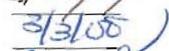
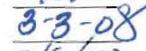
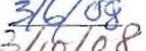
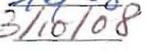


### ENVIRONMENTAL ASSESSMENT FOR THE 2008 RENEWAL OF INTERIM WATER SERVICE CONTRACTS THROUGH FEBRUARY 28, 2010

South-Central California Area Office

Date: March 3, 2008

To:	Wildlife Biologist	SCC 420		M Kinsey	
	Secretary	SCC 101		P Escobar	
	Acting Chief, Resource Division	SCC 400		V Curley	
	Deputy Area Manager	SCC 102		W Shipp	
	Natural Resource Specialist	SCC 413		J Tapia	

Cost Authority Number: A10-0863-8943-332-65-0-0

From: Judi Tapia

Subject: Review and signing of FONSI

Please review the attached FONSI/EA and route it according to the order on the list. When your review is finished, please date and initial this routing document, and sign on the first page of the FONSI if your name is listed. However, if you have comments or questions please contact the Environmental Team or the proponent of the action. When everyone has signed the FONSI, please return it to Judi Tapia.

Thank you.

Ready for Central Files 3/10/08

Copies to: MP-3730 (1 copies)  
 Project Proponent: Barbara Hidleburg (SCC- 415) Eileen Jones (TO-440) and Sheryl Carter (SCC- 414)  
 RMD Files  
 E-Copy (M. Yow)

**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION**

**MID-PACIFIC REGION**

**SOUTH-CENTRAL CALIFORNIA AREA OFFICE  
FRESNO, CALIFORNIA**

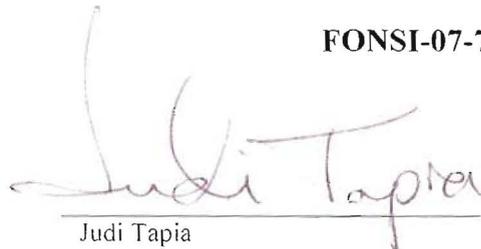
**FINDING OF NO SIGNIFICANT IMPACT**

**2008 RENEWAL OF INTERIM WATER SERVICE CONTRACTS**

**Central Valley Project  
Sacramento, California**

**FONSI-07-75**

Recommended by:



Judi Tapia  
Natural Resource Specialist  
South Central California Area Office

Date:

3/3/08

Concurred by:

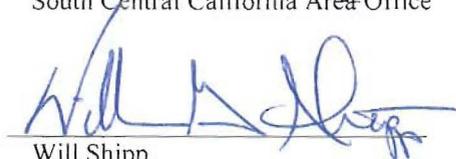


Valerie Curley  
Acting Resource Management Division Chief  
South Central California Area Office

Date:

3-3-08

Approved by:



Will Shipp  
Deputy Area Manager  
South Central California Area Office

Date:

3/6/08

**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION**

**MID-PACIFIC REGION**

**SOUTH-CENTRAL CALIFORNIA AREA OFFICE  
FRESNO, CALIFORNIA**

**FINDING OF NO SIGNIFICANT IMPACT**

**2008 RENEWAL OF INTERIM WATER SERVICE CONTRACTS**

**Central Valley Project  
Sacramento, California**

**FONSI-07-75**

Recommended by:

\_\_\_\_\_  
Judi Tapia  
Natural Resource Specialist  
South Central California Area Office

Date: \_\_\_\_\_

Concurred by:

\_\_\_\_\_  
Valerie Curley  
Acting Resource Management Division Chief  
South Central California Area Office

Date: \_\_\_\_\_

Approved by:

\_\_\_\_\_  
Will Shipp  
Deputy Area Manager  
South Central California Area Office

Date: \_\_\_\_\_

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**Draft FINDING OF NO SIGNIFICANT IMPACT**  
**San Luis Unit Water Service Interim Renewal Contracts**

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the South-Central California Area Office of the U.S. Bureau of Reclamation (Reclamation), has determined that the execution of up to 15 Interim Renewal Water Service Contracts for up to a two-year period from March 1, 2008 through February 28, 2010 is not a major federal action that would significantly affect the quality of the human environment and an environmental impact statement is not required. (see attached Table 1). This Finding of No Significant Impact is supported by Reclamation's Environmental Assessment (EA) Number EA-07-75, "2008 Renewal of Interim Water Service Contracts through February 28, 2010", and is hereby incorporated by reference.

**BACKGROUND**

Section 3404(c)(1) of the Central Valley Project Improvement Act (CVPIA) authorizes and directs Reclamation to prepare appropriate environmental review before renewing an existing water service contract for a period of twenty-five years. When that directive is not yet satisfied, Reclamation shall renew water contracts for an interim period not to exceed three years and for successive interim periods not to exceed two years. Because 15 interim renewal contractors' existing interim contracts will expire February 29, 2008, and Reclamation has not yet completed appropriate environmental review of a twenty-five year water service contract, Reclamation will execute 15 interim water service contracts. The Proposed Action, therefore, is the execution of these 15 interim renewal contracts with the United States, for 2 years with contract provisions as described within the EA. The 173,440 acre-feet of water available to these 15 contractors under the contract provisions of the Proposed Action will remain the same as in the existing interim contracts.

Reclamation initially prepared an EA in December 1994 to evaluate potential impacts of interim renewal of 67 water service contracts from December 1994 through February 1998. The 67 contracts considered in the 1994 EA were reduced to 54 through consolidation, termination, or assignment. A FONSI for that action was issued in December 1994.

Reclamation completed supplemental EAs in February 1998, February 2000, February 2001, February 2002, and February 2004, February 2006 to evaluate potential impacts from interim renewal contracts for an additional two years from March 1998 through February 2000, an additional one-year from March 2000 to February 2001, an additional 2 years from March 2002 to February 2004, an additional 2 years from March 2004 to February 2006 and an additional 2 years from March 2008 to February 2008. FONSIs for the 1998, 2000, and 2001, 2002, 2004 and 2006 interim contracts renewals, were approved.

The Proposed Action includes terms and conditions required by non-discretionary CVPIA provisions and are consistent with the Preferred Alternative of the CVPIA Programmatic Environmental Impact Statement. The contract provisions of the Proposed Action have been adapted for an interim period, and exclude tiered pricing. (Section 3405(d) of the CVPIA does not require tiered pricing to be included in contracts of 3 years or less in duration and negotiations concluded with a form of contract which does not include tiered pricing.)

Reclamation's finding that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following findings:

## **FINDINGS**

**Water Resources:** No interim renewal contract included in this action will change contract water quantities from the quantities in the existing contracts, and none will cause any increased water use. Therefore, there will be no effect on surface water supplies or quality. For the same reason, renewal of interim contracts will not result in any growth-inducing impacts that will increase water demand during the up to two-year period of this renewal.

**Land Use:** The renewal of contracts will not provide for additional water supplies that could act as an incentive for conversion of native habitat for increased acreage of agricultural production, municipal and industrial development, or other activities. The amount and types of crops will vary according to the annual water allocation and farming practices, and a small quantity of irrigation use may be changed to M&I purposes where the existing contract and governing laws and regulations allow. Given the two-year period of this renewal analysis, there will be no net effect on land use.

**Biological Resources:** The amount and timing of storage at CVP reservoirs and flows in rivers and streams that convey CVP water during the two-year analysis period are expected to be similar to the amount and timing of storage and flows under historic CVP operations and will be in conformance with all existing biological opinions and with regulatory requirements. Renewal of the interim contracts will not cause changes in existing programs to protect biological resources, and programs will continue to be implemented to ensure that no significant impacts to biological resources will occur.

Reclamation has completed consultation with the U.S. Fish and Wildlife Service on the proposed interim renewal action. The results of those ESA Section 7 consultations, along with implementation of all applicable requirements, ensure that renewal of interim contracts will not result in any significant effect to threatened or endangered species.

**Cultural Resources:** The Proposed Action will not cause activities that could affect cultural resources, such as permanent changes in reservoir elevations, development of native habitat for agricultural or M&I use, or the construction of any new facilities. No impacts to cultural resources are expected.

**Indian Trust Assets:** Continued delivery of project water to the existing contracts will not affect any Indian Trust Assets because existing rights will not be affected, no physical changes to existing facilities are proposed, and no new facilities are proposed.

**Recreation Resources:** The Proposed Action will not cause changes in historic CVP operations that determine reservoir storage or the amount or timing of water deliveries. Therefore, no impacts to recreational resources are anticipated.

**Socioeconomic Resources:** The renewal of interim CVP contracts will not cause changes from existing contracts in deliveries or pricing of CVP water, CVP facilities operations, CVP power generation and use, or recreation use, and will therefore not cause economic impacts.

**Environmental Justice:** The Proposed Action will not cause changes in historical water supplies or CVP operations and, as a result, no changes in population, economics, or other indicators of social well being will result from the contract renewal. The Proposed Action will support continued agricultural production and therefore will not cause changes to employment of minority and low-

income populations. No disproportionate impacts to minority or low-income populations are expected to occur as a result of renewing these contracts. There are no environmental justice implications from the Proposed Action.

***Cumulative Impacts:*** The Proposed Action, when added to other past, present, and future actions does not result in additional diversions of water, or significantly impact biological, cultural, recreation or socioeconomic resources. Neither Indian Trust Assets nor disadvantaged or minority populations would be impacted. Water quality would not be degraded as a result of construction activities. Overall there would be no cumulative impacts due to this Proposed Action.

**Table 1. Central Valley Project 2008 Interim Renewal Contractors**

CVP Contractor	Contract Quantity (A/F)	Contract Purpose of Use	Water Shortage Reliability	Existing IRC Contract No.	Contract Expiration Date	2008 IRC Contract No.
<b>DELTA DIVISION</b>						
<b>Delta-Mendota-Canal Unit:</b>						
Tracy, City of <i>(assignment final 27 Feb 04)</i>	5,000	Ag/M&I	Ag	14-06-200-4305A-IR9-B (partial assign from Banta Carbona ID)	2/29/2008	14-06-200-4305A-IR10-B (partial assign from Banta Carbona ID)
Tracy, City of <i>(assignment final 27 Feb 04)</i>	2,500	Ag/M&I	Ag	7-07-20-W0045-IR9-B (partial assign from the West Side ID)	2/29/2008	7-07-20-W0045-IR10-B (partial assign from the West Side ID)
Westlands Water District (District #1)* <i>(assignment final 9 Nov 04)</i>	2,500	Ag/M&I	Ag	7-07-20-W0055-IR9 (assign. From Centinella WD)	2/29/2008	7-07-20-W0055-I10 (assign. From Centinella WD)
Westlands Water District (District #1)* <i>(assignment final 27 May 05)</i>	2,990	Ag/M&I	Ag	14-06-200-8018-IR9 (assign. From Widren WD)	2/29/2008	14-06-200-8018-IR10 (assign. From Widren WD)
Westlands Water District (District #2)* <i>(assignment final 1 Mar 03)</i>	4,198	Ag/M&I	Ag	14-06-200-3365A-IR9-C (partial assign. From Mercy Springs WD)	2/29/2008	14-06-200-3365A-IR10-C (partial assign. From Mercy Springs WD)
Westlands Water District (District #1)* <i>(assignment final xx/xx/xxx)</i>	27,000	Ag/M&I	Ag	14-06-200-8092-IR9 (assign. From Broadview WD)	2/29/2008	14-06-200-8092-IR10
Pajaro Valley Water Mangement Agency, Westlands Water District (District #1), Santa Clara Valley Water District <i>(3-way assignment final 14 May 99)</i>	6,260	Ag/M&I	Ag	14-06-200-3365A-IR9-B (3-way assignment from Mercy Springs: see Reclamation 1999 and 2004c)	2/29/2008	14-06-200-3365A-IR10-B (3-way assignment from Mercy Springs: see Reclamation 1999 and 2004c)

Contractor	Contract Quantity (A/F)	Contract Purpose of Use	Water Shortage Reliability	Existing IRC Contract No.	Contract Expiration Date	2008 IRC Contract No.
<b>Cross Valley Contractors: CVP</b>						
Fresno, County of	3,000	Ag/M&I	Ag	14-06-200-8292A-IR11	2/29/2008	14-06-200-8292A-IR12
Hills Valley Irrigation District	3,346	Ag/M&I	Ag	14-06-200-8466A-IR11	2/29/2008	14-06-200-8466A-IR12
Kern-Tulare Water District	40,000	Ag/M&I	Ag	14-06-200-8601A-IR11	2/29/2008	14-06-200-8601A-IR12
Lower Tule River Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8237A-IR11	2/29/2008	14-06-200-8237A-IR12
Pixley Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8238A-IR11	2/29/2008	14-06-200-8238A-IR12
Rag Gulch Water District	13,300	Ag/M&I	Ag	14-06-200-8367A-IR11	2/29/2008	14-06-200-8367A-IR12
Tri-Valley Water District	1,142	Ag/M&I	Ag	14-06-200-8565A-IR11	2/29/2008	14-06-200-8565A-IR12
Tulare, County of	5,308	Ag/M&I	Ag	14-06-200-8293A-IR11	2/29/2008	14-06-200-8293A-IR12
Total	<b>173440</b>					

# RECLAMATION

*Managing Water in the West*

**Final Environmental Assessment**

## **Environmental Assessment for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010**

**EA-07-75**



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

February 2008

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## List of Acronyms, Abbreviations and Definition of Terms

AEWSD	Arvin Edison Water Storage District
af	acre-feet (the volume of water one foot deep and an acre in area)
af/y	acre-feet per year
Ag	agricultural
APE	Area of potential effect
Barcellos	Barcellos Judgment
BCID	Banta Carbona Irrigation District
BMP	Basin Management Plan
BO	Biological Opinion
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CDMWC	Colusa Drain Mutual Water Company
CEC	Categorical Exclusion Checklist
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRHR	California Registry of Historic Resources
CSA	County Service Area
CV Contractor	Cross Valley Contractor
CVC	Cross Valley Canal
CVHMP	Central Valley Habitat Monitoring Program
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DD#1	Distribution District #1
DD#2	Distribution District #2
Delta	Sacramento/San Joaquin Rivers Delta
Devine and Wood	Landowners in both MSWD and WWD that requested the MSWD partial assignment to WWD DD#2
DMC	Delta Mendota Canal
DOI	Department of the Interior
DWR	California Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impact
FWCA	Fish & Wildlife Coordination Act
FWS	Fish and Wildlife Service
GMP	Groundwater Management Plan
HVID	Hill's Valley Irrigation District
IRC	Interim Renewal Contract
ID	Irrigation District
ITA	Indian Trust Assets

JJWTP	John Jones Water Treatment Plant
KTWD	Kern-Tulare Water District
KTRG	Kern-Tulare and Rag Gulch Water Districts
LTRID	Lower Tule River Irrigation District
MG	Million gallons
M&I	Municipal and Industrial
MOU	Memorandum of Understanding
MSWD	Mercy Springs Water District
NDDDB	Natural Diversity Database
NEPA	National Environmental Policy Act
NHPS	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Registry of Historic Places
OCAP	Operating Criteria and Plan
PDA's	Public Domain Allotments
PEIS	Programmatic Environmental Impact Statement
PUD	Public Utility District
PVWMA	Pajaro Valley Water Management Agency
PWR	Pixley Wildlife Refuge
PXID	Pixley Irrigation District
RGWD	Rag Gulch Water District
Reclamation	Bureau of Reclamation
ROD	Record of Decision
ROW	Right of Way
SCVWD	Santa Clara Valley Water District
SHPO	State Historic Preservation Officer
SLC	San Luis Canal
SOD	South of Delta
SRSC	Sacramento River Settlement Contracts
SWP	State Water Project
Three Way Contract	Pajaro Valley Water Management Agency, Westlands Water District (District #1), Santa Clara Valley Water District
Tracy	City of Tracy
TVID	Tri-Valley Water District
US	United States
WSID	The Westside Irrigation District
WTP	Water Treatment Plant
WWD	Westlands Water District

# Section 1.0 Purpose and Need for Action

## 1.1 Introduction

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 Section 3404(c) of the CVPIA, the Bureau of Reclamation (Reclamation) proposes to execute 15 interim water service contracts beginning March 1, 2008. Interim renewal contracts (IRCs) are undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contract and the execution of a new long-term water service contract. The 15 water service contracts proposed for interim renewal in 2008 are listed in Table 1. These 15 interim contracts would be renewed for a two-year period from March 1, 2008 through February 28, 2010. In the event a new long-term water service contract is executed, the interim water service contract then-in-effect would be superseded by the long-term water service contract.

Reclamation has prepared this Environmental Assessment (EA) to determine the environmental effect of any actions resulting from the execution of these 15 interim contracts for up to two years (March 1, 2008 through February 28, 2010.) Previous interim renewal EAs and supplements have been prepared and approved as follows:

- the 1994 Interim Renewal Contracts EA (Reclamation 1994) which covered the contract years 1994 through 1997,
- the 1998 Supplemental EA (Reclamation 1998) which covered the contract years 1998 and 1999,
- the 2000 Supplemental EA (Reclamation 2000) which covered the contract year 2000,
- the 2001 Supplemental EA (Reclamation 2001) which covered the contract year 2001,
- the 2002 Supplemental EA (Reclamation 2002) which covered the contract years 2002 and 2003,
- the 2004 Supplemental EA (Reclamation 2004) which covered the contract years 2004 and 2005, and
- the 2006 Supplemental EA (Reclamation 2006) which covered the years 2006 and 2007.

These seven previous documents are incorporated by reference into this analysis. The 2006, 2004, 2002, 2001, and 2000 IRC Supplemental EAs are included in Appendix A. Due to the lengthiness of the documents, the December 1994 EA, and February 1998 Supplemental EA are available by request.

This 2008 EA will summarize and update, as needed, information from the 2006, 2004, 2002, 2001 or 2000 Final Supplemental EAs. This EA was developed consistent with regulations and

guidance from the Council on Environmental Quality, and in conformance with the analysis provided in *NRDC v. Patterson*, Civ. No. S-88-1658 (*Patterson*). In *Patterson* the Court found that "...[on] going projects and activities require NEPA [National Environmental Policy Act] procedures only when they undergo changes amounting in themselves to further 'major action'." In addition, the court went further to state that the NEPA statutory requirement applies only to those changes. The analysis in this 2008 EA and the incorporated EAs finds in large part that the interim renewal of the contracts is in essence a continuation of the "status quo," that is, they continue the existing use and allocation of resources (i.e., the same amount of water is being provided to the same lands for existing/ongoing purposes).

Section 3409 of the CVPIA required that Reclamation must 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 PEIS evaluated different alternatives of implementing CVPIA's requirements. On January 9, 2001, the Record of Decision (ROD) was signed approving the implementation of the Preferred Alternative from the Final PEIS, with a few delineated differences, (none of which relate to contract renewal). For the purposes of contract renewal, this was considered basic implementation of the CVPIA. An interim renewal contract form was developed in 1997 (prior to approval of the ROD), which incorporated the concepts of the Preferred Alternative. This interim renewal contract form is the basis for the No Action Alternative within this document.

The analysis in the PEIS as it relates to the implementation of CVPIA through contract renewal and the environmental impacts of implementation of the PEIS preferred alternative are foundational to this document. The PEIS has analyzed the differences in the environmental conditions between existing contract requirements (signed prior to CVPIA) and the No Action Alternative which is reflective of minimum implementation of CVPIA. This document will focus on the environmental impacts of implementation of the two forms of contracts described in the Alternatives Section.

### **1.1.1 Background of Long-Term and Interim Renewal Contracts**

As stated earlier, Sections 3404(c) and 3409 of the CVPIA stipulate that Reclamation must prepare a PEIS analyzing the direct and indirect impacts and benefits of implementing the

CVPIA before renewing long-term CVP water service contracts. The complexity of the analysis associated with the CVPIA PEIS extended its completion until October 1999, with a ROD approved on January 9, 2001.

The PEIS evaluated CVP-wide impacts of long-term contract renewal. As contract renewal negotiations were completed, Reclamation prepared environmental documents that tiered from the PEIS to analyze the local effects of long-term contract renewals at the division, unit, or facility level:

Reclamation completed long-term contract renewal environmental documentation in early 2001 for CVP contracts in the Friant Division, Hidden Unit, and Buchanan Unit of the CVP (Reclamation 2000, 2001b). Twenty-five of the 28 Friant Division long-term contracts were executed between January and February 2001, and the Hidden Unit and Buchanan Unit long-term contracts were executed in February 2001. The Friant Division long-term contracts with the City of Lindsay, Lewis Creek Water District, and City of Fresno were executed in 2005.

A final environmental impact statement (EIS) analyzing effects of the long-term renewal of the Sacramento River Settlement Contracts (SRSC) and the Colusa Drain Mutual Water Company (CDMWC) was completed in December 2004 (Reclamation 2004b). The 147 SRSCs were executed in 2005, and the CDMWC contract was executed on May 27, 2005. A revised EA for the long-term renewal of the Feather Water District water-service replacement contract was completed August 15, 2005 (Reclamation 2005), and the long-term contract was executed on September 27, 2005.

Environmental documents were completed by Reclamation in February 2005 for the long-term renewal of CVP contracts in the Shasta Division and Trinity River Divisions (Reclamation 2005b), the Black Butte Unit, Corning Canal Unit, and the Tehama-Colusa Canal Unit of the Sacramento River Division (Reclamation 2005c). All long-term CVP contracts for the Shasta, Trinity and Sacramento River Divisions were executed between February and May 2005.

Within the Delta Division, Reclamation completed long-term environmental documents for the Delta-Mendota Canal Unit (Reclamation 2005d), U.S. Department of Veteran Affairs (Reclamation 2005e), and the Contra Costa Water District (Reclamation 2005f), and executed 17 Delta Division long-term renewal contracts in early 2005. Three contractors in the Delta-Mendota Canal Unit have not yet executed a long-term renewal contract, and their respective existing interim contracts expire February 29, 2008. Reclamation is pursuing execution of these remaining long-term water service contract renewals within this interim period (March 1, 2008 to February 28, 2010).

Within the American River Division, Reclamation completed long-term environmental documents for the majority of the division. The American River long-term contract renewal EIS ROD was executed for five of the seven contractors. (Although the American River Division has eight contractors, one is a water rights contract with no expiration and is not part of the contract renewal process.) Reclamation has executed contracts with four of the five contractors covered by the ROD. The two of the three not covered by the ROD are still undergoing ESA consultation and awaiting the completion of a BO. The current contracts for the American River Division contractors that have not yet executed a long-term renewal contract expire in 2011. Reclamation is pursuing execution of these remaining long-term water service contract renewals within this interim period (March 1, 2008 to February 28, 2010).

Cross Valley Contractors (CV Contractors) and San Luis Unit long-term environmental documentation and contract renewal is pending. Reclamation is pursuing completion of environmental compliance and execution of these remaining long-term water service contracts within the analysis period of this EA (March 1, 2008 to February 28, 2010.)

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

In the late fall of 2007 due to the fact that the existing San Luis Unit contracts expire between December 2007 and December 2008, with one in February 2024, an interim renewal contract EA, entitled *San Luis Unit Water Service Interim Renewal Contracts – 2008 – 2011* (EA# 07-56)(Reclamation 2007), was written and separate Finding of No Significant Impacts (FONSI) will be signed beginning in December 2007. The first interim contracts for five of the seven San Luis Unit expiring contracts to be signed will be: Westlands Water District (WWD), City of Avenal, City of Huron, City of Coalinga, and Department of Fish and Game (CDFG.) The other two San Luis Unit contracts, which expire in December 2008, (Panoche Water District and San Luis Water District) are pending completion of ESA consultation and the signing of the remaining two FONSI.

## **1.2 Purpose and Need**

The purpose of the Proposed Action is to execute 15 interim contracts to extend the term of the contractors' existing interim renewal contract(s) for two years, beginning March 1, 2008 and ending February 28, 2010. Execution of these 15 interim contracts is needed to continue delivery of CVP water to these contractors until their new long-term contract can be executed.

IRCs 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 15 contractors. Additionally, CVP water is essential to continue agricultural production and municipal viability for these contractors.

## **1.3 Public Involvement**

The public is invited to review and comment on the Draft Supplemental EA and Draft FONSI for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010 for a 30-day review period that begins on December 27, 2007. A press release announcing the Draft EA/FONSI publication was sent to all interested parties, and the Draft EA/FONSI was made available for viewing on Reclamation's Mid-Pacific Region webpage.

Public participation requirements for water service, repayment, and other water-related contracts are established in Section 9(f) of the Reclamation Project Act of 1939, 43 U.S.C. 485h, and by Reclamation Reform Act rules and regulation (43 CFR 426.22). Public participation procedures are composed of two basic elements: 1) publicize proposed contract actions, and 2) provide an opportunity for public comment. Negotiations have been completed for the draft form of the 2008 interim renewal contracts, and all proposed 2008 interim contracts are proposed to have a term of two years. Reclamation invited the public to the negotiations of the draft form of the interim renewal contract, and Reclamation made available to the public documents discussed during the negotiations. Negotiations have been completed for the draft form of the 2008/09 IRCs. Reclamation provides public notices of proposed contract actions at least 60 days prior to execution of any contract with a term greater than 1 year. The 2008 IRCs were posted for 60 day public comment on December 13, 2007 at website [http://www.usbr.gov/mp/cvpia/3404c/lt\\_contracts/index.html](http://www.usbr.gov/mp/cvpia/3404c/lt_contracts/index.html).

## **1.4 Scope**

This EA has been prepared to examine the impacts on environmental resources as a result of delivering water to 15 contractors under the proposed IRCs. The water would be delivered for agricultural or municipal and industrial (M&I) purposes within Reclamation's existing water

right place of use. The water would be delivered within the current contractor service area boundaries using existing facilities for a period of up to two years.

#### **1.4.1 Contract Service Areas**

No changes to any contractor's service area are part of the Proposed Action. However, Reclamation anticipates completion of a boundary modification for the County of Fresno to include a previously graded tract (Tract 4870) into the service area so that development could commence. NEPA analysis was done for this as a separate action (Categorical Exclusion Checklist (CEC # 07-132.) Full ESA compliance has been accomplished for this boundary modification through the developer's purchase of mitigation lands.

Any request by an interim contractor to change its existing service area would be a separate federal action. Separate appropriate environmental compliance and documentation would be completed before Reclamation approves a land inclusion or exclusion to any CVP contractor's service area.

#### **1.4.2 Purpose of Use**

Use of contract water for agricultural irrigation use or M&I use under the proposed IRCs would not change from the purpose of use specified in the existing contracts. However, the amount and types of crops planted will vary according to the annual water allocation and farming practices, and a small quantity of irrigation use may be changed to M&I purposes where the existing contract and governing laws and regulations allow.

#### **1.4.3 Water Transfers and Exchanges**

No sales, transfers, or exchanges of CVP water are part of the Proposed Action. Water sales, transfers, and exchanges are separate actions and are independent of IRC execution. Pursuant to Section 3405 of the CVPIA, transfers of CVP water require appropriate site-specific environmental compliance and documentation. Appropriate site-specific environmental documentation is also prepared for all CVP water exchange actions.

#### **1.4.4 Water Assignments or District Mergers**

Assignments of CVP water are not included in the Proposed Action. Any changes in CVP contract assignments are separate, independent actions that require their own environmental compliance and documentation. Five interim contractors have previously obtained assignments or partial assignments of CVP water (see Table 1). The direct, indirect, and cumulative effects of these assignment actions were analyzed in previous environmental documents (Reclamation 1999, 2002b, 2003, 2003b, 2004d, 2005g).

District mergers or consolidations are also not included in the Proposed Action. During the period of these proposed IRCs it is likely that Kern-Tulare and Rag Gulch Water Districts

(KTRG) will combine into one district and request the combining of the two water service contracts. This action will be environmentally analyzed under separate environmental documentation.

#### **1.4.5 Warren Act Contracts**

Warren Act contracts between Reclamation and water contractors for the conveyance of non-federal water through federal facilities or for the storage of non-federal water in federal facilities are not included in the Proposed Action. KTRG routinely executes Warren Act contracts with Reclamation under separate environmental documentation. Most recently Reclamation executed a one year 2007 Warren Act with KTRG which was analyzed in EA 07-18 *Contract for Conveyance of Non-Project Water for KTWD and RGWD* (Reclamation 2007b). This EA determined that there was no affect of the proposed one year Warren Act contract. The FONSI was signed March 20, 2007. KTRG has requested a Warren Act contract for 2008 and is pursuing a long term Warren Act contract.

#### **1.4.6 Article 55 Conveyances**

Conveyance of non-federal water under Article 55 of a State Water Project (SWP) contractor's supply contract is not a federal action, and no Article 55 conveyance actions are included in the Proposed Action.

#### **1.4.7 Municipal and Industrial Water Shortage Policy**

Reclamation has completed environmental documentation for the Central Valley Project's Municipal and Industrial Water Shortage Policy (M&I Shortage Policy) (Reclamation 2005h). The purposes of the M&I shortage policy include: 1) define water shortage terms and conditions applicable to all CVP M&I contractors, 2) establish a minimum water supply level that (a) would sustain urban areas during droughts, and (b) during severe or continuing droughts would, as much as possible, protect public health and safety. The M&I water shortage policy will be incorporated into long-term water service contracts during the long-term contract renewal process being implemented under the CVPIA. The proposed 2008 interim renewal contracts would not change the existing contract terms and conditions governing the allocation of project water during a drought emergency. The existing contract terms regarding shortage allocations are in accordance with the June 9, 1997 CVPIA Administrative Proposal on Urban Water Supply.

Although the contracts contain provisions consistent with the M&I Shortage Policy, the effect of the policy on these 15 IRCs is limited. The M&I Shortage Policy does not apply to the CV Contractors and, as the contract assignments are from contractors with little or no historic M&I use, the water provided to the new assignors does not have M&I reliability.

### **1.4.8 Pajaro Valley Water Management Agency**

The Pajaro Valley Water Management Agency (PVWMA) was assigned a portion of the CVP contract held by the Mercy Springs Water District (MSWD) (Contract # 14-06-200-3365A-IR9-B shown in Table 1 below) which is one of the IRCs considered in this EA. Due to the lack of conveyance facilities from San Luis Reservoir into Pajaro Valley, this water cannot be delivered to Pajaro Valley, until further technical and environmental documentation are completed. As the water will not be deliverable to PVWMA during the two years considered within this document, water delivery to PVWMA's service area will not be analyzed within this EA.

