all affect the value of agricultural land as wildlife habitat. Some row and grain crops provide foraging habitat for hawks and migrating and wintering waterfowl.

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

Reclamation (lead federal agency) and DWR (lead state agency) have completed endangered species consultations and compliance to address the combined long-term operations of the CVP and SWP. Compliance activities are ongoing.

In addition, 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 BO issued by the USFWS on February 17, 2005 (1-1-04-0368). 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 woolly-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.

3.2.2 Environmental Consequences

No Action Alternative

The No Action Alternative is the renewal of existing contracts as required by non-discretionary CVPIA provisions addressed in the CVPIA PEIS. The No Action Alternative would only continue, for an interim period, water deliveries that accommodate current land uses.

Environmental commitments in existence as a result of existing and future BOs, including the CVPIA BO (Reclamation 2000) would be met under the No Action Alternative, including continuation of ongoing species conservation programs.

Execution of interim renewal contracts under the No Action Alternative would not involve construction of new facilities or installation of structures. Based on existing trends, caused by the implementation of regional projects, separate from the interim renewal contracts, that increase irrigation efficiency and utilization of reuse areas for the application of drainwater to

salt tolerant plants in accordance with existing permits, Reclamation anticipates that drainage production from the study area during the interim period would continue to decrease, as would discharges to the San Joaquin River and these discharges may affect biological resources; the reduction in these discharges resulting from ongoing actions such as the Grassland Bypass Project would benefit the biological resources. The interim renewal contracts themselves do not require the continuance of those regional projects, which are undertaken under separate authorities, and under separate consultations.

Ongoing trends in irrigation methods are toward higher efficiency systems and related changes in cropping, generally away from row crops and toward permanent crops. Reclamation anticipates that those trends would continue under the No Action Alternative, because those trends are spurred in part by water shortages from the implementation of laws and regulations that reduced the quantity of CVP water available for delivery to the San Luis Unit. Therefore, species inhabiting orchards and other permanent crops would benefit and those preferring row crops would be adversely affected under the No Action Alternative, but over the short interim period, these changes are not likely to be substantial.

For irrigation, these trends are clear enough to support the conclusion that other economic considerations would outstrip the effects of tiered pricing for irrigation water under the No Action Alternative, so no effects on biological resources is expected from its implementation.

With regard to M&I development, the short term of the contracts does not provide the long-term water supply required for conversions from agriculture to M&I uses. Tiered pricing under San Luis Unit M&I interim renewal contracts has the potential to cause additional conservation or to limit development within the service areas of cities with a San Luis Unit contract. Lack of new development would not, itself, affect species and habitats.

For these reasons, the No Action Alternative would not result in substantial changes in natural and semi-natural communities and other land uses that have the potential to occur within the study area and other portions of the San Luis Unit. The area of use and types of use are expected to fall within historic ranges. As a result, the No Action Alternative would not result in adverse effects on fish, vegetation, or wildlife resources located in the study area and other portions of the San Luis Unit.

Proposed Action

Given the hardening of demand that has already occurred in response to chronic shortages in CVP contract supplies and ongoing trends toward increased irrigation efficiency and economic factors apart from the contract that influence crop selection, the lack of tiered pricing in the Proposed Action is unlikely to have any effect on water application for irrigation within the study area. In all other aspects, the effects of the proposed contracts are substantially similar to those under the No Action Alternative, so the Proposed Action would not result in substantial changes in natural and semi-natural communities and other land uses that have the potential to occur within the study area and other portions of the San Luis Unit. Additionally, execution of interim renewal contracts under the Proposed Action Alternative would not involve construction of new facilities or installation of structures.

Within the Contractor's service area there would be no effects to salmonid species' designated critical habitat or green sturgeon since none inhabit or exist in the service areas. Additionally, impacts to salmonid species and green sturgeon in the Delta are solely the result of CVP operations, and are addressed in the CVP/SWP Coordinating Operations consultation.

Since WWD, City of Tracy, City of Huron, City of Coalinga, City of Avenal, and CDFG do not have drainage that reaches the San Joaquin River, Reclamation has determined that there is no affect to federally listed salmonids, designated salmonid critical habitat, or green sturgeon due to renewal of these interim contracts.

Reclamation is in the process of consulting with the USFWS on these interim renewal contract actions. The result of that Endangered Species Act Section 7 consultation, along with implementation of all applicable requirements, ensure that renewal of interim contracts would not result in any significant effect to threatened or endangered species.

Reclamation would complete consultation with the USFWS on effects to species and critical habitats, including loss of habitat and reduced habitat values, resulting from on-going trends within the valley, under the jurisdiction of USFWS within the service areas. This draft EA will not be finalized until the Section 7 consultation is complete. Reclamation will comply with the terms and conditions and the reasonable and prudent measures established within the BO from the USFWS.

Also, interim renewal contracts would occur within the context of implementation of the CVPIA by the United States Department of the Interior, including Reclamation and USFWS. Reclamation and the USFWS explained the CVPIA in a report entitled *CVPIA, 10 Years of Progress* (Reclamation 2002b), as follows:

The CVPIA has redefined the purposes of the CVP to include the protection, restoration, and enhancement of fish, wildlife, and associated habitats; and to contribute to the State of California's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin River Delta Estuary. Overall, the CVPIA seeks to "achieve a reasonable balance among competing demands for use of [CVP] water, including the requirements of fish and wildlife, and agricultural, municipal and industrial, and power contractors."

Finally, as explained above, interim renewal contracts would be subject to regulatory constraints imposed pursuant to Section 7 of the ESA, regardless of whether those constraints exist today. Therefore, there would be no adverse impacts to biological resources due to the Proposed Action.

3.3 Cultural Resources

3.3.1 Affected Environment

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

of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

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

Although archaeological sites are known to exist in the area, the activity is limited to the existing facilities of the San Luis Unit of the CVP. These resources are considered a component of the built environment. The San Luis Unit is joint Federal and State of California project. The Federal components of the San Luis Unit include O'Neill Pumping Plant and Intake Canal, Coalinga Canal, Pleasant Valley Pumping Plant, and the San Luis Drain. Components of the CVP have been determined eligible for inclusion in the National Register and is currently being reviewed by the Keeper of the National Register for Inclusion on the National Register. The features of the San Luis Unit are not considered contributing features of the CVP's National Register status. Additionally, the features of the San Luis Unit were all completed in the late 1960's and are not yet eligible for inclusion in the National Register.

3.3.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would renew interim water contracts with the San Luis Unit water users as prescribed by the CVPIA Preferred Alternative. Contract provisions under the No Action Alternative stipulate the implementation of a tiered pricing structure (80/10/10 tiered pricing). This pricing structure is unlikely to result in changes in agricultural land uses, such as land fallowing. Water would be conveyed through existing conveyance features and would not result in land use change, disturbance, or modification of existing features, or construction of new features. The No Action Alternative is administrative in nature and has no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). The No Action Alternative would have no impact to cultural resources as a result.

Proposed Action

Impacts to cultural resources associated with the Proposed Action would be comparable to those described under the No Action Alternative. No impacts to cultural resources are expected. The Proposed Action would not result in any changes in water delivery or in the construction of new delivery systems. The Proposed Action does not include any contract provisions that would result in "on-the-ground" changes proposed by the 11 contract renewals. Given the lack of any

possible impacts as a result of the Proposed Action, Reclamation concludes that there is no potential to affect historic properties.

3.4 Indian Trust Assets

3.4.1 Affected Environment

Indian trust assets (ITA) are legal interests in assets that are held in trust by the United States Government for federally recognized Indian tribes or individual Indians. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITA cannot be sold, leased or otherwise alienated without United States’ approval. ITA may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by Indian tribes, or individual Indians by treaty, statute, or Executive Order. The nearest ITA is Santa Rosa Rancheria approximately six miles east of the project location.

3.4.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, continuous delivery of project water to existing contractors would not affect any ITA. Existing rights would not be affected, no physical changes to existing facilities and no new facilities are proposed.

Proposed Action

Impacts to ITA associated with the Proposed Action would be comparable to those described under the No Action Alternative. No physical changes to existing facilities are proposed and no new facilities are proposed. Continued delivery of CVP water to the contractors listed in Table 1 under an interim renewal contract would not affect any ITA because existing rights would not be affected.

3.5 Land Use

3.5.1 Affected Environment

City of Tracy

The City of Tracy is located in San Joaquin County about 60 miles east of San Francisco and 60 miles south of Sacramento. Tracy city limits encompasses 21 square miles and is entirely classified as urban use (Tracy 2005).

City of Avenal

The City of Avenal is located in western Kings County in the southern portion of the San Joaquin Valley. The urbanized portion of the city is located around the intersection of State Highways 33 and 269. The City of Avenal's sphere of influence encompasses 19.5 square miles and is classified as urban use (Kings County 1993).

City of Coalinga

The City of Coalinga is located within Fresno County about 60 miles southwest of the City of Fresno. The Coalinga's sphere of influence is approximately 8.3 square miles and zoned for urban uses. The area surrounding the city within its sphere of influence is zoned for single family residential, business parks, and open space (Fresno County 2000).

City of Huron

The City of Huron is located in Fresno County about nine miles east of Interstate 5, three miles south of Highway 198, and 60 miles south of the City of Fresno. The City is a small farming community with a 450 acre sphere of influence. Land within its sphere of influence is zoned large-lot agricultural (Fresno County 2000).

Westlands Water District

WWD covers almost 950 square miles of prime farmland within between the California Coast Range and the trough of the San Joaquin Valley in western Fresno and Kings Counties. It averages 15 miles in width and stretches 70 miles in length from Mendota on the north to Kettleman City on the south. Interstate 5 is located near the district's western boundary.

Currently WWD's district boundaries encompass 604,000 acres with an irrigable acreage of 567,800 acres. More than 60 different crops are grown commercially in WWD. The cropping patterns have changed over the years depending upon water availability, water quality, the agricultural economy, and market factors. The acreage trend is toward planting of vegetable and permanent crops while cotton and grain acreage have decreased. Unlike many other key growing areas of California, urbanization is not a direct threat to productivity.

The major community entirely within WWD is Huron. Three Rocks and Five Points are smaller communities within WWD. The communities of Firebaugh, Mendota, Kerman, Tranquillity, San Joaquin, Lemoore, and Stratford lie just outside the district's eastern edge.

California Department of Fish and Game's Facilities

The CDFG headquarters consists of five houses, a conference hall, and a workshop, all of which are located at 4333 South Santa Fe Grade, Mendota, California, on approximately one acre of land. There is an on-site water treatment facility that is used to treat the CVP water before it is used for landscaping and at the visitor's center and employee residences.

3.5.2 Environmental Consequences***No Action Alternative***

The renewal of contracts, with only minor administrative changes to the contract provisions, would not provide for additional water supplies that could act as an incentive for increased

acreage of agricultural production. Generally, lands within the San Luis Unit that are productive are farmed. Uncertainty of supply due to the short-term duration of the renewal could act as a disincentive for farmers to preserve their lands from urban developments. However, most areas within the San Luis Unit are not near current M&I growth. Also, for those limited areas that are near such growth, the short terms of the interim renewal contracts do not provide sufficient certainty to permit the M&I development of land now in agricultural production, meaning that the No Action Alternative is not likely to have impacts on conversion of irrigated land to other uses.

Contract provisions stipulating the pricing structure for delivered water (80/10/10 tiered pricing) are not likely to result in changes in water use as the districts within the San Luis Unit are water short even in high allocation years. Land would continue to be used for existing purposes. Also because this is an interim renewal process, it is unlikely that the uncertainty of the water supply would result in any changes in agricultural practices that would influence land use.

Having water used on a less than five acre parcel defined as M&I would not result in a change in land use but would only have an impact on the rates Reclamation collects. It is unlikely with the small number of parcels involved, the small size of the parcels, and the small quantities of water involved that this changing definition would have any effects on land use resources.

Proposed Action

Impacts to land use associated with the Proposed Action would be comparable to those described under the No Action Alternative. Tiered pricing with its potential price increases is not included as part of the Proposed Action. For reasons discussed above, the lack of tiered pricing would have no impact on land use. It is possible that conversion from agricultural uses to M&I uses would occur during the term of the interim renewal contracts, but if such conversions occur it would not be a result of the interim renewal contracts due to their short terms. The pressures to convert are the same pressures that would have existed with the previous expiring long term contracts and with the No Action Alternative. The interim renewal of the 11 contracts would not provide for additional water supplies that could act as an incentive for conversion of native habitat. Use of contract water for M&I use under the proposed interim renewal contracts would not change from the purpose of use specified in the 11 existing contracts. Likewise, the 11 interim renewal contracts would not change contract terms or conditions governing the allocation of CVP water during times of limited supply (i.e., drought), so would not provide additional water reliability. Given the two-year period of the 11 interim renewal contracts, there will be no adverse impact on land use.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. The CVP allocations each year allow farmers to plan for the types of crops to grow and to secure loans to purchase supplies. The economic variances may include fluctuating agricultural prices, insect infestation, changing hydrologic conditions, increased fuel and power costs.