## **1.5 Potential Impacted Resource Areas**

Consistent with previous CVP interim renewal contract EAs including the *1994 Interim Renewal Contracts* EA for 67 contractors and the 1998, 2000, 2002, 2004, and 2006 supplemental EAs, this 2008 EA considers the potential effects of these 15 interim renewal contracts on the following resources:

- Water Resources
  - Surface Water
  - Groundwater
- Land Use
- Biological Resources
- Cultural Resources
- Recreational Resources
- Indian Trust Assets
- Socioeconomic Resources
- Environmental Justice

**Table 1. Central Valley Project 2008 Interim Renewal Contractors**

CVP Contractor	Contract Quantity (A/F)	Contract Purpose of Use	Water Shortage Reliability	Existing IRC Contract No.	Contract Expiration Date	2008 IRC Contract No.
<b>DELTA DIVISION</b>						
<b>Delta-Mendota-Canal Unit:</b>						
Tracy, City of <i>(assignment final 27 Feb 04)</i>	5,000	Ag/M&I	Ag	14-06-200-4305A-IR9-B (partial assign from Banta Carbona ID)	2/29/2008	14-06-200-4305A-IR10-B (partial assign from Banta Carbona ID)
Tracy, City of <i>(assignment final 27 Feb 04)</i>	2,500	Ag/M&I	Ag	7-07-20-W0045-IR9-B (partial assign from the West Side ID)	2/29/2008	7-07-20-W0045-IR10-B (partial assign from the West Side ID)
Westlands Water District (District #1)* <i>(assignment final 9 Nov 04)</i>	2,500	Ag/M&I	Ag	7-07-20-W0055-IR9 (assign. From Centinella WD)	2/29/2008	7-07-20-W0055-I10 (assign. From Centinella WD)
Westlands Water District (District #1)* <i>(assignment final 27 May 05)</i>	2,990	Ag/M&I	Ag	14-06-200-8018-IR9 (assign. From Widren WD)	2/29/2008	14-06-200-8018-IR10 (assign. From Widren WD)
Westlands Water District (District #2)* <i>(assignment final 1 Mar 03)</i>	4,198	Ag/M&I	Ag	14-06-200-3365A-IR9-C (partial assign. From Mercy Springs WD)	2/29/2008	14-06-200-3365A-IR10-C (partial assign. From Mercy Springs WD)
Westlands Water District (District #1)* <i>(assignment final xx/xx/xxx)</i>	27,000	Ag/M&I	Ag	14-06-200-8092-IR9 (assign. From Broadview WD)	2/29/2008	14-06-200-8092-IR10
Pajaro Valley Water Mangement Agency, Westlands Water District (District #1), Santa Clara Valley Water District <i>(3-way assignment final 14 May 99)</i>	6,260	Ag/M&I	Ag	14-06-200-3365A-IR9-B (3-way assignment from Mercy Springs: see Reclamation 1999 and 2004c)	2/29/2008	14-06-200-3365A-IR10-B (3-way assignment from Mercy Springs: see Reclamation 1999 and 2004c)

CVP Contractor	Contract Quantity (A/F)	Contract Purpose of Use	Water Shortage Reliability	Existing IRC Contract No.	Contract Expiration Date	2008 IRC Contract No.
<b>Cross Valley Contractors:</b>						
Fresno, County of	3,000	Ag/M&I	Ag	14-06-200-8292A-IR11	2/29/2008	14-06-200-8292A-IR12
Hills Valley Irrigation District	3,346	Ag/M&I	Ag	14-06-200-8466A-IR11	2/29/2008	14-06-200-8466A-IR12
Kern-Tulare Water District	40,000	Ag/M&I	Ag	14-06-200-8601A-IR11	2/29/2008	14-06-200-8601A-IR12
Lower Tule River Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8237A-IR11	2/29/2008	14-06-200-8237A-IR12
Pixley Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8238A-IR11	2/29/2008	14-06-200-8238A-IR12
Rag Gulch Water District	13,300	Ag/M&I	Ag	14-06-200-8367A-IR11	2/29/2008	14-06-200-8367A-IR12
Tri-Valley Water District	1,142	Ag/M&I	Ag	14-06-200-8565A-IR11	2/29/2008	14-06-200-8565A-IR12
Tulare, County of	5,308	Ag/M&I	Ag	14-06-200-8293A-IR11	2/29/2008	14-06-200-8293A-IR12
Total	<b>173,440</b>					

# Section 2.0 Alternatives Including Proposed Action

## 2.1 Alternative A – No Action

The No Action Alternative evaluated in this document is the execution of up to 15 interim renewal water service contracts between the United States and the CVP contractors listed in Table 1 with terms and conditions modeled after the Preferred Alternative of the CVPIA PEIS (Reclamation and FWS 1999) adapted to apply for an interim period. Therefore, the No Action Alternative is the continued delivery of CVP water under the IRCs which includes terms and conditions required by non-discretionary CVPIA provisions for long-term contracts.

The CVPIA PEIS Preferred Alternative assumed that most contract provisions would be similar to many of the provisions in the 1997 CVP Interim Renewal Contracts, which included contract terms and conditions consistent with applicable CVPIA requirements. The only CVPIA provision which was incorporated into the Preferred Alternative of the Final PEIS and included in the No Action Alternative but has not been incorporated into the previous interim renewal contracts for the 15 contractors is tiered water pricing.

The CVPIA required the implementation of a tiered water pricing component for contracts with terms longer than three years. The tiered pricing component is the incremental amount to be paid for each acre-foot of water delivered. The tiered pricing component for the amount of water delivered up to 80 percent of the contract total shall not be less than the established rates/charges determined annually by the Contracting Officer in accordance with the then-current applicable Reclamation water rate-setting policies for the contractor. The tiered pricing component for the amount of water delivered in excess of 80 percent of the contract total, but less than or equal to 90 percent of the contract total, shall equal one-half of the difference between the rate/charges established for the contractor and the M&I full cost rate. The tiered pricing component for the amount of water that exceeds 90 percent of the contract total shall equal the difference between (1) the rates/charges and (2) the applicable cost water rate. This is described as the 80/10/10 pricing structure (80/10/10.)

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 Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

## 2.2 Alternative B - Proposed Action

The Proposed Action alternative evaluated in this document is the execution of up to 15 interim renewal water service contracts between the United States and the CVP contractors listed in Table 1. (These contracts are the same 15 included in the No Action Alternative.) The existing IRCs listed on Table 1 expire February 29, 2008. All of these 15 contracts have existing IRCs and all have had several IRCs executed prior to their existing IRC. The CV Contractors are currently in their eleventh IRC and the proposed renewal would be the twelfth. The Proposed Action would continue these existing IRCs, with only minor, administrative changes to the contract provisions to update the previous IRCs for the new contract period. In the event that a new long-term water contract is executed, that IRC would then expire.

No changes to any of the 15 CVP contractor service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the 15 proposed IRCs can only be used within each designated contract service area (see Appendix B for service area maps). Contract service areas for the proposed IRCs have not changed from the existing IRCs except in the case of the County of Fresno. (See Section 1.4.1 above for further explanation.).

The proposed 2008 interim renewal contract quantities (see Table 1) remain the same as in the existing IRCs. Water can be delivered under the IRCs in quantities up to the contract total, although it is likely that deliveries will be less than the contract total. The existing interim contracts can be viewed on-line at [www.usbr.gov/mp/cvpia/3404c/lt\\_contracts/index.html](http://www.usbr.gov/mp/cvpia/3404c/lt_contracts/index.html) (click on “2006 Interim Renewal Contracts” or “2007 Interim Renewal Contracts” as appropriate – CV Contractor IRCs were executed in 2007 and the other seven were executed in 2006.), and a sample proposed 2008 IRC is provided in Appendix C of this document. The terms and conditions of the 2008 IRCs are incorporated by reference into the Proposed Action.

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 3 years or less in duration. Therefore, if during the term of the IRCs at least 80 percent of the contract total is delivered in any year, no incremental charges for water will be collected and paid to the Restoration Fund that year as would have happened under tiered pricing.

As in the No Action Alternative 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 Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

Table 2 below provides a comparison of many of the terms and conditions of: 1) the No Action Alternative and 2) the Proposed Action.

**Table 2**  
**Comparison of Contract Provisions**

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
Explanatory Recitals	<p>Assumes water rights held by CVP from the State Board for use by water service contractors under CVP policies</p> <p>Assumes that CVP is a significant part of the urban and agricultural water supply of users</p> <p>Assumes increased use of water rights, need to meet water quality standards and fish protection measures, and other measures constrained use of CVP</p> <p>Assumes the need for the 3408(j) study</p> <p>Assumes that loss of water supply reliability would have impact on socioeconomic conditions and change land use</p>	<p>Same as No Action Alternative</p>
<b>Definitions:</b> Charges  Category 1 and Category 2  Contract Total	<p>Charges defined as payments required in addition to Rates</p> <p>Tiered Pricing as in PEIS</p> <p>Contract Total described as Total Contract</p>	<p>Same as No Action Alternative</p> <p>No Tiered Pricing and No definition of Category 1 and Category 2</p> <p>Assumes maximum entitlement</p>

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
<p>Irrigation</p> <p>Landholder</p> <p>M&amp;I water</p>	<p>Assumes delivery of water for commercial agricultural production, livestock, incidental domestic uses</p> <p>Landholder described in existing Reclamation Law</p> <p>Not addressed as definition – Addressed within an article – Article assumes obtaining a rate for M&amp;I when delivered</p>	<p>Same as No Action Alternative</p> <p>Same as No Action Alternative</p> <p>Assumes provision of water for irrigation of land in units less than or equal to five acres as M&amp;I water unless Contracting Officer is satisfied use is irrigation</p>
<p>Terms of contract – right to use contract</p>	<p>Assumes that contracts may be renewed</p> <p>Assumes convertibility of contract to a 9(d) contract same as existing contracts</p>	<p>Assumes that contracts will be renewed if Contractor has been compliant with contract</p> <p>Similar to No Action Alternative but preserves positions re: convertibility to 9(d) contract</p>
<p>Water to be made available and delivered to the contractor</p>	<p>Assumes water availability in accordance with existing conditions</p> <p>Assumes compliance with Biological Opinions and other environmental documents for contracting</p> <p>Assumes that current operating policies strive to minimize impacts to CVP water users</p>	<p>Similar to No Action Alternative but makes it more explicit that water to be made available is subject to operational constraints</p> <p>Similar to No Action Alternative; Requires contractor to be within legal authority to implement.</p> <p>Same as No Action Alternative</p>
<p>Time for delivery of water</p>	<p>Assumes timing and quantities of water based on deliveries recognized under an approved schedule</p>	<p>Same as No Action Alternative</p>

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
Point of diversion and responsibility for distribution of water	Assumes measurement for each turnout or connection for federal facilities that are used to deliver CVP water as well as other water supplies	Same as No Action Alternative
Rates and method of payment for water	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
Non-interest bearing operation and maintenance deficits	Assumes language from 1997 Interim renewal contracts	Same as No Action Alternative
Sales, transfers, or exchanges of water	Assumes continuation of transfers; rates for transfer are determined by Reclamation policy	Same as No Action Alternative
Application of payments and adjustments	Assumes credits or refunds	Similar to No Action Alternative except requires \$1,000 or greater overpayment for refund
Temporary reduction – return flows	Assumes that the United States has the right to use return flows which escape or is discharged beyond District boundaries	Same as No Action Alternative
Constraints on availability of project water	Assumes that current operating policies strive to minimize impacts to CVP water users while meeting all CVP obligations	Same as No Action Alternative

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
Unavoidable groundwater percolation	Assumes that some of applied CVP water will percolate to groundwater	Same as No Action Alternative
Rules and Regulations	Assumes that CVP will operate in accordance with then-existing rules	Same as No Action Alternative
Water and air pollution control	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Quality of water	Assumes that CVP will operate in accordance with existing rules.	Same as No Action Alternative
Water acquired by the contractor other than from the United States	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Opinions and determinations	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	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
Charges for delinquent payments	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
Equal Opportunity	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
General obligation	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Compliance with civil rights laws and regulations	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Privacy act compliance	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Contractor to pay certain miscellaneous costs	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Water conservation	Assumes compliance with conservation programs established by Reclamation and the State of California	Same as No Action Alternative
Existing or acquired water or water rights	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Operation and maintenance by non-federal entity	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
Contingent on appropriation or allotment of funds	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative

<b>Interim Renewal Contract Provision</b>	<b>No Action Alternative Based on PEIS Preferred Alternative</b>	<b>Proposed Action – Negotiated Contract</b>
Books, records, and reports	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Assignment limited	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Severability	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Resolution of disputes	Not addressed	Assumes a Dispute Resolution Process
Officials not to benefit	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Changes in contractor's service area	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.
Notices	Assumes that CVP will operate in accordance with existing rules	Same as No Action Alternative
Confirmation of contract	Assumes Court confirmation of contract for assurance relating to validity of 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. The above table is also generally descriptive of contract provisions within the 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**

### **2.3.1 Non Renewal of Interim 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 2008 EA because Reclamation has no discretion not to renew existing water service contracts.

### **2.3.2 Reduction in Interim 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 this analysis of the 15 interim renewal contracts for several reasons:

First, 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 IRC contractor, the contractor's water needs equaled or exceeded the current total contract quantity.

Second, the analysis of the PEIS resulted in selection of a Preferred Alternative that required contract renewal for the full contract quantities and took into account the balancing requirements of CVPIA (p. 25, PEIS Record of Decision) (PEIS ROD). 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.

Third, the shortage provision of the water service contract provides Reclamation with a mechanism for annual adjustments in contract supplies. The provision protects Reclamation from liability from the shortages in water allocations that exist due to drought, other physical constraints, and actions taken to meet legal or regulatory requirements. Reclamation has relied on the shortage provisions to reduce contract allocations to IRC contractors in most years in order to comply with Section 3406(b)(2) of the CVPIA. Further, CVP operations and contract

implementation, including determination of water available for delivery, is subject to the requirements of biological opinions (BO) issued under the Federal Endangered Species Act (ESA) for those purposes. If contractual shortages result because of such requirements, the Contracting Officer has imposed them without liability under the contracts.

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

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

### **2.3.3 Delivery of Full Contract Quantities/No Shortages**

Given the constraints on available CVP supplies analyzed in the PEIS and updated with the CVP OCAP, an alternative that assumes deliveries of 100 percent contract supplies in every year was not considered. Such an alternative is not legally mandated, and could be achieved, according to the PEIS ROD, only in the future in the event mechanisms to increase CVP yield are implemented through federal legislation, then funded and constructed. The most current analysis of reasonably available deliveries is the CVP OCAP which projects continued constraints for south of Delta (SOD) CVP contractors through 2030. The interim renewal contracts would not exceed 26 months in length, and therefore, there is no reasonable basis to include a “full contract quantity/no shortages” alternative.

### **2.3.4 Other Alternatives**

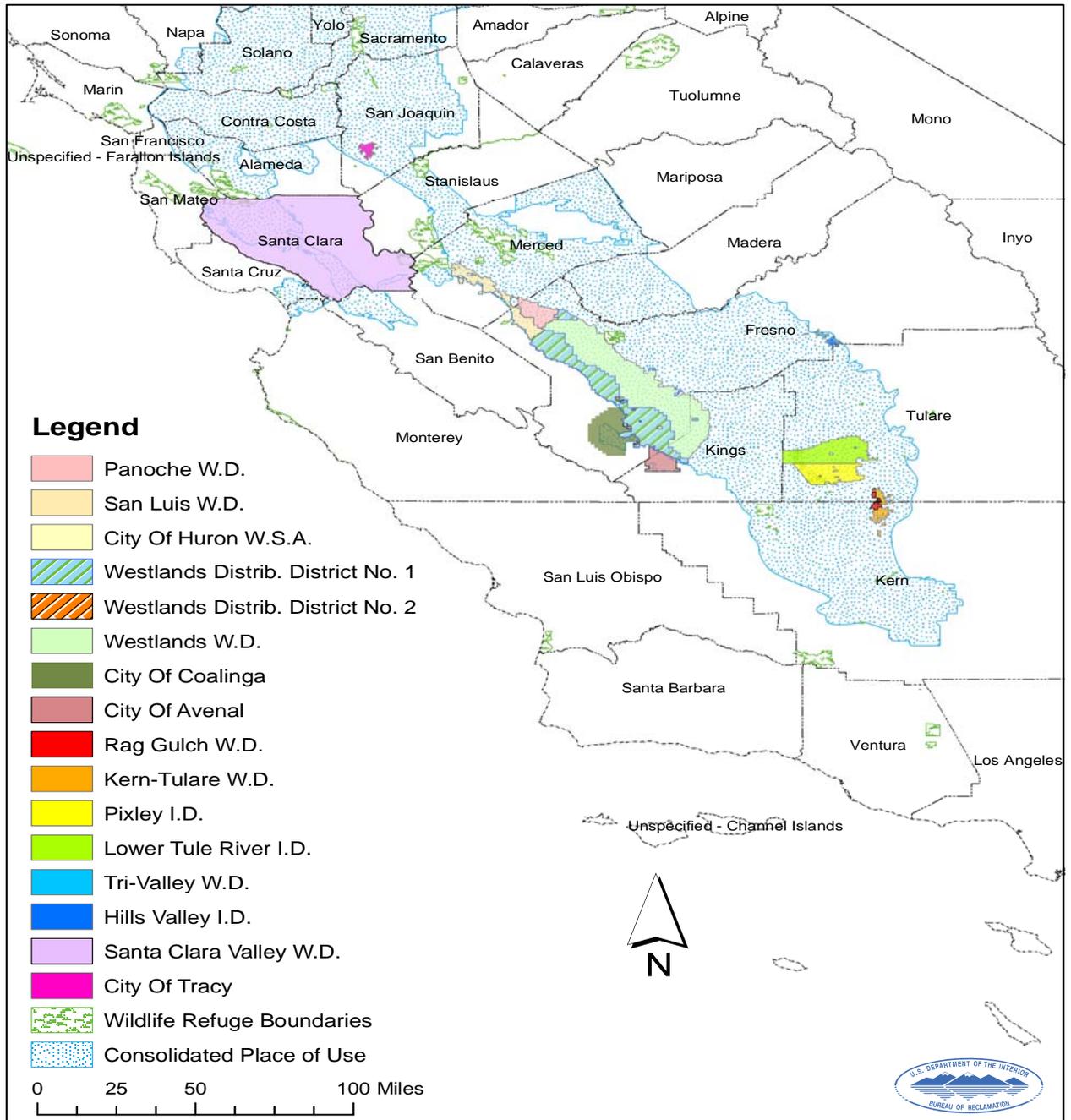
Other alternatives are being addressed through the negotiations process for long-term contracts. Appropriate alternatives will be evaluated as part of the environmental compliance process for long-term contract renewals. Reclamation is pursuing completion of the remaining long-term contract renewals. Reclamation anticipates completing environmental compliance and executing the remaining 15 long-term water service contracts within this interim contract term (2008 to 2010).

## Section 3 Affected Environment & Environmental Consequences

This section describes the service area for the 15 contractors analyzed in this EA. These IRC contractors receive CVP water from the Delta Mendota Canal (DMC), the San Luis Canal (SLC), and the Friant-Kern Canal (FKC) (typically via exchange.) The study area, shown in Figure 3.1, includes portions of San Joaquin, Fresno, Kings, Santa Clara, Tulare and Kern Counties. Specifically, the study area includes the service areas of the following fifteen contractors:

- Westlands Water Distribution District #1 (DD#1) (Previous assignment from Centinella)
- Westlands Water DD #1 (Previous assignment from Widren)
- Westlands Water DD #1 (Previous assignment from Broadview WD)
- Westlands Water DD #2 (Previous partial assignment from Mercy Springs Water District)
- Pajaro Valley Water Mangement Agency, Westlands Water District (DD #1), Santa Clara Valley Water District Three-Way Contract (Previous Assignment from Mercy Springs Water District)
- City of Tracy (Previous partial assignment from Banta Carbona ID)
- City of Tracy (Previous partial assignment from Westside ID)
- County of Fresno
- County of Tulare
- Hills Valley Irrigation District
- Kern-Tulare Water District
- Lower Tule River Irrigation District
- Pixley Irrigation District
- Rag Gulch Water District
- Tri-Valley Water District

**Figure 3.1 Contractors Service Area Boundaries**



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 IRCs that will be analyzed in this document are past partial assignments to the City of Tracy from two separate original contractors. The service areas and thus the affected environment for both contracts is the City of Tracy thus, 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 DD#1 and DD#2. These IRCs will be analyzed as a unified analysis of the total water quantity from the four direct assignments to WWD (as well as part of the three-way contract assignment) going to WWD and their affects in WWD's service area. The potential effects to SCVWD will be evaluated as part of the Pajaro Valley Water Mangement Agency, WWD DD #1, Santa Clara Valley Water District (SCVWD) Three-way Contract (Three-Way Contract) and the CV Contractors will be looked at mainly as a group since, for the most part, their districts have many similarities. For those aspects that are unique and are affected differently by the Proposed Action, the CV Contractors will be discussed individually.

## **3.1 Water Resources**

### **3.1.1 Affected Environment**

#### ***Surface Water Resources***

**Central Valley Project Water Supply** Prior to the CVP, irrigators in the San Joaquin Valley depended primarily on groundwater for agricultural irrigation. As groundwater quantity and quality declined and land subsidence increased, it became apparent that a supplemental source of water was needed for irrigated agriculture to continue. The CVP was developed, in part, to supply irrigators, primarily in the Central Valley, with a long-term water supply to augment existing groundwater resources.

CVP water is used for the irrigation of agricultural areas, for M&I uses, for the restoration of fisheries and aquatic habitat in 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 as well as for irrigation of permanent crops.

Reclamation makes CVP water available to contractors for reasonable and beneficial uses, but this water is generally insufficient to meet all of the contractors' needs. In the IRC contractor's service areas, contractors without a sufficient CVP water supply may extract groundwater if pumping is feasible or negotiate water transfers with other contractors. Alternative supplies from

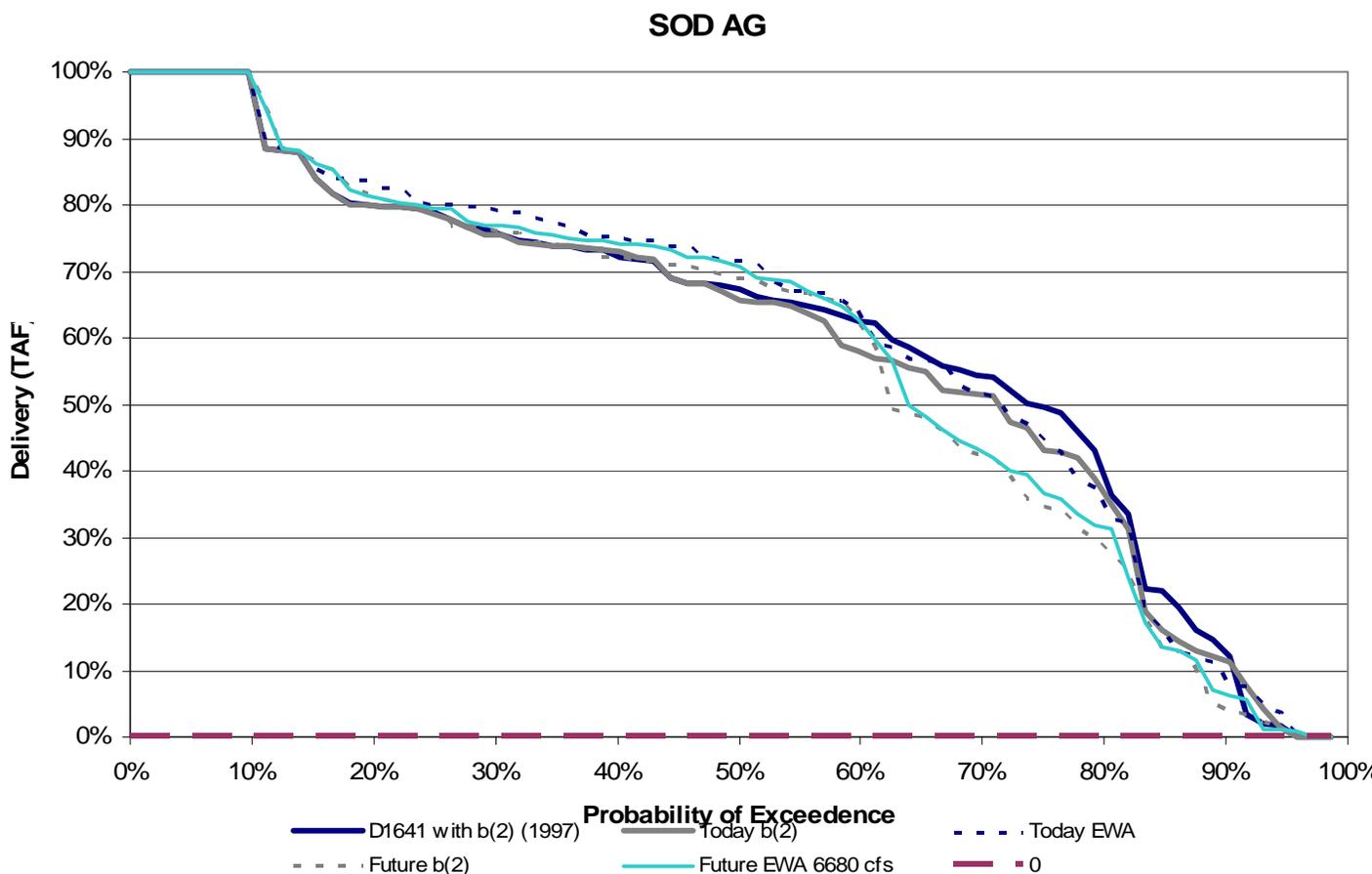
groundwater pumping and/or transfers are accessed as supply sources when CVP surface water deliveries become more expensive than pumping or transfer costs.

**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 on a CVP-wide basis. Experience since completion of the CVPIA PEIS has indicated even more severe contractual shortages are applicable to SOD water deliveries than predicted (Reclamation and FWS 1999), and this information has been incorporated into the modeling for the current CVP and SWP OCAP (Reclamation and DWR, 2004).

*Water Delivery Conditions Under CVPIA Implementation* With the implementation of the CVPIA PEIS Preferred Alternative and under conditions in the late 1990s, modeling predicts that CVP agricultural water service contractors SOD would receive an average of 59 percent of their current total contract amounts, based upon a hydrologic pattern similar to that of the last 70 years and described in Technical Appendix, Volume 2, of the Draft CVPIA PEIS (Reclamation 1997a). 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.

Tables within the CVP OCAP (Reclamation 2004b) 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. (See Figure 3.2) Therefore modeling predicts that tiered pricing, (if it were required), would apply once every fourth or fifth year.

**Figure 3.2 CVP South of Delta Agricultural Allocation Exceedance Chart**



Source: Reclamation 2004b.

**Contractor Water Needs Assessments** During the development of the Water Needs Assessments for each CVP contractor, beneficial and efficient future water demands were identified for each contractor. The demands were compared to available non-CVP water supplies to determine the need for CVP water. If the negative amount (unmet demand) is within 10 percent of their total supply for contracts of greater than 15,000 acre-feet (af) per year, or within 25 percent for contracts less than or equal to 15,000 af per year, 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.

**Table 3**  
**IRC Contractor Water Needs Assessments**

Contractor	2025 Projected Unmet Demand (af)
<b>WWD</b>	74,287
<b>SCVWD</b>	156,874
<b>City of Tracy</b>	-1,500 based on uncertain transfers in of 32,500 af/y
<b>Lower Tule River ID</b>	23,318
<b>Pixley ID</b>	112,507
<b>Hill's Valley ID</b>	3,092
<b>Kern-Tulare WD</b>	7,517
<b>Rag Gulch WD</b>	9,460
<b>Tri-Valley WD</b>	Data not available
<b>County of Fresno</b>	1,122
<b>County of Tulare</b>	Data not available

**WWD Water Use**

*Description of District Facilities* Of the gross 613,100 acres in WWD, approximately 570,000 acres are classified as irrigable. Water is delivered throughout WWD via 1,034 miles of underground pipelines from the SLC & Coalinga Canals and 7.4 miles of unlined canal from Mendota Pool. Seepage and evaporation losses are minimal within the distribution system. The area served by the distribution system encompasses approximately 88 percent of the irrigable land in the district, including all land lying east of the SLC. 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 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/y of CVP supply from the SLC, Coalinga Canal, and Mendota Pool. The first deliveries of CVP water from the SLC to WWD began in 1968. In a stipulated agreement dated September 14, 1981, the contractual entitlement to CVP

water was increased to 1.15 million af. The long-term contracts for WWD will expire on December 31, 2007, however, interim contracts have been prepared and environmentally analyzed under separate environmental documentation for interim contract renewal for the San Luis Unit contractors. (Reclamation 2007) Please refer to EA 07-56 *San Luis Unit Water service Interim Renewal Contracts 2008 – 2011* for more information. Additionally EA 07-56 is incorporated by reference as it pertains to additional descriptions of WWD facilities, water use and affect environment.

When WWD was originally organized, it included approximately 376,000 acres. In 1963, WWD executed a 40 year contract with the federal government for long-term water service. 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 form 604,000 acres. WWD has recently purchased 9,100 acres of lands previously owned by Broadview Water District to encompass the current 613,100 acres within its boundary.

The original WWD is referred to as Priority Area I (and the Westplains area is referred to as Priority Area II (DD#1). Priority Area I land has the original CVP contract amount of 900,000 af (approximately 2.6 af/acre) of CVP water annually, while Priority Area II has a contract amount of 250,000 af (approximately 1.3 af/acre) of CVP water annually. Priority Area III (DD#2) is land added to WWD after the merger and has no established water allocation. Priority Area III receives CVP water only if water is available after the needs in Areas I and II are satisfied or if surplus water is available. The 9,100 acres acquired from the purchase of lands from Broadview Water District will be delivered in Priority Area III (DD#2).

WWD annual contract amount is subject to shortages caused by drought, legislative, environmental, and regulatory actions such as the CVPIA, the ESA, and Bay/Delta water quality actions. The contract number for the 900,000 af contract in Priority Area I is 14-06-200-495A. The contract for the 250,000 af in Priority Area II was awarded to WWD per the December 21, 1986 Barcellos Judgment (Barcellos). WWD receives the majority of its CVP water supply via the SLC. Barcellos allowed for the delivery of up to 50,000 af of Priority Area II water via the DMC.

WWD has executed three full or partial CVP contract assignments from DMC contractors to DD#1 over the last decade. Issuance of IRC contracts for these prior contract assignments are covered within this 2008 EA. WWD requested and received approval from Reclamation on the contract assignments of 27,000 af/y from Broadview Water District (Contract Number 14-06-200-8092-IR8), 2,990 af/y from Widren Water District (Contract Number 14-06-200-8018-1R7) and 2,500 af/yr from Centinella Water District (Contract Number 7-07-20-W0055). By helping WWD meet their water supply demands with surface water, the contract assignments have helped to reduce groundwater overdraft and subsidence within WWD. WWD has been acquiring

these assignments to alleviate the recent reduction in water supplies due to environmental water needs in the Sacramento and San Joaquin River Delta (Delta). Additionally, they reduce the need for annual spot market purchases by providing supplemental water at a cost WWD water users can afford.

Additionally, on March 1, 2003, Reclamation approved a partial contract assignment of 4,198 af/y from MSWD (Contract Number 14-06-200-3365A) to WWD DD#2. (This was MSWD second partial assignment. The first was the Three Way Contract which is explained in more detail below.) The partial contract assignment involved the change in delivery of water to land historically owned and farmed by Donald Devine, David E. Wood, and their affiliated entities, (Devine and Wood) in MSWD to Devine and Wood lands in WWD. This action reduced these landowners' reliance on the use of transfers and groundwater to meet their crop water demands and maximized the economic benefit of this water by delivering it to Devine and Wood lands in WWD which were growing higher value crops. This interim renewal of this contract assignment to WWD DD#2 is also part of this EA.

*WWD CVP Water Supplies* In 1999, Reclamation stated that the estimated average long-term supply for WWD was 70 percent of its water supply contract, or about 805,000 af per year (approximately 70 percent of the contract total). Prior to 1990, WWD's average CVP water supply, including interim CVP water when it was available, was approximately 1,250,000 af/y. The total maximum additional water supply provided from the four assignments to WWD is 32,490 af. The likely long-term average deliveries for this assigned water is 22,743 af/y (as above, this is approximately 70 percent of the contract total). Therefore current average long-term CVP water supply deliveries of 827,743 af/y to WWD are still below the average deliveries prior to 1990.

WWD has an on-going program to purchase and transfer supplemental water from other sources that would allow a better determination of the water supply sooner in the water year. Unlike water agencies with more abundant supplies, WWD must allocate (ration) water to its farmers, even in the wettest years. Average total demand for WWD is approximately 1,394,000 af/y. With its annual CVP contract entitlement of 1,150,000 af/y, and an annual safe yield available from groundwater pumping of approximately 135,000 to 200,000 af/y, the total water supply available from a full CVP contract supply and from groundwater is still less than the total water need. With future CVP water deliveries estimated at 60-70 percent of the contract amount or less, WWD and individual landowners must obtain supplemental water to help make up this deficiency.

Additionally, water users in WWD must commit to the purchase of supplemental water early in the water year when the final price is unknown. Therefore, they limit their requests for supplemental water, and hope that CVP allocations and the pumping of groundwater will meet

the balance of their crop water needs for the year. During periods of high runoff, CVP flood water diverted from Mendota Pool may be purchased.

**Three-Way Contract** Prior to 1999, MSWD was entitled to up to 13,300 af/y of CVP water pursuant to Contract Number 14-06-200-3365A. In 1999, MSWD assigned 6,260 af/y of its CVP Water Service Contract jointly to PVWMA, WWD DD#1 and SCVWD (who already has a CVP water service contract) (Contract No. 14-06-200-3365A-IR3-B).

The EA entitled CVP Water Supply Partial Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Pajaro Valley Water Management Area, Santa Clara Valley Water District, and Westlands Water District, Final Environmental Assessment and Final Finding of No Significant Impact, signed April 12, 1999, (1999 EA) supporting the partial assignment of 6,260 af/y from MSWD to PVWMA, WWD, and SCVWD, assessed (1) the impact of the removal of this existing surface water supply (and the entire 13,300 af/y supply) from MSWD and (2) the impact of delivering 6,260 af/y to SCVWD and WWD under the terms and conditions of the then existing MSWD CVP contract and Related Agreement. This environmental document is hereby incorporated by reference into this EA. (This was the first MSWD partial assignment.)

In conjunction with the assignment, PVWMA, WWD, and SCVWD executed the “Agreement Relating to Partial Assignment of Water Service Contract” (Related Agreement). Generally, the Related Agreement allows SCVWD and WWD to take delivery of the water on an interim basis until PVWMA is ready to take delivery of the CVP water for beneficial use in its service area. Specifically, the Related Agreement allocates the water as follows:

- SCVWD has first right of refusal before WWD as follows:
  - (a) From 1999 - 2009, SCVWD has the first right to up to 6,260 af/y, but is limited during this period to a cumulative total of 25 percent of the total water supply;
  - (b) for the period of 2010 – 2119, SCVWD continues to have the first right to up to 6,260 af/y but the cumulative total for SCVWD is increased to the greater of 20,000 af or 25 percent of the total CVP water supply provided under this contract assignment; and
  - (c) up to 6,260 af/y after year 2019 if PVWMA does not exercise its option to assume the full contract water supply, limited to a maximum of 25 percent of the total CVP water supply provided under this contract assignment during any 10 year period.
  
- The water can be used within WWD as follows:
  - (a) up to 6,260 af/y in most years between 1999-2009,
  - (b) up to 6,260 af/y in most years over the period of 2010 – 2019, unless PVWMA decides to assume WWD’s portion of this water supply during this same period and
  - (c) up to 6,260 af/y after 2019 if PVWMA does not exercise its option to assume the full contract water supply.
  
- Potential use within PVWMA of up to 6,260 af/y by providing an option for PVWMA to:
  - (a) assume WWD’s portion of the water supply between 2010 and 2019
  - (b) assume the full contract assignment water supply after 2019. If PVWMA exercises its option for the water and then finds it cannot beneficially use the water in their service area, the right to receive the water reverts back to WWD and SCVWD.

Despite the fact that SCVWD has first right of refusal on the contract assignment, historically WWD has taken delivery of the vast majority of the contract assignment water as SCVWD utilizes the water supply as a dry year water supply.

In 1993, the PVWMA Board of Directors approved a Basin Management Plan and in 2002 a Revised Basin Management Plan (BMP) for the purpose of managing groundwater supplies and eliminating sea water intrusion into the groundwater basin. The importation of CVP water, including the MSWD Partial Assignment of 6,260 af/y, is one element of the BMP. An Environmental Impact Report (EIR) for the BMP was certified by PVWMA’s Board of Directors in February 2002. A Revised Draft BMP EIS analyzing the impacts of connecting PVWMA’s imported water facilities to the San Felipe Project facilities and the use of CVP water in PVWMA’s service area was circulated for a 60 day public review period which ended November

21, 2003 and the ROD executed on September 10, 2004, however conveyance facilities to transport the CVP water have not been constructed. The PVWMA will not be able to take delivery of CVP water under Contract No 14-06-200-3365A unless or until the proposed pipeline or other conveyance mechanism is in place for PVWMA to physically receive this water. Since it is highly unlikely that PVWMA will have the ability to take CVP water during the two year IRC period there will be no analysis of water deliveries to PVWMA within this 2008 EA (as discussed in the Scoping section on page 7.) This partial assignment will be referred to as the Three Way Contract throughout the 2008 EA.

As most of the partial assignment goes to WWD, it has helped WWD reduce reliance on the spot water market for supplemental water, and helped to stabilize WWD base water supply, reduce groundwater overdraft and subsidence.

**SCVWD Water Use** The SCVWD is a water supply wholesaler who conserves, imports, treats, distributes, and is responsible for the quality of water. In 1929, the Santa Clara Valley Water Conservation District was created by public vote under provisions of the Water Conservation Act of 1929 (Jones Act) to alleviate land surface subsidence in and around San Jose. The District included about 350 square miles of Santa Clara Valley which overlay the groundwater basin between Coyote and Palo Alto. The plan was to construct dams to capture winter rains that would be used to recharge groundwater aquifers and wells. The Santa Clara County Flood Control and Water Conservation District was created in 1951 by special act of the Legislature and placed under the direction of the County Board of Supervisors. In 1968, the Santa Clara Valley Water Conservation District merged with the Santa Clara County Flood Control District and became governed by an independent board. The name was changed in 1974 to SCVWD. Its purposes were to reduce flood hazards, conserve local water resources, and provide and distribute an adequate water supply for all of Santa Clara County. In 1991, the State Legislature revised SCVWD's enabling act to recognize its role as the comprehensive water resources management agency for Santa Clara County and to authorize SCVWD to restore streams, riparian corridors and natural resources while carrying out its water management and flood protection duties. SCVWD provides wholesale water service to 13 retail agencies serving Santa Clara County. SCVWD also provides water directly to the agricultural community and to supplement groundwater.

SCVWD's water supply consists of two primary sources: local supplies and imported water. Local supplies include captured surface runoff, groundwater, and recycled water. Imported supplies are from the SWP, CVP, and Hetch-Hetchy (City of San Francisco). Most imported water comes to SCVWD from the Sierra Nevada Mountains via the Delta and is delivered by the CVP and SWP.

SCVWD has two contracts for water delivery from the CVP. The first CVP contract was executed in 1977 for 152,500 af/y. SCVWD's annual contract amount is subject to shortages

caused by drought and environmental and regulatory actions such as the CVPIA, the ESA, and Bay/Delta water quality actions. The second contract, executed in 1999, is Contract Number 14-06-3365A-IR3-B, (the Three Way Contract), the partial assignment from MSWD which was discussed above and is one of the IRCs analyzed in this EA. SCVWD imports CVP deliveries via the San Felipe Division of the CVP which originate from Delta water stored in the San Luis Reservoir in Merced County and delivered to the Coyote Creek Pump Station west of Anderson Reservoir via a series of pipelines and tunnels.

SCVWD has a contract with the California Department of Water Resources (DWR) for 100,000 af/y from the SWP. Water is delivered via the Banks pumping plant in the southern Delta and the South Bay Aqueduct delivers the water to a terminal tank at the Penitencia Water Treatment Plant in east San Jose. SWP water is subject to shortages caused by drought conditions and environmental/regulatory actions in the Bay/Delta.

Several municipalities in Santa Clara County have contracts with the City and County of San Francisco for water from the Hetch-Hetchy project. Imported deliveries originate in the Tuolumne River watershed in the Sierra Nevada Mountains and are transported directly by closed conduit to the Bay-Area. The SCVWD does not control or administer Hetch-Hetchy deliveries to Santa Clara County; however, this supply reduces the demands on SCVWD supplied water (SCVWD, February 1993.)

SCVWD owns and operates 17.3 miles of canals, 8.4 miles of tunnels, 142 miles of pipelines, 3 pumping stations and 3 treatment plans as part of the overall water treatment, distribution and recharge systems. SCVWD operates ten local reservoirs, the largest one being Anderson Reservoir with maximum storage of approximately 89,000 af. SCVWD also operates a comprehensive groundwater management program, including onstream and offstream recharge facilities and extensive monitoring. SCVWD manages pumping demands on the groundwater basin indirectly through its contract and non-contract water rates with retail water agencies.

SCVWD has established rights to 35 percent of the existing Semitropic Groundwater Banking Program in Kern County which is used to offset shortfalls in annual water supplies. Deliveries to storage would primarily take place in wet years and withdrawals from storage would occur in dry years to offset water shortages. The agreement reserves for SCVWD up to 350,000 af of storage, and improves SCVWD's supply reliability by enabling storage of wet-year water for use during future dry years. Reclamation has approved the deliver of up to 100,000 af/y of CVP supplies to be banked in Semitropic for 21 years through the year 2027. (SCVWD also has DWR's approval to bank SWP supplies.) Reclamation prepared an EA and FONSI analyzing this approval entitled EA 05-126 *Santa Clara Valley Water District Long-Term Groundwater Banking Project Storage and Exchange of CVP water with Semitropic Water Storage District* was signed on April 18, 2006 and is hereby incorporated into the EA by reference.

In 2003, SCVWD prepared an update to its Integrated Water Resources Plan. This study indicates that, over the next 40 years, SCVWD could experience significant shortages, particularly if various risk scenarios, such as climate change, are realized. Although SCVWD has a variety of water supplies, it has limited ability to use its local, imported and groundwater supplies interchangeably, and its operational flexibility is further limited by water rights, regulations, institutional agreements, flood management, water quality, efficiency and cost issues. These factors place limits on SCVWD's ability to change the timing of deliveries or to shift supplies from one source to another. SCVWD has limited capability to store early deliveries in its surface reservoirs and groundwater basins; its facilities are neither fully integrated nor interchangeable; and its retailers have pumping limitations on groundwater supplies and limited re-operational capabilities.

Total annual water use in Santa Clara County is currently estimated to be 400,000 af. Approximately 10 percent of this is for agricultural purposes, and most of the remaining use is for M&I purposes, which includes residential, commercial, industrial, and institutional water use. Water is also used to meet environmental needs, such as maintenance of minimum stream flows to meet fishery needs.

**City of Tracy (Tracy)** Tracy is located in San Joaquin County. It was founded in 1878 as a small railroad town. Tracy is 60 miles east of San Francisco and 60 miles south of Sacramento (Figure 1-1). Tracy city limits encompasses 21 square miles. 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 af/y within its service territory and expects that demand will grow to 27,000 af/y by the year 2020 (City of Tracy, 2005).

Approximately 60 percent of Tracy's water resources come from surface water flowing through a variety of regional rivers, creeks, and canals. Tracy's surface water comes primarily from a long-standing contract with Reclamation up to 10,000 af (Contract 14-06-200-7858A.) (Renewal of this contract is not part of the Proposed Action. It does not expire until 2014.) The long-term water service contract with Reclamation is due to expire in 2014, though Tracy and Reclamation are in ongoing negotiations for contract renewal. Tracy also has two partial contract assignments. The West Side Irrigation District (WSID) has assigned 2,500 af/y, with an option for an additional 2,500 af/y, and the Banta-Carbona Irrigation District (BCID) has assigned 5,000 af/y to Tracy (Reclamation, 2003 and 2003b). These are the two IRCs 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. In normal and wet hydrologic years, Tracy's combined water resources are in excess of their current

demand (City of Tracy 2005). Plainview Water District also provides up to 1,000 af/y. Forty percent of Tracy's water supply comes from groundwater.

Tracy has four surface water intake pumps with capacity to pump approximately 20 million gallons per day for the DMC and deliver it to the Tracy Water Treatment Plant (WTP). The water is pumped into a 3 million gallon (MG) equalization tank at the WTP prior to treatment. Tracy operates three storage reservoirs located at the WTP which provide the system with emergency fire and operational storage. One reservoir has a storage capacity of 0.94 MG and the other two have storage capacity of 2.66 MG for a combined storage capacity of 3.6 MG.

### **Cross Valley Contractors**

*Cross Valley Contractors Contractual Water Supplies* The eight CV Contractors CVP IRCs entitle these contractors to an annual delivery of up to 128,300 af/y of water. Unlike the other seven IRCs analyzed in this EA, the IRCs for these eight contractors will be three party contracts. In these three-party contracts Reclamation provides the water supply in the Delta and DWR pumps the water from the Delta and conveys the water to the Cross Valley Canal (CVC). Similarly to other SOD contractors, CV Contractors are limited in their water allocation south of the Delta by the ability to convey the water south of the Delta. That is, limitations on the Tracy Pumping Plant, Harvey O. Banks Pumping Plant, and available storage in San Luis Reservoir control the amount of water that can be delivered south of the Delta. Recent constraints placed on export pumping through the Bay-Delta Plan Accord, endangered species actions, and the final decision on CVPIA Section 3406 (b)(2) water all constrain the diversion of water at the CVP and SWP export facilities. Unlike other SOD contractors most of the CV Contractors' water is pumped via DWR facilities at a lower priority than SWP water supplies. This results in additional reductions in water quantity as well as limitations on the delivery timing. Deliveries are limited to pumping windows when the SWP does not need the full allowable pumping capacity rather than contractors scheduling water on a demand pattern. CV Contractors' supplies are conveyed through the California Aqueduct to Tupman by DWR.

Due to its heavy agricultural focus, 82 percent of the CV Contractors' service area land is irrigated. The CV Contractors' service area receives water from the CVP, other surface water sources, and groundwater pumped from on-farm sources. In 1987, total farm deliveries of water amounted to 273,631 af. On-farm groundwater contributed 82 percent (224,309 af) of the CV Contractor's total farm deliveries. Surface water supplied from the CVP totaled 64,320 af, but combined with non-project surface water (2,048 af) and taking losses of 17,046 af into consideration, the total net surface water delivered to the CV Contractors was 49,322 af.

*Cross Valley Contractor "In Delta Allocation"* Reclamation has determined that the CV Contractor's IRCs allow the difference between the SOD allocation and the amount Reclamation could allocate to the SOD contractors if the Delta pumping restrictions were not limiting to be

delivered to the CV Contractors in the Delta upon their request.. This additional delivery is contingent upon the CV Contractors obtaining a conveyance mechanism outside of the delivery mechanism envisioned in the IRC and that will not harm other CVP contractors. Although this option has been available to the CV Contractors for several years, to date this has not been taken advantage of mainly due to the difficulty in arranging alternative conveyance mechanisms. It is unlikely that the “In Delta Allocation” will be utilized during the two-year term of these IRCs and, additionally, since the specific conveyance mechanism is not known at this time, the action cannot be fully analyzed. This additional allocation will not be analyzed in this document. If a CV Contractor obtains an alternative conveyance mechanism and requests the “In Delta Allocation” Reclamation will analyze the environmental effects of that action through separate documentation. Additionally, prior to approval of the “In Delta Allocation”, Reclamation would consider all CVP needs, hydrologic conditions, operational constraints and requirement for the requested conveyance outside of the IRC conveyance agreement with DWR.

**Kern-Tulare and Rag Gulch Water Districts’ (KTRG) Water Use** KTRG provide irrigation water to over 19,000 acres of high-value permanent crops in Kern and Tulare counties. (These districts share management and distribution facilities and although they have separate CVP contracts, they are essentially managed as a unit. For this reason within this 2008 EA they will be discussed together.) The annual irrigation demand is approximately 54,000 af, of which the water districts currently provide approximately 40,000 af (2.2 af/acre) of imported water. The remaining 14,000 af/y (0.8 af/acre) is from groundwater pumped by water users.

KTWD has a 40,000 af/y CVP water service contract (Contract number 14-06-200-8601 – IR11) and RGWD has a CVP contract for 13,300 af/y (Contract number 14-06-200-8367 – IR11.) KTRG also has two Kern River contracts (contract numbers 76-61 and 76-63) which expire in 2012 for a total of 23,000 af/y. KTRG also has long term banking approval for CVP water to be deposited in both Rosedale Rio-Bravo WSD’s and North Kern WSD’s groundwater banks. From Rosedale Rio-Bravo, KTRG will be able to withdraw up to 9,000 af/y of previously banked water and from North Kern 5,000 af/y of previously banked water may be withdrawn.

KTRG share common distribution systems and staff. The KTRG distribution system was constructed over the last 48 years, through a combination of KTRG financed and privately financed improvements. KTRG facilities consist of 12 pumping plants and approximately 65 miles of pressure pipeline to deliver water upslope of the FKC. There are four regulating reservoirs in the district totaling 510 af of storage. Because KTRG’s distribution system is inadequate to fully satisfy irrigation demands and system capacities must be prorated during the summer months, water users rely upon privately-owned wells, even in the wettest of years.

The KTRG distribution system consists of four pumping plants located along the FKC, four regulating reservoirs, seven re-lift pumping plants, and approximately 70 miles of buried pipelines. In addition, KTRG owns two pumping plants located in Delano Earlimart Irrigation

District reservoirs and one pumping plant located in a Southern San Joaquin Municipal Water District reservoir.

**Lower Tule River Irrigation District's (LTRID) Water Use** The water supplies in LTRID are groundwater, water rights on the Tule River, and CVP water under two separate contracts. The Tule River water supply is approximately 70,000 af/y. Tule River flows approximately 22 miles through the central part of the District. Porter Slough follows a parallel course north of the Tule River. In 1951, LTRID entered into a long-term water service contract with Reclamation for 61,200 af/y of Class 1 and 238,000 af/y of Class 2 Friant water. In 1975, LTRID entered into a three-way contract with Reclamation and the DWR to provide an additional 31,102 af/y of CVP water supply. This second contract is the IRC analyzed within this document. (Current contract number 14-06-200-8237A-IR11)

The towns of Woodville, Popular and Tipton lie within the District's boundaries but are not serviced by LTRID. The District's entire distribution system is unlined earth canals. Collectively, LTRID owns or controls approximately 163 miles of canals and approximately 47 miles of river channel. LTRID maintains and operates 12 recharge and regulating basins, covering approximately 3,000 acres. In wetter years, LTRID uses these facilities to recharge the groundwater reservoir. LTRID does not own or control groundwater extraction facilities. Therefore, each landowner must provide privately owned wells to sustain irrigation during periods when LTRID does not have surface water available.

In the past Arvin Edison Water Storage District (AEWSD) and LTRID exchanged CVP water supplies from the Delta and Friant facilities. Several years ago, however, the exchange agreement between AEWSD and LTRID was terminated. Currently, because they have no exchange arrangements to take delivery of their CV supplies off of the FKC, LTRID sells their CVP contract supplies from the Delta and uses the money to purchase other supplies on the water market. LTRID may enter into similar exchange arrangements with other water districts to obtain their CVP water supplies from the Delta. Proposed exchange arrangements under Article 5 of the long-term renewable contracts and are not within the scope of this EA.

**Pixley ID (PXID) Water Use** The PXID's water supply is derived from the use of groundwater, diversions from Deer Creek and CVP water. PXID entered into a long-term water service contract with Reclamation in 1975 for 31,102 af/y (Current contract number 14-06-200-8238A-IR11). The City of Pixley is located within the PXID's boundaries. However, PXID does not serve the City of Pixley.

PXID currently contains 69,550 acres, of which 48,302 are irrigated. Deer Creek flows westerly through the entire length of the District. The FKC is located between one to five miles east of the PXID's boundary.

PXID operates a conjunctive use program by supplying a portion of the irrigated lands and a portion for direct groundwater recharge through Deer Creek, the existing canal system and sinking basins owned or leased by the district. PXID obtains their CVP supplies through four turnouts on the FKC into Deer Creek to District diversions or Deer Creek. The District has 45 miles of unlined canals that convey water and provide groundwater recharge. An estimated 30 percent of the CVP supplies are “lost” through the unlined canals. However, the recharge to the groundwater is considered a beneficial use of this water. PXID maintains and operates nine recharge and regulating basins covering approximately 330 acres.

PXID owns or has access to approximately 330 acres of sinking/re-regulating basins. These basins, along with the Deer Creek channel and the District’s canals, are used for direct groundwater recharge when surface water supplies are available. It is estimated that a third of the water imported by the District has been directly recharged into the underground reservoir by District operations since the District’s inception.

PXID does not own or operate any groundwater extraction facilities. However, groundwater is the primary water supply available to lands within PXID. Privately owned wells currently provide water to all irrigated lands within the District. Approximately 31,957 acres of lands rely totally on groundwater pumping for irrigation.

In addition, the District may enter into an agreement with the Pixley Wildlife Refuge (PWR) to recharge the groundwater. The PWR is approximately 960 acres.

**County of Fresno Water Use** The County of Fresno has a CVP water service contract for 3,000 af of water (Current Contract number 14-06-200-8292A-IR11). The County of Fresno currently serves this water to one subcontractor – CSA #34 who utilizes the supply for M&I purposes. This subcontractor draws their water directly from Millerton Lake after their CV Delta supply has been exchanged for Friant supplies. However, in the past several years the County has been unable to find an exchangor in order to receive their CVP water, therefore they have relied upon transfers from the City of Fresno or Fresno Irrigation District.

**County of Tulare Water Use** The County of Tulare entered into a long-term water service contract with Reclamation in 1975 for 5,308 af/y (current contract number 14-06-200-8293A-IR11). The County of Tulare has ten subcontractors that are the recipients of the CVP water under this contract. The ten subcontractors are described below:

*Alpaugh Irrigation District (AID)* AID was formed in 1915 and is located in Tulare County approximately 15 miles southerly of Corcoran and 15 miles northwesterly of Delano. AID is comprised of approximately 10,500 acres, of which 5,400 are irrigated. Groundwater provides the primary water supply to AID. AID also operates 18 wells. Using two of its deep wells, AID provides approximately 300 af/y a potable water supply to the community of Alpaugh. AID

maintains 60 miles of domestic water pipelines. The population in Alpaugh is approximately 1,150.

In 1975, AID entered into a contract with the County of Tulare as a subcontractor for CVP water. Historically, AID has entered into exchange arrangements with AEWSO under Article 5 of the long-term water service contracts. Via this contract AID could receive up to 150 af/y of CVP water; however, in recent years because of limited deliveries and unreliability of availability, AID has not taken any CV water.

AID receives its CVP water supplies via Deer Creek. Water from the FKC is diverted into Deer Creek and flows approximately 12 miles to the Deer Creek check structure located on the westerly side of Highway 43 at the northeasterly corner of the district. AID has approximately 45 miles of unlined canals and approximately 25 miles of pipeline. The district has three regulating reservoirs. Reservoir No.1 is the primary regulatory reservoir used year round to provide timing and flexibility in water deliveries. Reservoirs 2 and 3 are used to provide additional storage to meet the peak demand flows during the summer months. Collectively, the reservoirs cover approximately 800 acres and maximum capacity of 4,000 af.

AID does not have any other contracts or water rights to surface water supplies. However, during wet years the district has been able to utilize excess waters available in the Homeland Canal located on the westerly side of AID, which if not used, would flow into the historic Tulare Lake. The main crops grown in AID are cotton, alfalfa, barley, and wheat.

*Atwell Island Water District (AIWD)* AIWD was established in 1977 and is located in Kings and Tulare Counties approximately 1 ½ miles south of the community of Alpaugh. The District is comprised of 7,136 acres, of which, 4,645 are irrigated. In 1993, AIWD and Hills Valley Irrigation District entered into a County of Tulare subcontracts for CVC CVP water. Both AIWD and Hills Valley Irrigation District (HVID) receive 954 af/y of CVP water. In recent years, HVID has obtained 904 af/y of AIWD's supply under this agreement resulting in a reduction to 1,055 af/y for AIWD. The CVP water from the Friant facilities that would have flowed to AEWSO are diverted at MP 102.67R via Deer Creek through AID's facilities to AIWD.

AIWD also is a participant in the Mid-Valley Water Authority. This Authority was organized to develop the Mid-Valley Canal.

The distribution of AIWD's water is performed by AID through a wheeling agreement. AID owns and operates the approximately 36 miles of unlined canals and laterals. AIWD does not operate or maintain groundwater recharge or extraction facilities. Landowners must provide privately owned wells to sustain irrigation during periods when the District does not have surface water available. The District serves only agricultural users. The main crops are cotton, alfalfa, barley, and wheat.

AIWD provides an in lieu conjunctive use program. In wet years, AIWD purchases supplies for use in the District in lieu of pumping groundwater. The District uses primarily surface water supplies when it is available and relies on groundwater only when surface water is unavailable.

*Hills Valley Irrigation District (HVID)* See description below. HVID receives up to 1,858 af/y (total of 954 af/y and 904 af/y) of CVP water under its contract with County of Tulare.

*Sausalito Irrigation District (SID)* SID receives up to 100 af/y of CVP water under its contract with County of Tulare. SID was formed in 1941 and is located in Tulare County, approximately ten miles southwest of Porterville, two miles south of Poplar, eight miles east of Tipton and five miles west of Terra Bella. Deer Creek, an intermittent stream, crosses the District for about five miles from its southern boundary, but there are no District diversions off Deer Creek. The FKC is located on the eastern boundary of the District.

HVID entered into a long-term renewable contract with Reclamation in 1959 for construction of facilities. Water deliveries began in 1961 for 21,200 af/y Class 1 and 32,800 af/y of Class 2 water. Currently, the District comprises of 19,453 acres, of which 19,057 are irrigated. The District has five individual water users that have rights in Popular Irrigation Company of 9.5 shares at 55 acre feet per share from Mole Ditch. SID engages in exchanges with the other CV Contractors.

SID obtains its CVP water supplies from four diversion points on the FKC between MP 11.64 and 107.35 and Deer Creek diversion at MP 102.69. The District's distribution system is 55 miles of pipeline with one recharge pond that covers approximately ½ acre. Deer Creek also provides groundwater recharge in wet years.

*Fransinetto Farms* Fransinetto Farms receives up to 400 af/y of CVP water under its contract with County of Tulare. (Fransinetto Farms has replaced Smallwood Vineyards within the last three years as the County of Tulare subcontractor.)

*Stone Corral Irrigation (SCID)* SCID receives up to 950 af/y CVP water under its contract with County of Tulare. SCID was formed in 1948. SCID is located in Tulare County, approximately 30 miles southeast of Fresno and 10 miles north-northeast of Visalia. SCID is comprised of 6,488 acres, of which 5,470 acres are irrigated. In addition to the County of Tulare subcontract, SCID entered into a long-term water service contract with Reclamation for 7,700 af/y of Friant Division Class 1 water in 1950. In 1991, the contract was amended to 10,000 af/y of Class 1 water. The safe yield for the groundwater supply in SCID is approximately 3,200 af.

The FKC runs approximately along the north and east boundaries of the District. SCID obtains the CVP water from the FKC at MP 57.90, 59.33, 60.90 and 62.68. The District's conveyance

system is 27 miles of pipeline. SCID serves only agricultural water. The main crops are citrus, cotton, deciduous and subtropical fruit.

*City of Lindsay* In 1958, Lindsay entered into a long-term water service contract with Reclamation for 2,500 af/y of Class 1 Friant water under contract number 5-07-20-W0428. City of Lindsay receives up to 50 af/y of CVP water under its contract with County of Tulare.

Lindsay obtains their CVP water from the FKC at the Honolulu Street turnout. The water treatment plant is at the same location and provides filtration, chemical additions and chlorination.

*Strathmore Public Utility District* Strathmore PUD receives up to 400 af/y CVP water under its contract with County of Tulare.

*Styrotek, Inc* Styrotek receives up to 45 af/y CVP water under its contract with County of Tulare. Styrotek is an industry manufacturing of shipping containers. Most of the CVP water is used for cooling and is recirculated back into Reclamation's conveyance system.

*City of Visalia* The City of Visalia receives up to 300 af/y CVP water under its contract with County of Tulare. The City has a keen interest in wisely managing the water supply, recognizing that water is a precious resource that is in short supply in this area. The City has established water conservation programs, developed groundwater recharge systems and is currently considering a water acquisition fee be applied to annexations and development projects.

**Hill's Valley Irrigation District Water Use** HVID is currently 4,223 acres, of which 3,067 are irrigated. The District is divided into three segments. Improvement District No.1 covers 1,276 acres, Improvement District No. 2 covers 1,990 acres and the remaining 795 acres are outside any improvement district but are within the District's boundaries. In 1976 HVID entered into a long-term water service contract with Reclamation for 2,146 af/y. In 1995, the contract amount was amended to 3,346 af/y. The District has historically received the CVP contract supplies through an exchange with AEWS. In 1993 HVID, along with Atwell Island Water District entered into a contract for CVC water with the County of Tulare. HVID acquired an additional 954 af/y and subsequently acquired another 904 af/y from Atwell Island Water District portion of the County of Tulare contract. HVID serves water only to agricultural users. HVID obtains its CVP water supplies from its turnout at MP 41.15L of the FKC. The District's distribution system comprises of 10.5 miles of pipeline. Within Improvement District No. 2 are two regulating reservoirs. The Anchor Reservoir and American Reservoir have storage capacities of approximately 0.53 and 2.0 million gallons respectively. Within Improvement District No. 1 is a 15 af regulating reservoir. The District does not own groundwater extraction facilities. Therefore, individual landowners must provide their own wells to sustain irrigation during periods when HVID does not have surface water available. The main crops in HVID are citrus and grapes.

**Tri-Valley Water District Use (TVWD)** TVWD has approximately 2,727 acres of irrigated agriculture. TVWD receives up to 45 af/y CVP water under its subcontract with County of Tulare. TVWD is in the Kings groundwater subbasin which has a “safe yield” which is estimate to be 1,048 ac-ft/year.

### **Conveyance**

*The Delta* All of the water supplied to the IRC contractors is pumped from the Delta. The CVP water originates in the Sacramento and San Joaquin Rivers. CVP facilities provide for the transport of water through both the San Francisco Bay-Delta Estuary and the Sacramento and San Joaquin River systems and provide for the delivery of water to CVP contractors in both Santa Clara County and the San Joaquin Valley. The Delta Cross Channel moves water from the Sacramento River through an excavated channel and natural channels to the Tracy Pumping Plant, which then pumps water into the DMC.

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

*SCVWD Conveyance* The Act of August 27, 1967, authorized the construction, operation, and maintenance of the San Felipe Unit as an integrated feature of the CVP. The San Felipe Unit is owned by Reclamation, but operated and maintained by SCVWD. The San Felipe Unit was authorized to provide CVP water service to San Benito County, Santa Clara County, and that portion of Monterey and Santa Cruz counties represented by the PVWMA. Water is conveyed from San Luis Reservoir through the Pacheco Tunnel and Conduit. Water is then conveyed from the Pacheco Conduit into the Santa Clara Conduit to serve SCVWD. As previously mentioned facilities have not yet been constructed for water delivery to the PVWMA service area.

*Conveyance of Delta CVP Water to the CV Contractors* Reclamation delivers CVP water into DWR’s Clifton Court Forebay in the Delta. DWR conveys the CVP water directly through the SWP facilities to the CVC, or may temporarily store the water in San Luis Reservoir for delivery to the CVC at a later time.

Under the temporary storage scenario, DWR conveys the CV Contractor’s CVP water from the Delta to the state or federal share of the San Luis Reservoir for later release and delivery to the CV Contractor. DWR also has an option of replacing water delivered to the CV Contractors from DWR’s share of San Luis Reservoir prior to receiving CVP water from Reclamation if DWR

determines that capacity is available for such conveyance, storage or exchange. Such deliveries of CVP water will not occur if an increase in cost or adverse affects to SWP operations and the quantity or quality of water deliveries to SWP contractors would result. The CVP water is ultimately delivered to the CVC and the CV Contractors as described below subject to capacity or other constraints.

Under the direct delivery scenario, DWR diverts water for the CV Contractors from the Delta at the Harvey O. Banks Pumping Plant through the California Aqueduct, and to the SWP's portion of San Luis Reservoir. Historically, from San Luis Reservoir, the water is conveyed via the California Aqueduct to the CVC Reach 12-E turnout in Kern County and delivered to AEWS. AEWS takes delivery of the Delta CVP water, then "exchanges" Friant CVP water that is then delivered to the CV Contractor's turnouts along the FKC.

A Memorandum of Understanding (MOU) between AEWS and the CV Contractors was executed in the 1970s to delineate the specifics of this exchange mechanism by which CV Contractors take delivery of their water supplies. Exchanging water with AEWS in accordance with the 1970s MOU does not need further environmental documentation under NEPA however if exchange arrangements with other entities are proposed or proposals are outside of the bounds of the 1970s MOU, additional environmental documentation would be required. KTRG and other CV Contractors are coming to Reclamation with proposed exchange arrangements with others and new agreements with AEWS. Some of these arrangements (on a short term basis) have already been analyzed in other NEPA documents. The analysis of the approval of exchange arrangements with "others" will be done in separate environmental documentation.

The CV Contractors joined in the cost sharing with a group of SWP contractors to construct the CVC. In 1975, the privately owned and locally financed CVC was completed, bringing water from the California Aqueduct through a series of six lift pumps to the east side of the southern San Joaquin Valley to the FKC near the city of Bakersfield. The CVC provides improved flexibility in conveying water supplies in the lower San Joaquin Valley allowing Friant and Delta water to be conveyed east to west by gravity or west to east by pumping. The CVC also conveys non-CVP and non-SWP water to non-CVP and non-SWP contractors. The operations of the CVC require extensive coordination among the users for conveyance and deliveries. Exchanges of water among the water districts are common. Reclamation only has jurisdiction and approval of exchanges or transfers involving CVP water. CVP water exchanges under IRC Articles 5 and 9 would undergo separate environmental analysis and review with the exception of Article 5 exchanges involving AEWS for the purpose of facilitating the delivery of CVP supplies to the CV Contractor pursuant to the 1975 MOU. These exchanges with AEWS are necessary, well described and have occurred historically. Therefore, they are within the scope of this IRC approval process and environmental analysis.

*Kern Tulare and Rag Gulch Siphons* KTRG constructed siphons on the east side of the CVC and the west side of the FKC and have direct access to the CVP supplies from the Delta. The siphons transport CVP or other water from the CVC into the FKC and then under appropriate conditions this water can be pumped over the northward checks allowing the water to flow upgradient in the FKC to KTRG. With direct accessibility to CVP supplies, KTRG no longer relies exclusively on exchanges of CV water for Friant water.