The six contractors' service areas are predominately rural and agricultural with numerous small cities and a few large communities, such as Fresno and Tracy. The regional economic indicators of social well being are all measures of the social conditions within a region. Unemployment for Fresno, Kings, and San Joaquin counties ranged from 6.5 to 7.1 percent in 2000 but increased to between 9.5 and 11.8 percent in 2008 (US Census Bureau 2009). All three County's unemployment rates were higher than the state average. Per capita income for all three counties and individuals and families below the poverty level were higher than the state average (see Table 3).

Table 3 County Economic Characteristics

Economic Characteristic	Fresno County		Kings County		San Joaquin County		California	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Population 16 years and over	657,981		111,848		496,288		28,139,366	
Civilian labor force	411,746		58,710		308,941		18,084,737	
Unemployed		9.5	6,942	11.8		10.0		6.9
Per capita income	20,640		18,041		23,020		29,405	
Families below poverty level		16.5		13.6		11.8		9.6
Under 18 below poverty		30.3		24.7		20.6		17.9
Over 18 below poverty		17.3		14.7		13.1		11.2
Industries								
Agricultural and related	32,574	8.7	8,213	15.9	13,818	5.0	339,633	2.0
Construction	27,058	7.3	2,172	4.2	25,143	9.0	1,284,152	7.6
Manufacturing	28,465	7.6	4,840	9.3	29,057	10.4	1,770,277	10.5
Wholesale trade	17,755	4.8	1,320	2.5	11,867	4.3	590,137	3.5
Retail trade	43,724	11.7	4,790	9.3	32,578	11.7	1,869,838	11.1
Transportation and related	16,831	4.5	3,257	6.3	19,001	6.8	798,965	4.7
Information	6,744	1.8	372	0.7	5,458	2.0	514,954	3.1
Finance and Insurance	19,543	5.2	1,408	2.7	18,332	6.6	1,215,793	7.2
Professional and related	29,944	8.0	2,452	4.7	23,683	8.5	2,022,993	12.0
Educational and Health	81,966	22.0	9,240	17.8	51,981	18.7	3,248,747	19.3
Arts and Entertainment	29,049	7.8	4,360	8.4	19,949	7.2	1,555,226	9.2
Non-administrative services	16,795	4.5	2,521	4.9	13,107	4.7	876,807	5.2
Public administration	22,097	5.9	6,823	13.2	14,174	5.1	747,344	4.4

Source: US Census Bureau 2009.

3.6.2 Environmental Consequences

No Action Alternative

Contract provisions under the No Action Alternative which stipulate the water pricing structure (80/10/10 tiered pricing) would place an additional financial burden on water contractors including the water supplies of four San Luis cities. Because the economy of the Central Valley is heavily dependent on these water supplies, this increased burden, despite the short duration of the renewal and limited circumstances when tiered pricing increases rates, may translate into economic impacts throughout the affected area.

While contractors would likely receive the same quantity of water under the No Action Alternative, the tiered pricing structure stipulated in the contract would result in higher water prices for both agricultural and M&I contractors when second or third tier water is provided.

These provisions under the No Action Alternative would increase the cost of water. Local and regional economies would be directly affected as a result of losses in farming revenues, decreased value of land dependent on water supplies, increased costs to consumers of agricultural products or M&I water, and increased water conservation or measurement costs. It may also put additional pressures on low income households to pay for water supplies at higher rates. The cities report that current water prices are affecting their customer's ability to pay municipal water costs. Although there is a potential for these effects to occur, considering the short duration of the two years of the contract renewal period, and the low frequency of allocations above 80 percent, no effects to socioeconomic resources are expected over the scope of this project related to tiered pricing contract provisions.

Historic water deliveries and CVP facility operations would continue under the No Action Alternative. No changes in power generation, recreational opportunities, or agricultural economics are expected. Thus, no economic impacts are anticipated to occur under the period of renewal.

Proposed Action

Potential socioeconomic impacts associated with the Proposed Action would be comparable to those described under No Action Alternative; however, under the Proposed Action there is no potential for effects to occur due to tiered pricing. Thus, renewal of the interim contracts 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. The renewal of the 11 interim contracts would provide continued stability to the agricultural industry within the contractors' service area resulting in beneficial impacts to socioeconomic resources.

3.7 Environmental Justice

3.7.1 Affected Environment

Executive Order 12898, dated February 11, 1994, requires Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. Some information relating to the socioeconomic stratification of the San Luis unit can be found in Section 3.6 above. The Hispanic community within Fresno, Kings, and San Joaquin Counties is greater than the California average (see Table 4). The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America. The population of some small communities typically increases during late summer harvest.

Table 4 County Demographics

Demographics	Fresno County		Kings County		San Joaquin County		California	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Total Population	895,357		147,824		667,556		36,418,499	
Male	451,044	50.4	84,882	57.4	334,105	50.0	18,210,090	50.0
Female	444,313	49.6	62,942	42.6	333,451	50.0	18,208,409	50.0
Median Age	30		29.9		31.7		34.7	
One race	862,902	96.4	143,493	97.1	636,056	95.3	35,162,860	96.6
Two or more races	32,455	3.6	4,331	2.9	31,500	4.7	1,255,639	3.4
White	548,797	61.3	103,363	69.9	400,029	59.9	23,243,689	63.8

Black or African American	45,585	5.1	11,409	7.7	49,215	7.4	2,549,314	7.0
American Indian	10,257	1.1	1,938	1.3	5,887	0.9	610,997	1.7
Asian	77,751	8.7	5,160	3.5	91,984	13.8	4,915,229	13.5
Native Hawaiian/Pacific Islander	1,161	0.1	197	0.1	3,170	0.5	206,388	0.6
Hispanic	431,196	48.2	71,633	48.5	243,053	36.4	13,160,978	36.1
Some other race	179,351	20	21,426	14.5	85,771	12.8	6,244,749	17.1

Source: US Census Bureau 2009.

3.7.2 Environmental Consequences

No Action Alternative

Contract provisions under the No Action Alternative include the tiered pricing structure (80/10/10 tiered pricing). As discussed previously, modeling predicts that the number of years when tiered pricing would be applicable would be limited to approximately 22 or 24 percent of the time [or one year out of four or five] (see Figure 2). During those times, implementation of tiered pricing would increase the cost of water, which could reduce farming revenues and decrease land values. Tiered pricing could, but is not likely to result in changes in agricultural practices, including cropping patterns and land fallowing as discussed. M&I users would also be impacted by changes in water supply costs placing increased pressure on low income households. Nevertheless, because this is a short term action, and because the potential changes in water delivery and cost is expected to be within the normal range of variation, it is unlikely that significant changes in social well-being would occur under this alternative.

Reduced farming revenue and land values would adversely impact farm workers, especially migrant workers who tend to be from minority and low-income populations. However, the impact from tiered pricing would occur only when allocations are above 80 percent which has only occurred twice in the last 10 years [2005 and 2006] (Reclamation 2009). Therefore, any changes due to tiered pricing would likely be within the normal range of annual or seasonal variations.

Factors contributing to population change, employment, income levels, and unemployment rates in the affected area are closely tied to CVP water contracts through either agricultural or M&I dependence. Because no changes in water supplies or CVP operations would occur under this alternative, no changes in population and the various indicators of social well-being are expected. Additionally, the No Action Alternative would support continued agricultural production and would not directly result in changes to employment of minority and low-income populations; therefore,

Proposed Action

Tiered pricing is not part of the Proposed Action since the renewal of the interim contracts is for less than three years; consequently, impacts associated with tiered pricing as discussed under the No Action Alternative would not occur. Renewal of the interim renewal contracts, 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. The Proposed Action 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. There would be no changes to existing conditions. Employment opportunities for low-income wage earners and

minority population groups would be within historical conditions. Disadvantaged populations would not be subject to disproportionate impacts. Therefore, the Proposed Action would not differ from current conditions and would not be expected to disproportionately affect minority or low income populations. There would be no environmental justice implications from the Proposed Action.

3.8 Global Climate Change

Climate change refers to changes in the global or a regional climate over time. Global climate change is expected to have some effect on the snow pack of the Sierra Nevadas and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. 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 and therefore surface water resource changes due to climate change would be the same with or without the Proposed Action.

3.9 Cumulative Impacts

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

To determine whether cumulatively significant impacts are anticipated from the Proposed Action, the incremental effect of the Proposed Action was examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

Renewal of 11 interim contracts would not contribute to cumulative changes or impacts to water resources, biological resources, air quality, cultural resources, ITA, land use, socioeconomic resources, environmental justice or global climate change.

Therefore, there would be no cumulative impacts as a result of the Proposed Action.

Section 4 Consultation and Coordination

Several federal laws have directed, limited or guided the National Environmental Policy Act analysis and decision making process of this EA.

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the CVPIA, of which this action is a part, has been jointly analyzed by Reclamation and USFWS and is being jointly implemented. Since there would be no construction and water would move in existing facilities the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary (of the Interior or Commerce, as appropriate), 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.

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with CVP water. The water would be delivered to existing homes or farmlands, through existing facilities, as has been done under existing contracts, and would not be used for land conversion. Reclamation has determined that there would be no effects to species and critical habitats under the jurisdiction of National Marine Fisheries Service within the service areas for all six contractors.

Reclamation is completing consultation with the US Fish and Wildlife Service (USFWS) on potential effects to species and critical habitats under the jurisdiction of USFWS within the service areas. Effects to Delta species and critical habitats, such as the Delta smelt, salmonids, and green sturgeon which are the result of CVP operations, are addressed in the CVP/SWP Coordinated Operations consultation.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Reclamation has made a determination that as the Proposed Action would result in no change in the water conveyed or applied to the ground by this contract renewal and given the lack of any possible impacts as a result of the undertaking, Reclamation concludes that there is no potential to affect historic properties, pursuant to 36 CFR Part 800.3(a)(1). As described in the regulations, Reclamation has no further obligations under section 106.

4.4 Indian Trust Assets

ITA are legal interests in property held in trust by the United States for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the United States is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The Proposed Action would not affect ITA because there are none located in the Proposed Project area. The nearest ITA is the Santa Rosa Rancheria, which is approximately six miles east of the Proposed Action area.

4.5 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, 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 MBTA, 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 deliver water through existing facilities to existing irrigated agricultural lands which already receive delivered water. This would have no effect on birds protected by the MBTA.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands.

The Proposed Action would deliver water through existing facilities to existing irrigated agricultural lands and would not impact wetlands and/or floodplains as there are none present in the areas to be irrigated.

4.7 Clean Air Act (42 USC § 7506 (C))

Section 176 of the Clean Air Act (CAA) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 USC § 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP'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 will, in fact conform to the applicable SIP before the action is taken.

The Proposed Action analyzed is the renewal of interim contracts for contractors within the San Luis Unit. Water that is moved from the San Luis Reservoir down to the various interim renewal contractors is done either via gravity or with the used of electrical pumps. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical engines and therefore a conformity analysis is not required under the CAA and there would be no impact on air quality.

4.8 Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 404

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

Section 5 List of Preparers and Reviewers

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Patricia Rivera, Indian Trust Assets, MP- 400
Adam Nickels, Cultural Resources, MP-153
Valerie Curley, Repayment Specialist, SCCAO - Reviewer
Patti Clinton, Natural Resources Specialist, SCCAO - Reviewer

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Draft ENVIRONMENTAL ASSESSMENT

INTERIM RENEWAL CONTRACT 2010-2013

Appendix A
Draft Interim Renewal Contracts

December 2009

1
2
3 UNITED STATES
4 DEPARTMENT OF THE INTERIOR
5 BUREAU OF RECLAMATION
6 Central Valley Project, California

7 INTERIM RENEWAL CONTRACT BETWEEN THE UNITED STATES
8 AND
9 WESTLANDS WATER DISTRICT
10 PROVIDING FOR PROJECT WATER SERVICE

11 THIS CONTRACT, made this _____ day of _____, 2010,
12 in pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory or
13 supplementary thereto, including, but not limited to, the acts of August 26, 1937 (50 Stat. 844),
14 as amended and supplemented, August 4, 1939 (53 Stat. 1187), as amended and supplemented,
15 July 2, 1956 (70 Stat. 483), June 21, 1963 (77 Stat. 68), October 12, 1982 (96 Stat. 1263),
16 as amended, and Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706), all collectively
17 hereinafter referred to as Federal Reclamation law, between the UNITED STATES OF
18 AMERICA, hereinafter referred to as the United States, and WESTLANDS WATER
19 DISTRICT, hereinafter referred to as the Contractor, a public agency of the State of California,
20 duly organized, existing, and acting pursuant to the laws thereof;

21 WITNESSETH, That:

22 EXPLANATORY RECITALS

23 WHEREAS, the United States and the Contractor entered into an interim
24 renewal contract identified as Contract No. 14-06-200-495A-IR1, hereinafter referred to as
25 the Interim Renewal Contract, which provided for the continued water service to the
26 Contractor; and

27 WHEREAS, the United States and the Contractor have entered into only one
28 renewal of the Interim Renewal Contract, Contract No. 14-06-200-495A-IR1, hereinafter
29 referred to as the Existing Interim Renewal Contract, from January 1, 2008, through
30 February 28, 2010; and

31 WHEREAS, the United States and the Contractor have made significant progress
32 in their negotiations of a long-term renewal contract, believe that further negotiations on the
33 long-term renewal contract would be beneficial, and mutually commit to continue to negotiate to
34 seek to reach agreement, but anticipate that the environmental documentation necessary for
35 execution of any long-term renewal contract will be delayed until the summer of 2011 and may
36 be delayed further for reasons beyond the control of the parties; and

37 WHEREAS, the Contractor has requested a subsequent interim renewal contract
38 pursuant to Subdivision (b) of Article 2 of the Interim Renewal Contract; and

39 WHEREAS, the United States has determined that the Contractor has to date
40 fulfilled all of its obligations under the Existing Interim Renewal Contract; and

41 WHEREAS, the United States is willing to renew the Existing Interim Renewal
42 Contract pursuant to the terms and conditions set forth below;

43 NOW, THEREFORE, in consideration of the mutual and dependent covenants
44 herein contained, it is hereby mutually agreed by the parties hereto as follows:

45 INCORPORATION AND REVISION OF EXISTING INTERIM RENEWAL CONTRACT

46 1. The terms and conditions of the Existing Interim Renewal Contract are hereby
47 incorporated by reference into this Contract with the same force and effect as if they were
48 included in full text with the exception of Article 2 thereof, which is revised as follows:

49 (a) The first sentence in Subdivision (a) of Article 2 of the Existing Interim
50 Renewal Contract is modified as follows: “This Contract shall be effective from March 1, 2010
51 and shall remain in effect through February 29, 2012 and thereafter will be renewed as described
52 in Subdivision (a) of Article 2 of the Interim Renewal Contract if a long-term renewal contract
53 has not been executed with an effective commencement date of March 1, 2012.”