*Friant Direct Supplies* The IRCs provide for the CV Contractor water supplies (up to their contract totals) to come directly from the Friant Division under specific circumstances. All Friant Division water requirements must be met prior to making this water available to the CV Contractors. Therefore, the frequency and availability of direct delivery of Friant supplies for the CV Contractors is low and occurs only in very wet years. On the rare occasions when Friant supplies are made available, water is conveyed down the FKC directly to the CV Contractors where an equal reduction is made in the amount of the Delta water supplies allowed to be taken under contract.

### **Groundwater Resources**

**WWD** WWD is located above the alluvial fan deposits between the eastward dipping marine deposits of the Coast Range and the alluvium filled San Joaquin Valley. The groundwater basin underlying WWD is comprised generally of two water-bearing zones: (1) an upper zone above a nearly impervious Corcoran Clay layer containing the Coastal and Sierran aquifers and (2) a lower zone below the Corcoran Clay containing the sub-Corcoran aquifer. These water-bearing zones are recharged by subsurface inflow primarily from the west and northeast, and percolation of groundwater, and imported and local surface water. The Corcoran Clay separates the upper and lower water-bearing zones in the majority of WWD. (The Corcoran Clay is not continuous in the western portion of WWD.)

Groundwater pumping started in this portion of the San Joaquin Valley in the early 1900's. Prior to delivery of CVP water, the annual groundwater pumpage in WWD ranged from 800,000 to 1,000,000 af during the period of 1950-1968. The majority of this pumping was from the aquifer below the Corcoran Clay, causing the sub-Corcoran groundwater surface to reach the average elevation of more than 150 feet below mean sea level by 1968. The large quantity of groundwater pumped prior to delivery of CVP water caused a significant amount of land subsidence in some areas. Subsidence permanently reduces the aquifer capacity because of the compaction of the water-bearing sediments. WWD has implemented a groundwater management program to reduce the potential for future extreme subsidence.

After delivery of CVP water supplies into WWD began, groundwater pumping declined to about 200,000 af/y, or less, in the 1970's. The reduction in groundwater pumping stabilized groundwater depths and in most portions of WWD, groundwater levels significantly recovered.

During the early 1990's, groundwater pumping greatly increased because of the reduced CVP water supplies caused by an extended drought, and regulatory actions related to the CVPIA,

**Endangered Species Act (ESA), and Bay/Delta water quality actions** Groundwater pumping quantities are estimated to have reached 600,000 af /y during 1991 and 1992 when WWD received only 25 percent of its contractual entitlement of CVP water. The increase in pumping caused a decline in groundwater levels which have since recovered. Normal or near normal CVP water supplies from 1995 – 1999 have reduced the estimated annual quantity of groundwater pumped to approximately 60,000 af/y, resulting in an increase in water surface elevations. However, since 2000, WWD's water supply has been significantly reduced once again resulting in groundwater pumping to increase to over 200,000 af/y.

Safe yield, or current perennial yield, is the maximum quantity of water that can be annually withdrawn from a groundwater basin over a long period of time (during which water supply conditions approximate average conditions) without developing an overdraft condition. WWD estimates the current safe yield of groundwater underneath the district to be approximately 175,000-200,000 af/y. However, this quantity of groundwater is generally only pumped when other supplemental supplies are not available. This is due to the poorer quality of the groundwater compared to surface water.

WWD supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in WWD.

**SCVWD** The three major groundwater basins in the SCVWD service area, which are interconnected and occupy nearly 30 percent of the total county area, are Santa Clara Valley, Coyote and Llagas Basins. Groundwater supplies nearly half of the total water used in Santa Clara County and nearly all of that use is in the Coyote and Llagas basins. In 2000, about 165,000 af of groundwater was used. (SCVWD 2003)

Historically, Santa Clara County has experienced as much 13 feet of subsidence caused by excessive groundwater withdrawal. SCVWD was created partially to protect groundwater resources and minimize land subsidence. Subsidence is costly, as it can lead to flooding that damages properties and infrastructure, and saltwater intrusion that degrades groundwater quality. The rate of subsidence slowed in 1967 when imported water was obtained to replenish groundwater supplies. Today, SCVWD reduces the demand on groundwater and minimizes subsidence through conjunctive use of surface water and groundwater. SCVWD monitors land subsidence through benchmark surveying, groundwater elevation monitoring, and data from compaction wells. SCVWD also monitors groundwater levels to ensure that the amount of groundwater being pumped will not cause further subsidence.

Recharge to the groundwater basins consists of both natural groundwater recharge and artificial recharge through local surface and imported water. SCVWD owns and operates more than 30 recharge facilities and six major recharge systems with nearly 400 acres in recharge ponds. These facilities percolate both local and imported water into the groundwater aquifer. SCVWD does not have its own groundwater extraction facilities, but does levy a charge for all groundwater extractions by local retailers and individual users overlying the Santa Clara Valley Groundwater Basin.

SCVWD owns and operates eleven storage reservoirs with a combined storage capacity of 170,000 af. These reservoirs are located on most of the major streams in the SCVWD service area. These reservoirs retain seasonal runoff that can later be released for groundwater recharge along natural channels and in percolation ponds. Local surface water supplies include the stream flows that feed into and out of SCVWD's reservoirs, stream flows that are not captured by reservoirs, and water that flows overland into reservoirs.

**City of Tracy** The Tracy groundwater storage basin underlying the city is 600 square miles with a safe yield reported to be 9,000 af/y (Tracy 2002.) The City of Tracy pumps an annual maximum of 6,700 af/y. The City of Tracy currently operates nine groundwater wells that pump from the groundwater aquifer. 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. Recently, Tracy completed a groundwater study that estimated the operational yield from these wells to be approximately 9,000 af annually. In 2004 and 2005, the annual available groundwater supply was 9,000 af and 6,000 af, respectively. This groundwater supply is indirectly affected by annual rainfall, and a multiple year drought could decrease groundwater supplies. Despite this, groundwater supplies have historically been available at a consistent level. The long-term objectives of Tracy are to 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 (City of Tracy 2005).

Tracy is participating in a Groundwater Management Plan (GMP) for the groundwater basin in conjunction with agencies that draw water from the aquifer within the DMC's northern service area, including Plain View Water District, Banta-Carbona Irrigation District, Del Puerto Water District, Panoche Water District, West Side Irrigation District, and San Joaquin County. This GMP will help assure that overdrafting of the aquifer, potentially leading to poor water quality or subsidence, does not occur. Tracy has adopted a Groundwater Management Policy to implement the GMP (SLDMWA, 1995).

**CV Contractors** The CV Contractors are located in the Tulare Lake groundwater hydrologic region. Within the Tulare Lake Region, CV Contractors are located in the Kings, Kaweah, Tule, and northern portion of the Kern County subbasins. The subbasins and the associated water districts are shown in Table 4.

**Table 4  
Groundwater Subbasins and Water Service Areas in the Cross Valley Contractor Service Area**

<b>Groundwater Subbasin</b>	<b>County Service Area/Water/Irrigation District/City</b>
Kings Basin	County of Fresno Hills Valley Irrigation District Tri-Valley Water District
Kaweah Basin	City of Visalia
Tule Basin	Pixley Irrigation District Rag Gulch Water District Lower Tule River Irrigation District
Kern County	Kern-Tulare Water District County of Tulare

Recharge of the semi-confined aquifer in the region is primarily derived from seepage from streams and canals, infiltration of applied water, and subsurface inflow. Precipitation on the valley floor provides some recharge, but only in wet years. Seepage from streams and canals is highly variable depending on annual hydrologic conditions. Recharge to the lower confined aquifer takes place largely through lateral inflow from the semi-confined aquifer.

The usable storage capacity of the Tulare Lake Region is about 28 million af. The most recent perennial yield estimate for groundwater extraction is approximately 4.6 million af for the Tulare Lake Region. This perennial yield is directly dependent upon the amount of recharge received by the groundwater basin, which may be different in the future than it has been in the past.

Groundwater pumping ranged from 1.6 million af in 1922 to 4.7 million af in 1977. Groundwater pumping has been rising steadily through the 1970s, and has varied greatly from year to year depending on hydrologic conditions. The largest year-to-year fluctuation occurred during the 1976 to 1977 drought period. Immediately following the drought, hydrologic wet and above normal conditions for the years 1978 to 1980, resulted in reduced pumping. However, urban growth during the 1980s has contributed to an increase in groundwater use. In addition, increased groundwater pumping in the late-1980s and early-1990s occurred as a result of reduced surface water deliveries to CVP water users due to the imposition of environmental requirements on the operation of surface water facilities, and critically dry hydrologic conditions during the 1987 to

1992 drought period. DWR estimated recent groundwater pumping for 1990 conditions in the Tulare Lake Region at 5.2 million af. This exceeds the estimated perennial yield in the Tulare Lake Region by approximately 630,000 af. All of the subbasins within Tulare Lake Region experience some overdraft.

During the 10-year period from spring 1970 to spring 1980, semi-confined groundwater levels generally dropped in the Tulare Lake Region. In portions of Fresno, Kings, Kern, and Tulare counties, semi-confined groundwater levels dropped as much as 50 feet since spring 1970. The semi-confined aquifer in the Tulare Lake Region showed little change between spring 1980 and spring 1988.

### **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 IRC service areas, 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 3.1). Based on modeling during the interim renewal contract period there is a relatively low chance that tiered pricing would be in effect. Water supplies do not typically meet demands for most IRC contractors and many IRC contractors are very active on the water market purchasing water supplies. Since much of the IRC contractors' service areas are planted in permanent crops and these contractors have paid more than tiered pricing rates in dry years on the water market to preserve their permanent crop planting investment, increasing water prices due to tiered pricing would not change water use trends.

For those areas where groundwater is of suitable quality and therefore available for irrigation, CVP water is considered to be a supplemental supply. Most agricultural contractors already rely on groundwater supplies and in some cases water transfers to meet on-farm needs. Alternate surface water supplies frequently are expensive. Thus, tiered pricing is unlikely to cause a grower to switch to alternate supplies. Most IRC contractors have the option of switching to groundwater for a limited amount of time. This option would only be utilized (as stated above) if the cost/benefit ratio and the water quality were sufficient to warrant it. Due to continuing overdraft conditions, districts realize that when pumping groundwater above safe yield levels they are mining dry year supplies and that this supply cannot be relied on continually as it is not sustainable.

The CVP supplies for the CV Contractors are unpredictable due to the constraints in deliveries from the Delta. The CV Contractors swap Delta water for Friant water resulting in higher costs

for the CV Contractors. In order for the CV Contractors to obtain their Delta supplies through an exchange with the Friant Division Contractors, the runoff on the San Joaquin River must be sufficient to declare a full Class 1 and a minimum percent of Class 2 supply. If these conditions are not met, the CV Contractors do not have the ability to exchange their CV supplies. These combined conditions result in higher overall costs of water for the CV Contractors compared to neighboring Friant Division Contractors. In dry years the costs for CV Contractors per acre foot may double. This is due to fixed contract costs and is independent of the runoff conditions and hydrology. These fixed contract costs are typically the operations and maintenance, pumping and watermaster costs.

The CV Contractors may switch from surface water to groundwater in certain years because of tiered water pricing. In certain years, the CV Contractors may purchase additional water supplies. Purchased water by the CV Contractors would come from San Luis Reservoir, Delta, or Friant. This does not represent a new water supply, but rather, part of the water supply described in the PEIS. Overall, the diversion from the Delta or Friant would not change as the diversion would remain within the contract total. The total diversions from the Delta or Friant are not anticipated to change with the tiered pricing with no impact anticipated. The CV Contractors receive water physically from Millerton Lake through exchanges (or occasionally via direct delivery). Changes in CVP water use because of this alternative would not affect this exchange.

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 use of 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 (i.e., installation and use of highly efficiency irrigation systems). For those reasons, and others discussed in this EA, implementation of the No Action Alternative is not likely to cause an impact to water resources.

### **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. 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. Water delivery during the interim renewal contract period would not exceed historic quantities. Therefore there would be no effect on surface water supplies or quality.

The renewal of interim contracts delivering the same quantities of water that have historically been put to beneficial use would not result in any growth-inducing impacts. In addition, no substantial changes in growth are expected to occur during the short timeframe of this renewal.

### **Cumulative Effects**

Although, as the areas in or surrounding the IRC service areas grow in population, there would be additional competition for the CVP supplies among the differing purposes of use, the quantity of water provided under these fifteen CVP interim renewal contracts has been and would continue to be at historic levels. No new water supplies are being added to the region. Renewal of the fifteen interim renewal contracts would have no impact on water resources and as such has no cumulative effects.

## **3.2 Land Use**

The following discussion provides information on land uses within each IRC contractor's service area and includes a discussion of current agriculture and future trends in agriculture as applicable. While this information is indicative of land use and growth trends in the IRC service areas, it is not intended to be a comprehensive list of every development project planned or proposed.

### **3.2.1 Affected Environment**

#### **Westlands Water District (WWD)**

WWD covers almost 950 square miles of prime farmland 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. Nearly all land within the current WWD service area was at one time farmed using groundwater. The first deliveries of CVP water from the SLC to WWD began in 1968.

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.

The current population within the WWD is approximately 50,000. 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.

CVP water in the district is used for both agricultural and M&I uses. The majority of CVP supply is used in agriculture, and of the almost 800 water users in the district, approximately 600 are agricultural users and approximately 180 are M&I users. Unlike many other key growing areas of California, urbanization is not a direct threat to agricultural productivity. The district's M&I deliveries include cities and governmental agencies; however, none of this water is treated by the district before its distribution. Current M&I deliveries are estimated to be approximately 2,000 af/y and account for only a very small percentage of the district's CVP supplies.

The landowners in WWD have farmed their lands for many years. Each year since 1989, additional lands have been set aside over and above normal crop fallowing. The increase in fallowed acres is the direct result of insufficient high quality water to grow the wide variety of crops grown in WWD. In certain water year types, such as dry or critically dry, in combination with regulatory cutbacks for environmental protection of endangered and threatened species, CVP contract water, supplemental water, and good quality groundwater supplies are not always available to meet the irrigation demands. As a result of the shortfall, WWD has experienced severe land fallowing over the past fifteen years. During the period 1991 through 1994, WWD farmers fallowed 125,082, 112,718, 90,413, and 75,732 acres, respectively, of high quality farmland. This forced fallowing resulted in on-farm economic losses ranging from \$136 million to \$225 million (based on \$1,800 gross on-farm income/acre) and the loss of from 757 to 1,281 on-farm jobs (based on 1 position for each 100 acres lost).

In an attempt to continue farming lands within WWD that have been farmed for many decades and to minimize the impacts described above, WWD has developed a program to purchase as much supplemental water as is required or is available at a price suitable for irrigated agriculture. The WWD program supplements its CVP contract supplies with purchases of supplemental water from willing sellers on the spot market.

Farming in WWD has occurred for several decades. During the period 1997 through 2001 (this period selected because the information is available from WWD Website) WWD has averaged 564,138 acres in production and cultivated more than 48 different types of crops. WWD average annual CVP water supply over the same period was 801,688 af/y. This quantity of CVP Contract supply is 69.7 percent of the total entitlement under the CVP water supply contracts.

### **Santa Clara Valley Water District**

The SCVWD, which has the same boundaries as Santa Clara County, covers about 1,300 square miles from San Francisco Bay south to the Pajaro River. SCVWD includes the Santa Clara Valley and portions of the Diablo Range and Santa Cruz Mountains. The Santa Clara Valley runs the entire length of the County from north to south, bounded by the Diablo Range to the east and the Santa Cruz Mountains to the west. The valley is bounded to the northwest by the southern reaches of San Francisco Bay and to the south by the Pajaro River. Most of the development and

water use occurs in the 350 square mile valley floor. SCVWD encompasses 15 cities, including San Jose, Mountain View, Palo Alto, Santa Clara, Sunnyvale, and Gilroy and includes much of the area known as the “Silicon Valley”. Natural waterways in SCVWD include the Pajaro River, Guadalupe River, Coyote Creek, Llaga Creek, Uvas Creek, and Los Gatos Creek.

Most development and water use occurs on the 350-square-mile valley floor. The northern part of the valley, north of the Coyote Narrows, is extensively urbanized and houses over 90 percent of the County’s 1.7 million residents and 13 of the County’s 15 cities. The southern part of the valley remains predominately rural with some low-density residential development, with the exception of the cities of Morgan Hill and Gilroy.

### **City of Tracy**

Tracy is a city in San Joaquin County, California of 21 square miles. As of the 2007, Sterling's Bestplaces.net showed total population of 80,000 and a July 1, 2005 Census estimate showed the fast-growing city's population at 75,800. The land use in the entire service area boundary is urban uses.

### **CV Contractors**

The service areas of the eight CV Contractors are located along the eastern edge of the southern San Joaquin Valley, stretching from Fresno County on the north to Bakersfield on the south (Figure 3-1). The CV Contractors are inter-dispersed among the Friant Division Contractors. Surface water has historically been delivered to over 190,000 acres of irrigated farmland within the service areas of the eight CV Contractors and their subcontractors. Water deliveries are used primarily for irrigation, but a small amount of water is used for M&I purposes.

The CV Contractors’ service area produces a diverse range of crops on 161,980 acres agricultural land, grains and field crops, nuts, cotton, and vegetables. Several of the districts were not required to report crop water use information in 1996 due to limited irrigation acreage. From the reported information, alfalfa was the most plentiful crop in the area with over 19 percent of the crop land devoted to its harvest. Lower Tule River Irrigation District led the contractors in acreage for most of its major crops. The District had over 20,000 and 19,000 acres of alfalfa and cotton, respectively. Cotton and corn were planted on over 17 percent and 13 percent, respectively, of CV Contractors agricultural land. Ten other crops each contributed less than 10 percent of the crop land in the service area (Reclamation 1999b).

Within the Kern County portion of the CV Contractors service area, the most abundant of the seven crops were from subtropical orchards, which occupy approximately 8,800 acres. Citrus fruits were the primary crop in the Hills Valley Irrigation District. Located in Fresno County, Hills Valley Irrigation District produces approximately 73 percent of the CV Contractors citrus crop (Reclamation 1999b).

The CV Contractors service area is a significant contributor to the production of several crops in California (See Table 5a and 5b). Of the 706,731 acres of the grapes grown in California, 51 percent are within the three counties that encompass the CV Contractors service area. The Cross Valley unit is also a substantial supplier of cotton (CASS 1995).

**Table 5a 2000 Land Use**

Crop/Contractor	Kern- Tulare (acres)	Rag Gulch (acres)	KTRG Total (acres)
Alfalfa	0	276	276
Almonds	480	100	580
Pistachios	1,111	0	1,111
Other Deciduous	355	15	370
Citrus	6,945	1,097	8,042
Subtropical	201	0	201
Grapes	4,301	3,815	8,116
Total Irrigated	13,393	5,303	18,696
Non-irrigated	4,792	650	5,442
<b>Total</b>	<b>18,185</b>	<b>5,953</b>	<b>24,138</b>

**Table 5b 1999 Land Use**

<b>Crop/Contractor</b>	<b>Lower Tule River ID (acres)</b>	<b>Pixley ID (acres)</b>	<b>Hill's Valley ID (acres)</b>
Alfalfa	20,635	11,284	0
Pistachios	3,359	3,219	85
Other Deciduous	3,772	487	56
Citrus	88	0	2,444
Grapes	2,810	4,511	494
Barley	0	0	154
Corn	22,629	0	0
Cotton	19,024	8961	0
Grain	11,118	0	0
Misc.	890	23,559	0
Olive	0	0	120
Pasture	551	1,364	0
Sugar Beet	418	0	0
Truck Crop	1,077	0	0
<b>Total</b>	<b>18,371</b>	<b>53,385</b>	<b>3,353</b>

Source: Reclamation 1999b

Note: Tri-Valley Water District is exempt from reporting crop water needs information.

No data are available for the County of Fresno and the County of Tulare

The service area of the IRCs covers a major portion of three counties (Fresno, Tulare, Kings, Kern, San Joaquin and Santa Clara). The six California counties account for \$9.38 billion in

gross agricultural production (Table 6). The leading agricultural commodities in these counties are grapes, milk, cotton, almonds, and citrus, which accounted for nearly \$4 billion in gross agricultural production in 2002. The leading crops in terms of acreage in the IRC contractors' service areas are alfalfa, corn, cotton, wheat, orchards, and vineyards.

**Table 6**

**Ranking of Cross Valley Contractor Counties by Total Value of Agricultural Production**

<b>1998 CA Rank</b>	<b>County</b>	<b>2002 Production (\$1,000)</b>	<b>Number of Farms (# farms)</b>	<b>Land in Farms (acres)</b>	<b>Average size of Farm (acres)</b>	<b>Leading Crops</b>
1	Fresno	2,759,421 (down 1% from 1997)	6,281 (down 11% from 1997)	1,928,865 (down 0.4% from 1997)	307 (up 12% from 1997)	Grapes, poultry, cotton, tomatoes, milk
2	Tulare	2,338,577 (up 20% from 1997)	5,738 (down 8% from 1997)	1,393,456 (up 1% from 1997)	243 (up 12% from 1997)	Forage, corn (for silage) grapes, citrus, almonds, cotton, poultry, milk, pork, beef
4	Kern	2,058,705 (up 4% from 1997)	2,147 (down 9% from 1997)	2,731,341 (down 5 % from 1997)	1,272 (up 5% from 1997)	Almonds, other fruit and nuts, grapes, cattle & calves, vegetables
7	San Joaquin	1,222,454 (up 3% from 1997)	4,026 (down 8% from 1997)	812,629 (down 2% from 1997)	202 (up 7% from 1997)	Fruit, nuts and berries, poultry, corn for grain, milk, vegetables
12	Kings	793,061 (up 14% from 1997)	1,154 (down 5% from 1997)	645,598 (down 2% from 1997)	559 (up 3% from 1997)	Cotton, forage, wheat for grain, corn for silage, vegetables
28	Santa Clara	208,498 (up 7% from 1997)	1,026 (down 17% from 1997)	320,851 (down 2% from 1997)	313 (up 19% from 1997)	Vegetables, fruits, tree nuts and berries, nursery stock

Source: USDA 2002

Table 6 indicates that agricultural production is generally up, the number of farms and acreage in farming is decreasing, but the farm size is increasing.

Water for communities and other M&I users in the IRC contractors' service area comes almost entirely from pumping of groundwater. The quality of the groundwater, for the most part, does not require treatment prior to use. There are no major population centers in the CV Contractors' service area. The only significant use of Cross Valley CVP water for M&I purposes is for the Strathmore Public Utility District (PUD), City of Lindsay, City of Visalia, Styrotek, and County of Fresno. The PUD is under subcontract with Tulare County and supplies the only source of water for the City of Strathmore. The City of Lindsay receives 2,500 af of Friant Class 1 water as a Friant contractor and 50 af as a Tulare County subcontractor. The City of Visalia receives 300 af as a Tulare County subcontractor for golf course irrigation. Styrotek, Inc. receives 45 af for the manufacturing of shipping containers. County of Fresno water (currently approximately 500 af of the 3,000 af under contract) is delivered to homes, the golf course and landscape irrigation at the Brighton Crest development near Millerton Lake.

The conversion of agricultural land to alternate uses is not a significant issue for the IRC Contractors because of the lack of major population centers in their service areas. Exceptions are the cities of Silicon Valley cities, Tracy, Fresno, Tulare, Visalia, and Delano that have experienced rates of growth similar to the rest of the State of California. Historically, agricultural lands receiving CVP water that are converted to urban uses have not continued to use CVP water with the exception of Santa Clara County and the City of Tracy. The land use change generally results in a change in water supply, from agricultural to urban community water system. Eastside groundwater is generally preferred for a community water system. The CVP water is generally reallocated to other agricultural lands in the district or used to recharge groundwater. CV Contractor water supplies to these municipalities either do not contribute to the community water supply or are very minor portions of their water supplies. The subdivisions in Millerton New Town and Brighton Crest are other exceptions where County of Fresno supplies provide the entire water supply. Expansion of the County of Fresno's service area has been analyzed under separate environmental documentation and is not part of this IRC EA. Any future service area expansion will also be analyzed separately.

### **3.2.2 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 or municipal development. Generally, lands within the IRC contractor service areas that are productive are farmed or have maximized M&I development with the CVP water available. 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 IRC contractor service areas 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 conversation 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 IRC contractor service areas are water short even in high allocation years. Water short farmers have demonstrated via purchases on the water market a willingness to pay tiered pricing rates. 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.

### ***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. 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 contract renewal. The pressures to convert are the same pressures that would have existed with the previous expiring interim contracts and with the No Action Alternative. Local land use agencies have the oversight of these actions. It is unlikely that significant conversions to M&I uses would occur during the term of the interim renewal contract or that the short-term water supply under that contract would contribute to any such conversion. Since contracts are mandated to be renewed for the quantity of water that can be put to beneficial use, the water supply would be available for either purpose of use and the interim renewal of contracts would not affect the potential M&I conversion.

The IRC would continue to support current land uses and no conversion of agricultural lands currently in production would convert to urban uses during the term of the IRCs. The Proposed Action will have no affect on land use.

### ***Cumulative Effects***

Since the alternatives have no impact on land use, they also have no cumulative effects.

### 3.3 Biological Resources

#### 3.3.1 Affected Environment

This section analyzes the potential impacts to listed (under the federal Endangered Species Act) and non-listed species and habitats with the potential to occur in the study area. The study area is located in the San Joaquin Valley and includes those portions of San Joaquin, Fresno, Kings, Tulare, Santa Clara and Kern counties comprising the service areas of the IRC Contractors.

The following list (See Table 7) was obtained on November 30, 2007, by accessing the U.S. Fish and Wildlife Database: [http://www.fws.gov/pacific/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/pacific/sacramento/es/spp_lists/auto_list.cfm). The list is for the following USGS 7½ minute quadrangles (quads): Deepwell Ranch, McFarland, North of Oildale, Wasco NW, Ducor, Sausalito School, Delano East, Richgrove, Pixley, Alpaugh, Allensworth, Hacienda Ranch NE, Hacienda Ranch, Lindsay, Cairns Corner, Woodville, Porterville, Tulare, Taylor Weir, Tipton, Corcoran, Westhaven, Avenal, Coalinga, Slack Canyon, Ivanhoe, Exeter, Goshen, Visalia, Vanguard, Five Points, Tres Pecos Farms, Domengine Ranch, Stokes Mtn, Orange Cove North, Wahtoke, San Joaquin, Helm, Coit Ranch, Monocline Ridge, Friant, Firebaugh, Broadview Farms, Mariposa Peak, Three Sisters, San Felipe, Chittenden, Watsonville East, Crevison Peak, Pacheco Pass, Mustang Peak, Mississippi Creek, Gilroy Hot Springs, Pacheco Peak, Mt. Sizer, Morgan Hill, Mt. Madonna, Gilroy, Santa Teresa Hills, Los Gatos, Laurel, Loma Prieta, Castle Rock Ridge, Mt. Boardman, Mt. Stakes, Eylar Mtn, Mt. Day, Lick Observatory, Isabel Valley, Calaveras Reservoir, Milipitas, San Jose West, San Jose East, Mountain View, Palo Alto, Cupertino, Tracy, Union Island. (USFWS 2007).

**TABLE 7: FEDERAL STATUS SPECIES ON QUADS LISTED ABOVE**

<u>Common Name</u>	<u>Species Name</u>	<u>Fed Status</u> <sup>1</sup>	<u>ESA</u> <sup>2</sup>	<u>Summary basis for ESA determination</u>
Blunt-nosed leopard lizard	<i>Gambelia silus</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
California tiger salamander, Central DPS	<i>Ambystoma californiense</i>	T	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
California tiger salamander – Critical Habitat	<i>Ambystoma californiense</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC

<sup>1</sup> E: Listed as Endangered under the federal ESA. T: Listed as Threatened under the federal ESA. CH: Critical habitat designated under the federal ESA.

<sup>2</sup> ESA effect determination. NE: No effect to the species or critical habitat. NLAA: Not likely to adversely affect the species or critical habitat

California red-legged frog	<i>Rana aurora draytonii</i>	T	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
California red-legged frog - Critical Habitat	<i>Rana aurora draytonii</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Central Valley steelhead - Critical Habitat	<i>Oncorhynchus mykiss</i>	CH	NE	Effects to this critical habitat are operational, and will be addressed in the OCAP BO
Central California Coastal steelhead	<i>Oncorhynchus mykiss</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Central California Coastal steelhead - Critical Habitat	<i>Oncorhynchus mykiss</i>	CH	NE	Effects to this critical habitat are operational, and will be addressed in the OCAP BO
South Central Valley steelhead	<i>Oncorhynchus mykiss</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Delta smelt	<i>Hypomesus transpacificus</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Delta smelt - Critical Habitat	<i>Hypomesus transpacificus</i>	CH	NE	Effects to this critical habitat are operational, and will be addressed in the OCAP BO
Green sturgeon	<i>Acipenser medirostris</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Tidewater goby	<i>Eucyclogobius newberryi</i>	E	NE	The species is outside of the action area
Coho salmon	<i>Oncorhynchus kisutch</i>	E	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Central Valley spring-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	T	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Winter-run Chinook salmon – Sacramento River	<i>Oncorhynchus tshawytscha</i>	E	NE	Effects to this species are operational, and will be addressed in the OCAP BO
Fresno kangaroo rat	<i>Dipodomys nitratooides exilis</i>	E	NE	Species is presumed extirpated in the action area
Fresno kangaroo rat - Critical Habitat	<i>Dipodomys nitratooides exilis</i>	CH	NE	Critical habitat is outside of the action area
Giant kangaroo rat	<i>Dipodomys ingens</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Tipton kangaroo rat	<i>Dipodomys nitratooides nitratooides</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E	NE	Species habitat not in land types affected by the contract water

Marbled murrelet	<i>Brachyramphus marmoratus</i>	T	NE	The species is outside of the action area
Marbled murrelet – Critical habitat	<i>Brachyramphus marmoratus</i>	CH	NE	Critical habitat is outside of the action area
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T	NE	Species habitat not in land types affected by the contract water
California condor	<i>Gymnogyps californianus</i>	E	NE	The species is outside of the action area
California clapper rail	<i>Rallus longirostris obsoletus</i>	E	NE	Species habitat not in land types affected by the contract water
California least tern	<i>Sternula antillarum brownii</i>	E	NLAA	CVP water is unlikely to result in changes to the evaporation ponds used by the species
Least Bell’s vireo	<i>Vireo bellii pusillus</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Giant garter snake	<i>Thamnophis gigas</i>	T	NLAA	No discharge from WWD, species not present in remainder of action area
Alameda whipsnake	<i>Masticophis lateralis eurxanthus</i>	T	NLAA	Species is outside the action area, critical habitat is slightly within SCVWD, no changes in land uses and no new construction or facilities through the duration of the IRC
Alameda whipsnake - Critical Habitat	<i>Masticophis lateralis eurxanthus</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	T	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Bay checkerspot butterfly - Critical Habitat	<i>Euphydryas editha bayensis</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Bruno elfin butterfly	<i>Callophrys mossii bayensis</i>	E	NE	The species is outside of the action area
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Vernal pool tadpole shrimp - Critical Habitat	<i>Lepidurus packardi</i>	CH	NE	The critical habitat is outside of the action area
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	NE	The species is outside of the action area
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	NLAA	No changes in land uses and no new construction or facilities through the

duration of the IRC				
Vernal pool fairy shrimp - critical habitat	<i>Branchinecta lynchi</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	E	NE	The species is outside of the action area
Fleshy Owl's Clover	<i>Castilleja campestris</i> spp. <i>succulenta</i>	T	NE	The species is outside of the action area
Fleshy Owl's Clover- Critical Habitat	<i>Castilleja campestris</i> spp. <i>Succulenta</i>	CH	NE	The critical habitat is outside of the action area
Tiberon paintbrush	<i>Castilleja affinis</i> spp. <i>neglecta</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Joaquin Valley Orcutt Grass - Critical Habitat	<i>Orcuttia inaequalis</i>	CH	NE	The critical habitat is outside of the action area
Large -flowered fiddleneck	<i>Amsinckia grandiflora</i>	E	NE	The species is outside of the action area
Coyote ceanothus	<i>Ceanothus ferrisae</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Hoover's spurge	<i>Chamaesyce hooveri</i>	T	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Hoover's spurge - Critical Habitat	<i>Chamaesyce hooveri</i>	CH	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Springville clarkia	<i>Clarkia springvillensis</i>	T	NE	The species is outside of the action area
Santa Clara Valley dudleya	<i>Dudleya setchellii</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Santa Cruz tarplant	<i>Holocarpha macradenia</i>	T	NE	The species is outside of the action area
Santa Cruz tarplant - Critical Habitat	<i>Holocarpha macradenia</i>	CH	NE	Critical habitat outside of action area
Contra Costa goldfields	<i>Lasthenia conjugens</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Contra Costa goldfields - Critical Habitat	<i>Lasthenia conjugens</i>	CH	NE	The critical habitat is outside of the action area
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	E	NLAA	Urban areas within WWD (Avenal and Coalinga) are not likely to expand during the IRC period; WWD water would not support such expansion

regardless				
Bakersfield cactus	<i>Opuntia basilaris</i> var. <i>treleasei</i>	E	NE	The species is outside of the action area
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	T	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Metcalf Canyon jewelflower	<i>Streptanthus albidus</i> ssp. <i>albidus</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
California sea blite	<i>Suaeda californica</i>	E	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC

Baseline information on biological resources in the IRC Contractors' service areas study area was compiled primarily from literature and information gathered from water district general managers and staff. Data sources included appendices to the CVPIA PEIS (Reclamation 1997b, 1997e), Draft EA for Eastside/Westside Water Transfer/Exchange (Tetra Tech 2000), BO on Operation of the CVP and Implementation of the CVPIA (USFWS 2000), Biological Opinion on the Operations and Maintenance Program Occuring on Bureau of Reclamation Lands Within the South-Central California Area Office (USFWS 2005), 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 EIS/EIR (Reclamation 2001b), the California Department of Fish and Game (CDFG) California Natural Diversity Database, and the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society 2000).