54 (b) Subdivision (b) of Article 2 of the Existing Interim Renewal Contract is
55 amended by deleting the date “February 28, 2010,” and replacing same with the date
56 “February 29, 2012.”

DRAFT

57 IN WITNESS WHEREOF, the parties hereto have executed this Contract as of
58 the day and year first above written.

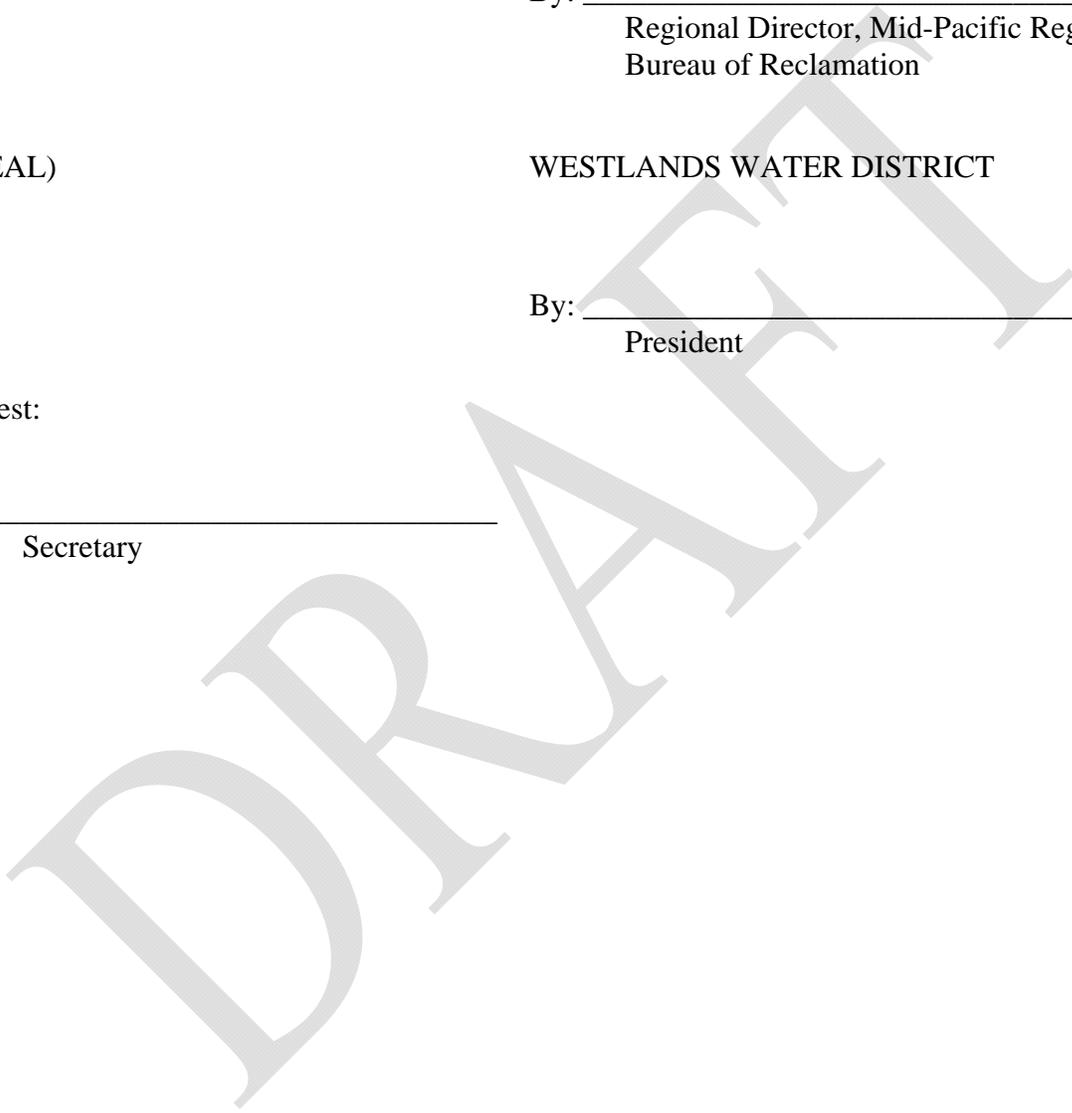
59 UNITED STATES OF AMERICA

60 By: _____
61 Regional Director, Mid-Pacific Region
62 Bureau of Reclamation

63 (SEAL) WESTLANDS WATER DISTRICT

64 By: _____
65 President

66 Attest:
67 _____
68 Secretary



1
2
3 UNITED STATES
4 DEPARTMENT OF THE INTERIOR
5 BUREAU OF RECLAMATION
6 Central Valley Project, California

7 INTERIM RENEWAL CONTRACT BETWEEN THE UNITED STATES
8 AND
9 THE CITY OF TRACY
10 PROVIDING FOR PROJECT WATER SERVICE

11 THIS CONTRACT, made this _____ day of _____, 2010,
12 in pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory or
13 supplementary thereto, including, but not limited to, the acts of August 26, 1937 (50 Stat. 844),
14 as amended and supplemented, August 4, 1939 (53 Stat. 1187), as amended and supplemented,
15 July 2, 1956 (70 Stat. 483), June 21, 1963 (77 Stat. 68), October 12, 1982 (96 Stat. 1263),
16 as amended, and Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706), all collectively
17 hereinafter referred to as Federal Reclamation law, between the UNITED STATES OF
18 AMERICA, hereinafter referred to as the United States, and THE CITY OF TRACY, hereinafter
19 referred to as the Contractor, a public agency of the State of California, duly organized existing
20 and acting pursuant to the laws thereof;

21 WITNESSETH, That:

22 EXPLANATORY RECITALS

23 WHEREAS, the United States and the Banta-Carbona Irrigation District (District)
24 entered into an interim renewal contract identified as Contract No. 14-06-200-4305A-IR5,
25 hereinafter referred to as the Interim Renewal Contract, which provided for the continued water
26 service to the Contractor following expiration of Contract No. 14-06-200-4305A; and

27 WHEREAS, the United States and the District have entered into successive
28 renewals of the Interim Renewal Contract, the most recent of which is Contract
29 No. 14-06-200-4305-IR11-B, hereinafter referred to as the Existing Interim Renewal Contract,
30 from March 1, 2008, through February 28, 2010; and

31 WHEREAS, on February 27, 2004, the Contractor and the District entered into an
32 assignment agreement that assigned 5,000 acre-feet of project water to the Contractor; and

33 WHEREAS, the United States and the Contractor have made significant progress
34 in their negotiations of a long-term renewal contract, believe that further negotiations on the
35 long-term renewal contract would be beneficial, and mutually commit to continue to negotiate to
36 seek to reach agreement, but anticipate that the environmental documentation necessary for
37 execution of any long-term renewal contract will be delayed until the summer of 2011 and may
38 be delayed further for reasons beyond the control of the parties; and

39 WHEREAS, the Contractor has requested a subsequent interim renewal contract
40 pursuant to subdivision (b)(1) of the Article 2 of the Interim Renewal Contract and Article 1 of
41 the Existing Interim Renewal Contract; and

42 WHEREAS, the United States has determined that the Contractor has to date
43 fulfilled all of its obligations under the Existing Interim Renewal Contract; and

44 WHEREAS, the United States is willing to renew the Existing Interim Renewal
45 Contract pursuant to the terms and conditions set forth below;

46 NOW, THEREFORE, in consideration of the mutual and dependent covenants
47 herein contained, it is hereby mutually agreed by the parties hereto as follows:

48 INCORPORATION AND REVISION OF
49 EXISTING INTERIM RENEWAL CONTRACT

50 1. The terms and conditions of the Existing Interim Renewal Contract are hereby
51 incorporated by reference into this Contract with the same force and effect as if they were
52 included in full text with the exception of Article 1 thereof, which is revised as follows:

53 (a) The first sentence in Subdivision (a) of Article 1 of the Existing Interim
54 Renewal Contract is modified as follows: “This interim renewal contract shall be effective from
55 March 1, 2010, and shall remain in effect through February 29, 2012, and thereafter will be
56 renewed as described in Subdivision (a) of Article 2 of the Interim Renewal Contract, if a
57 long-term renewal contract has not been executed with an effective commencement date of
58 March 1, 2012.”

59 (b) Subdivision (b) of Article 1 of the Existing Interim Renewal Contract is
60 amended by deleting the date “February 15, 2010,” and replacing same with the date
61 “February 15, 2012.”

62 (c) Subdivision (c) of Article 1 of the Existing Interim Renewal Contract is
63 amended by deleting the dates “February 1, 2010,” “February 15, 2010,” and “February 28,
64 2010,” and replacing same with the dates “February 1, 2012,” “February 15, 2012,” and
65 “February 29, 2012,” respectively.

66 IN WITNESS WHEREOF, the parties hereto have executed this contract as of the
67 day and year first above written.

68 UNITED STATES OF AMERICA

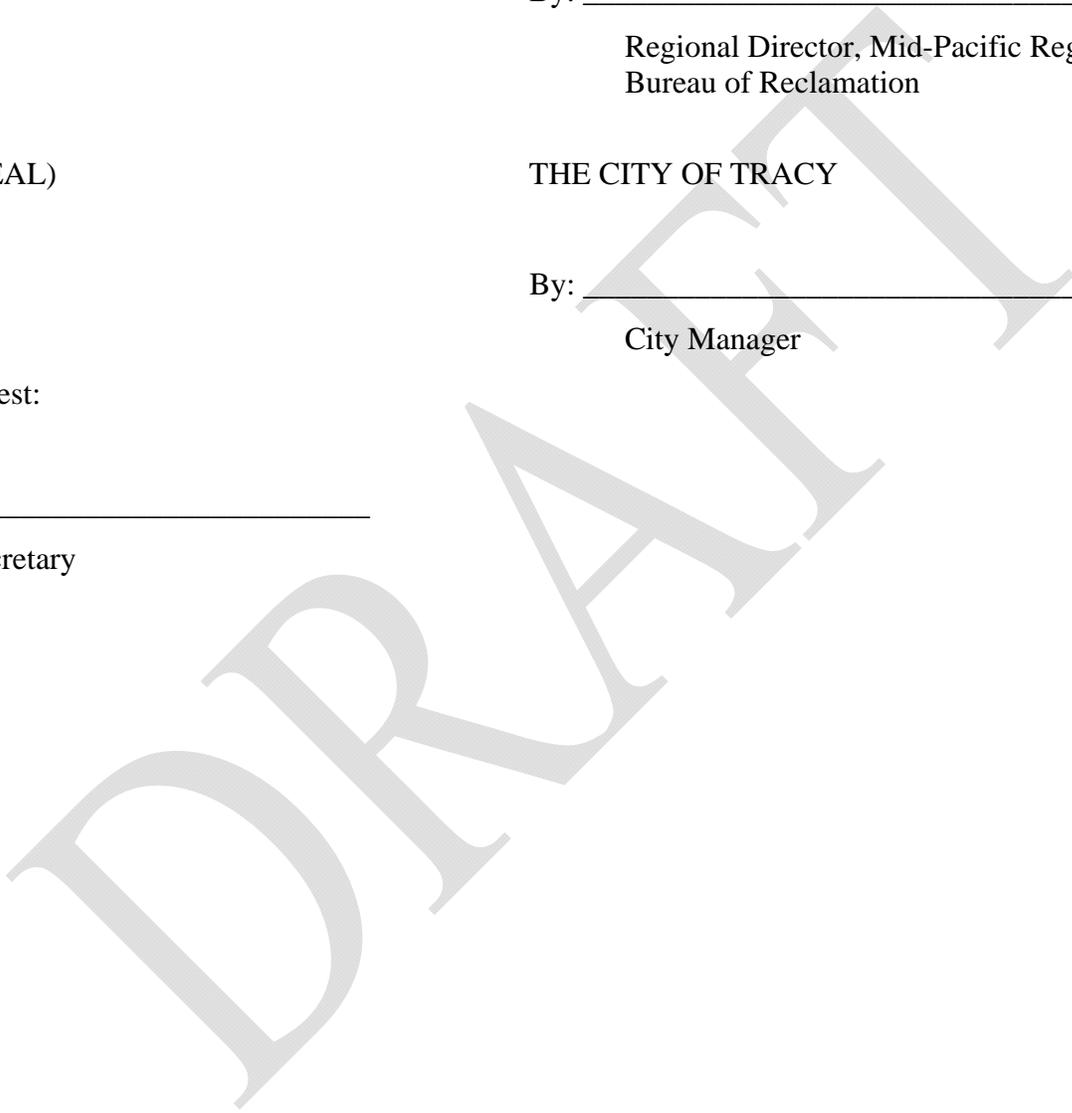
69 By: _____
70 Regional Director, Mid-Pacific Region
71 Bureau of Reclamation

72 (SEAL) THE CITY OF TRACY

73 By: _____
74 City Manager

75 Attest:

76 _____
77 Secretary



SAN LUIS UNIT

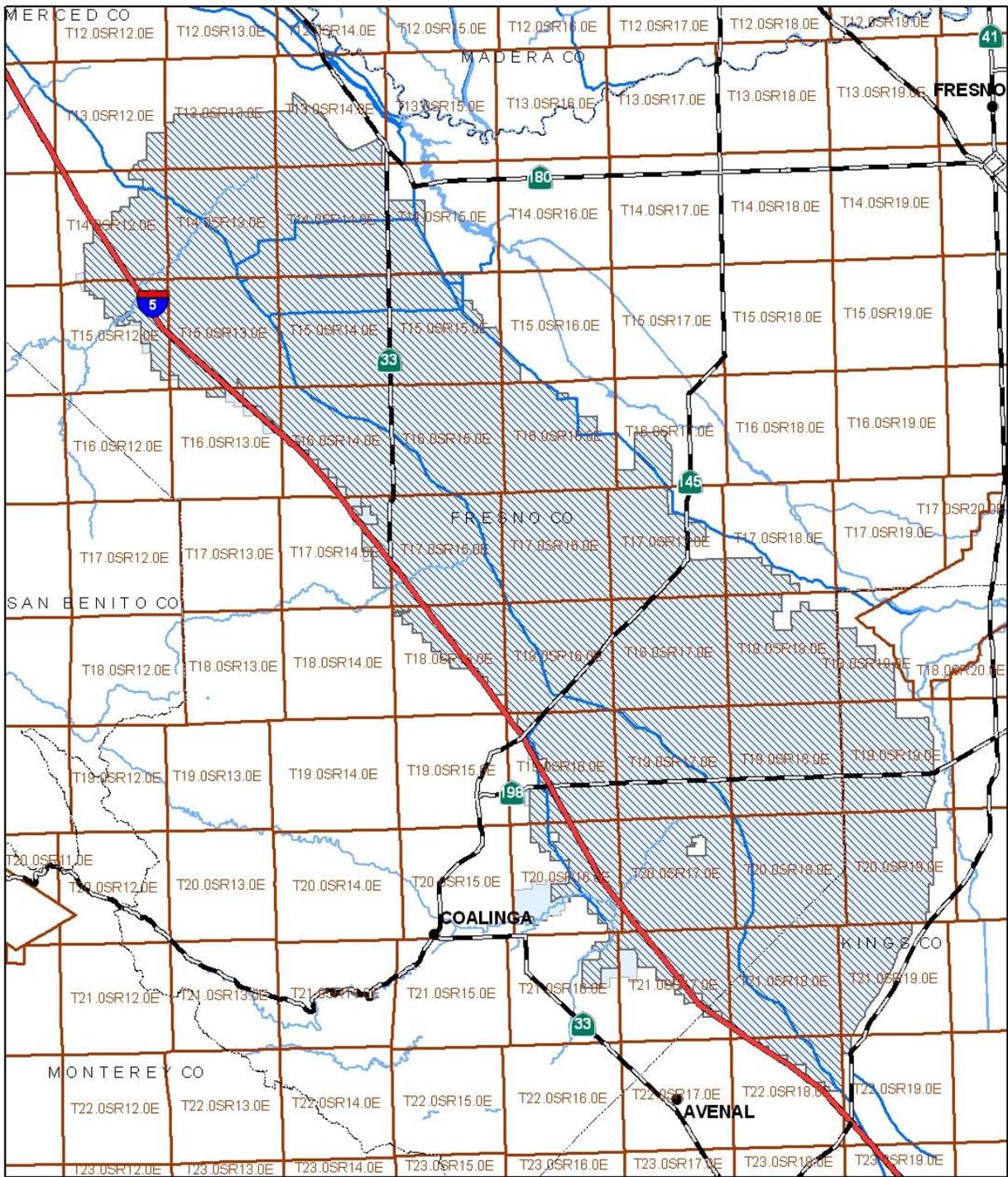
Draft ENVIRONMENTAL ASSESSMENT

INTERIM RENEWAL CONTRACT 2010-2013

Appendix B

Maps of San Luis Unit Contractor's Service Area Boundaries

December 2009



-  Contractor's Service Area
-  District Boundary

Westlands Water District

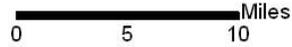
Contract No. 14-06-200-495A-IR2

Contract No. 14-06-200-8092-IR12 (Broadview WD)

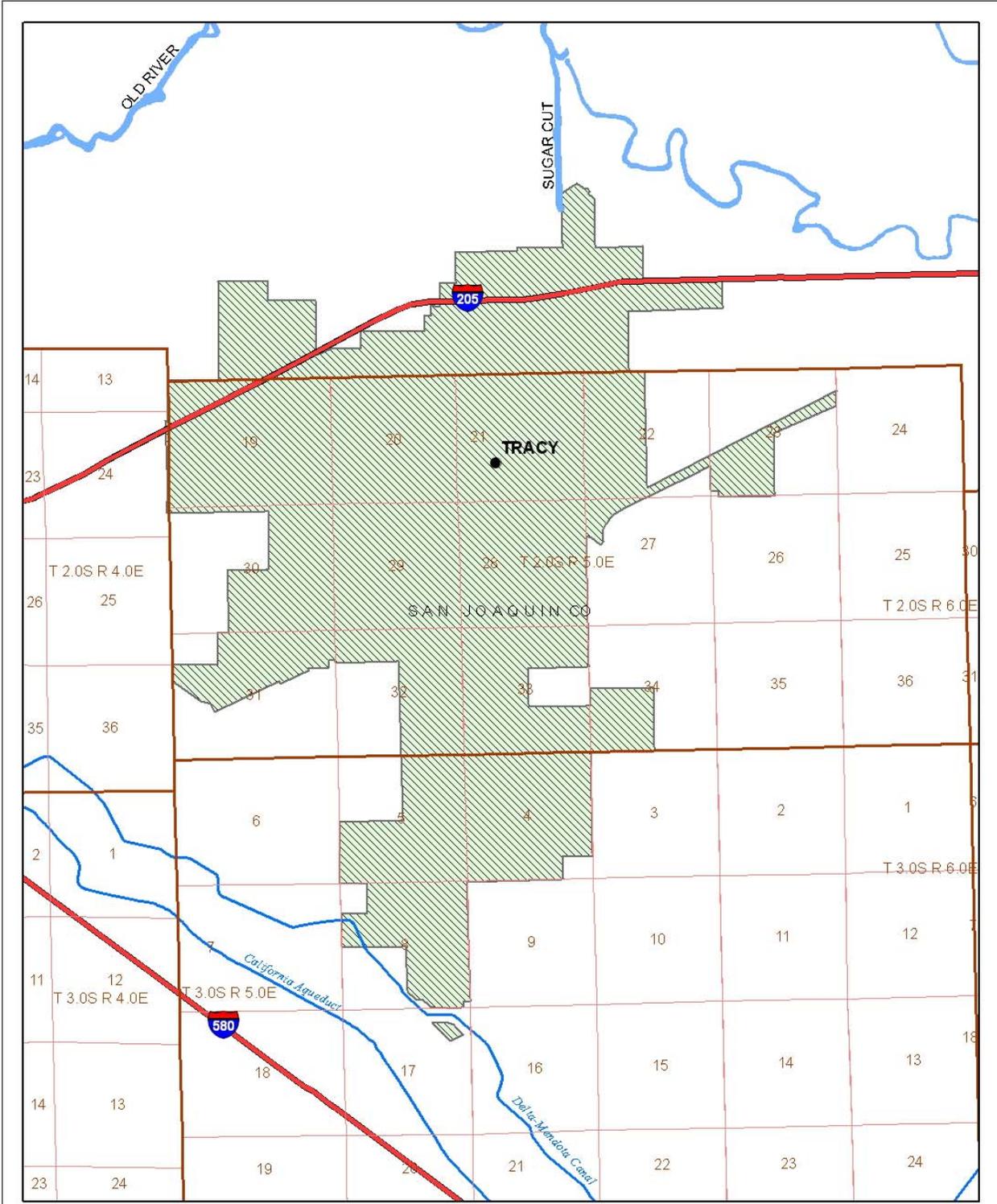
Contract No. 7-07-20-W0055-IR12-B (Centinella WD)

Contract No. 14-06-200-8018-IR12-B (Widren WD)

Contract No. 14-06-200-3365A-IR12-C (Mercy Springs WD)



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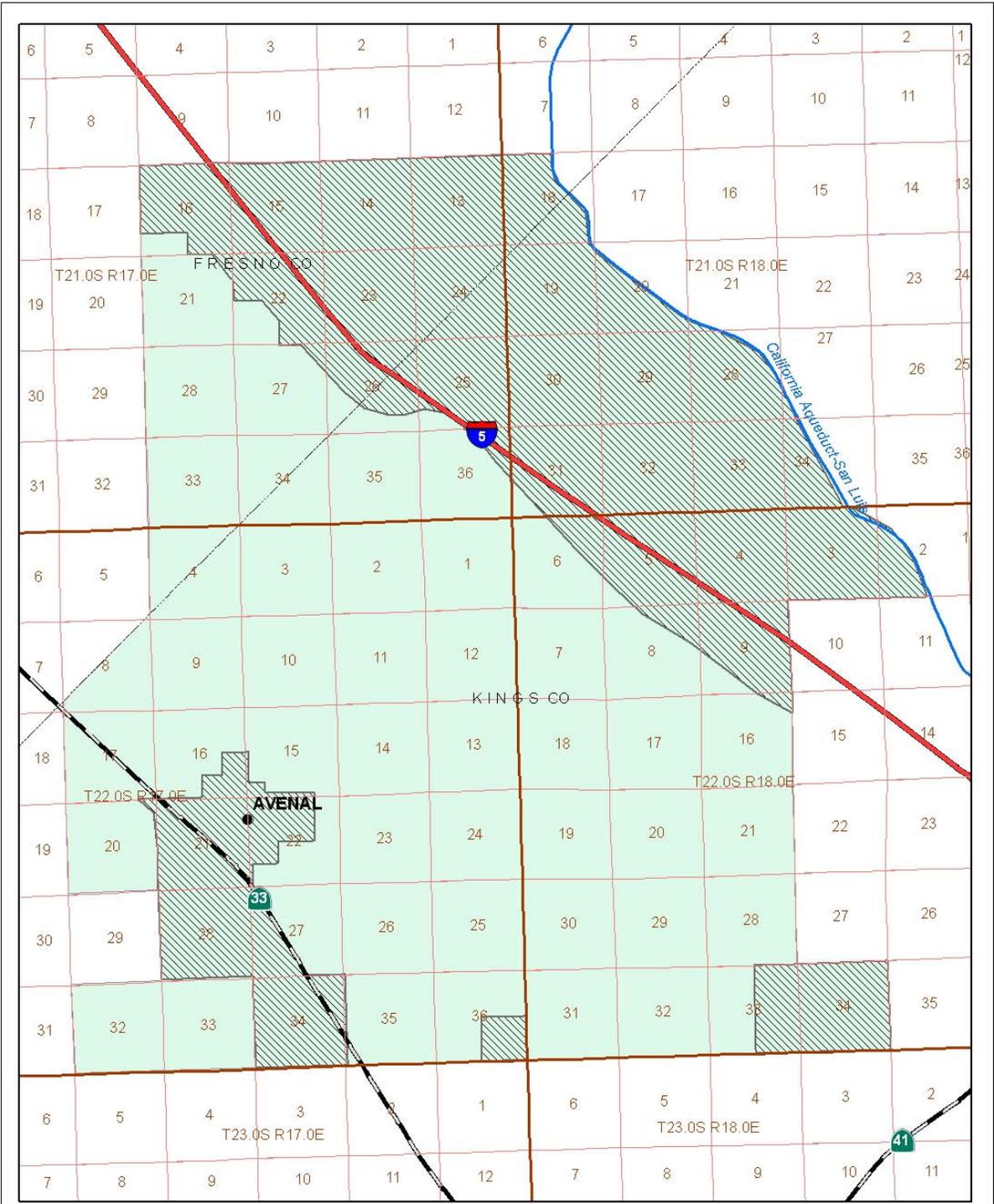