Appendix E presents a list of federal and California special-status species that are known to inhabit the above listed quads.

The existing affected environment conditions are essentially the same as those described in the initial 1994 EA and subsequent Supplemental EAs. Consistent with existing CVP and CVPIA BOs, Reclamation implemented a Central Valley Habitat Monitoring Program (CVHMP) in 1999 to map and monitor habitat inside CVP water service areas. The CVHMP uses satellite imagery and aerial photography to identify natural habitats and monitor habitat changes that may be occurring inside CVP water service areas. The CVHMP database benchmark year is 1993, and that 1993 data reflects land-use and habitat conditions described in the affected environment sections of the 1994 EA (Reclamation 1994). Comparisons of the 1993 benchmark-year to recent available satellite imagery (2000) show that habitat conditions inside the IRC water service areas have changed very little since the first IRC environmental analysis in 1994, which further supports conclusions presented in the 2004, 2002, 2001, and 2000 Supplemental IRC EAs. Summaries of land-use and habitat changes inside each IRC service area between 1993 and 2000 are presented in Appendix C. The CVHMP has obtained 2005 satellite-imagery of the

Central Valley, and is analyzing land use changes that may have occurred inside CVP contract service areas between 2000 and 2005. The 2005 analysis is expected to be completed in next year.

***Documents Addressing Potential Impacts to Listed Species Associated with Deliveries to the IRC Contractors' Service Areas***

Reclamation and the DWR are currently cooperating in conducting endangered species consultations to address the combined long-term operations of the CVP and SWP, as part of the OCAP. Reclamation is the lead federal agency and DWR is the lead state agency for these consultations. Reclamation is consulting with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) regarding potential operational impacts to species listed under the federal ESA. DWR is consulting with CDFG regarding potential operational impacts to species listed pursuant to the California Endangered Species Act (CESA). The OCAP is a detailed analysis and explanation of the criteria and procedures for conducting combined CVP and SWP operations.

The fifteen 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 fifteen interim water service contracts considered in this EA. As a result, the IRCs analyzed would conform to any applicable requirements imposed under the federal ESA or other applicable environmental laws.

In addition, Reclamation has consulted under the ESA on the *Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office*, resulting in a BO issued by the FWS (USFWS 2005) on February 17, 2005 (1-1-04-0368). The BO considers the effects of routine operation and maintenance 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.

***Land Use and Natural Communities Inside and Within Two Miles of WWD's Service Area***

Immediately west of the WWD service area lies the Diablo Range of the California Coast Range. The area west of the northern portion of WWD service area includes a portion of the San Luis Reservoir, O'Neil Forebay, and Los Banos Reservoir near Santa Nella in Merced County. From here, the western portion follows foothills through portions of the Panoche Hills and Monocline

Ridge in western Fresno County. Other than the open water of the reservoirs, this area along most of the western boundary is primarily composed of open areas of annual grasses with linear riparian communities along intermittent streams. Further south, the land adjacent to WWD's service area includes grasslands and portions of coastal scrub, chaparral, and oak woodland communities at the higher elevations of hills west of Coalinga. The southern portion of WWD's service area includes a mix of oil development, agricultural lands, and annual grasses on the Kettleman Hills near Avenal and Bakersfield in western Kings County and Kern County.

Immediately southeast of WWD's service area lies the north shore of what was historically the open water and tule marshes of Tulare Lake. The area includes some riparian and wetland areas but is largely dominated by irrigated agriculture, primarily row crops. Going north, the area east of the San Luis Unit includes the historical marshlands of the Fresno Slough, which were created by the channelization of the Fresno Slough and flood control operations of the Kings River from its departure through the area of Tranquility and the Mendota Wildlife Area. Most of these lands are used for irrigated agriculture, but there are also areas of restored and conserved wetlands such as the Mendota Wildlife Area. From there, the eastern portion of WWD's service area extends northwest through Mendota and the Mendota Pool area along the San Joaquin River.

**Land Use and Natural Communities Within WWD's service area** WWD's service area encompasses approximately 604,000 acres of land situated on arid plains and low hills in the San Joaquin Valley. It lies between the foothills of the Sierra Nevada Range on the east and the foothills of the Diablo Range on the West. It lies north and west of the Tulare Lake bed and just south of the Grasslands wetland areas on the west. At present, approximately 14 percent of WWD's service area land area remains undeveloped. Most remaining undeveloped lands are along the foothills of the Diablo Range at the western edge of WWD's service area. Approximately 71 percent of undeveloped lands are in the hills surrounding the Pleasant Valley near Coalinga and the Kettleman Hills near Avenal. The remaining 29 percent is in the northern portion of WWD's service area near Santa Nella and various small parcels throughout WWD's service area (DWR 2004).

Development of land within WWD's service area 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.

**Fisheries** On the arid west side of the San Joaquin River basin, relatively small intermittent streams drain the Coast Range but rarely reach the San Joaquin River. On the east side, numerous streams and three major rivers drain the western Sierra Nevada and provide flow to the San Joaquin River. The lower San Joaquin River is adjacent to the study area along portions of the eastern boundary beginning at Millerton Reservoir and continuing past the Mendota Pool.

Historic fishery resources within the study area were different from fishery resources present today (Reclamation 1997e). Many native species have declined in abundance and distribution, and several introduced species have become well-established. The major factors producing changes in aquatic habitat within the project area are habitat modification, species introduction, and over fishing of fishery resources that originate in the project area (Moyle 2002). These factors and anthropogenic activities within the project area have adversely affected the fisheries resources in the area.

The San Joaquin River in the vicinity of WWD's service area is characterized as a warm-water, Deep-Bodied Fishes Zone composed of a variety of habitats, and supports steelhead trout and Chinook salmon to the barrier at the Merced River in years with sufficient water flows and timing. The natural habitat and water quality of the River and Mud and Salt Sloughs have been highly modified by the addition of canals, agricultural drainwater, and seasonal regulation of main stem River flows.

Little information exists about fishery resources in water bodies located within WWD's service area. The westside intermittent streams located within the project area are not known to support anadromous fish and are unlikely to support populations of resident fish because of their hydrologic conditions, which are often characterized by low (or no) flows, increased temperatures, and reduced water quality. The numerous water conveyance facilities and water supply and drainage canals could and do support warm-water fish, such as bass, crappie, sunfish, catfish, and shad.

Laboratory and field research has demonstrated that elevated waterborne and/or dietary concentrations of several trace elements in the San Joaquin Valley drainwaters are toxic to fish and wildlife. Selenium is the most toxic of these; other constituents include arsenic, boron, chromium, mercury, molybdenum, and salts (SJVDP 1990). Elevated selenium levels have been detected in a wide variety of fish in WWD's service area, including Chinook salmon and striped bass (Hamilton et al. 1986; Saiki and Palawski 1990). The bio-accumulative food chain threat of selenium contamination on fish and aquatic birds has also been well documented.

NMFS has designated critical habitat within the San Joaquin River system for listed salmonid species (70 FR 52487).

**Vegetation and Wildlife** This section discusses land uses and land cover types within WWD's service area. It also includes a discussion of vegetation types, plants, and animals located in and adjacent to the study area. In addition to the natural, semi-natural and agricultural communities discussed below, other uses in WWD's service area include land developed for industrial and transportation uses, mixed urban uses, residential and commercial development, and land that is barren.

**Wetlands** Available wetland habitats in the two-mile buffer area around the WWD study area include both riparian corridors and the more classic wetland habitat with emergent vegetation associated with the San Joaquin River.

Palustrine wetlands include any non-tidal wetlands not classified as lacustrine, estuarine or riverine and having no deepwater habitat associations. In the San Joaquin Valley, this classification includes both permanent and seasonal fresh emergent wetlands.

In the San Joaquin Valley, the topography is generally level or gently rolling. Wetlands follow basin contours or occur in conjunction with riverine or lacustrine environments. Subtypes of permanent emergent wetlands are generally classified by species presence and/or their association with specific terrestrial habitats. Because emergent wetlands are typically inundated for most of the year, the roots of vegetation have evolved to thrive in an anaerobic environment. Characteristic floral species are erect, rooted hydrophytes dominated by perennial monocots such as the common tule, cattail, various sedges, and spike rushes. Permanent wetland habitat can occur on virtually any slope or exposure that provides a saturated depression.

In the San Joaquin Valley, seasonal fresh emergent wetlands most often occurred in grasslands and saltbush areas. A broad description of a seasonal wetland would include any area that ponds water during the wet season. Vegetation may vary from Italian rye grass in the driest areas to spike rush in the wettest. Cattail species are conspicuously absent from seasonal wetlands as they are indicative of permanent wetlands. These wetlands were historically composed of vast areas that, although inundated only periodically, provided crucial seasonal habitat for many wildlife species, most conspicuously for waterfowl and other migrants. They can occur as a subtype in almost any community.

Very little area in WWD's service area (0.02 percent) is mapped as seasonal emergent wetlands. Wetlands occur primarily as small parcels along the eastern edge of the WWD nearest to historical marshlands along Fresno Slough. A small area of wetlands is also mapped in an area of riparian woodland habitat maintained at the O'Neill Forebay Wildlife Area. A large mosaic of

seasonal wetlands and grasslands occurs northeast of WWD's service area and near the San Luis National Wildlife Refuge Complex.

**Riparian Communities** Riparian communities develop in the floodplains of low-gradient rivers and streams. They occur adjacent to freshwater reaches of permanent and seasonal watercourses. Typically, riparian land cover occurs as narrow bands of vegetation immediately adjacent to watercourses. In and near WWD's service area, tree species include non-native salt cedar and cottonwood. Shrub cover includes riparian scrub vegetation, which includes several community types dominated by different shrub species, including buttonbush scrub, elderberry savanna, great valley mesquite scrub, and great valley willow scrub (FWS 1998).

Approximately 0.1 percent of WWD's service area is mapped as riparian communities. This is primarily riparian scrub with intermittent cottonwoods and non-native salt cedar along seasonal streams that flow into WWD's service area from the Diablo Range, such as Los Banos Creek, Little Panoche Creek, Panoche Creek, Cantua Creek, Las Gatos Creek, Warthen Creek, and Zapato Chino Creek.

**Water** Open water in WWD's service area is primarily in reservoirs and water conveyance facilities. Streams in WWD's service area originate on the Coast Range and typically will carry water for a few hours or days after a rainfall event. Historically, the water from these streams would spread out over the plain of the western San Joaquin Valley and would seldom reach the San Joaquin River (Mead 1901). With the exception of heavy rainfall events, open water covers less than 1 percent of the study area and is nearly all found in the SLC, parts of O'Neill Forebay, San Luis Reservoir and various other canals.

Riverine habitats consist of perennial or intermittently flowing rivers and streams. The San Joaquin River with its major tributaries and sloughs is the major riverine habitat within two miles of the study area. In WWD's service area itself, there are numerous small and intermittent streams occur along. Riverine habitats commonly are associated with adjacent riparian and wetland habitat types and are valuable to wildlife as well as aquatic species for cover, foraging, and travel corridors.

Freshwater emergent wetlands are among the most productive wildlife habitats in California, providing food, cover, and water for over 160 species of birds, and numerous species of mammals, reptiles, and amphibians (Mayer and Laudenslayer 1988). Common plant species found in freshwater emergent wetlands habitats include big leaf sedge, baltic rush, and redroot nutgrass around the upper margins; saltgrass in more alkali sites; and common cattail, bulrushes, and arrowhead in the wetter sites.

Vernal pools are a rare and protected form of seasonal freshwater emergent wetlands found only within grassland habitats. The pools are shallow depressions filled with water from winter storms that subsequently dry up during spring or early summer. A unique assemblage of special status plant and invertebrate species is associated with the ephemeral pools, with the salinity, alkalinity, and the length of time that water persists generally determining plant species composition. Within the general area, vernal pool occurrences are concentrated east of the San Joaquin River.

Unlined canals and drains provide marginal wetland and aquatic habitat throughout large portions of both the two-mile region and the study area. The quality of this habitat varies depending on the degree and frequency of maintenance, water quality, habitat type of adjacent lands, consistency of flows, and other factors. Some reaches of delivery canals and drains contain emergent and aquatic plants such as bulrushes, cattails, and pondweeds, as well as undesirable invasives such as perennial pepperweed. Larger canals and drains may support warmwater fisheries. Common fish species potentially present in canal fisheries include largemouth and striped bass, threadfin shad, Sacramento blackfish, bluegill, white catfish, black bullhead, black crappie, green sunfish, carp, goldfish, and mosquitofish.

**Ruderal or Unclassified Rangeland** This common habitat type is always associated with disturbed lands. It can occur as large areas (e.g., abandoned croplands) or as small inclusions within other terrestrial communities. These lands make up approximately 3.5 percent of the study area (University of California-Santa Barbara 1996; California State University-Stanislaus, Endangered Species Recovery Program 2004). In the study area, this habitat is most typically associated with road and utility rights-of-way (ROW's), field borders, ditch ROW's, and abandoned fields. Vegetation usually consists of scattered native and nonnative shrubs, generally with nonnative herbaceous species dominating the understory. Habitat value is typically low for most terrestrial wildlife species, although the interconnecting matrix of ruderal vegetation associated with farm roads, field margins, irrigation ditches, and fencelines in the San Joaquin Valley provides wildlife movement corridors in the otherwise agriculture-dominated landscape.

**Idle/Retired Farmland** Lands of this category are similar to abandoned farmlands in the ruderal or unknown rangeland category, but with less time out of agricultural production. Similarly, the habitat value of these lands may vary with land management practices.

**Shrub and Brush, Herbaceous, and Mixed Rangeland** Rangelands are classified into three basic types. The shrub and brush rangeland is dominated by woody vegetation and is typically found in arid and semiarid regions. Mixed rangelands are ecosystems where more than one-third of the land supports a mixture of herbaceous species and shrub or brush rangeland species. Herbaceous rangelands are dominated by naturally occurring grasses and forbs, which are typically grazed by livestock, as well as some areas that have been modified to include grasses

and forbs as their principal cover. Rangelands are, by definition, areas where a variety of commercial livestock are actively maintained. Rangelands may occur within the 2-mile radius of WWD's service area along the western boundary and around the northernmost area of the Unit. Within the rangeland community, a number of herbivorous animals such as grasshoppers, jackrabbits, and kangaroo rats compete with livestock for forage.

**Agricultural Habitat** The most dominant habitat in WWD's service area 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 WWD's service area. 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.

Although natural communities provide the highest value for wildlife, many of these historical natural habitats have been largely replaced by agricultural habitats with varying degrees of benefits to wildlife. The intensive management of agricultural lands, including soil preparation activities, crop rotation, grazing, and the use of chemicals, effectively reduces the value of these habitats for wildlife. Many species of rodents and birds have adapted to croplands, which often requires that the species be controlled to prevent extensive crop losses. This may require intensive management and often the use of various pesticides. Rodent species that are known to forage in row crops include the California vole, deer mouse, and the California ground squirrel. These rodent populations are preyed upon by Swainson's hawks, red-tailed hawks, and black-shouldered kites. Orchards, vineyards, and cotton crops generally provide relatively low-quality wildlife habitat because the frequent disturbance results in limited foraging opportunities and a general lack of cover. Pasture and row crops provide a moderate-quality habitat with some limited cover and foraging opportunities.

Pasture habitat can consist of both irrigated and unirrigated lands dominated by perennial grasses and various legumes. The composition and height of the vegetation, which varies with management practices, also affects the wildlife species composition and relative abundance. Irrigated pastures may offer some species habitats that are similar to those of both seasonal wetlands and unirrigated pastures. The frequent harvesting required, which reduces the overall habitat quality for ground-nesting wildlife, effectively reduces the value of the habitat. Irrigated pastures provide both foraging and roosting opportunities for many shorebirds and wading birds, including black-bellied plover, killdeer, long-billed curlew, and white-faced ibis. Unirrigated

pastures, if lightly grazed, can provide forage for seed-eating birds and small mammals. Ground-nesting birds, such as ring-necked pheasant, waterfowl, and western meadowlark, can nest in pastures if adequate vegetation is present. Small mammals occupying pasture habitat include California voles, Botta's pocket gophers, and California ground squirrels. Raptors including red-tailed hawks, white-tailed kites, and prairie falcons prey upon the available rodents. In areas where alfalfa or wild oats have been recently harvested, the large rodent populations can provide high-quality foraging habitat for raptors.

The habitat value in cropland is essentially regulated by the crop production cycle. Most crops in California are annual species and are managed with a crop rotation system. During the year, several different crops may be produced on a given parcel of land. Many species of rodents and birds have adapted to croplands, which often requires that the species be controlled to prevent extensive crop losses. This may require intensive management and often the use of various pesticides. Rodent species that are known to forage in row crops include the California vole, deer mouse, and the California ground squirrel. These rodent populations are preyed upon by Swainson's hawks, red-tailed hawks, and black-shouldered kites.

Orchard-vineyard habitat consists of cultivated fruit or nut-bearing trees or grapevines. Orchards are typically open, single-species, tree-dominated habitats and are planted in a uniform pattern and intensively managed. Understory vegetation is usually sparse, but grasses or forbs are allowed to grow between rows to reduce erosion in some areas. In vineyards, the rows under the vines are often sprayed with herbicides to prevent the growth of herbaceous plants.

Wildlife species associated with vineyards include the deer mouse, California quail, opossum, raccoon, mourning dove, and black-tailed hare. Nut crops provide food for American crows, scrub jay, northern flicker, Lewis' woodpecker, and California ground squirrel. Fruit crops provide additional food supplies for yellow-billed magpies, American robin, northern mockingbird, black-headed grosbeak, California quail, gray squirrel, raccoon, and mule deer. Loss of fruit to grazers often results in growers using species management programs to force these species away from the orchards.

**Alkali Desert Scrub, also called San Joaquin Saltbush or Chenopod Scrub** Relict stands of this shrub-dominated habitat type are widely scattered throughout the San Joaquin Valley, but are more commonly found in Tulare Basin, south of the project area. Alkali scrub occurs in areas characterized by impeded drainage with fine-textured, alkaline, or saline soils. Vegetation is generally dominated by salt-tolerant shrub and subshrub species such as perennial saltbush, iodine bush, alkali blite, and goldenbush, but also could include forbs and grasses such as alkali heath, alkali weed, pickleweed, alkali sacaton, and saltgrass. Wildlife species associated with alkali scrub are specifically adapted to its open, sparsely vegetated, dry conditions and include several special-status species.

**Annual and Perennial Grasslands** These habitat types occur throughout the San Joaquin Valley, mostly on level plains to gently rolling foothills at elevations immediately higher than surrounding areas. Annual grasslands are comprised primarily of introduced annual grasses and forbs such as wild oats, ripgut brome, soft chess, and barley. Habitat value is variable, depending largely on current management and grazing history. Perennial grasslands are typically associated with moist, lightly grazed relict areas within annual grasslands-dominated landscapes and are quite rare. Characteristic native perennial grasslands species include purple needlegrass and alkali sacaton. Grassland habitats are important foraging areas for a large number of species, including hawks and swallows, mourning doves, loggerhead shrike, coyotes, and badgers. The habitat type supports large populations of small prey species, such as deer mice, pocket gophers, voles, and ground squirrels. Birds such as killdeer, ring-necked pheasant, western meadowlark, western kingbird, and horned lark nest in grassland habitats. Common reptiles and amphibians of grassland habitats include western fence lizard, common kingsnake, western rattlesnake, common garter snake, and western toad. An extensive list of terrestrial special-status species are also associated with the grassland habitat types. *Vernal pool* communities, shallow depressions filled with water from winter storms that subsequently dry up during spring or early summer, are a rare and protected form of wetland found only within grassland habitats. Grassland habitats in the study area or within a 2-mile radius are generally located along the western margins of the San Joaquin Valley.

**Valley Foothill Riparian** This habitat type is found in valleys and bottomlands bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. It is generally associated with low velocity rivers and streams, floodplains, and gentle topography. In the study area, major valley foothill riparian habitats are associated with the San Joaquin River and major tributary streams. Dominant tree species include Fremont cottonwood, California sycamore, valley oak, white alder, boxelder, and Oregon ash. Common shrubs include wild grape, wild rose, California blackberry, blue elderberry, poison oak, buttonbrush, and willows. The herbaceous layer may include sedges, rushes, grasses, miner's lettuce, Douglas sage, poison hemlock, and hoary nettle. All valley foothill riparian habitats have exceptionally high wildlife value. A large number of riparian obligate migratory birds forage and nest in the valley foothill riparian habitat type, as well as a long list of common and frequently observed birds, reptiles, amphibians, and mammals and numerous special-status species.

**Deciduous and Evergreen Forest** Deciduous forests are composed of trees that lose their leaves in the winter. These include species such as the various California oaks and California buckeye. The interior live oak, which is not deciduous, is also found in deciduous forests. Valley oak woodlands are found in the Sacramento and San Joaquin Valleys and usually occur below elevations of 2,000 feet. The deciduous forest plant species often provide a substantial amount of food to associated animals. The forest itself also provides a large amount of habitat. Wildlife

associated with deciduous forests includes a wide variety of birds, small rodents, deer, racoons, various insects, foxes, bobcats, black bears, or even wolves.

Some of the component species of the mixed evergreen forest include tanbark oak, madrone, douglas fir, California bay, bigleaf maple, canyon live oak, black oak, coast live oak, and California hazelnut. This forest is also filled with leafy trees and few conifers.

The CV Contractor's service areas cover an extensive area in the San Joaquin Valley including parts of Fresno, Tulare, and Kern Counties, and a very small portion in southeastern Kings County (Atwell Island Water District). The following sections discuss the vegetation and wildlife resources that may be affected by the project.

### ***City of Tracy***

**Vegetation and Natural Habitat Setting** Historically, the service area was dominated by perennial native grasslands, broad riparian zones and freshwater marsh wetlands. During the 1800s, settlers drained wetland and riparian areas and converted the land for agriculture. Grasslands were similarly eliminated from the region as a result of concentrated grazing and agricultural conversion. Wetlands have been generally mapped as part of the National Wetland Inventory of the FWS. The Tracy service area currently contains a range of vegetation and habitat types including urban, agricultural, riparian woodlands, seasonal wetlands, farmed wetlands and non-native grasslands.

These vegetation areas and habitats, which are described below, host a wide range of wildlife and plant species that reflect the diversity in San Joaquin County and the Central Valley.

***Farmed Wetlands*** Wetland areas that are currently in agricultural uses are defined as farmed wetlands. This type of area occurs in the northern portion of the Tracy Service Area.

***Lakes, Ponds and Open Water*** Includes both natural and human-made water bodies such as that associated with working landscapes, municipal water facilities and canals, creeks and rivers.

***Seasonal Wetlands*** There are numerous seasonal wetlands throughout the Tracy Service Area which typically fill with water during the wet winter months and then drain enough to become ideal plant habitats throughout the spring and summer.

***Tidal Salt Ponds and Brackish Marsh*** Brackish marshes are areas affected by irregular tidal flooding with generally poor drainage and standing water. In the northern portion of the Tracy Planning Area there are minimal occurrences along some of the larger river channels.

***Riparian Woodlands*** The Great Valley Riparian Woodland communities lay in the northern portion of the Service Area, along the Old River and Tom Paine Slough riparian zones, and in the southern portion of the Planning Area long the Corral Hollow system, which flows northeast.

***Agricultural*** Much of the Service Area outside the Tracy City limits is used for agricultural production. This area includes land that is currently in agricultural use and lands that have been used for agricultural uses in the past but remain un-urbanized.

**Urban** Much of the land in the city limits and parts of the sphere of influence is built up and therefore considered Urban.

**Non-Native Grasslands** The majority of non-native grasslands that occur in the Tracy area are in its southern portion, and are often associated with grazing activities (City of Tracy 2005).

### **SCVWD**

There are four broad groupings of habitat/vegetation types in Santa Clara County: (1) Baylands habitats (including estuaries, mudflats, salt marshes, salt ponds, and levees); (2) Freshwater habitats (including flowing streams, riparian zones, freshwater marshes, and lentic zones); (3) Grassland/Savannah habitats; (4) Chaparral/Forest habitat (including chaparral, mixed evergreen forest, redwood forest, foothill woodland, and closed-cone pine forest). The CDFG's Natural Diversity Data Base (CNDDDB) lists 39 "special plant species, subspecies or varieties" known to occur in Santa Clara County.

Most urban development and water use occurs on the 350-square-mile valley floor. Permanent and seasonal populations of wildlife species are found in the diverse habitat types and relatively undeveloped upper watersheds and Baylands. In addition, local streams provide habitat to native freshwater fish, and some species of anadromous marine fish. The CDFG reports that 26 "special animal species and/or subspecies" (including invertebrates and fish) are known to occur in Santa Clara County.

Intense urban development that has occurred in the past in Santa Clara County has largely eliminated natural biological resources on the valley floor. Those wildlife species adapted to urban trees and landscaping are present in residential neighborhoods. Remnant stands of native vegetation in parks, along creeks, and at the edge of San Francisco Bay also provide refugia for numerous wildlife species.

Streams crossing the valley floor are often vegetated with willow, Fremontia, cottonwood, box elder, and western sycamore trees. These support migratory and resident birds, deer, small mammals, and a few species of amphibians and reptiles. Streams support warm and cold water fisheries, and some runs of anadromous fish. These types of riparian habitats have been described as Coast Cottonwood – Sycamore Riparian Forest, and are designated by the California Natural Diversity Data Base as rare and sensitive.

Several types of marshes occur in the county, primarily along the edges of San Francisco Bay and streams, and less common at scattered locations where a year round water supply is at or near the ground surface. Salt marsh occurs in those areas daily flushed by the tides and is generally vegetated with cordgrass and pickleweed. Brackish marsh, where the tides and freshwater inflow mix, is vegetated with bulrushes. Freshwater marsh is vegetated primarily with cattails. Marshes provide special habitat for fish, birds, and amphibians, and represent most of the wetland vegetation in the County. Some of these areas may only be wet on a seasonal basis. SCVWD percolation ponds usually have a narrow strip of freshwater marsh vegetation along their edges.

Several special status species are found in the marshes and riparian areas of Santa Clara County: California clapper rail, salt marsh harvest mouse, salt marsh wandering shrew, salt marsh yellowthroat, Alameda song sparrow, southwestern pond turtle, and California red-legged frog. Federally listed Steelhead and Chinook salmon are anadromous fish that use the stream corridors for spawning and habitat for young fish.

The two mountain ranges to each side of the valley floor are less developed and generally support grassland, chaparral, and oak savannah vegetation. The wet conditions of the coastal Santa Cruz Mountains support redwood forests and other mixed hardwoods at the higher elevations. A greater diversity of wildlife species is associated with the mountain ranges and foothills.

***Cross Valley Contractors’ Service Area***

Major land use within the CV Contractors’ service area includes natural or native habitats (44,411 acres), agriculture (249,151 acres), and urban areas (6,112 acres) (Table 8). Major natural areas include grasslands (native and nonnative), oak woodlands, riparian areas, and freshwater aquatic communities (seasonal wetlands, vernal pools, and ponds) (Holland 1986; Mayer and Laudenslayer 1988; Holland and Keil 1989; 1989; Hickman 1993; Harvey 1995). Agricultural areas include row crops, vineyards, orchards, grains, cotton, pastures, and dairies.

**Table 8  
Summary of CVP Cross Valley Contractor Land Use or Habitat Types**

<b>Contractor</b>	<b>Habitat Type (acres)</b>		
	<b>Agriculture<sup>a</sup></b>	<b>Natural or Native<sup>b</sup></b>	<b>Urban</b>
County of Tulare			
Alpaugh ID <sup>c</sup>	7,243	3,346	96
Atwell Island WD <sup>c,d</sup>	4,450	2,687	0
City of Lindsay	0	--	--
City of Visalia	0	--	--
Hills Valley ID		(see below)	
Fransinetto Farms	155	--	--
Saucelito ID <sup>g</sup>	19,456	184	97
Stone Corral ID <sup>g</sup>	6,395	480	10
Strathmore PUD	0	--	--
Styrotek, Inc.	0	--	--
Hills Valley ID <sup>e</sup>	2,323	910	40
Kern-Tulare WD <sup>c,f</sup>	16,321	9,078	106
Lower Tule River ID <sup>g</sup>	93,885	77,988	1,240
Pixley ID <sup>c</sup>	60,629	11,583	1,302
Rag Gulch WD <sup>c,f</sup>	36,431	5,879	3,214
Tri-Valley WD <sup>e</sup>	1,863	2,476	114

**Table 8**  
**Summary of CVP Cross Valley Contractor Land Use or Habitat Types**

<b>Contractor</b>	<b>Habitat Type (acres)</b>		
	<b>Agriculture<sup>a</sup></b>	<b>Natural or Native<sup>b</sup></b>	<b>Urban</b>
County of Fresno	0	--	--
<b>Total</b>	249,151	44,411	6,112

Source: David Scroggs, DWR pers. comm. 1999

Note:

a Includes irrigated and non-irrigated lands

d 1996 Kings County data

g 1999 Tulare County data

b Includes wetland and riparian habitats

e 1994 Fresno County data

c 1993 Tulare County data

f 1990 Kern County data

-- data not available

Valley Grassland Community (includes Non-native Grasslands, Valley Needlegrass Grassland, Valley Sacaton Grassland, Valley Wildrye Grassland, and Wildflower Fields). Grassland communities within the natural areas of the CV Contractors' service areas can be divided into non-native grasslands and relic native communities. Non-native Grassland is the most widespread and intermingles with remnant native communities of all types. It is dominated by non-native, annual grass species such as wild oats, ripgut brome, soft chess, red foxtail chess, foxtail, wild rye, and annual fescues. The most common non-native forbs include mustard and filaree.

Relic native communities include Valley Needlegrass Grassland, Valley Sacaton Grassland, Valley Wildrye Grassland, and Wildflower fields. Valley Needlegrass Grassland typically occurs on fine-textured soils in openings in oak savanna. Once dominated by perennial bunch grasses such as purple needlegrass and slender needle grass, most remnants are dominated by introduced annual species. Valley Sacaton Grasslands occur on poorly drained, alkaline soils. Dominant species include perennial, bunch grass alkali sacaton and salt grass. Valley Wildrye Grassland occurs on moist sites at low elevations, often in openings in riparian forest habitats. Soils are typically subalkaline and experience seasonal flooding. The sod-forming perennial grass leymus dominates. Remnant wildflower fields are dominated by non-native annual grass species and are characterized by brilliant displays of spring-blooming forbs such as California poppy, lupine, trefoil, rusty popcornflower, and layia. Other common native forbs include fiddleneck, gilia, goldfields, linanthus, owl's clover, and phacelia. These are all spring flowering plants and most are annuals. Common summer and fall flowering plants include tarweeds, turkey mullein, vinegar weed, and buckwheat. An annual native grass species would include wild barley. Some of the grassland areas also have vernal pools present, which have their own unique characteristics (see vernal pool description below).