-  Contractor's Service Area
-  District Boundary

City of Tracy

Contract No. 14-06-200-4305A-IR12-B (West Side ID)
Contract No. 7-07-20-W0045-IR12-B (Banta-Carbona ID)





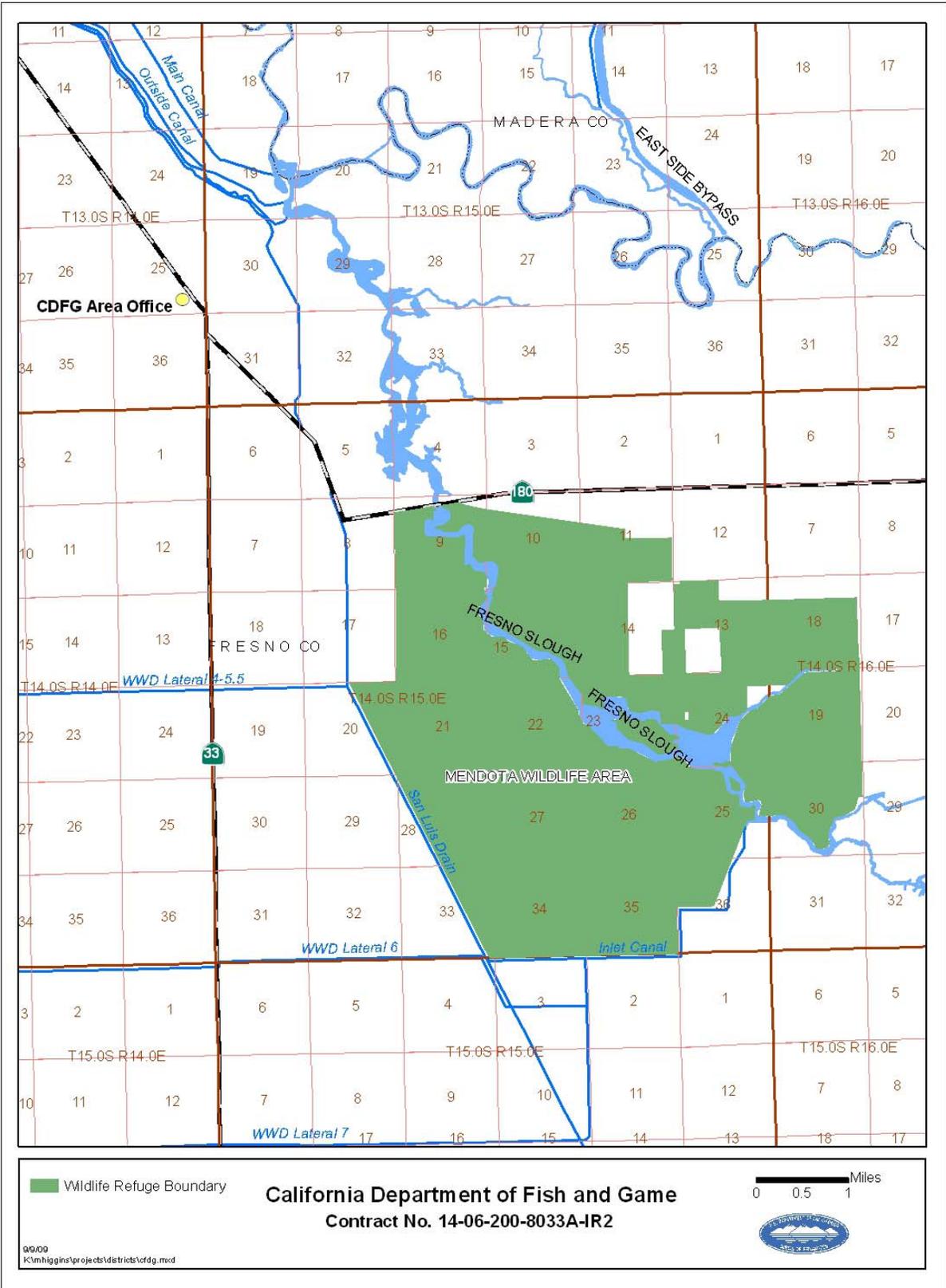
 Contractor's Service Area
 District Boundary

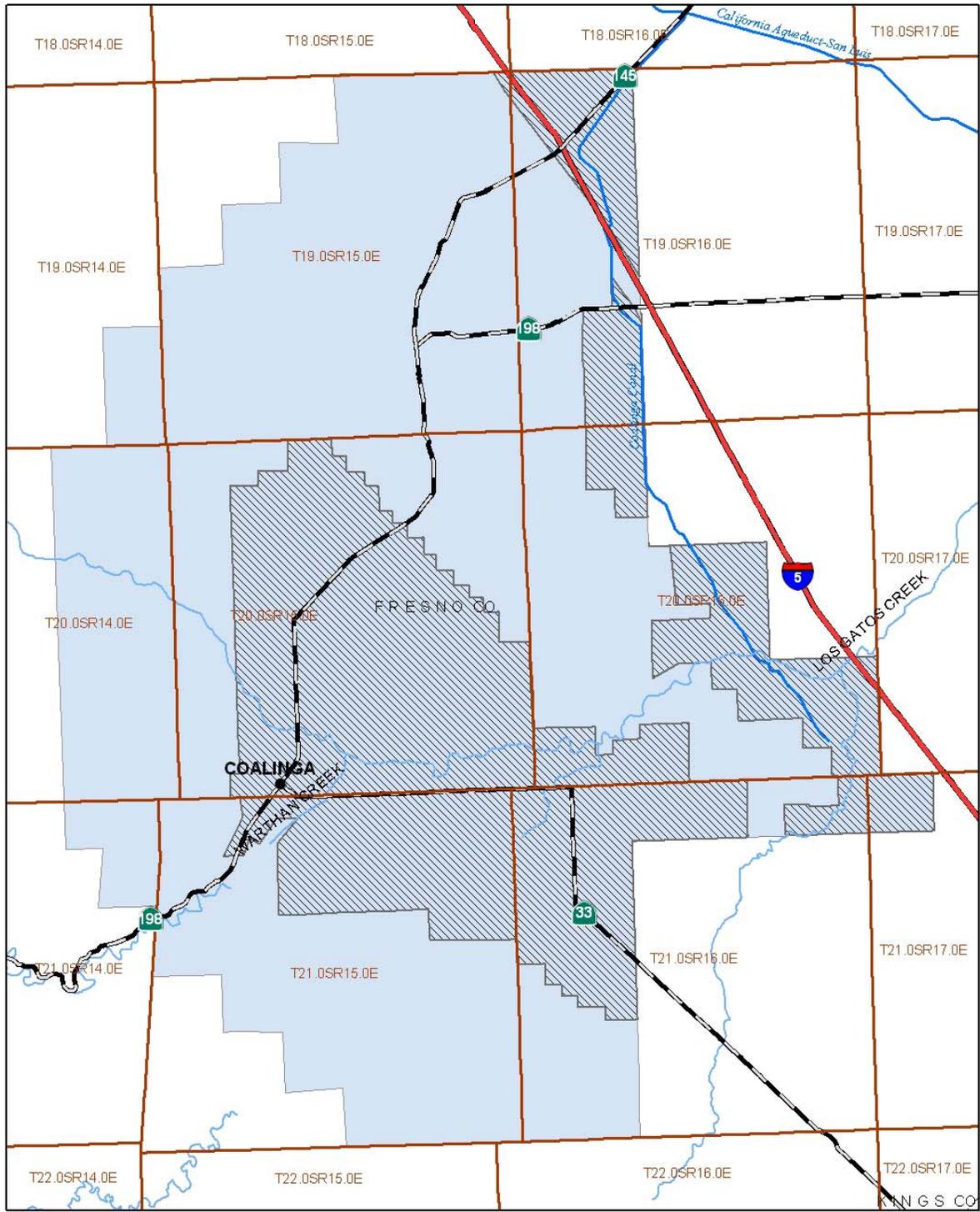
City of Avenal
 Contract No. 14-06-200-4619A-IR2

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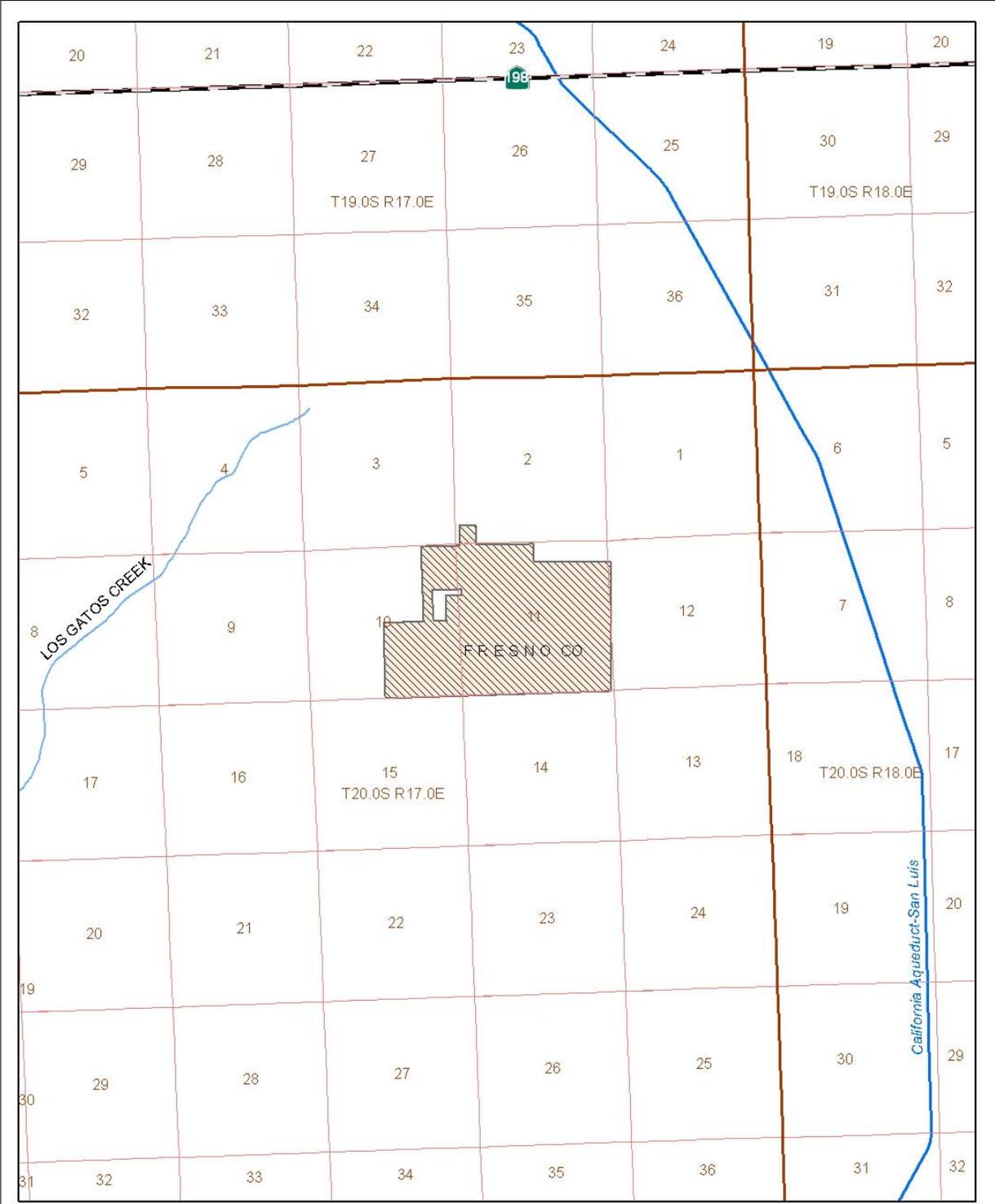


-  Contractor's Service Area
-  District Boundary

City of Coalinga
Contract No. 14-06-200-4173A-IR2



9/9/09
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-  Contractor's Service Area
-  District Boundary

City of Huron
Contract No. 14-06-200-7081A-IR2



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SAN LUIS UNIT

DRAFT ENVIRONMENTAL ASSESSMENT

INTERIM CONTRACT RENEWAL

Appendix C
Environmental Documents

December 2009

Healer, Rain L

From: Nickels, Adam M
Sent: Friday, September 04, 2009 10:41 AM
To: Healer, Rain L; Barnes, Amy J; Bruce, Brandee E; Connolly, Jonathan D; Leigh, Anastasia T; Overly, Stephen A; Gruenhagen, Ned M; Kinsey, Charles M (Michael); Lewis, Jennifer; McDonald, Shauna A
Subject: RE: EA-09-101 San Luis Unit Interim Renewal Contracts for review
Attachments: Cultural Resources Section for San Luis Unit Project Descriptions.doc

Project No. 09-SCAO-332

Rain:

I have reviewed the EA 09-101 San Luis Unit Interim Renewal Contracts. I have included the section for the Cultural Resources portion of the EA (Attached). Both the No Action Alternative and the Proposed Action Alternative have no potential to effect historic properties pursuant to 36 CFR Part 800.3(a)(1). There is no effect to cultural resources as a result. Please include the cultural resource section in the Draft EA. Baring any substantive changes that may result in ground disturbance or modification of built environment features, we have no further review. The Section 106 process is complete.