Resident grassland birds of Study Area include the western meadowlark, mourning dove, western kingbird, burrowing owls, and horned larks. In the winter these species are joined by American pipits and savannah sparrows among others. Raptors, which nest and roost in adjacent riparian habitats, hunt here. Raptors that would be expected in the grassland area include the

white-tailed kite, red-tailed hawk, golden eagle, American kestrel, barn owl, great horned owl, short-eared owl, turkey vulture, Northern harrier, and prairie falcon.

Large populations of small mammals provide a primary source of prey for many predators. The most obvious small mammal, the California ground squirrel, occurs in numerous scattered colonies. Grasslands also provide an abundant food supply for small mammals such as the deer mouse, Botta's pocket gopher, the black-tailed hare, western harvest mouse, and California vole.

In turn, these small mammals serve as prey for coyotes, red foxes, badgers, the endangered San Joaquin kit fox, and avian predators.

Annual grasslands provide habitat for a variety of amphibian and reptile species. The Gilbert's skink and western fence lizard occur here, especially along fence lines and grassland edges where they are close to cover. Gopher snakes commonly hunt lizards and small mammals in grasslands. Other reptilian species expected to occur include the common garter snake, California horned lizard, western rattlesnake and the endangered blunt-nosed leopard lizard.

**Oak Woodland Communities** Oak woodlands occur at elevations ranging from 10 to 1,500 meters (30 to 5,000 feet) in the foothills of the Sierra mountain range and San Joaquin Valley. These woodlands are dominated by trees that are 5 to 21 meters (15 to 70 feet) in height and vary from open savannas to dense, closed-canopy communities. The most common type consists of scattered trees and scrubs with an understory of grasses and forbs. Oak woodland areas are often more dense on the north-facing slopes compared to the south-facing slopes. At higher elevations, oak woodlands are often more dense and have a greater species diversity compared to lower levels. The understory of an oak woodland includes grasses and forbs previously described above and shrubs such as California buckeye and redbud. There are two groups of Oak Woodland Communities in the San Joaquin Valley region; 1) Valley Oak Woodland Communities and 2) Foothill Woodland Communities. Valley Oak Woodland is the predominant type that exists within the CVC contract service area.

**Valley Oak Communities (includes Valley Oak Woodland)** Valley Oak Woodlands mix into foothill woodlands, but are generally restricted to deep alluvial valley soils at low elevations which parallel riparian communities. Other oak species tend to occur on shallower soils on slopes. Valley oak stand densities range from open savanna to dense forest savanna and valley oak is often the only canopy species. The understory is typically composed of non-native grasses and forbs as described above. Most of the valley oaks in the San Joaquin Valley have been removed for cultivation and urbanization. A few scattered stands remain in the valley in areas around dwellings and in parks. Unfortunately very little regeneration has occurred, primarily due to livestock grazing.

Valley oak woodlands provide important food and cover for many species of wildlife. Oak trees are used for foraging, shelter, nesting, and loafing by a variety of avian and mammalian species. Avian species that would be expected in an valley oak community include the red-shouldered hawk, red-tailed hawk, California quail, plain titmouse, western scrub-jay, spotted (or rufous-

sided) towhee, Bewick's wren, bushtit, and acorn woodpecker. Mammalian species include the mule deer, western gray squirrel, bobcat, coyote, western harvest mouse, Botta's pocket gopher, California vole, and deer mouse. Reptilian species include the western fence lizard, common garter snake, and western rattlesnake.

**Riparian Communities** Riparian Communities occur along the rivers, numerous creeks, and sloughs within the CVC service contract area. Riparian communities usually consist of one or more deciduous tree species plus an assortment of shrubs and herbs that border streams, rivers, lakes, and springs. Trees vary from tall, dense forests to a scattering of a few individual trees. The extent of riparian vegetation also varies depending on the size and nature of the banks and floodplains, by the amount of water carried by the waterway, and the depth of the aquifers. The existence of a riparian community is dependent upon a permanent water supply. The microenvironment varies depending on seasonal fluctuation of light availability to the understory. During the winter, deciduous trees are dormant and leafless, allowing direct sunlight to the understory vegetation. Some of the herbaceous plants and shrubs grow and flower with the addition of sunlight. During the summer, broadleaf deciduous trees can provide dense shade, resulting in decreased sunlight, which provides for cooler temperatures and higher humidity within the riparian corridor.

**Valley and Foothill Riparian Communities (includes Great Valley Willow Scrub, Great Valley Cottonwood Riparian Forest, White Alder Riparian Forest, Great Valley Mixed Riparian Forest, and Great Valley Oak Riparian Forest)** Valley and Foothill Riparian Communities occur from the Central Valley floor to the lower elevation margins of the montane coniferous forest of cismontane California. These riparian zones can vary from broad valley floodplain forests to narrow, steep canyon streams. The dominant trees or shrubs include: white alder, Oregon ash, western sycamore, Fremont's cottonwood, valley oak, red willow, Gooding's (or black) willow, and arroyo willow. Common evergreens include interior live oak, California bay-laurel, and a noxious exotic weed, salt cedar or Tamarisk. Common shrubs include: seep willow, button-willow, dogwoods, California wild rose, blackberries, elderberries, California grape, and poison oak. Herbaceous species include: spikenard, mugwort, sedges, flat-sedges, spike-rushes, willow-herbs, horsetails, rushes, monkeyflowers, watercress, bulrushes, stinging nettle, and cattail. Below is a brief description of the specific riparian communities that potentially could occur within the CVC contract service area.

Great Valley Willow Scrub occupies frequently inundated floodplains and banks of major rivers and smaller streams. It is characterized by dense, shrubby thickets dominated by willow species including narrow-leaved willow, arroyo willow, red willow, and dusky willow. Associated species include California wild rose and Fremont's cottonwood.

Great Valley Cottonwood Riparian Forest occurs in alluvial soils near streams that provide subsurface irrigation year-round. These sites are subject to spring inundation. Characteristic species include Fremont's cottonwood, assorted willows, box elder, and Oregon ash.

White Alder Riparian Forest occurs along rapidly flowing, well aerated, perennial, canyon streams that experience substantial scouring and high flows during spring runoff. Canyons are typically deeply incised, resulting in a narrow riparian corridor.

Great Valley Mixed Riparian Forest occur further back from river and stream banks, where flooding and scouring events are less frequent and severe. Dominant species are typically winter deciduous and include California walnut, white alder, western sycamore, Fremont's cottonwood, box elder, and assorted willow species.

Great Valley Oak Riparian also occurs further back from river and stream banks, where less physical disturbance occurs during flooding. Dominant species include valley oak, California walnut, white alder, western sycamore, Oregon ash, blackberries, and poison oak.

Valley and Foothill Riparian Communities provide food, cover, water, migration and movement corridors, escape, nesting, and thermal cover for a wide diversity of wildlife species. Expected wildlife species would be similar to species previously described in the Oak Woodland and Valley Grassland Communities. Additional species include water dependent species such as the wood duck, mallard, great blue heron, great egret, snowy egret, and beaver.

**Freshwater Aquatic Communities** Freshwater aquatic communities occur in still and flowing waters and can range in size from small pools to small reservoirs or stock ponds throughout the CV Contractors' service area. Areas that are seasonally wet also support freshwater aquatic environments. Aquatic communities vary and are dependent on several interacting environmental factors including: species composition, water depths, water level fluctuations, water flow rates, water and air temperatures, other climatic variables, pH, dissolved salts, organic content of the water, nature and depth of bottom sediments, and history of the body of water. Deep, open water areas support submergent or floating aquatic plant communities. Shallow water areas generally support emergent vegetation. Seasonal wetlands are temporary and usually become dry during the summer. Water levels in artificial reservoirs (i.e. livestock or farm ponds, irrigation storage ponds) often fluctuate, preventing well-developed aquatic communities from becoming established. There are two main types of freshwater aquatic communities present: 1) limnetic communities which occur in open water and 2) littoral communities which occur in shallow water and along shores of open bodies of water. Littoral communities include freshwater marshes, bogs, montane meadows, and vernal pools.

**Limnetic Plant Communities (includes lakes, reservoirs, irrigation, and stock ponds)**

Limnetic plant communities have both algal and higher plant components. The algal component is primarily plankton with a variety of algal species. Vascular plants include: hornwort, elodea, quillwort, water-milfoil, water-nymphs, and pondweeds . Floating plants include: water fern, hornwort, duckweed, water buttercup, and bladderwort.

Open ponds provide feeding and loafing areas for a variety of birds including the eared grebe), eastern grebe, Clark's grebe, American white pelican, double-crested cormorant, American coot, and waterfowl such as the canvasback, redhead, lesser scaup, mallard, northern pintail, northern

shoveler, and Canada goose. Depending on their location, reservoirs provide a water source for a variety of terrestrial wildlife including coyotes, badgers, striped skunks, weasels, California quail, and passerine birds.

**Freshwater Marsh Communities (includes Freshwater Seeps, Valley Freshwater Marsh, and Vernal Marsh)** Freshwater marsh communities develop in locations with slow-moving or stagnant water. These communities occur along margins of ponds and lakes and in the floodplains of slow moving streams and rivers. Marshes can also develop where seepage from springs or shallow water tables allow rooted aquatic plants to become established. Common marsh plants include sedges, spikerushes, bulrushes, bur reeds, cattail, Tule, water hemlock, willow-herbs, common monkeyflower, watercress, smartweeds, dock, pondweed, duckweed, and widgeongrass.

Freshwater marshes are among the most productive wildlife habitats in California, providing a diversity of habitats for a wide variety of wildlife species. This habitat provides foraging, loafing, and cover areas for species such as the mallard, northern pintail, gadwall, green-winged teal, cinnamon teal, Canada goose, white-fronted goose, American coot, American bittern, green heron, great egret, snowy egret, great blue heron, northern harrier, red-tailed hawk, dowitcher, least sandpiper, western sandpiper, black-bellied plover, killdeer, dunlin, American avocet, and black-necked stilt. Mammals include the California vole, muskrat, raccoon, coyote, striped skunk, and long-tailed weasel. Amphibians and reptiles that depend on or utilize freshwater marshes include the western toad, western spadefoot, pacific treefrog, western pond turtle, and gopher snake.

**Vernal Pool Communities (includes Northern Hardpan Vernal Pools, Northern Basalt Flow Vernal Pools, and Northern Volcanic Mudflow Vernal Pools)** Vernal pools are seasonal, shallow, ephemeral bodies of water that occupy depressions in grassland and woodland areas. The pools are underlain by an impervious layer of hardpan, claypan, or bedrock covered with a layer of clay or silt, which results in the collection and ponding of water during winter and spring rains. These pools are generally a few centimeters deep and seldom are more than a meter in depth. The pools gradually dry, resulting in a series of concentric rings of herbaceous vegetation forming around the pool margins.

Species composition in the pools varies in accordance with chemical and physical properties such as salinity, alkalinity (pH), depth, and duration of the pool. Most species that occur within vernal pools are endemic to California and require seasonal inundation followed by desiccation to complete their life cycles. Relative to other community types, vernal pools still support a high percentage of native vegetative cover. Vernal pools are characterized by herbaceous plants that begin as aquatic plants and make a transition to a dry land environment as the pools dry in late spring and summer. Most vernal pool vegetation is comprised of annual herbs with some deeply rooted rhizome type perennials. Vernal pool plant species include: foxtail, water starwort, hairgrass, downingia, rush, flowering quillwort, meadowfoam, tricolor monkeyflower, orcuttia,

allocarya, popcornflower, woolyheads, quillwort, water-clover fern, white brodiaea, slender spikerush, and coyote thistle. Vernal pools lack trees or shrubs. The CVC contract service area contains several distinct types of vernal pools including Northern Hardpan, Northern Basalt Flow, and Northern Volcanic Mudflow Vernal Pools.

Animal species that are vernal pool dependent include special-status species such as the fairy shrimp, longhorn fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, and western spadefoot. Common invertebrate species would include the California linderiella. Migrating birds such the mallard, cinnamon teal, black-necked stilt, and greater yellowlegs feed and loaf in vernal pools during spring migration. Other avian and mammalian species that would utilize a vernal pool and its surrounding area include species that are listed in the Grassland Community section.

**Anthropogenic Communities and Agricultural Areas** Much of the San Joaquin Valley's vegetation has been altered by human activities including urbanization, roads and highways, livestock grazing, and agriculture. Communities dominated by introduced plants and established or maintained by human disturbance are referred to as anthropogenic communities.

Anthropogenic communities include: 1) agrestal ("of or pertaining to plants growing wild in fields and uncultivated areas") communities, 2) pastoral communities, 3) ruderal communities, 4) plantations, and 5) the urban mix. Agrestal communities are in areas that have been disturbed by cultivation and thrive in the same environment as agricultural crops. Pastoral communities are dominated by species that are adapted to livestock grazing. Valley grassland communities have become a type of pastoral community. Ruderal communities are highly disturbed areas such as roadsides and similar disturbed sites in towns and cities. Plantations are areas that have been planted with trees such as windbreaks and orchards. Urban mix habitats are areas where nonnative plant species have escaped or been planted in and around urban and residential developments. It is not uncommon to find a mix of native and non-native plants in urban open areas. The local urban mix is difficult to classify due to the variety and vast number of cultivated species introduced into the urban setting.

Anthropogenic Communities provide some wildlife habitat values to native animal species, as well as to non-native species such as the house sparrow, European starling, rock dove, black rat, and house mouse. Wintering waterfowl and coots could be expected to forage on park and golf course lawns. Trees and shrubs provide nesting, roosting, and foraging areas for native species such as the northern mockingbird, mourning dove, Brewer's blackbird, American crow, and raven, as well as for hummingbirds, and other song birds. Mammals that would be expected in an urban setting include the Virginia opossum, striped skunk, Botta's pocket gopher, ground and tree squirrels, and bats.

**Agricultural** Agricultural areas provide cover, foraging, and loafing areas for a variety of wildlife. Pre-irrigated grain fields provide food and loafing areas for migrating and wintering

waterfowl, shorebirds, gulls, and terns. Standing grain and alfalfa fields provide feeding, nesting, and escape cover for ducks such as the mallard, gadwall, and cinnamon teal, and for blackbirds. Grain and alfalfa fields support rodent populations which in turn provide hunting areas for avian and mammalian predators. Irrigated alfalfa fields provide foraging areas for gulls and egrets. Open, fallow fields provide areas for wintering species such as the mountain plover. Fallow fields with vegetation can provide cover and food for small mammals, which provide hunting areas for avian and terrestrial predators. Orchards provide nesting and roosting areas for species such as Mourning Doves and other passerines, as well as, habitat for mammalian species such as the California ground squirrel (Zeiner 1988; 1988a; 1988b).

### **3.3.2 ENVIRONMENTAL CONSEQUENCES**

#### ***No Action Alternative***

The No Action Alternative is the renewal of existing IRCs 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 the existing and future BO's, including the CVPIA BO (Reclamation and Service 2000) would be met under the No Action Alternative, including continuation of ongoing species conservation programs.

Execution of IRC's would not involve construction of new facilities or installation of structures. 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 IRC contractors. 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. 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 study area and other portions of the IRC contractors' service areas. The area of use and types of use

are expected to fall within the 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 IRC contractors' service areas.

### ***Proposed Action***

CVP-wide impacts to biological resources were evaluated in the PEIS, and a FWS BO to address potential CVP-wide impacts was completed on November 21, 2000. The programmatic BO and Essential Fish Habitat Conservation Recommendations prepared by NOAA Fisheries for the CVPIA was completed on November 14, 2000.

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, and the lack of tiered pricing, 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 changes in natural and semi-natural communities and other land uses that have the potential to occur within the study area.

Reclamation has determined that there would be no effects to species and critical habitats under the jurisdiction of NMFS within the service areas. Effects to species and critical habitats under the jurisdiction of FWS within the service areas would be addressed in the BO issued by that agency to Reclamation before the interim contracts are signed. Such effects include loss of habitat and reduced habitat values, resulting from ongoing trends within the Valley, and are considered to be indirect effects under the federal ESA.

### ***Cumulative Effects***

Interim renewal contract, when added to other past, present, and reasonably foreseeable future actions, represent a continuation of existing conditions which are unlikely to result in cumulative impacts on the biological resources of the study area. Interim renewal contracts obligate the delivery of the same contractual amount of water to the same lands without the need for additional facility modifications or construction. Thus, the interim renewal contracts, together with reasonably foreseeable future actions, would not incrementally contribute to any physical impacts to study area biological resources.

Also, interim renewal contracts would occur within the context of implementation of the CVPIA by the United States Department of the Interior (DOI), including Reclamation and FWS. Reclamation and the FWS explained the CVPIA in a report entitled "CVPIA, 10 Years of Progress", 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 (Delta). 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, are imposed through a re-consultation, or result from litigation concerning applicable BOs.

## **3.4 Cultural Resources**

### **3.4.1 Affected Environment**

Cultural resources is a term used to describe both 'archaeological sites' depicting evidence of past human use of the landscape and the 'built environment' which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPA), and the Archaeological Resources Protection Act (ARPA). Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources 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 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 (SHPO), 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.

Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably destroyed many Native American cultural sites (Bureau of Reclamation 2006).

The CVP is being evaluated for the National Register of Historic Places (NRHP). Facilities related to this study area include the DMC, Friant Dam and the FKC.

Friant Dam is located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare, and Kern Counties. Construction of the canal began in 1945 and was completed in 1951.

The Delta-Mendota Canal, completed in 1951, carries water southeasterly from the Tracy Pumping Plant along the west side of the San Joaquin Valley for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera systems. The canal is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno (Reclamation, 2006).

### ***WWD***

In the WWD area, during the prehistoric period, the San Joaquin Valley supported extensive populations of Native Americans, principally Northern Valley Yokuts. By the mid-19th century, after Spanish and Mexican incursions and the introduction of European-born epidemics, Native American populations declined and became culturally extinct in the San Joaquin Valley by mid-19th century. The extent of cultural studies in the San Joaquin Valley is limited. The reclamation of land and intensive farming practices over the last century has removed destroyed many Native American occupation sites (WWD Water Supply Replacement Project EIR, 1989).

### ***SCVWD***

The Ohlone, or Costanoan, Indians inhabited the Santa Clara County area in prehistoric times. The Ohlones were gatherers and hunters who utilize native flora and fauna such as acorns, tule, ducks, and deer for food, shelter, and trade items. Beginning in the late 1700's, Spanish explorers and missionaries arrived in Santa Clara County. Settlers began to develop land in Santa Clara County first as ranchland, and by the mid-1800's as agricultural land, particularly for

orchards. Many settlements during prehistoric and historic times were located adjacent to water ways. Native American artifacts and occasional burials are most frequently found in association with existing or prior locations of creeks. Many of the historic neighborhoods and buildings are associated with the original settlements along the Guadalupe River, including the Pueblo de San Jose, which was the first civil settlement in Alta California.

### ***City of Tracy***

City of Tracy Cultural resources in Tracy consist of historical buildings and landmarks, and archaeological and paleontological resources.

**Archaeological and Paleontological Resources.** In general, little archaeological or paleontological work has been completed in San Joaquin County. Cultural resources in the Tracy Planning Area outside of City limits are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Large portions of the Tracy Area have not been surveyed for prehistoric artifacts (City of Tracy, 2005).

**Historic Landmarks.** In 1976, the Tracy City Council contracted with the State Office of Historic Preservation to conduct an historic resources survey of Tracy. The survey was completed and published on October 21, 1977, and considered buildings constructed between 1878 and 1941. A more recent survey of historic resources in Tracy has not been conducted. Fifty structures and sites were found to be both architecturally and historically significant to Tracy. Two more structures were added in 2001. Tracy has six historic sites that are listed on the NRHP and also recognized by the California State Office of Historic Preservation's listing of California Historical Landmarks, however, there are no State Points of Historical Interest in the Tracy Area (City of Tracy, 2005).

### ***CV Contractors' Service Area***

Most of the territory encompassed by the CV Contractors' service area was occupied at the time of contact by the Yokuts group, the various branches of which occupied most of San Joaquin Valley, its eastern and western foothills, and the eastern part of Delta. The Yokuts language is a member of the Penutian stock, which includes the Miwok and Costanoan (or Ohlone) groups. The Penutian peoples are thought to have entered central California from the northwestern Great Basin beginning around 1500 BC (Moratto 1984) and to have gradually displaced the previous inhabitants, speakers of Hokan and Uto-Aztecan stocks. This hypothetical population movement is associated chronologically with the development of the Windmiller pattern in Sacramento Valley, a cultural pattern characterized by diversified food-gathering strategies, including highly developed hunting and fishing technology; the pattern also features extended burials oriented towards the west.

The first Europeans to enter the CV Contractors service area were Pedro Fages and his expedition, who explored the San Joaquin Valley in 1772. However, most subsequent Spanish settlement in California was concentrated along the coast and adjacent valleys. When Mexico became independent, the government began to give land grants to settlers, including a few in the southern valley in the early 1830s. These settlements often provided the nucleus for present-day cities.

Until the late 1850s, the San Joaquin Valley was sparsely settled by Europeans. Extensive areas of marsh were a hindrance to farming. By the mid-1860s, however, American settlers were beginning to reclaim and drain land for agriculture and ranching. By the 1870s, the San Joaquin Valley was the center of California's wheat production. The introduction of canning technology and transcontinental rail led to widespread diversification and development of specialty crops such as fruits and nuts. About the same time, exploitation of the petroleum resources of the valley began, and continues today. The need for a steady supply of water to irrigate the increasing acreage of farmed land led to the incorporation of water districts, and in 1933 to the introduction of the State Water Plan, which grew into the CVP.

There are 117 historic or archaeological resources are known within the CV Contractors service area. Of these, 57 (48.7 percent) are prehistoric archaeological sites; 10 (8.5 percent) are historic archaeological sites; two (1.7 percent) have both prehistoric and historic archaeological components; and 47 (40.2 percent) are part of the built environment.

A majority of the built environment resources (45 [93.8 percent]) are located in the City of Visalia water district and are urban in nature, mostly homes, bridges, and canals. Among the prehistoric resources 37 (62.7 percent) are located within CSA #34, a heavily surveyed area south of Millerton Lake. Few resources remain within the other districts of the CV Contractors service area. As noted above, it is likely that this paucity of sites reflects a lack of cultural resource inventories within the given areas, rather than the absence of historic or prehistoric resources.

### **3.4.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, would not change nor modify any features of the CVP nor result in ground disturbance and has no potential to affect historic properties pursuant to 36 CFO Part 800.3(a)(1).

#### ***Proposed Action***

The proposed action is an administrative action that would allow for the flow of water through existing facilities to existing users. There is no ground disturbance or modification needed to the existing facilities as a result of this action. As a result there is no potential to affect historic

properties pursuant to 36 CFR Part 800.3(a)(1). There are no impacts to cultural resources as a result of implementing the proposed action.

### ***Cumulative Effects***

Since there is no potential to affect historic properties there are no impacts to cultural resources due to the alternatives, there would be no cumulative effects to cultural resources.

## **3.5 Recreational Resources**

### **3.5.1 Affected Environment**

Recreation sites that are within or near the service areas of the IRCs include San Luis Reservoir, Los Banos Reservoir, Little Panoche Reservoir, the O'Neill Forebay, SLC, the San Joaquin River, Millerton Lake and the Pixley and Mendota wildlife refuges.

San Luis Reservoir, the adjacent O'Neill Forebay, and Los Banos and Little Panoche Reservoirs provide reservoir-related recreational resources in or near the study area. San Luis Reservoir and the O'Neill Forebay are located west of Interstate 5 near State Route 152. Los Banos Reservoir is located southwest of the town of Los Banos and Little Panoche Reservoir is located south of Los Banos. Visitor attendance to the San Luis Reservoir State Recreation Area in fiscal year 2001 and 2002 was 514,096 [California Department of Parks and Recreation (CDPR) 2004]. This included 469,478 day-users and 44,618 campers.

Millerton Lake is a very popular lake for recreation use, primarily due to its proximity to Fresno. The outdoor recreation activities at Millerton Lake are water dependent or water enhanced. Such activities include boating, fishing, swimming, camping, hiking, hunting, and interpretive programs.

While recreational boating, camping, picnicking, and sightseeing are water-dependent opportunities within the central and lower San Joaquin Valley, waterfowl hunting and fishing are the primary water-dependent recreational activities affected by CVP water deliveries. Water from the CVP supports regional hunting and fishing activities by flooding the waterfowl refuges and hunting areas and conveying water through canals that support warm water fishing opportunities. The PEIS has based its assessment of impacts on recreational resources primarily upon projected changes in water levels at reservoirs and in rivers, changes in refuge conditions, and the associated changes in visitor usage. Data were compiled and are presented to characterize recreation conditions at lakes, reservoirs, and rivers in the PEIS. Additionally, the PEIS provides a description of the affected environment including facilities and activities at national wildlife refuges, wildlife management areas, and private hunting clubs in the central and lower San Joaquin Valley (Reclamation 1999; 1999a). The Pixley National Wildlife Refuge is the only wildlife refuge within any of the IRC's service areas.

In 1991, 39 private water fowl hunting clubs were reported for the Tulare Basin Region (i.e., Kern and Tulare counties), totaling approximate 15,700 acres. These hunting clubs flooded approximately 4,800 acres annually with hunting activity at about 8,200 hunter days. Flooded acres on water districts used for hunting were estimated to account for 22 percent (1,016 acres) of the total area flooded for water fowl hunting in the Tulare Basin Region (Reclamation 1994a).

Sportfishing in the Tulare Basin Region was projected to account for 11.8 million angler days in 1990. Fishing occurs primarily on rivers and lakes on the west slope of the Sierra Nevada and along the California Aqueduct. Most sportfishing that occurs in the CVP canals is for resident warmwater species, although no portion of the Friant-Kern, Madera, and CVCs is designated for public access fishing. Fishing in the canals is limited because of the small number of fish in the canals, access constraints, and the availability of fishing opportunities on nearby reservoirs and rivers (Reclamation 1986).

### **3.5.2 Environmental Consequences**

#### ***No Action Alternative***

As discussed above, no changes in CVP reservoir storage or modifications in the amount or timing of water deliveries, which could affect recreational resources, would occur under the No Action Alternative. Therefore, no impacts to recreational resources are anticipated.

#### ***Proposed Action***

Impacts to recreational resources associated with the Proposed Action would be comparable to those described under No Action Alternative.

#### ***Cumulative Effects***

There would be no cumulative effects to recreational resources.

## **3.6 Indian Trust Assets**

### **3.6.1 Affected Environment**

Indian Trust Assets (ITAs) are legal interests in property held in trust by the U.S. 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. ITAs 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 U.S. is the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts,

executive orders, and historic treaty provisions. Consistent with President William J. Clinton's 1994 memorandum, "Government-to-Government Relations with Native American Tribal Governments," Bureau of Reclamation (Reclamation) assesses the effect of its programs on tribal trust resources and federally-recognized tribal governments. Reclamation is tasked to actively engage federally-recognized tribal governments and consult with such tribes on government-to-government level (59 Federal Register 1994) when its actions affect ITAs. The DOI Departmental Manual Part 512.2 ascribes the responsibility for ensuring protection of ITAs to the heads of bureaus and offices (DOI 1995). Part 512, Chapter 2 of the Departmental Manual states that it is the policy of the Department of the Interior to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members. All bureaus are responsible for, among other things, identifying any impact of their plans, projects, programs or activities on Indian trust assets; ensuring that potential impacts are explicitly addressed in planning, decision, and operational documents; and consulting with recognized tribes who may be affected by proposed activities. Consistent with this, Reclamation's Indian trust policy states that Reclamation will carry out its activities in a manner which protects Indian trust assets and avoids adverse impacts when possible, or provides appropriate mitigation or compensation when it is not. To carry out this policy, Reclamation incorporated procedures into its NEPA compliance procedures to require evaluation of the potential effects of its proposed actions on trust assets.

Within 15 miles east of the CV Contractors service area, there are approximately 10 public domain allotments (PDAs) located in Fresno and Tulare counties. The PDAs, owned by Native Americans, are small parcels of land that are frequently held in trust. Any land held in trust for Native Americans whether PDA or rancheria, is an ITA. One of the ITAs is located near but not within the CV Contractors water service districts - the Table Mountain Rancheria. Table Mountain Rancheria is near the County of Fresno service area. There are no ITAs in the City of Tracy, WWD or SCVWD.

### **3.6.2 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 are proposed 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.

### ***Cumulative Effects***

There would be no cumulative effects to ITAs.

## **3.7 Socioeconomic Resources**

### **3.7.1 Affected Environment**

Agriculture is a very important industry in the area surrounding the IRC contractors' service areas. If taken together, the farm and agricultural services sectors are important to all six counties. Agriculture takes on additional significance because it is generally considered a "primary" industry (along with mining and manufacturing). Santa Clara is the only county in the study area where agriculture is not the "primary industry." A reasonably large portion of activity in non-primary industries can be attributed to support for primary industry activity in an area. Changes in primary industry activity, therefore, usually precipitate additional changes in non-primary or support industries.

#### ***WWD***

The socioeconomic setting is dependent upon population, employment, housing, and revenues earned by the primary private employers. The majority of human resources within WWD and surrounding lands, including Firebaugh, Coalinga, Lemoore, Avenal, Tranquility, Kettleman City, Huron, Mendota, and San Joaquin are located near WWD. These predominantly Hispanic communities, though relatively small and similar in size, have undergone varying rates of population growth over the years, which can be heavily influenced by the agricultural economy. WWD lies within an area of western Fresno and Kings Counties. Agriculture is vitally important in both counties, with agriculture being Fresno County's major industry. Fresno County consistently ranks among the top agricultural counties in the Country's agricultural production and employment. WWD's gross agricultural output totaled approximately \$773 million in 1994, which represented approximately 25.1 percent of Fresno County's \$3.084 billion in agricultural output in 1994. (WWD Annual Report 1994).

#### ***City of Tracy***

City of Tracy is located 20 minutes east of the Bay Area and is centrally located to several large metropolitan areas (San Francisco, San Jose, and Sacramento). Tracy is a growing population of nearly 80,000 with a projected future population of 125,000 by 2025. The City of Tracy has one of the most diverse and skilled labor forces in the Central Valley, with 56 percent of the workforce attending or graduated from college. Tracy's daytime workers are primarily in professional and business services, retailing, and manufacturing. Tracy is home to a large number of science and technology workers, as well as many blue collar workers that commute to the Bay Area (City of Tracy, 2005).

#### ***SCVWD***

Santa Clara County ranks fourth in the State in terms of population and jobs. Its industries provide more than 6 percent of the State's employment with a gross regional product of more than \$40 billion annually (SCVWD, January 1997). The County is a major employment center for the region, providing more than a quarter of all jobs in the Bay Area.

Population growth in Santa Clara County is expected to continue, but at slower rates than in the past. Most of the population growth is expected to occur in San Jose to a somewhat lesser extent, in the South County, while the north and west valley cities are expected to experience relatively little population growth (County of Santa Clara, undated).

The economy of Santa Clara County remains the strongest in the Bay Area and one of the strongest in the nation. The County, together with adjacent parts of San Mateo, Alameda, and Santa Cruz Counties, comprise the "Silicon Valley". The regions economy is expected to continue to grow and diversify in the future with high technology industries fueling most of the County's employment growth. Another expected trend is the change in location of employment away from previous major employment centers. As the northwestern cities have approached build out, new job growth has shifted southward into Santa Clara County and San Jose and eastward toward Milpitas and southern Alameda County. (County of Santa Clara, updated).

While Santa Clara County has 27 percent of the Bay Area's jobs, it contains only 23 percent of the regions households. This greater share of jobs than households is projected to continue through the year 2010. The Association of Bay Area Governments estimates that approximately 7 percent of County jobs will be filled by persons residing in other parts of the region, primarily Alameda, San Mateo, and Santa Cruz counties. (County of Santa Clara, updated).

The County's economy is a key element in the Northern California Bay Area, providing approximately 30 percent of all the jobs in the region. Nicknamed "Silicon Valley," with about one of every five of the County's jobs in high technology, the area continues to attract industries. Santa Clara County ranks fourth in the State in terms of jobs and population. In 2000, the population was estimated to be 1,737,000. Growth in the County is expected to continue, although at slower rates than in the past.

### ***CV Contractors***

The CV Contractors service area is a part of the economy of the San Joaquin Valley. In conjunction with implementing CVPIA, substantial changes in agricultural production, income, and employment are possible. In addition, economic impacts on agriculture will have a multiplier or induced impact effect on the rest of the regional and statewide economy. The CV Contractors service areas are located within portions of Fresno, Kern, Tulare, and a small portion in Southeastern Kings County (Atwell Island Water District) encompass portions of the most important agricultural production areas in the Central Valley and the state. All of these counties

have a per capita income lower than the state average and unemployment rates approaching double the state average based on the most recent data available (Table 9).

**Table 9 County-Level Socioeconomic Data**

<b>County</b>	<b>2006 Population (estimate)</b>	<b>2006 Civilian Labor Force</b>	<b>2006 Employment</b>	<b>1999 Per Capita Income (most recent available)</b>	<b>2006 Unemployment Rate (%)</b>
<b>Fresno</b>	<b>891,756</b>	<b>414,800</b>	<b>381,400</b>	<b>\$15,495</b>	<b>8.0%</b>
<b>Kern</b>	<b>780,117</b>	<b>338,400</b>	<b>312,800</b>	<b>\$15,760</b>	<b>7.6%</b>
<b>Tulare</b>	<b>419,909</b>	<b>189,400</b>	<b>173,300</b>	<b>\$14,006</b>	<b>8.5%</b>
<b>Kings</b>	<b>146,153</b>	<b>55,600</b>	<b>50,900</b>	<b>\$15,848</b>	<b>8.5%</b>
<b>San Joaquin</b>	<b>673,170</b>	<b>287,800</b>	<b>266,400</b>	<b>\$17,365</b>	<b>7.4%</b>
<b>Santa Clara</b>	<b>1,731,281</b>	<b>834,400</b>	<b>797,100</b>	<b>\$38,795</b>	<b>4.5%</b>
<b>Totals</b>	<b>4,642,386</b>	<b>2,120,400</b>	<b>1,981,900</b>		<b>6.5%</b>
California	<b>36,457,549</b>	<b>17,901,900</b>	<b>17,029,300</b>	<b>\$22,711</b>	<b>4.9%</b>

Sources: Census Bureau 2006, EDD 2006

Three of the counties encompassing the service area are amongst the state's top counties for agricultural production value, generating over 30 percent of the state's production value in 1998 and contain 1 percent of the irrigated land in California.

The social conditions in the IRC contractors' service area are described with factors such as employment level, educational opportunities, the income level, the community social structure,

and the need for public social assistance programs. These conditions were described in the PEIS and are summarized below.

The IRC contractors' service area is predominately rural with numerous small cities. Large communities, such as Fresno, San Jose, Tracy and Bakersfield, are also located in the vicinity of the CV Contractors service area. The regional economic indicators of social well being are all measures of the social conditions within a region. For the Tulare Lake Region, the unemployment rate is higher than in urban areas (Table 9), attributed to a large seasonal labor market and limited availability of employment in other industries. Unemployment for Fresno, Kern, and Tulare counties ranged from 12.1 to 15.6 percent in 1997 but decreased to 4.5 to 8.5 percent in 2006. Statewide unemployment was 6.3 percent in 1997 but dropped to 4.9 percent in 2006 (see Table 9). As the farming economy declines, the employment opportunities also decline.

Santa Clara County and the City of Tracy are an exception to the above and have a different socioeconomic setting than the other predominantly agricultural based contractors. Santa Clara County and Tracy have median household incomes above the state average, \$68,842 and \$62,794 respectively. The state-wide average is \$47,493. Santa Clara County has a highly educated workforce with over 40 percent of the population have a college education. Statewide less than 30 percent are college educated. The City of Tracy to a large extent is a bedroom community to the Bay Area and the high tech job market that exists there. Santa Clara County and the City of Tracy's economies are tied more to high tech markets than to the agricultural sector.

### **3.7.2 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. 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. The increased cost of water resulting from 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. Although there is a potential for these effects to occur, considering the short duration of the 26 months of the contract renewal period, and the low frequency of allocations above 80 percent, no effects to socio-economic 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 socio-economic 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.

### ***Cumulative Effects***

Since there would be no effect of the Proposed Action, there would be no cumulative effects to socio-economic resources.

## **3.8 Environmental Justice**

### **3.8.1 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 socio-economic stratification of the IRC contractors can be found above. 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.

### **3.8.2 Environmental Consequences**

#### ***No Action Alternative***

Contract provisions under the No Action Alternative include the tiered pricing structure (80/10/10 tiered pricing.) Implementation could, but is not likely to result in changes in agricultural practices, including cropping patterns and land fallowing. It would, however, during the circumstances when tiered pricing increased rates apply, increase the cost of water, which could reduce farming revenues and decrease land values. 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 temporary 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 be detrimental to farm workers, especially to migrant workers who tend to be from minority and low-income populations. This impact would be attenuated by the short duration of the interim renewal contracts and the low likelihood of major shifts in agricultural production in a 26-month period. Additionally tiered pricing impacts occur only when allocations are above 80 percent which occurs infrequently. Any changes would likely be within the normal range of annual or seasonal variations. No significant disproportionate impacts to minority or low-income populations are expected.

Factors contributing to population change, employment, and 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, changes in population and the various indicators of social well-being that would result are expected to be relatively minor.

The No Action Alternative would support continued agricultural production and would not result in changes to employment of minority and low-income populations.

### ***Proposed Action***

Impacts to minority and disadvantaged populations associated with the Proposed Action would be comparable to those described under No Action Alternative. Renewal of the IRCs 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. Therefore, the Proposed Action would not differ from current conditions and would not be expected to disproportionately affect minority or low income populations.

### ***Cumulative Effects***

Since there would be no effect of the Proposed Action, there would be no cumulative effects to minority or disadvantaged populations.

## **Section 4 Consultation and Coordination**

### **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 the FWS and is being jointly implemented. The Proposed Action does not involve construction projects. Therefore the FWCA does not apply.

### **Endangered Species Act (16 USC § 1521 et seq.)**

Section 7 of the ESA requires federal agencies, in consultation with the Secretaries of Commerce and the Interior, 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 in the past, and would not be used for land conversion.

In 2000, Reclamation completed formal ESA consultation on IRCs, and the FWS issued a BO dated February 29, 2000. On February 28, 2001, the FWS issued a memorandum extending that 2000 BO through February of 2002. In February 2002, the FWS issued a BO amending the February 2000 BO, and extending the 2000 BO through February of 2004. On February 27, 2004, the FWS issued a second amendment to their February 2000 BO to address the effects of the 2004 interim renewal contracts through February 2006. The FWS issued a BO on February 28, 2006, that addressed the effects of two consecutive one-year interim renewal contracts, through February 28, 2007, and February 29, 2008 (Service File No. 1-1-06-F-0070). These BOs are attached as appendices to previous interim renewal EAs.

Reclamation has determined that there would be no effects to species and critical habitats under the jurisdiction of NMFS within the service areas. Effects to species and critical habitats under the jurisdiction of FWS within the service areas would be addressed in the BO issued February 29, 2008.

## **National Historic Preservation Act (15 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 amount of water, how the water is conveyed or applied to the ground 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.

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

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

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

## **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 project would not affect either concern.

## SECTION 5.0 List of Preparers and Reviewers

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DRAFT ENVIRONMENTAL ASSESSMENT

*INTERIM RENEWAL CONTRACT EA*

**Appendix A**  
**Draft Interim Renewal Contract**

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December 2007

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**Contract No.**

14-06-200-4305A-IR9-B

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
Central Valley Project, California

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

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

WITNESSETH, That:

EXPLANATORY RECITALS

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

WHEREAS, the United States and the District have entered into successive renewals of the Interim Renewal Contract, the most recent of which is Contract No. 14-06-200-4305A-IR8, hereinafter referred to as the Existing Interim Renewal Contract from March 1, 2004, through February 28, 2006; and

WHEREAS, on February 27, 2004, the Contractor and the District entered into an assignment that assigned 5,000 af of project water to the City of project water; and

WHEREAS, the United States and the Contractor have made significant progress in their negotiations of a long-term renewal contract, believe that further negotiations on the long-term renewal contract would be beneficial, and mutually commit to continue to negotiate to seek to reach agreement, but anticipate that the environmental documentation necessary for execution of any long-term renewal contract will be delayed until the summer of 2006 and may be delayed further for reasons beyond the control of the parties; and,

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

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

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

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

## INCORPORATION AND REVISION OF EXISTING INTERIM RENEWAL CONTRACT

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

(a) The first sentence in Subdivision (a) of Article 1 of the Existing Interim Renewal Contract is modified as follows: "This interim renewal contract shall be effective from March 1, 2006, and shall remain in effect through February 28, 2007, and thereafter will be renewed as described in Subdivision (a) of Article 2 of the Interim Renewal Contract if a long-term renewal contract has not been executed with an effective commencement date of March 1, 2007."

(b) Subdivision (b) of Article 1 of the Existing Interim Renewal Contract is amended by deleting the date "February 15, 2006," and replacing same with the date "February 15, 2007."

(c) Subdivision (c) of Article 1 of the Existing Interim Renewal Contract is amended by deleting the dates "February 1, 2006," "February 15, 2006," and "February 28, 2006," and replacing same with the dates "February 1, 2007," "February 15, 2007," and "February 28, 2007," respectively.

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

THE UNITED STATES OF AMERICA

By: \_\_\_\_\_  
Regional Director, Mid-Pacific Region  
Bureau of Reclamation

(SEAL)

THE CITY OF TRACY

By: \_\_\_\_\_  
City Manager

Attest:

\_\_\_\_\_  
Secretary

(H:\pub440\Interim Renewal Contracts - Drafts, charts, etc.\2006-2007 IRC's\Tracy -4305A-B 12-  
mo  
(3-1-06 - 2-28-07).doc)

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DRAFT ENVIRONMENTAL ASSESSMENT

*INTERIM RENEWAL CONTRACT EA*

**Appendix B**  
**Threatened and Endangered Species List**

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December 2007

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**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: 071130012744*

*Database Last Updated: August 16, 2007*

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**Quad Lists**

*Listed Species*

**Invertebrates**

- Branchinecta conservatio
  - Conservancy fairy shrimp (E)
- Branchinecta lynchi
  - Critical habitat, vernal pool fairy shrimp (X)
  - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)
- Euphydryas editha bayensis
  - bay checkerspot butterfly (T)
  - Critical habitat, bay checkerspot butterfly (X)
- Incisalia mossii bayensis
  - San Bruno elfin butterfly (E)
- Lepidurus packardi
  - Critical habitat, vernal pool tadpole shrimp (X)
  - vernal pool tadpole shrimp (E)

**Fish**

- Acipenser medirostris
  - green sturgeon (T) (NMFS)
- Eucyclogobius newberryi
  - tidewater goby (E)
- Hypomesus transpacificus
  - Critical habitat, delta smelt (X)
  - delta smelt (T)

- *Oncorhynchus kisutch*
  - coho salmon - central CA coast (E) (NMFS)
- *Oncorhynchus mykiss*
  - Central California Coastal steelhead (T) (NMFS)
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central California coastal steelhead (X) (NMFS)
  - Critical habitat, Central Valley steelhead (X) (NMFS)
  - South Central California steelhead (T) (NMFS)
- *Oncorhynchus tshawytscha*
  - Central Valley spring-run chinook salmon (T) (NMFS)
  - winter-run chinook salmon, Sacramento River (E) (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)
  - Critical habitat, California red-legged frog (X)

### **Reptiles**

- *Gambelia (=Crotaphytus) sila*
  - blunt-nosed leopard lizard (E)
- *Masticophis lateralis euryxanthus*
  - Alameda whipsnake [=striped racer] (T)
  - Critical habitat, Alameda whipsnake (X)
- *Thamnophis gigas*
  - giant garter snake (T)

### **Birds**

- *Brachyramphus marmoratus*
  - Critical habitat, marbled murrelet (X)
  - marbled murrelet (T)
- *Charadrius alexandrinus nivosus*
  - western snowy plover (T)
- *Gymnogyps californianus*
  - California condor (E)

- *Rallus longirostris obsoletus*
  - California clapper rail (E)
- *Sternula antillarum* (=Sterna, =albifrons) *browni*
  - California least tern (E)
- *Vireo bellii pusillus*
  - Least Bell's vireo (E)

### **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)
- *Reithrodontomys raviventris*
  - salt marsh harvest mouse (E)
- *Vulpes macrotis mutica*
  - San Joaquin kit fox (E)

### **Plants**

- *Amsinckia grandiflora*
  - large-flowered fiddleneck (E)
- *Castilleja affinis* ssp. *neglecta*
  - Tiburon paintbrush (E)
- *Castilleja campestris* ssp. *succulenta*
  - Critical habitat, succulent (=fleshy) owl's-clover (X)
  - succulent (=fleshy) owl's-clover (T)
- *Ceanothus ferrisae*
  - Coyote ceanothus (E)
- *Chamaesyce hooveri*
  - Critical habitat, Hoover's spurge (X)
  - Hoover's spurge (T)
- *Clarkia springvillensis*
  - Springville clarkia (T)

- *Dudleya setchellii*
  - Santa Clara Valley dudleya (E)
- *Holocarpha macradenia*
  - Critical habitat, Santa Cruz tarplant (X)
  - Santa Cruz tarplant (T)
- *Lasthenia conjugens*
  - Contra Costa goldfields (E)
  - Critical habitat, Contra Costa goldfields (X)
- *Monolopia congdonii* (=Lembertia congdonii)
  - San Joaquin woolly-threads (E)
- *Opuntia treleasei*
  - Bakersfield cactus (E)
- *Orcuttia inaequalis*
  - Critical habitat, San Joaquin Valley Orcutt grass (X)
- *Pseudobahia bahiifolia*
  - Hartweg's golden sunburst (E)
- *Pseudobahia peirsonii*
  - San Joaquin adobe sunburst (T)
- *Streptanthus albidus* ssp. *albidus*
  - Metcalf Canyon jewelflower (E)
- *Suaeda californica*
  - California sea blite (E)

### ***Candidate Species***

#### **Amphibians**

- *Rana muscosa*
  - mountain yellow-legged frog (C)

#### **Quads Containing Listed, Proposed or Candidate Species:**

DEEPWELL RANCH (263A)

MCFARLAND (263B)

NORTH OF OILDALE (263D)

WASCO NW (264B)

DUCOR (287A)  
SAUSALITO SCHOOL (287B)  
DELANO EAST (287C)  
RICHGROVE (287D)  
PIXLEY (288A)  
ALPAUGH (288B)  
ALLENSWORTH (288C)  
HACIENDA RANCH NE (289A)  
HACIENDA RANCH (289D)  
LINDSAY (310A)  
CAIRNS CORNER (310B)  
WOODVILLE (310C)  
PORTERVILLE (310D)  
TULARE (311A)  
TAYLOR WEIR (311C)  
TIPTON (311D)  
CORCORAN (312D)  
WESTHAVEN (313B)  
AVENAL (314C)  
COALINGA (315A)  
SLACK CANYON (316C)  
IVANHOE (333B)  
EXETER (333C)  
GOSHEN (334C)

VISALIA (334D)  
VANGUARD (336C)  
FIVE POINTS (337A)  
TRES PECOS FARMS (338A)  
DOMENGINE RANCH (338D)  
STOKES MTN. (355C)  
ORANGE COVE NORTH (356A)  
WAHTOKE (356B)  
SAN JOAQUIN (359C)  
HELM (359D)  
COIT RANCH (360B)  
MONOCLINE RIDGE (361D)  
FRIANT (378B)  
FIREBAUGH (381C)  
BROADVIEW FARMS (382D)  
MARIPOSA PEAK (384B)  
THREE SISTERS (385A)  
SAN FELIPE (385B)  
CHITTENDEN (386A)  
WATSONVILLE EAST (386B)  
CREVISON PEAK (404B)  
PACHECO PASS (404C)  
MUSTANG PEAK (405A)  
MISSISSIPPI CREEK (405B)

GILROY HOT SPRINGS (405C)  
PACHECO PEAK (405D)  
MT. SIZER (406A)  
MORGAN HILL (406B)  
MT. MADONNA (406C)  
GILROY (406D)  
SANTA TERESA HILLS (407A)  
LOS GATOS (407B)  
LAUREL (407C)  
LOMA PRIETA (407D)  
CASTLE ROCK RIDGE (408A)  
MT. BOARDMAN (425B)  
MT. STAKES (425C)  
EYLAR MTN (426A)  
MT. DAY (426B)  
LICK OBSERVATORY (426C)  
ISABEL VALLEY (426D)  
CALAVERAS RESERVOIR (427A)  
MILPITAS (427B)  
SAN JOSE WEST (427C)  
SAN JOSE EAST (427D)  
MOUNTAIN VIEW (428A)  
PALO ALTO (428B)  
CUPERTINO (428D)

TRACY (444B)

UNION ISLAND (462C)

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**Key:**

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

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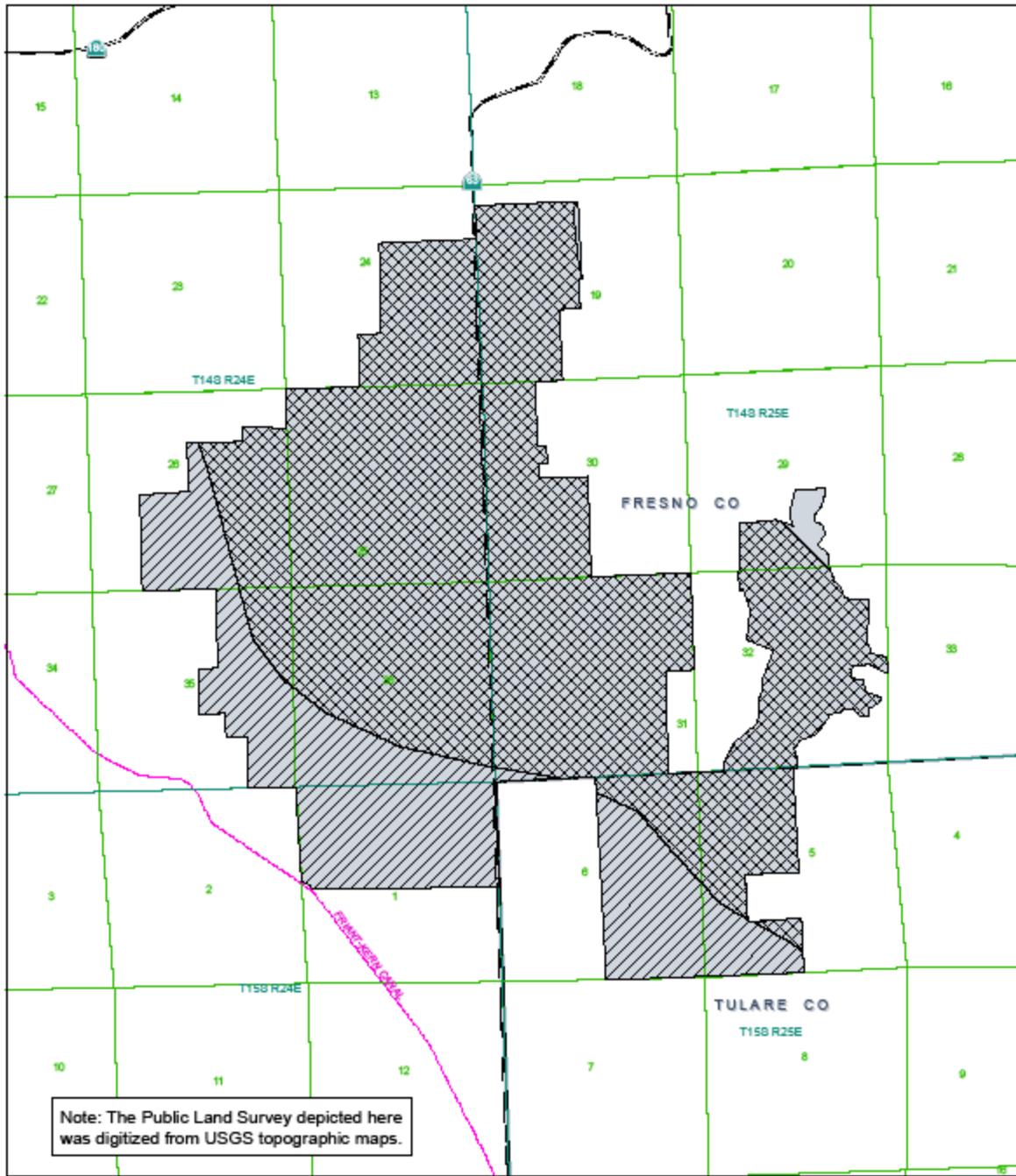
DRAFT ENVIRONMENTAL ASSESSMENT

*INTERIM RENEWAL CONTRACT EA*

**Appendix C**  
**Individual Service Area Boundary Maps**

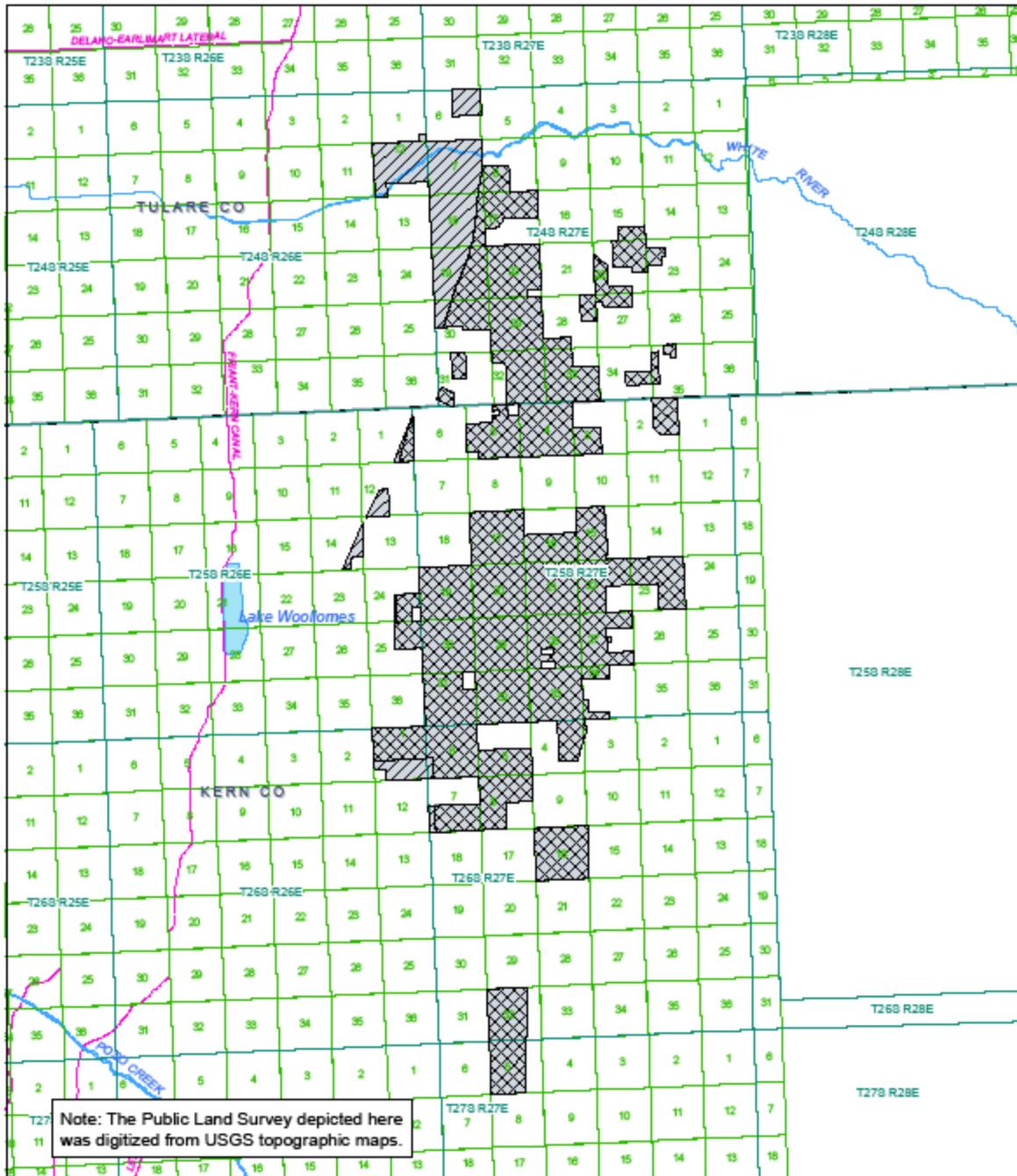
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December 2007



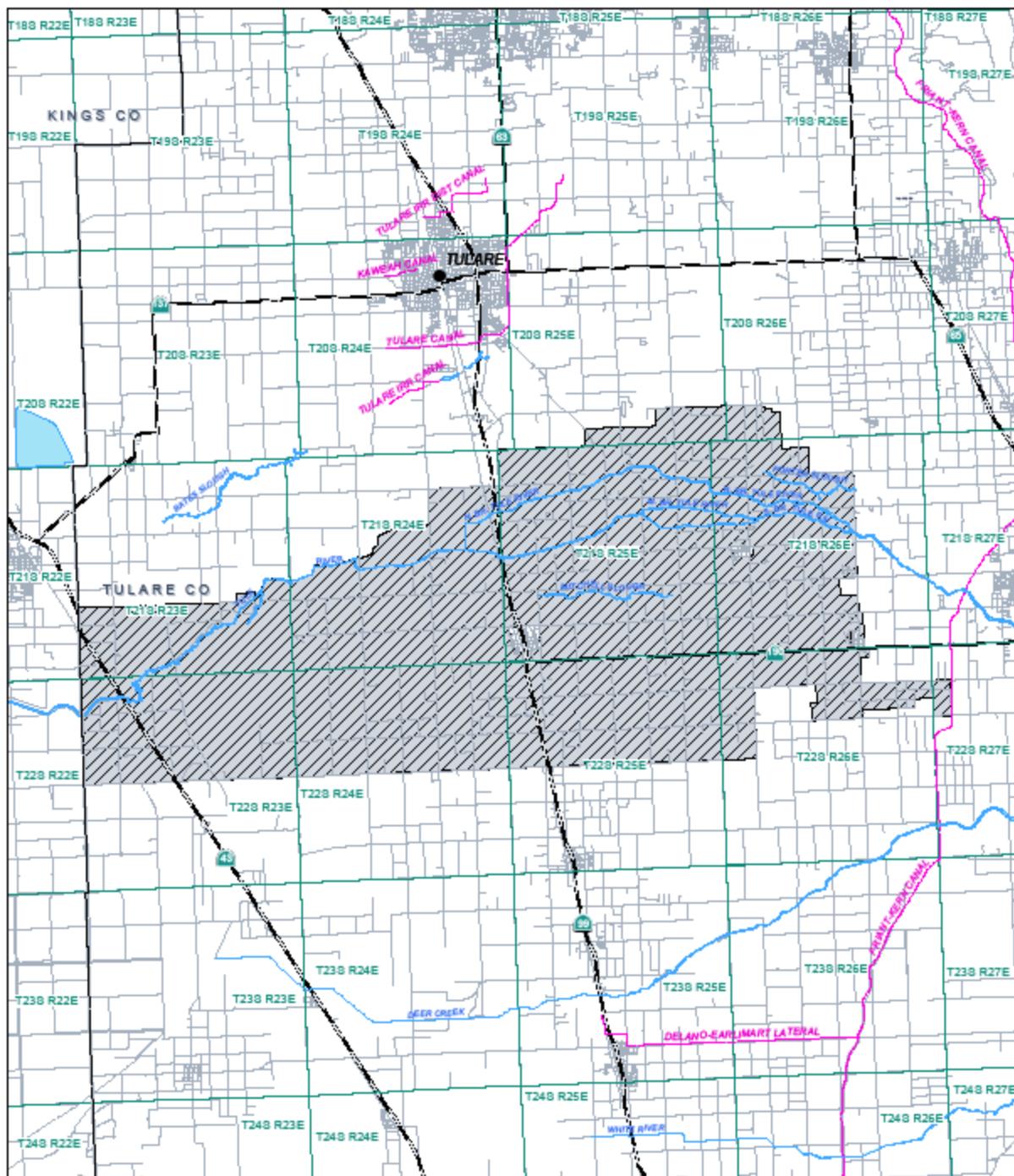
Note: The Public Land Survey depicted here was digitized from USGS topographic maps.