Sincerely,

Adam M. Nickels, M.S.
Archeologist
Bureau of Reclamation
Mid-Pacific Regional Office, MP-153
2800 Cottage Way
Sacramento, California 95825

Phone: 916.978.5053

Fax: 916978.5055

From: Healer, Rain L
Sent: Friday, September 04, 2009 8:50 AM
To: Barnes, Amy J; Bruce, Brandee E; Connolly, Jonathan D; Leigh, Anastasia T; Morris, Peter J; Nickels, Adam M; Overly, Stephen A; Gruenhagen, Ned M; Kinsey, Charles M (Michael); Lewis, Jennifer; McDonald, Shauna A
Subject: EA-09-101 San Luis Unit Interim Renewal Contracts for review

I have attached a new project for review.

Cost authority: A10-0805-8941-332-21-0-0

Rain L. Healer
Natural Resource Specialist
Bureau of Reclamation
1243 N Street, SCC 413
Fresno, CA 93721
(559) 487-5196
rhealer@usbr.gov

Healer, Rain L

From: Rivera, Patricia L
Sent: Thursday, September 24, 2009 1:29 PM
To: Healer, Rain L
Subject: RE: EA-09-101 San Luis Unit Interim Renewal Contracts

Rain,

I reviewed the proposed action to execute seven interim renewal contracts beginning March 1, 2010 for Westlands Water District (WWD) and the City of Tracy as well as four interim renewal contracts beginning March 1, 2011 for the California Department of Fish and Game (CDFG), and the cities of Huron, Coalinga and Avenal. Interim renewal contracts are undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contracts and long-term renewal of those contracts. Each of the 11 renewal contracts will be renewed for up to two years.

The Proposed Action is the execution of 11 interim renewal water service contracts between the United States and the Central Valley Project (CVP) contractors. The existing interim renewal contracts expire between February 28, 2010 and February 28, 2011. All 11 of these contracts have existing Interim Renewal Contracts. WWD, CDFG, the cities of Avenal, Huron, and Coalinga are on their second interim renewal contract. WWD and the City of Tracy have full or partial assignments from Mercy Springs Water District (MSWD), Centinella Water District (CWD), Widren Water District (Widren), Broadview Water District (BWD), West Side Irrigation District (WSID), and Banta Carbona Irrigation District (BCID) which are currently in their eleventh Interim Renewal Contract.

The Proposed Action would continue these existing Interim Renewal Contracts, with only minor, administrative changes to the contract provisions to update the previous interim renewal contracts for the new contract period. In the event that a new long-term water contract is executed, that interim renewal contract would then expire.

No changes to any of the six CVP contractor service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the 11 proposed interim renewal contracts can only be used within each designated contract service area. Contract service areas for the proposed interim renewal contracts have not changed from the existing interim renewal contracts. The proposed interim renewal contract quantities remain the same as in the existing interim renewal contracts. Water can be delivered under the interim renewal contracts in quantities up to the contract total, although it is likely that deliveries will be less than the contract total. The terms and conditions of the 2008 interim renewal contracts from EA-07-56 and EA-07-75 are incorporated by reference into the Proposed Action.

Interim renewal contracts are undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contracts and long-term renewal of those contracts. Each of the 11 renewal contracts will be renewed for up to two years with contract provisions as negotiated between Reclamation and each of the San Luis Unit contractors. Negotiations between Reclamation and each of the San Luis Unit contractors have recently been completed.

The Proposed Action includes language addressing the O&M of facilities by San Luis Unit Contractors as described in the No Action Alternative as well as water measurement and conservation articles. The Proposed Action also includes the same definition of M&I Water as the No Action Alternative.

Article 16(c) of the interim renewal contracts for irrigation specifies that the Contracting Officer shall notify the Contractor in writing when drainage service becomes available, and provides for the payment of rates for such service after such notice. The M&I contracts do not include drainage language.

The primary difference between the Proposed Action and the No Action Alternative 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 and negotiations between Reclamation and the six San Luis Unit contractors concluded with a form of contract which does not include tiered pricing. Consequently, if at least 80 percent of the contract total is delivered in any year during the term of the interim renewal contracts, in such year no incremental charges for water in excess of 80 percent of the contract total will be collected and paid to the Restoration Fund.

The following assumptions are made under each alternative:

- A. Execution of each interim renewal contract is considered to be a separate action;
- B. A two year interim renewal period is considered in the analysis, though contracts may be renewed for a shorter period.
- C. The contracts will be renewed with existing contract quantities as reflected in Table 2.1 below;
- D. Reclamation would continue to comply with commitments made or requirements imposed by applicable environmental documents, such as existing biological opinions (BOs) including any obligations imposed on Reclamation resulting from consultations; and
- E. Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

The proposed action does not affect Indian Trust Assets. The nearest ITA is Santa Rosa Rancheria approximately 6 miles East of the project location.

Patricia

SAN LUIS UNIT

DRAFT ENVIRONMENTAL ASSESSMENT

INTERIM CONTRACT RENEWAL 2010-2013

Appendix D
Water Needs Assessment

December 2009

Water Needs Assessment

TRACY, CITY OF

Contractor ID: 202135

Date: 5/25/2006 9:12:41

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

Timeframe	Surface Water Supply						Groundwater Supply			Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private		Safe Yield	Recharge
1995	10,000 *	0	0	0	0	0	0	5,000	0	0	0	5,000
2025	10,000 *	10,000 *	0	0	0	32,500	0	5,000	0	0	0	47,500

Maximum Productive Acres: 3,962

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1995												
2025												

1995

2025

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss		Rel Urban Per Capita Dmd (gpcc)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcc)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Loss	Calc Urban Per Capita Dmd (gpcc)	Total M&I Demand (acre-feet)					
1995	46,000	242.3	12,487	0	0	0	0	0	0	0	301.0	242.3	12,487	12,487	7,487
2025	160,000	256.7	46,000	0	0	0	0	0	0	0	269.0	256.7	46,000	46,000	-1,500

* Represents Maximum Contract Amount

In 2025, transfers in = 10,000 ac-ft (So. San Joaquin ID), 3,000 ac-ft (Widren), 5,000 ac-ft (Banta Carbona), 5,000 ac-ft (The West Side) and 9,500 ac-ft (Plain View).

Many of these transfers are uncertain.

Water Needs Assessment

TRACY, CITY OF

Contractor ID: 202135

Date: 10/14/2004 3:30:24

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

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trislr / Rtm / Recycle In	Trislr / Out	District		Private	Safe Yield
1	2	3	4	5	6	7	8	9	10	11	12
1995	10,000	0	0	0	0	0	0	5,000	0	0	0
2025	10,000	10,000	0	0	0	32,500	0	5,000	0	0	0

Maximum Productive Acres: 3,962

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated		USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Net Crop Water Req (acre-feet)	Water Req (acre-feet)							
1	15	16	17	18	19	20	21	22	23	24	25	26	
1995													
2025													

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Insitt. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)					
1	28	29	30	31	32	33	34	35	36	37	38	39
1995	46,000	242.3	12,487	0	0	0	0	301.0	242.3	12,487	12,487	7,487
2025	160,000	256.7	46,000	0	0	0	0	269.0	256.7	46,000	46,000	-1,500

* Represents Maximum Contract Amount

Notes: In 2025, transfers in = 10,000 ac-ft (So. San Joaquin ID), 3,000 ac-ft (Widren), 5,000 ac-ft (Banta Carbona), 5,000 ac-ft (The West Side) and 9,500 ac-ft (Plain View). Many of these transfers are uncertain.

Water Needs Assessment

TRACY, CITY OF

Contractor ID: 202135

Delta

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

Date: 6/2/2003 8:27:05 A

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1995	10,000	0	0	0	0	0	0	5,000	0	0	0	5,000
2025	10,000	10,000	0	0	0	32,500	0	5,000	0	0	0	47,500

Maximum Productive Acres: 3,962

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USB Net Water Req (acre-feet)	Average Irrigated Acres	Reference Irrigated Acres	Calculated FDR (AF/acre)	USB FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)	
												15
1	15	16	17	18	19	20	21	22	23	24	25	26

1995

2025

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcpd)	Calc Urban Per Capita Dmd (gpcpd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcpd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Insit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)							
1	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1995	46,000	242.3	12,487	0	0	0	0	301.0	242.3	12,487	12,487	7,487	12,487	7,487
2025	160,000	256.7	46,000	0	0	0	0	269.0	256.7	46,000	46,000	-1,500	46,000	-1,500

* Represents Maximum Contract Amount

In 2025, transfers in = 10,000 ac-ft (So. San Joaquin ID), 3,000 ac-ft (Widren), 5,000 ac-ft (Banta Carbona), 5,000 ac-ft (The West Side) and 9,500 ac-ft (Plain View).

Notes: Many of these transfers are uncertain.

Division: Delta Water Needs Assessment District: 3/8/01

Agricultural and M&I Water Supply TRACY, CITY OF

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Irrfr/Retn /Recycle In Out	District	Private	Safe Yield	Recharge	
1	2	3	4	5	6	7	8	10	11	12	13
1995	10,000 *	0	0	0	0	0	0	5,000	0	0	5,000
2025	10,000 *	10,000 *	0	0	0	13,000	0	5,000	0	0	28,000

Maximum Productive Acres= 3,962

Contractor's Agricultural Water Demands

Timeframe	District	Crop Water Requirement (acre-feet)	Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Not Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1													
1995													
2025													

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Non-residential Water Demand			Loss		Ref Urban Per Capita Dmd (gpcd)	Total MCI Demand (acre-feet)	Total Ag+ MCI Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Per Capita Demand (gpcd)	Population	Industrial (acre-feet)	Comm/Instit (acre-feet)	Total Demand (acre-feet)	Unacc /Dist (acre-feet)	Loss							
1	28	29	31	32	33	34				35	36	37	38	39
1995	46,000	242.3	0	0	0	0	0	0	301.0	242.3	12,487	12,487	7,487	
2025	160,000	256.7	0	0	0	0	0	0	269.0	256.7	46,000	46,000	18,000	

Notes:
 * Represents Maximum Contract Amount
 Water supply and demand information is for a normal hydrologic year. Crop Water Requirement includes leaching req. and cultural water but not irrigation efficiency.
 Information from contractor's water management plan or data submitted for historical years. USBR reference information for future years
 Quality control check; information is either calculated by USBR staff, or from reference.

Water Needs Assessment

AVENAL, CITY OF

Contractor ID: 203181

West San Joaquin

Date: 5/25/2006 9:14:45

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

Timeframe	Surface Water Supply					Groundwater Supply					Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Tsfr / Rtm / Recycle In	Tsfr / Out	District	Private	Safe Yield		Recharge
1997	3,500	2,432	0	0	0	0	0	0	0	0	0	2,432
2025	3,500	3,500	0	0	0	0	0	0	0	0	0	3,500

Maximum Productive Acres: 11,099

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres	Reference Irrigated Acres	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1997	15	16	17	18	19	20	21	22	23	24	25	26
2025	15	16	17	18	19	20	21	22	23	24	25	26

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcc)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcc)	Total Demand (acre-feet)	Comm / Inslit. (acre-feet)	Industrial (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Calc Urban Per Capita Dmd (gpcc)					
1997	28	29	30	31	32	33	34	35	36	37	38	39	1
2025	6,495	106.1	772	33	1,300	1,333	328	311.0	334.4	2,433	2,433	2,433	1
	12,000	97.2	1,306	57	2,143	2,200	385	274.0	289.5	3,891	3,891	3,891	391

* Represents Maximum Contract Amount

Note: Unaccounted beneficial use is added to distribution system loss; the total is shown under Distribution system loss.

Water Needs Assessment

AVENAL, CITY OF

Contractor ID: 203181

West San Joaquin

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

Date: 10/14/2004 3:30:26

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trisfr / Recycle In	Trisfr / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1997	3,500 *	2,432	0	0	0	0	0	0	0	0	0	2,432
2025	3,500 *	3,500	0	0	0	0	0	0	0	0	0	3,500

Maximum Productive Acres: 11,099

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1997												
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Loss (acre-feet)				
1	28	29	30	31	32	33	34	35	36	37	38	39
1997	6,495	106.1	772	33	1,300	1,333	328	311.0	334.4	2,433	2,433	1
2025	12,000	97.2	1,306	57	2,143	2,200	385	274.0	289.5	3,891	3,891	391

* Represents Maximum Contract Amount

Notes: Unaccounted beneficial use is added to distribution system loss; the total is shown under Distribution system loss.

Water Needs Assessment

AVENAL, CITY OF

Contractor ID: 203181

West San Joaquin

Date: 6/2/2003 8:27:13 A

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

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / Rtrn / Recycle In	Trsf / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1997	3,500	2,432	0	0	0	0	0	0	0	0	0	2,432
2025	3,500	3,500	0	0	0	0	0	0	0	0	0	3,500

Maximum Productive Acres: 11,099

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated		USBR Net		Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Net Crop Water Req (acre-feet)	Water Req (acre-feet)	Crop Water Req (acre-feet)	Water Req (acre-feet)						
1	15	16	17	18	19	20	21	22	23	24	25	26	26	

1997

2025

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Insit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)							
1	28	29	30	31	32	33	34	35	36	37	38	39	39	39
1997	6,495	106.1	772	33	1,300	1,333	328	311.0	334.4	2,433	2,433	1	2,433	1
2025	12,000	97.2	1,306	57	2,143	2,200	385	274.0	289.5	3,891	3,891	391	3,891	391

* Represents Maximum Contract Amount

Notes: Unaccounted beneficial use is added to distribution system loss; the total is shown under Distribution system loss.

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir/Return /Recycle In Out	Trsfir/Out	District	Private	Safe Yield		Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1995	3,500 *	2,432	0	0	0	0	0	0	0	0	0	2,432
1997 representative	3,500 *	2,432	0	0	0	0	0	0	0	0	0	2,432
2025	3,500 *	3,500	0	0	0	0	0	0	0	0	0	3,500

Contractor's Agricultural Water Demands Maximum Productive Acres= 0

Timeframe	District Irrig. Requirement (acre-foot)	District Irrig. Efficiency (%)	Reference Effective Precip (acre-foot)	Reference Effective Precip (acre-ft)	Calculated Net Water Req (acre-foot)	USBR Net Crop Water Req (acre-foot)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-foot)	Total Ag Demand (acre-foot)
1	15	16	17	18	19	20	21	22	23	24	25	26
1995												
1997												
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss		Total Demand (acre-foot)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-foot)	Industrial (acre-foot)	Comm/Instit (acre-foot)	Total Demand (acre-foot)	Unacc/Distr (acre-foot)	Loss	Unmet Demand (acre-foot)		
1	28	29	30	31	32	33	34				
1995	6,495	106.1	772	33	1,300	1,333	328	311.0	334.4	2,433	2,433
1997	6,495	106.1	772	33	1,300	1,333	328	311.0	334.4	2,433	2,433
2025	12,000	97.2	1,306	57	2,143	2,200	385	274.0	289.5	3,891	3,891

Notes: Unaccounted beneficial use is added to distribution system loss; the total is shown under Distribution system loss.
 * Represents Maximum Contract Amount
 Water supply and demand information is for a normal hydrologic year. Crop Water Requirement includes leaching req. and cultural water but not irrigation efficiency.
 Information from contractor's water management plan or data submitted for historical years. USBR reference information for future years
 Quality control check; information is either calculated by USBR staff, or from reference.

Water Needs Assessment

COALINGA, CITY OF

Contractor ID: 203182

West San Joaquin

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

Date: 5/25/2006 9:14:45

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf / Rtm / Recycle In	Trsf / Out	District	Private	Safe Yield		Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	10,000	4,321	0	0	0	0	0	0	0	0	0	4,321
1998	10,000	3,995	0	0	0	0	0	0	0	0	0	3,995
2025	10,000	10,000	0	0	0	0	0	0	0	0	0	10,000

Maximum Productive Acres: 34,538

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26

1996
1998
2025

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	35						
1	28	29	30	31	32	33	34	35	36	37	38	39		
1996	14,990	257.3	4,321	0	0	0	0	311.0	257.3	4,321	4,321	0		
1998	15,400	108.7	1,875	600	1,295	1,895	225	311.0	231.6	3,995	3,995	0		
2025	27,000	279.6	8,455	0	0	0	563	274.0	298.2	9,018	9,018	-982		

* Represents Maximum Contract Amount

Unaccounted beneficial uses are added to distribution system losses and shown under Distribution system loss. 2025 system losses based on 1998 system loss rate. The City's population includes 5,000 inmates at the Pleasant Valley State Prison.

Water Needs Assessment

COALINGA, CITY OF

Contractor ID: 203182

West San Joaquin

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

Date: 10/14/2004 3:30:26

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsr / Rtm / Recycle In	Trsr / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	10,000	4,321	0	0	0	0	0	0	0	0	0	4,321
1998	10,000	3,995	0	0	0	0	0	0	0	0	0	3,995
2025	10,000	10,000	0	0	0	0	0	0	0	0	0	10,000

Maximum Productive Acres: 34,538

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1996												
1998												
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss		Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Loss (acre-feet)	Calc Urban Per Capita Dmd (gpcd)	Ref Urban Per Capita Dmd (gpcd)				Total M&I Demand (acre-feet)
1	28	29	30	31	32	33	34	35	36	37	38	39		
1996	14,990	257.3	4,321	0	0	0	0	311.0	257.3	4,321	4,321	4,321	0	0
1998	15,400	108.7	1,875	600	1,295	1,895	225	311.0	231.6	3,995	3,995	3,995	0	0
2025	27,000	279.6	8,455	0	0	0	563	274.0	298.2	9,018	9,018	9,018	-982	-982

* Represents Maximum Contract Amount

Notes: Unaccounted beneficial uses are added to distribution system losses and shown under Distribution system loss. 2025 system losses based on 1998 system loss rate. The City's population includes 5,000 inmates at the Pleasant Valley State Prison.

Water Needs Assessment

COALINGA, CITY OF

Contractor ID: 203182

West San Joaquin

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

Date: 6/2/2003 8:27:14 A.

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	10,000 *	4,321	0	0	0	0	0	0	0	0	0	4,321
1998	10,000 *	3,995	0	0	0	0	0	0	0	0	0	3,995
2025	10,000 *	10,000	0	0	0	0	0	0	0	0	0	10,000

Maximum Productive Acres: 34,538

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net		Reference Irrigated Acres (acres)	Average Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Net Crop Water Req (acre-feet)	Crop Water Req (acre-feet)						
1	15	16	17	18	19	20	22	21	23	24	25	26
1996												
1998												
2025												

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag * M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Comm / Insit. (acre-feet)	Industrial (acre-feet)	Unacc. / Distr (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr (acre-feet)						
1	28	29	30	31	32	33	34	35	36	37	38	39		
1996	14,990	257.3	4,321	0	0	0	0	311.0	257.3	4,321	4,321	0	0	0
1998	15,400	108.7	1,875	600	1,295	1,895	225	311.0	231.6	3,995	3,995	0	0	0
2025	27,000	279.6	8,455	0	0	0	563	274.0	298.2	9,018	9,018	-982	-982	-982

* Represents Maximum Contract Amount
 Unaccounted beneficial uses are added to distribution system losses and shown under Distribution system loss. 2025 system losses based on 1998 system loss rate
 The City's population includes 5,000 inmates at the Pleasant Valley State Prison.

Division: West San Joaquin

Water Needs Assessment

District:

Date: 3/8/01

Agricultural and M&I Water Supply

COALINGA, CITY OF

Timeframe	Contractor's Water Supply Sources and Quantities (acre-feet)						Groundwater Supply			Total Supply
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf/Retn /Recycle In Out	District	Private	Safe Yield Recharge	
1	2	3	4	5	6	7 8	9	10	11 12	13
1996	10,000 *	4,321	0	0	0	0 0	0	0	0	4,321
1998	10,000 *	3,995	0	0	0	0 0	0	0	0	3,995
2025	10,000 *	10,000	0	0	0	0 0	0	0	0	10,000

Maximum Productive Acres= 34,538

Contractor's Agricultural Water Demands

Timeframe	Crop Requirement (acre-feet)	District Irrig. Efficiency (%)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-foot)	USBR Net Crop Water Req (acre-foot)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-foot)	Total Ag Demand (acre-foot)	
												15
1	15	16	17	18	19	20	21	22	23	24	25	26

1996
1998
2025

Contractor's M&I Water Demands

Timeframe	Residential Water Demand			Nonresidential Water Demand			Loss		Total MCI Demand (acre-foot)	Total MCI Dmd (acre-foot)	Unmet Demand (acre-foot)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-foot)	Industrial (acre-foot)	Comm/Inst (acre-foot)	Total Demand (acre-foot)	Unacc /Dist (acre-foot)	Loss (acre-foot)				
1	28	28	30	31	32	33	34	35	36	37	38	39
1996	14,990	257.3	4,321	0	0	0	0	311.0	257.3	4,321	4,321	0
1998	15,400	108.7	1,875	600	1,295	1,895	225	311.0	231.6	3,995	3,995	0
2025	27,000	279.6	8,455	0	0	0	0	274.0	279.6	8,455	8,455	-1,545

Notes: Unaccounted beneficial uses are added to distribution system losses and shown under Distribution system loss.

* Represents Maximum Contract Amount

Water supply and demand information is for a normal hydrologic year. Crop Water Requirement includes leaching req. and cultural water but not irrigation efficiency.

Information from contractor's water management plan or data submitted for historical years. USBR reference information for future years

Quality control check; information is either calculated by USBR staff, or from reference.

Water Needs Assessment

HURON, CITY OF

Contractor ID: 203186

West San Joaquin

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

Date: 5/25/2006 9:14:45

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsr / Rlm / Recycle In	Trsr / Out	District	Private		Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	3,000	982	0	0	0	0	0	0	0	0	0	982
2025	3,000	3,000	0	0	0	0	0	0	0	0	0	3,000

Maximum Productive Acres:

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1996	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	0	0

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instil. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	80							206
1	28	29	30	31	32	33	34	35	36	37	38	39	39	39	39
1996	5,608	75.9	477	311	114	425	80	311.0	156.3	982	982	0	0	0	
2025	12,810	76.0	1,090	710	260	970	206	274.0	157.9	2,266	2,266	-734	-734		

* Represents Maximum Contract Amount

Unaccounted beneficial use is totaled with the distribution system loss. The total for both is shown under Distribution system losses in 2025 estimated to be 10%.

Water Needs Assessment

HURON, CITY OF
 Contractor ID: 203186
 West San Joaquin

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

Date: 10/14/2004 3:30:26

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsr / Rlm / Recycle In	Trsr / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	3,000	982	0	0	0	0	0	0	0	0	0	982
2025	3,000	3,000	0	0	0	0	0	0	0	0	0	3,000

Maximum Productive Acres:

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1996	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	0	0

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)	
	Population	Per Capita Demand	Industrial	Comm / Instit.	Industrial	Comm / Instit.	Unacc. / Distr.	Ref Urban Per Capita Dmd (gpcd)							Calc Urban Per Capita Dmd (gpcd)
1	28	29	31	32	31	32	34	35	36	37	38	39	39	39	39
1996	5,608	75.9	477	114	425	80	311.0	156.3	982	982	982	0	0	0	
2025	12,810	76.0	1,090	260	970	206	274.0	157.9	2,266	2,266	2,266	-734	-734		

* Represents Maximum Contract Amount

Notes: Unaccounted beneficial use is totaled with the distribution system loss. The total for both is shown under Distribution system loss. Distribution system losses in 2025 estimated to be 10%.

Water Needs Assessment

HURON, CITY OF

Contractor ID: 203186

West San Joaquin

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

Date: 6/2/2003 8:27:14 A.

Timeframe	Surface Water Supply					Groundwater Supply				Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsr / Rtm / Recycle In	Trsr / Out	District	Private		Safe Yield	Recharge
1996	3,000	982	0	0	6	7	8	9	10	11	12	13
2025	3,000	3,000	0	0	0	0	0	0	0	0	0	3,000

Maximum Productivity: Acres:

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net		Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Calculated Net Crop Water Req (acre-feet)	Water Req (acre-feet)						
1996	15	16	17	18	19	20	21	22	23	24	25	26
2025	0	0	0	0	0	0	0	0	0	0	0	0

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag * M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instit. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)							
1996	28	29	30	31	32	33	34	35	36	37	38	39	0	0
2025	12,810	76.0	1,090	710	260	970	206	274.0	157.9	2,266	2,266	-734	2,266	-734

* Represents Maximum Contract Amount

Notes: Unaccounted beneficial use is totaled with the distribution system loss. The total for both is shown under Distribution system loss. Distribution system loss estimated to be 10%.

Timeframe	Contractor's Water Supply Sources and Quantities (acre-feet)						Groundwater Supply			Total Supply		
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsf/Retn /Recycle In	Trsf/Retn /Out	District	Private		Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1996	3,000 *	982	0	0	0	0	0	0	0	0	0	982
2025	3,000 *	3,000	0	0	0	0	0	0	0	0	0	3,000

Timeframe	Contractor's Agricultural Water Demands												Maximum Productive Acres=
	District	Crop Water Requirement (acre-feet)	Irrig. Efficiency (%)	Effective Precip (acre-ft)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-foot)	USBR Net Crop Water Req (acre-foot)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-foot)	
1	15	16	17	18	18	19	20	21	22	23	24	25	26
1996	0												0
2025													

Timeframe	Contractor's M&I Water Demands										
	Residential Water Demand			Nonresidential Water Demand			Loss		Total M&I Demand		Unmet Demand
1	Population	Per Capita Demand (gpcd)	Total Demand (acre-foot)	Industrial (acre-foot)	Comm/Inst (acre-foot)	Total Demand (acre-foot)	Unacc /Dist (acre-foot)	Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Ag+ M&I Dmd (acre-foot)	Total Demand (acre-foot)
1996	28	28	30	31	32	33	34	35	36	37	38
1996	5,608	75.9	477	311	114	425	80	311.0	156.3	982	982
2025	12,810	76.0	1,090	710	260	970	0	274.0	143.6	2,060	2,060

Notes: Unaccounted beneficial use it totaled with the distribution system loss. The total for both is shown under Distribution system loss.
 * Represents Maximum Contract Amount
 Water supply and demand information is for a normal hydrologic year. Crop Water Requirement includes leaching req. and cultural water but not irrigation efficiency.
 Information from contractor's water management plan or data submitted for historical years. USBR reference information for future years
 Quality control check; information is either calculated by USBR staff, or from reference.

Water Needs Assessment

WESTLANDS WD

Contractor ID: 203220

West San Joaquin

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

Date: 10/14/2004 3:30:27

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1989	2	3	4	5	6	7	8	9	10	11	12	13
1996	1,062,509	1,130,463	0	0	0	32,865	5,420	0	175,000	0	0	1,332,908
1999	0	0	0	0	0	0	0	0	175,000	0	0	0
2025	1,150,000 *	1,150,000 *	0	0	0	0	4,938	0	175,000	0	0	1,320,062

Maximum Productive Acres: 532,700

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1989	1,150,449	75	65,249	155,765	1,446,933	1,401,883	515,000	519,216	2.81	2.70	319	1,447,252
1996	1,229,209	75	163,895	163,895	1,420,419	1,420,419	546,315	546,315	2.60	2.60		
1999	1,269,094	75	163,754	163,754	1,473,787	1,473,787	545,847	545,847	2.70	2.70		
2025	1,366,756	85	181,830	181,830	1,394,030	1,394,030	606,100	606,100	2.30	2.30	319	1,394,349

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instl. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Ref Urban Per Capita Dmd (gpcd)				
1989	28	29	30	31	32	33	34	35	36	37	38	39
1996	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	1,394,349	74,287

* Represents Maximum Contract Amount

Notes: In order to limit this to an assessment of agricultural water needs, M&I water demand in the amount of 5,420 AF in 1989 and 4,938 AF in 2025 are shown as transfers out.

Water Needs Assessment

WESTLANDS WD

Contractor ID: 203220

West San Joaquin

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

Date: 5/25/2006 9:14:46

Timeframe	Surface Water Supply						Groundwater Supply				Total Supply	
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District	Private	Safe Yield		Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989	1,062,509	1,130,463	0	0	0	32,865	5,420	0	175,000	0	0	1,332,908
1996	0	0										0
1999	0	0										0
2025	*	*	0	0	0	0	4,938	0	175,000	0	0	170,062
2026	*	*	1,150,000	0	0	0	4,938	0	175,000	0	0	1,320,062
2030	*	*	2,675	0	0	4,198	0	0	0	0	0	6,873

Maximum Productive Acres: 532,700

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	USBR Net		Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
					Calculated Net Crop Water Req (acre-feet)	Crop Water Req (acre-feet)						
1	15	16	17	18	19	20	21	22	23	24	25	26
1989	1,150,449	75	65,249	155,765	1,446,933	1,401,883	515,000	519,216	2.81	2.70	319	1,447,252
1996	1,229,209	75	163,895	163,895	1,420,419	1,420,419	546,315	546,315	2.60	2.60		
1999	1,269,094	75	163,754	163,754	1,473,787	1,473,787	545,847	545,847	2.70	2.70		
2025	1,366,756	85	181,830	181,830	1,394,030	1,394,030	606,100	606,100	2.30	2.30	319	1,394,349
2026	1,139,266	85	151,230	151,230	1,162,395	1,162,395	504,100	504,100	2.31	66,003	66,003	1,228,398
2030	10,560	85	1,330	1,330	10,859	10,859	3,598	3,598	3.02	343	343	11,202

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Ref Urban Per Capita Dmd (gpcd)	Calc Urban Per Capita Dmd (gpcd)	Total M&I Demand (acre-feet)	Total Ag + M&I Dmd (acre-feet)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Instl. (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)	Loss					
1	28	29	30	31	32	33	34	35	36	37	38	39	
1989													
1996													
1999													
2025													
2026													
2030													

* Represents Maximum Contract Amount

Notes: In order to limit this to an assessment of agricultural water needs, M&I water demand in the amount of 5,420 AF in 1989 and 4,938 AF in 2025 are shown as transfers out. 2030 is 2025 assessment for Westlands Distribution District #2 and includes an assignment of 4198 AF from Mercy Springs Water District, 5% conveyance loss and effective precipitation proportional to WWD 2025 estimate.

Water Needs Assessment

WESTLANDS WD

Contractor ID: 203220

West San Joaquin

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

Date 6/2/2003 8:27:14 A

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir / Rtm / Recycle In	Trsfir / Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	9	10	11	12	13
1989	1,062,509	1,130,463	0	0	0	32,865	5,420	0	175,000	0	0	1,332,908
1996	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2025	1,150,000 *	1,150,000 *	0	0	0	0	4,938	0	175,000	0	0	1,320,062

Maximum Productive Acres: 532,709

Contractor's Agricultural Water Demands

Timeframe	Crop Water Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-feet)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-feet)	USBR Net Crop Water Req (acre-feet)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-feet)	Total Ag Demand (acre-feet)
1	15	16	17	18	19	20	21	22	23	24	25	26
1989	1,150,449	75	65,249	155,765	1,446,933	1,401,883	515,000	519,216	2.81	2.70	319	1,447,252
1996	1,229,209	75	163,895	163,895	1,420,419	1,420,419	546,315	546,315	2.60	2.60	0	1,420,419
1999	1,269,094	75	163,754	163,754	1,473,787	1,473,787	545,847	545,847	2.70	2.70	0	1,473,787
2025	1,366,756	85	181,830	181,830	1,394,030	1,394,030	606,100	606,100	2.30	2.30	319	1,394,349

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Loss	Total Demand (acre-feet)	Per Capita Demand (gpcd)	Unmet Demand (acre-feet)
	Population	Per Capita Demand (gpcd)	Total Demand (acre-feet)	Industrial (acre-feet)	Comm / Inslit (acre-feet)	Total Demand (acre-feet)	Unacc. / Distr. (acre-feet)					
1	28	29	30	31	32	33	34	35	36	37	38	39
1989	0	0	0	0	0	0	0	0	0	0	0	114,344
1996	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	1,394,349	74,287

* Represents Maximum Contract Amount

Notes: In order to limit this to an assessment of agricultural water needs, M&I water demand in the amount of 5,420 AF in 1989 and 4,938 AF in 2025 are shown as transfers out.

Division: West San Joaquin

Water Needs Assessment

District:

Date: 3/8/01

Agricultural and M&I Water Supply

WESTLANDS WD

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

Timeframe	Surface Water Supply				Groundwater Supply				Total Supply			
	Reference Delivery	USBR Total Deliv/Max	SWP	Local	Local Source	Trsfir/Recycle In	Trsfir/Out	District		Private	Safe Yield	Recharge
1	2	3	4	5	6	7	8	8	10	11	12	13
1989	1,062,509	1,130,463	0	0	0	32,865	5,420	0	175,000	0	0	1,332,908
1996	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2025	1,150,000 *	1,150,000 *	0	0	0	0	4,938	0	175,000	0	0	1,320,062

Contractor's Agricultural Water Demands

Maximum Productive Acres= 545,268

Timeframe	Crop Requirement (acre-feet)	District Irrig. Efficiency (%)	Effective Precip (acre-foot)	Reference Effective Precip (acre-ft)	Calculated Net Crop Water Req (acre-foot)	USBR Net Crop Water Req (acre-foot)	Average Irrigated Acres (acres)	Reference Irrigated Acres (acres)	Calculated FDR (AF/acre)	USBR FDR (AF/acre)	Conveyance Loss (acre-foot)	Total Ag Demand (acre-foot)
1	15	16	17	18	19	20	21	22	23	24	25	26
1989	1,150,449	75	65,249	155,765	1,446,933	1,401,883	515,000	519,216	2.81	2.70	319	1,447,252
1996	1,229,209	75	163,895	163,895	1,420,419	1,420,419	546,315	546,315	2.60	2.60	0	1,420,419
1999	1,269,094	75	163,754	163,754	1,473,787	1,473,787	545,847	545,847	2.70	2.70	0	1,473,787
2025	1,366,756	85	181,830	181,830	1,394,030	1,394,030	606,100	606,100	2.30	2.30	319	1,394,349

Contractor's M&I Water Demands

Timeframe	Residential Water Demand				Nonresidential Water Demand				Total MCI Demand (acre-foot)	Total MCI Demand (acre-foot)	Unmet Demand (acre-foot)	
	Population	Per Capita Demand (gpcd)	Total Demand (acre-foot)	Comm/Instit (acre-foot)	Industrial (acre-foot)	Total Demand (acre-foot)	Unacc/Distr (acre-foot)	Ref Urban Per Capita Dmd (gpcd)				Calc Urban Per Capita Dmd (gpcd)
1	28	29	30	31	32	33	34	35	36	37	38	39
1989	0	0	0	0	0	0	0	0	0	0	1,447,252	114,344
1996	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	1,394,349	74,287

Notes: In order to limit this to an assessment of agricultural water needs, M&I water demand in the amount of 5,420 AF in 1989 and 4,938 AF in 2025 are shown as transfers out.

* Represents Maximum Contract Amount

SAN LUIS UNIT

DRAFT ENVIRONMENTAL ASSESSMENT

INTERIM CONTRACT RENEWAL

Appendix E
San Luis Unit Interim Contract Renewal Biological Opinion

December 2009

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 070521020847

Database Last Updated: March 5, 2007

Quad Lists

Listed Species

Invertebrates

- Branchinecta longiantenna
 - longhorn fairy shrimp (E)
- Branchinecta lynchi
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Lepidurus packardi
 - vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus
 - delta smelt (T)
- Oncorhynchus mykiss
 - Central Valley steelhead (T) (NMFS)

Amphibians

- Ambystoma californiense
 - California tiger salamander, central population (T)
 - Critical habitat, CA tiger salamander, central population (X)
- Rana aurora draytonii

- California red-legged frog (T)

Reptiles

- Gambelia (=Crotaphytus) sila
 - blunt-nosed leopard lizard (E)
- Thamnophis gigas
 - giant garter snake (T)

Birds

- Gymnogyps californianus
 - California condor (E)
- Haliaeetus leucocephalus
 - bald eagle (T)

Mammals

- Dipodomys ingens
 - giant kangaroo rat (E)
- Dipodomys nitratoides exilis
 - Critical habitat, Fresno kangaroo rat (X)
 - Fresno kangaroo rat (E)
- Dipodomys nitratoides nitratoides
 - Tipton kangaroo rat (E)
- Vulpes macrotis mutica
 - San Joaquin kit fox (E)

Plants

- Caulanthus californicus
 - California jewelflower (E)
- Cordylanthus palmatus

- palmate-bracted bird's-beak (E)
- *Monolopia congdonii* (=Lembertia congdonii)
 - San Joaquin woolly-threads (E)

Quads Containing Listed, Proposed or Candidate Species:

KETTLEMAN PLAIN (291A)

GARZA PEAK (291B)

STRATFORD (313A)

WESTHAVEN (313B)

KETTLEMAN CITY (313C)

HURON (314A)

GUIJARRAL HILLS (314B)

AVENAL (314C)

LA CIMA (314D)

COALINGA (315A)

ALCALDE HILLS (315B)

CURRY MOUNTAIN (315C)

KREYENHAGEN HILLS (315D)

BURREL (336B)

VANGUARD (336C)

FIVE POINTS (337A)

WESTSIDE (337B)

HARRIS RANCH (337C)

CALFLAX (337D)

TRES PECOS FARMS (338A)
LILLIS RANCH (338B)
DOMENGINE RANCH (338D)
SAN JOAQUIN (359C)
HELM (359D)
TRANQUILLITY (360A)
COIT RANCH (360B)
LEVIS (360C)
CANTUA CREEK (360D)
CHANEY RANCH (361A)
CHOUNET RANCH (361B)
TUMEY HILLS (361C)
MONOCLINE RIDGE (361D)
FIREBAUGH (381C)
DOS PALOS (382B)
HAMMONDS RANCH (382C)
BROADVIEW FARMS (382D)
CHARLESTON SCHOOL (383A)
ORTIGALITA PEAK NW (383B)
LAGUNA SECA RANCH (383D)
LOS BANOS VALLEY (384A)
VOLTA (403C)
LOS BANOS (403D)
SAN LUIS DAM (404D)

SAN LUIS UNIT

DRAFT ENVIRONMENTAL ASSESSMENT

INTERIM CONTRACT RENEWAL 2010-2013

Appendix F
San Luis Unit Interim Contract Renewal Biological Opinion

December 2009

United States Fish and Wildlife Service Biological Opinion pending.