<ul style="list-style-type: none"> <li> District Boundary</li> <li> Contractor's Service Area (Irrigation Only)</li> <li> Contractor's Service Area (Irrigation and M&amp;I)</li> </ul>	<p><b>Hills Valley I.D.</b></p> <p>Project water delivered from the Friant Division</p> <p>Contract No. 14-06-200-8466A-LTR1</p> <p>EXHIBIT A</p>	
<p>Date: October 21, 2004          File Name: K:\csl\csl\contractor\hills_valley\hills_valley.mxd</p>		<p>1785-202-2</p>



**Kern-Tulare W.D.**  
 Project water delivered from the Friant Division  
 Contract No.14-06-200-8601A-LTR1  
 EXHIBIT A

<ul style="list-style-type: none"> <li> District Boundary</li> <li> Contractor's Service Area (Irrigation Only)</li> <li> Contractor's Service Area (Irrigation and M&amp;I)</li> </ul>	<p><small>Date: October 21, 2004        File Name: K:\deland\contract\deland_kern_tulare\deland_kern_tulare.mxd</small></p> <p>0      2.5      5 Miles</p>	<p>1785-202-3</p>
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### Lower Tule River Irrigation District

-  Contractor's Service Area
-  District Boundary

Contract No. 14-06-200-8237A-LTR1

EXHIBIT A

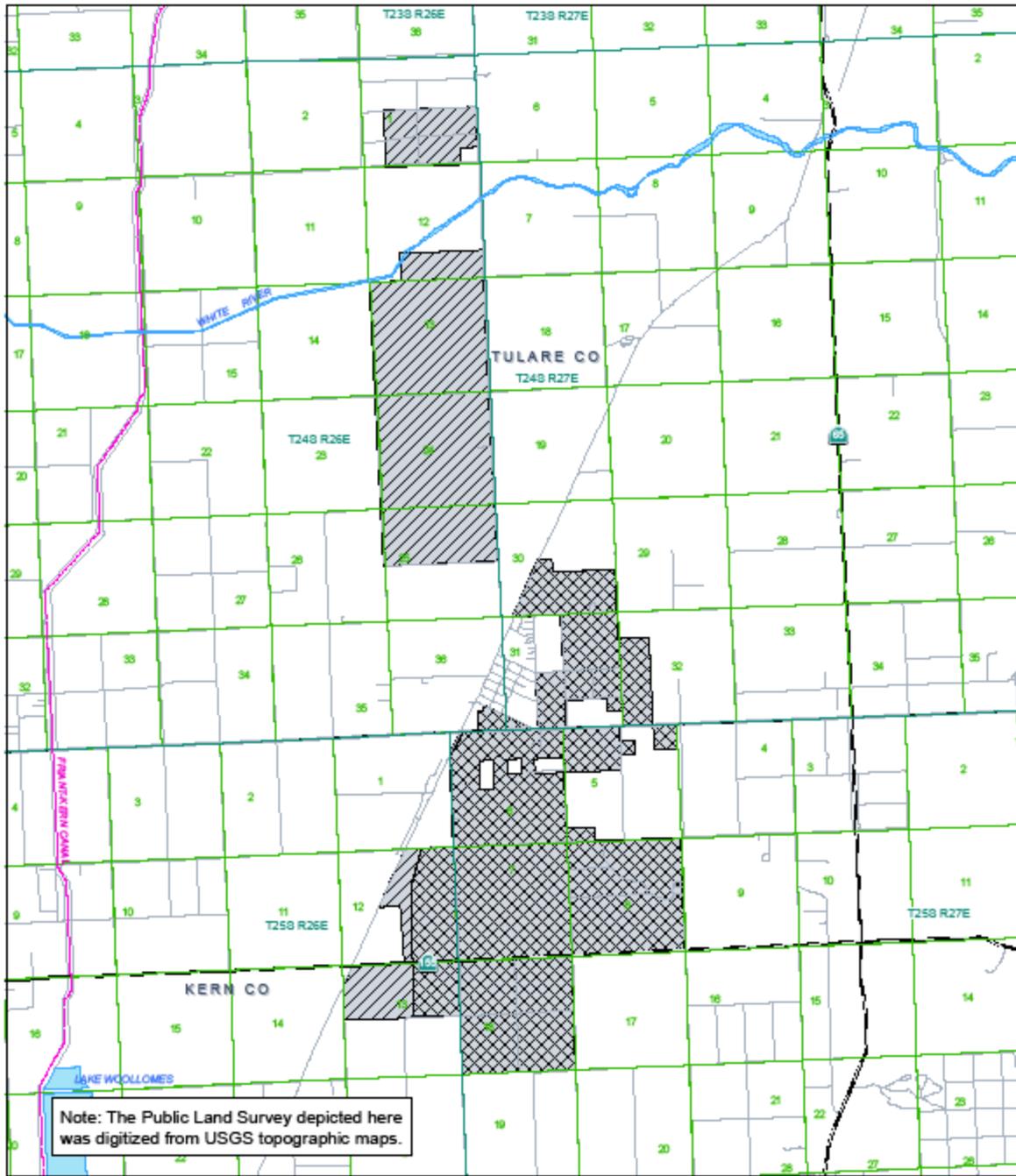


Date: October 21, 2004  
File Name: N:\delist\contract\lower\_tule\lower\_tule.mxd



1785-202-4





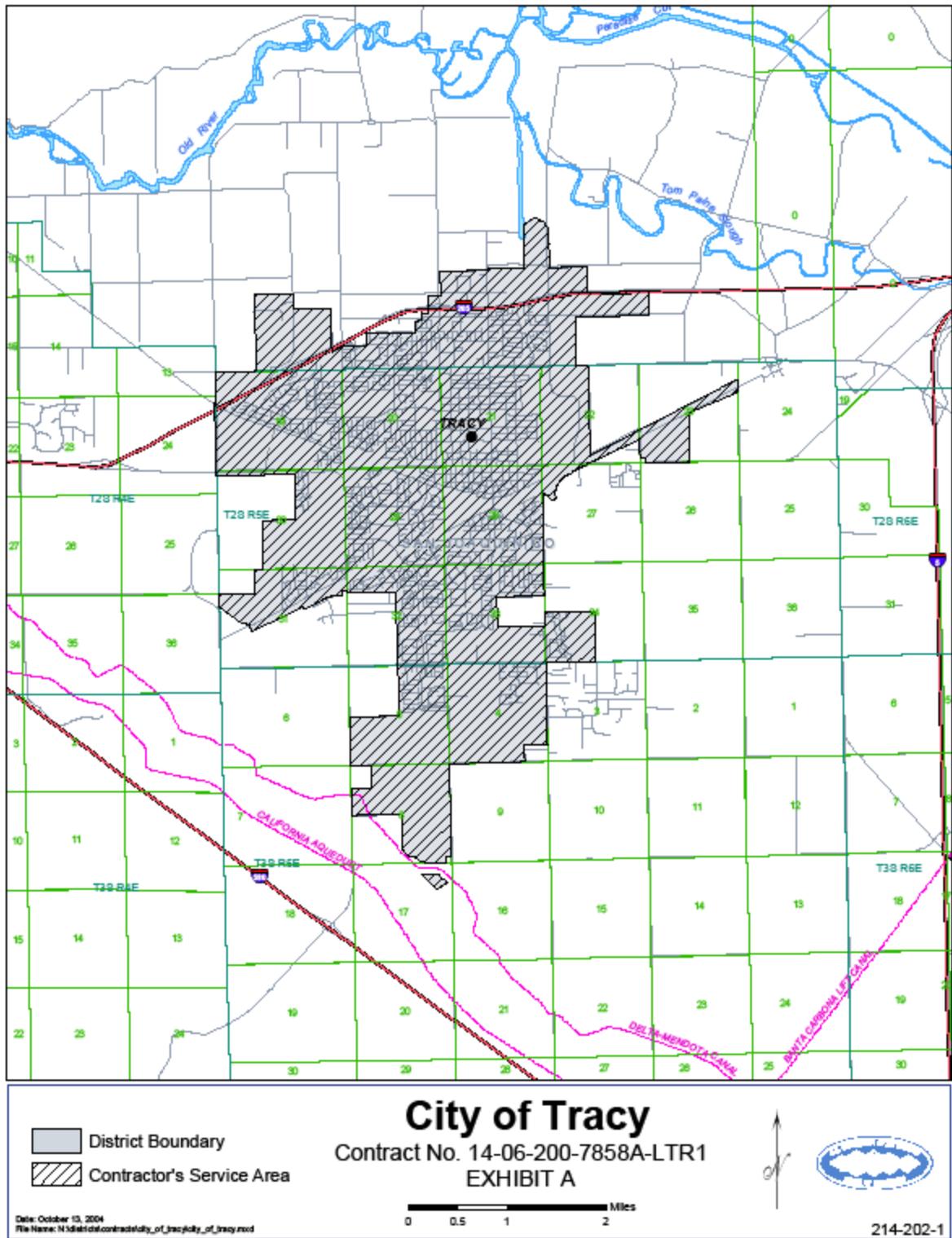
**Rag Gulch Water District**  
 Project water delivered from the Friant Division  
 Contract No. 14-06-200-8367A-LTR1  
 EXHIBIT A

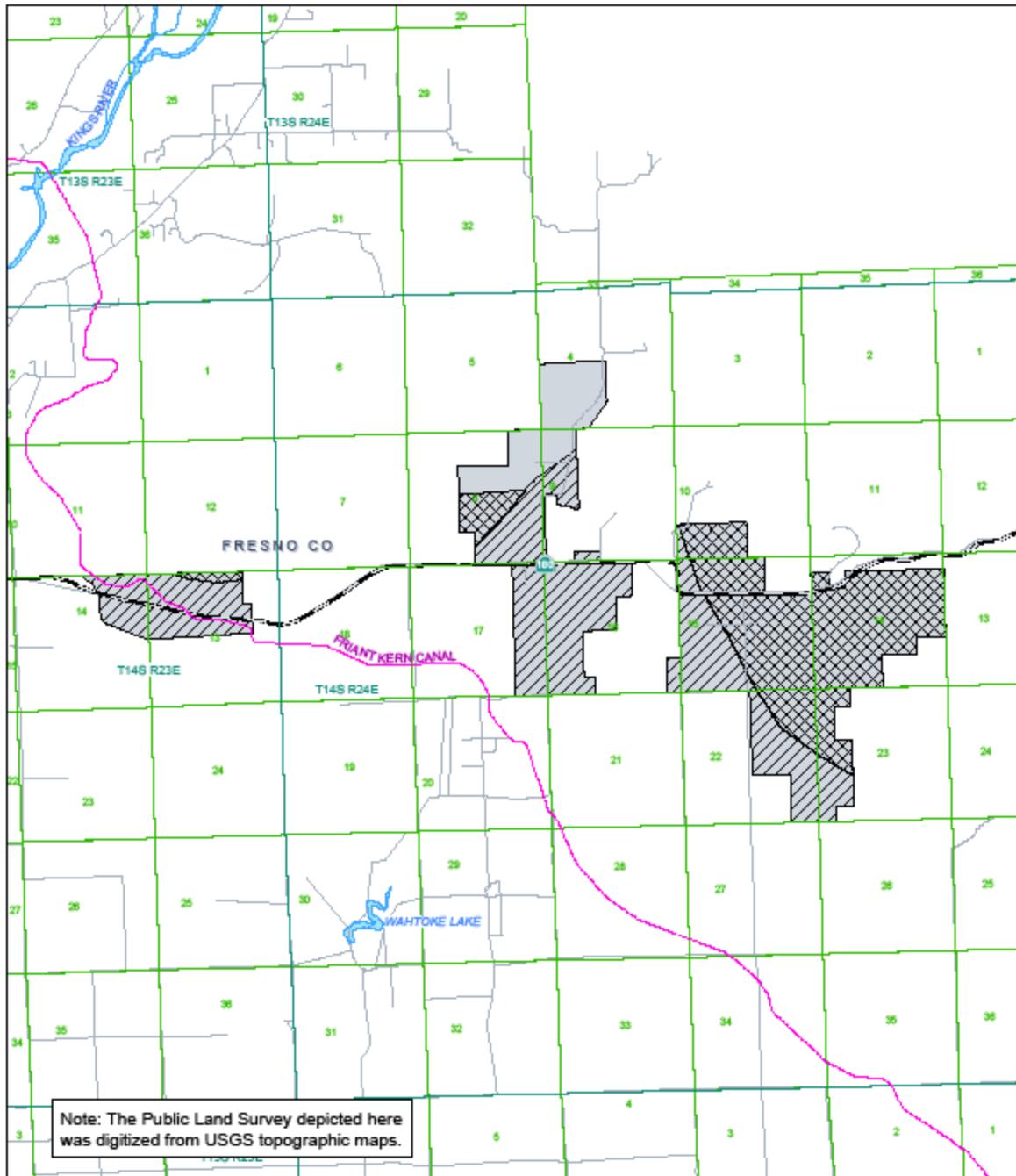
<ul style="list-style-type: none"> <li> Contractor's Service Area (Irrigation Only)</li> <li> Contractor's Service Area (Irrigation and M&amp;I)</li> <li> District Boundary</li> </ul>		
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Date: October 21, 2004  
 File Name: N:\distinfo\contracting\_rag\_gulchrag\_gulch.mxd

1785-202-8







Note: The Public Land Survey depicted here was digitized from USGS topographic maps.

**Tri Valley Water District**  
 Project water delivered from the Friant Division

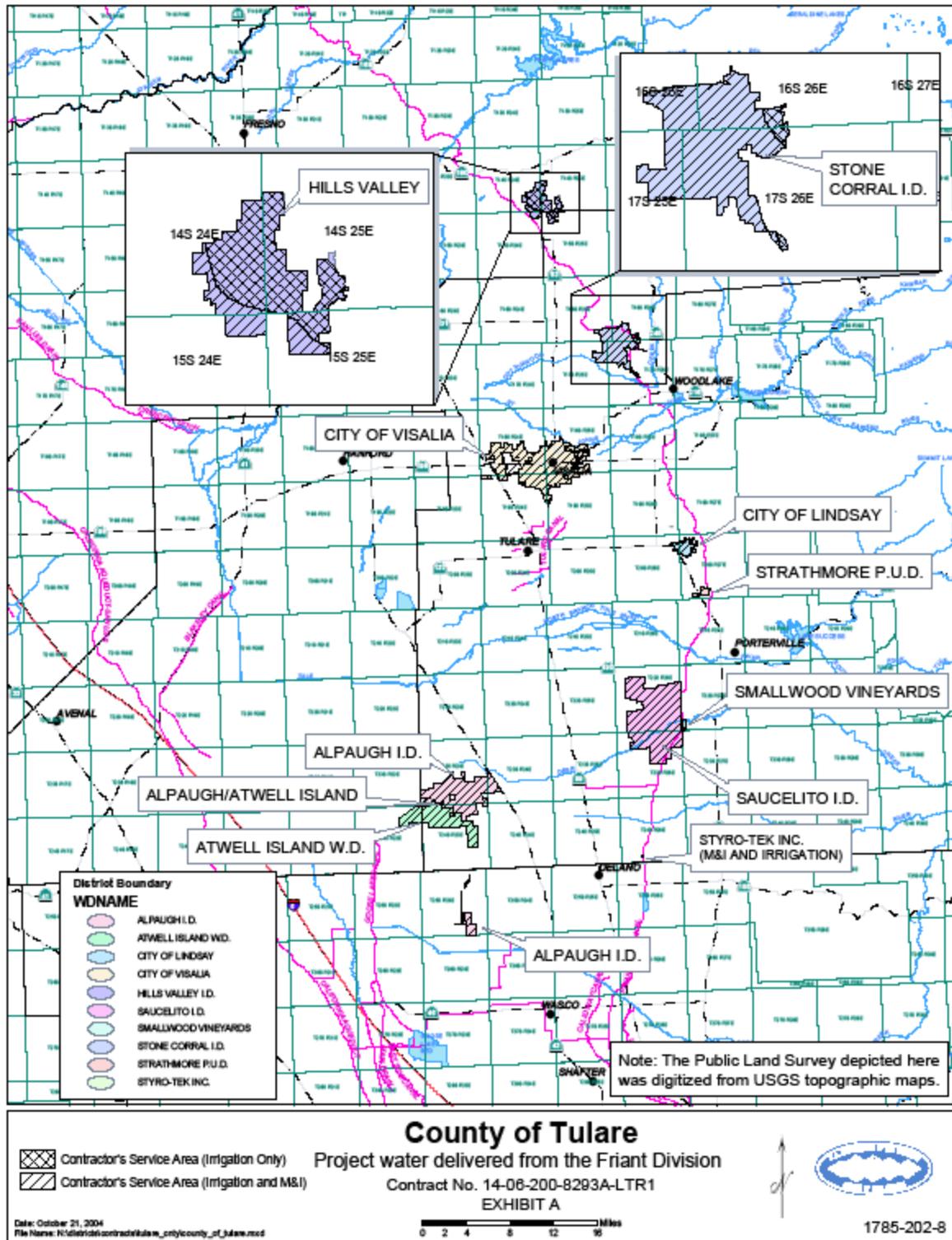
Contract No. 14-06-200-8565A-LTR1  
 EXHIBIT A

Contractor's Service Area (Irrigation and M&I)  
 Contractor's Service Area (Irrigation Only)  
 District Boundary

Date: October 21, 2004  
 File Name: N:\distri\contract\triv\_valley\triv\_valley.mxd

0 0.5 1 2 3 Miles

1785-202-7



**From:** Adam Nickels  
**To:** Tapia, Judi  
**Date:** 12/20/2007 12:30:59 PM  
**Subject:** EA 07-75 2008 Interim CVP Contracts with 15 ussers

Project No. 07 SCAO 077

Judi,

Reclamation's cultural resources branch at MP 153 has reviewed the Draft EA for 2008 Renewal of Interim Water Service Contracts through February 28 2010.

My review was limited to the cultural resources section 5.5 on Page 80 through 84. I have made some edits to the section and have concluded that both the proposed action and the no action alternatives will result in no potential to affect historic properties 36 CFR Part 800.3(a)(1).

Location: CVP Contractor Service Area

This concludes the section 106 process for the proposed action and no action alternatives as defined in the above mentioned EA's. Baring any changes to the EA that could effect cultural resources, the Section 106 process is complete and Reclamation requires no further cultural resource investigation.

Please retain a copy of this concurrence with the EA file. Thank you for the opportunity to comment.

Sincerely,

Adam Nickels

Adam M. Nickels  
Archaeologist  
U.S. Bureau of Reclamation  
Mid-Pacific Region  
2800 Cottage Way, MP-153  
Sacramento, CA 95825  
916-978-5053  
anickels@mp.usbr.gov

**CC:** MP-153

**From:** Patricia Rivera  
**To:** Tapia, Judi  
**Date:** 3/3/2008 1:55:27 PM  
**Subject:** Re: ITA Review Please! EA-07-75

I have reviewed the proposed action to execute 15 interim contracts to extend the term of the contractors' existing interim renewal contract(s) (IRC) for two years, beginning March 1, 2008 and ending February 28, 2010. Execution of these 15 interim contracts is needed to continue delivery of CVP water to these contractors until their new long-term contract can be executed. IRCs 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 15 contractors. Additionally, CVP water is essential to continue agricultural production and municipal viability for these contractors. The water would be delivered for agricultural or municipal and industrial (M&I) purposes within Reclamation's existing water right place of use. The water would be delivered within the current contractor service area boundaries using existing facilities for a period of up to two years. No changes to any contractor's service area are part of the Proposed Action.

I concur the proposed action does not affect Indian Trust Assets. The nearest ITA to the proposed action is a Public Domain Allotment and is within the San Benito WD (part of the San Felipe Division).

Patricia

>>> Judi Tapia 2/29/2008 3:12:13 PM >>>

Please find the ITA request form filled out and attached. I know I keep sending you these huge areas! Again this week! Sorry again! My recent projects have tended to encompass huge study areas. Let me know if you need anything else!!

CA#- A10-0805-8943-332-76-0-0

This is interim contract renewal so I would not expect there to be any ITA impacts.

Thanks so much!!



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



IN REPLY REFER TO:  
81420-2008-F-0944

29 February 2008

### Memorandum

**To:** Chief, Resource Management Division, South Central California Area Office, U.S. Bureau of Reclamation

**From:** *ACTING Daniel Russell*  
Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California

**Subject:** Interim Water Contract Renewal for the Period March 1, 2008 through February 28, 2010

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposal to issue 15 Interim Renewal Contracts for up to two consecutive one year periods, commencing March 1, 2008, through February 28, 2010, in accordance with section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq.*). This document also addresses the County of Fresno's service area change in 2007, to reflect the proposed Tract 4870, of the Millerton Newtown project. The Service, by letter dated February 23, 2006 (Service File 1-1-06-TA-0822) confirmed that all Endangered Species Act compliance had been completed for that boundary change. Reclamation is currently in consultation with Service on the Millerton Newtown project and anticipates that all effects of that action will be analyzed and addressed in that consultation. We received your January 30, 2008 request for formal consultation on February 1, 2008.

Based on Reclamation's project description and our evaluation of the status of the species, the environmental baseline, together with effects of the action and cumulative effects, the Service has concluded that Reclamation's request to renew the interim water contracts is a non-jeopardy Federal action within the meaning of the Endangered Species Act of 1973.

### Introduction

This biological opinion is a reinitiation and amendment of the U.S. Fish and Wildlife Service's (Service) February 29, 2000 biological opinion on Interim Water Contract Renewals (Service File 1-1-00-F-0056, as amended by our biological opinions of February 27, 2002, Service File 1-1-02-F-0070), February 27, 2004 (Service File 1-1-04-F-0360), and February 28, 2006 (Service File 1-1-06-F-0070) in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA). This third amendment to the February 29, 2000 biological opinion addresses the effects of the proposed renewal of 15 of the contracts addressed in the 2004 opinion (Table 1) in accordance with Section 3404(c) of the Central Valley Project Improvement Act (CVPIA), for a maximum period of 2 years. The water will be used within the interim contract service

areas for agricultural, municipal, and industrial purposes, and will not exceed water allocations determined by existing CVP operations criteria. Nine maps showing the individual service areas are attached at the end of the document. Interim CVP water contract renewals are consistent with the tiered implementation of the CVPIA, as described in the biological opinion on Implementation of the CVPIA (CVPIA opinion, Service File No., 1-1-98-F-0124).

Table 1. Interim renewal contractors for period of March 1, 2008 through February 28, 2010

	CVP Contractor name and Contract Number	Contract amount (af/year)
Delta Division - Delta-Mendota Canal Unit		
1.	Tracy, City of (partial assignment from Banta Carbona ID – 14-06-200-4305A-IR10-B)	5,000
2.	Tracy, City of (partial assignment from West Side ID – 7-07-20-W0045-IR-B)	5,000
3.	Pajaro Valley Water Management Area, Santa Clara Valley Water District, Westlands Water District #1 (3-way partial assignment from Mercy Springs WD – 14-06-200-3365A-IR10-B <sup>1</sup> )	6,260
4.	Westlands Water District #1 (assignment from Broadview Water District – 14-06-200-8092-IR10)	27,000
5.	Westlands Water District #1 (assignment from Centinella ID – 7-07-20-W0055-IR10)	2,500
6.	Westlands Water District #1 (assignment from Widren ID – 14-06-200-8018-IR10)	2,990
7.	Westlands Water District #2 (3-way partial assignment from Mercy Springs WD – 14-06-200-3365A-IR10-C)	4,198
CROSS VALLEY UNIT		
8.	Fresno, County of – 14-06-200-8292A-IR12	3,000
9.	Hills Valley Irrigation District – 14-06-200-8466A-IR12	3,346
10.	Kern-Tulare Water District – 14-06-200-8601A-IR12	40,000
11.	Lower Tule River Irrigation District – 14-06-200-8237A-IR12	31,102
12.	Pixley Irrigation District – 14-06-200-8238A-IR12	31,102
13.	Rag Gulch Water District – 14-06-200-8367A-IR12	13,300
14.	Tri-Valley Water District – 14-06-200-8565A-IR12	1,142
15.	Tulare, County of – 14-06-200-8293A-IR12	5,308

1 - Partial assignment of Mercy Springs contract 14-06-200-3365A-IR9-B

For the purposes of this consultation, all conservation measures and non-discretionary terms and conditions described in the biological opinion on long-term contract renewal of the Friant and Cross Valley Unit Contracts (Friant-Cross Valley Opinion, Service File No. 1-1-01-F-0027) apply to the interim renewal of the Cross Valley Unit contracts for the period of March 1, 2008 through February 28, 2010, or until long-term contracts for the Cross Valley Unit are executed, whichever comes first. Therefore, all conservation measures and non-discretionary terms and

conditions of the Friant-Cross Valley Opinion of 2000 relevant to Cross Valley contracts are incorporated by reference into this consultation.

### **Relationship of the Proposed Action to Other Reclamation Actions**

The 2008 contract renewals will use the same “interim form of contract” used in the previous interim contracts. The interim form of contract includes a mixture of agricultural/irrigation (Ag) use and municipal/industrial (M&I) purpose of each of the 2008 interim renewal contracts. Use of contract water under the proposed interim contracts will not change from the purpose of use specified in the existing interim contracts.

Reclamation has completed environmental documentation for the Central Valley Project’s Municipal and Industrial Water Shortage Policy (M&I Shortage Policy) (Reclamation 2005h). The purposes of the M&I shortage policy include: 1) define water shortage terms and conditions applicable to all CVP M&I contractors, 2) establish a minimum water supply level that (a) would sustain urban areas during droughts, and (b) during severe or continuing droughts would, as much as possible, protect public health and safety. The M&I water shortage policy will be incorporated into long-term water service contracts during the long-term contract renewal process being implemented under the CVPIA. The proposed 2008 interim renewal contracts would not change the existing contract terms and conditions governing the allocation of project water during a drought emergency. The existing contract terms regarding shortage allocations are in accordance with the June 9, 1997 CVPIA Administrative Proposal on Urban Water Supply. Although the contracts contain provisions consistent with the M&I Shortage Policy, the effect of the policy on these 15 IRCs is limited. The M&I Shortage Policy does not apply to the CV Contractors because the water is pumped at the Banks Pumping Plant and is not considered to be a reliable source. (See **Environmental Baseline**).

### **Biological Opinion**

This biological opinion is based on information provided in your January 13, 2008 request for consultation, the December 2007 draft Environmental Assessment, information provided by the South Central California Area Office, the 2000, 2002, 2004, and 2006 biological opinions on interim contract renewals, and other information in our files. A complete administrative record of this consultation is on file in the Service’s Sacramento Fish and Wildlife Office.

### **Concurrence with Determinations of “Not Likely to Adversely Affect”**

Because of the wide geographic variation in service areas for interim contractors and overlap of species among different contractors, we will address these determinations by contractor rather than by species.

#### *Pajaro Valley Water Management Area (PVWMA)*

We concur that interim renewal of the CVP water service contract (Contract No. 14-06-200-3365A-IR10-B) for PVWMA (partial assignment from Mercy Springs Water District) is not

likely to adversely affect federally listed species. The PVWMA currently has no infrastructure to divert and convey CVP water to its water service area, and will not have that capability at any time during the 2 year interim period. PVWMA will not be further addressed in this consultation.

### *City of Tracy*

The renewal of the City of Tracy's interim contracts 14-06-200-4305A-IR10-B and 7-07-20-W0045-IR10-B will be used to support additional urban growth in the City of Tracy. These contracts were assigned from Banta Carbona Irrigation District and West Side Irrigation District to the City of Tracy. The effects of this water delivered to the City of Tracy, together with the effects of interdependent actions, have been addressed through the section 10(a)(1)(B) permit issued to the City of Tracy for implementation of the San Joaquin Multi-Species Conservation Plan for a period of fifty years. The permit expires in the year 2051. Reclamation has completed Endangered Species Act compliance through our April 15, 2003, biological opinion on these assignments (Service file 1-1-03-F-0128). Approval of these assignments by Reclamation will not result in effects to listed species not anticipated and covered by the section 10(a)(1)(B) permit issued to the City of Tracy, and the biological opinion for the contract assignments.

### *Conclusion*

Therefore, for all species and critical habitat within the service areas of the PVWMA and City of Tracy, unless new information indicates that the action will affect them in a way not considered, no further consultation under the ESA is necessary. If new information comes to light that indicates the action may affect them, please contact us immediately.

### **Species that May be Adversely Affected by the Proposed Federal Action**

Table 2 shows species within the action area of the proposed federal action for the contracts for which we have determined that renewal may adversely affect federally listed species.

Contra Costa goldfields, robust spineflower, and showy Indian clover have been extirpated from Santa Clara County (California Native Plant Society 2006). We have determined that the proposed federal action is not likely to adversely affect the western snowy plover, because it nests and forages on dikes and salt ponds adjacent to San Francisco Bay which are not likely to be affected by interrelated or interdependent actions of CVP M&I water deliveries (primarily urban and industrial development) during the interim contract period.

Federally listed salmonids and their critical habitat, as well as the southern Distinct Population Segment of the North American green sturgeon (*Acipenser medirostris*) occur within or downstream of Interim contract service areas. These species are under the jurisdiction of the NOAA Fisheries

**Table 2.** Species and critical habitat within the action area considered in this biological opinion (13 of 15 contracts; see explanation above).

Common Name	Scientific Name	Federal Status	Critical Habitat
<b>CROSS VALLEY UNIT</b>			
Blunt-nosed leopard lizard	<i>Gambelia silus</i>	Endangered	
California jewelflower	<i>Caulanthus californicus</i>	Endangered	
California tiger salamander Central population	<i>Ambystoma californiense</i>	Threatened	Units 2,3
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	Endangered	
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	Units 24B, 27B
<b>SANTA CLARA VALLEY WD</b>			
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	Threatened	Units 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
California clapper rail	<i>Rallus longirostris obsoletus</i>	Endangered	
California least tern			
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened	Proposed STC-1A and 1B.
California tiger salamander Central population	<i>Ambystoma californiense</i>	Threatened	Units 3,5,6,7,8,9,10 a and 10b, 11,12
Coyote ceanothus	<i>Ceanothus ferrisiae</i>	Endangered	
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered	
Metcalf Canyon jewelflower	<i>Streptanthus albidus ssp. Albidus</i>	Endangered	
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	Endangered	
Santa Clara Valley dudleya	<i>Dudleya setchellii</i>	Endangered	
Pacific Coast population, Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	
<b>WESTLANDS WD #1</b>			
Blunt-nosed leopard lizard	<i>Gambelia silus</i>	Endangered	
California jewelflower	<i>Caulanthus californicus</i>	Endangered	
Giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered	
San Joaquin kit fox	<i>Vulpes macrois mutica</i>	Endangered	
San Joaquin wooly-threads	<i>Monolopia congdonii</i>	Endangered	
<b>WESTLANDS WD #2</b>			
San Joaquin kit fox	<i>Vulpes macrois mutica</i>	Endangered	

### Changes Since 2006

Changes in this list of species since 2006 include the final listing of the California tiger salamander Distinct Population Segment as a threatened species; final designation of critical habitat for the Central Distinct Population Segment of the California tiger salamander; final

designation of critical habitat for 15 vernal pool species; and the April 13, 2006 Designation of Critical Habitat for the California Red-Legged Frog, and Special Rule Exemption Associated With Final Listing for Existing Routine Ranching Activities; Final Rule 71 FR 19243 19346. Additional information on these actions can be found in the sections **Environmental Baseline** and **Status of Species in the Action Area**.

### **Consultation History**

*April 5, 2000:* Reclamation provides a memo to the Service regarding the status of Coordination with California Department of Pesticide Regulation (CDPR) in a joint effort to provide endangered species information to pesticide users consistent with conservation measure 2a. of the 2000 Interim Contract Renewal biological opinion.

*January 30, 2001:* Request from Reclamation to the Service initiating formal consultation for interim CVP water service contracts for the period of February 2001 to February 2002.

*February 5, 2001:* Reclamation provides to the Service a copy of the Draft Supplemental Environmental Assessment for the Renewal of Interim Water Service Contracts through February 28, 2002, Central Valley Project, California, and the draft Finding of No Significant Impact dated February 2, 2001.

*June 19, 2001:* The Service submits a memo to Reclamation regarding concerns over exceedences of selenium levels in wetland water supply channels in the Grasslands Area, and how actions that Reclamation undertakes may influence these exceedences. The memo asked Reclamation to determine if reinitiation of the Interim contract biological opinion was warranted, and further asked Reclamation take steps to correct these selenium issues before initiating consultation with the Service on long-term contract renewal for the Delta Mendota Canal Unit, or an additional interim renewal of the contract.

*June 27, 2001:* Letters to the Service from the Board of Supervisors, County of Santa Clara and from Board of Directors, Santa Clara Valley Water District which includes commitments on the part of Santa Clara County to participate in the 1) preparation of a multi-species HCP/NCCP with the goal of completing a final HCP/NCCP and submitting an application for incidental take permits within 5 years; and, 2) establish an interim process that will keep conservation and recovery options open for affected species, and to ensure County compliance with ESA and the California ESA with regard to the issuance of discretionary permits, excluding agricultural activities, where federal jurisdiction applies, during the period prior to approval of the HCP.

*November 6, 2003:* Reclamation requests initiation on 59 interim renewal contracts for the period March 1, 2004 through February 28, 2006.

*February 19, 2004:* Service receives supplemental information regarding presence of critical habitat, Natural Diversity Database records, and other baseline information for interim contractors.

*January 13, 2006:* Reclamation initiates consultation on interim renewal of 18 CVP water service contracts for the period of March 1, 2006 through February 29, 2008.

February 28, 2006: Service receives supplemental information on each 2006 interim renewal contract indicating the contract's "purpose of use", the interim contract's existing "water shortage reliability", and states the year each 2006 interim contract's "purpose of use" became mixed Ag and M&I.

## **Project Description**

The proposed action is to execute up to 15 CVP water service contracts for two consecutive one-year periods from March 1, 2008 through February 28, 2010.

In addition, we have determined that interim renewal of the contract assignments to the City of Tracy have been addressed by issuance to the City of an incidental take permit in accordance with ESA section 10(a)(1)(B) for implementation of the San Joaquin County Multi-Species Conservation Plan, and that the two proposed water assignments will not result in effects not anticipated or covered by that permit. PVWMA has no infrastructure to divert or deliver CVP water at this time, and will not have that capacity during the interim renewal period. As a result, the effect of interim renewal of the partial assignment to PVWMA will not be further addressed in this opinion; however, the effects of interim renewal of the partial assignment to SCVWD and Westlands WD will be addressed herein.

The remaining interim contracts fall within the following divisions or units of the CVP: Cross Valley Unit (n=8 contracts), and Delta Division (n= 7 contracts), which includes 3 partial contract assignments. All contracts proposed for interim renewal were analyzed in our 2004 biological opinion.

To facilitate analysis, we have grouped the interim contracts by geographic region.

### **Westlands Water District #1 and #2**

Westlands Water District #1 and #2 are in the San Luis Unit on the west side of the San Joaquin Valley. The Broadview Water District (in the Delta Mendota Canal Unit) has assigned their entire contract to Westlands Water District #1 (WWD#1). As a result, water associated with the Broadview contract will actually be applied within WWD#1. A biological opinion was completed on February 19, 2005 for the use of the CVP long-term contract water in Broadview

Water District. However, because this water will be delivered to Westlands, which is in the San Luis Unit, the assignment and use of this contract water in Westlands will be reviewed in the biological opinion on renewal of long term contracts for the San Luis Unit (see **Contemporaneous Consultations**). The contract and the deliveries to Broadview are being covered in the interims until the assignment to Westlands is complete with the long term contract renewals for San Luis Unit. Once the long term contracts for the San Luis unit, and specifically for Westlands Water District, the Broadview contract will be incorporated into the Westlands long term contract and will no longer exist

Table 3. Interim contracts assigned to Westlands Water District #1 and #2

	<b>Contract Number</b>	<b>Quantity (ac-ft)</b>
<b>Westlands WD #1</b>		
Broadview WD	14-06-200-8092-IR10	27,000
Partial Assignment from Mercy Springs WD, 1999	14-06-200-3365A-IR10-C	6,260
Assigned from Centinella	7-07-20-W0055-IR10	2,500
Assigned from Widren	14-06-200-8018-IR10	2,990
<b>Total</b>		<b>38,750</b>
<b>Westlands WD #2</b>		
Partial assignment from Mercy Springs WD, 2003	14-06-200-3365A-IR10-C	4,198

Effects of contract water deliveries under the subject contracts within the Westlands Water District have been addressed in our 2000, 2002, 2004, and 2006 biological opinions on interim renewal of CVP contracts. We hereby incorporate by reference those opinions, and provide the supplemental analysis below. No new species have been listed, or critical habitat designated, within this water district since the 2006 biological opinion.

### **Santa Clara Valley Water District**

Santa Clara Valley Water District includes all of Santa Clara County. The CVP place of use, however, does not include the entire county. Although water is commingled, CVP water can only be applied in the CVP place of use and the SCVWD must show they have needs for the water within the CVP place of use. As a result, this analysis is based on use of water within the CVP place of use within SCVWD.

Included in the 2002, 2004, and 2006 interim renewal and this 2008 interim renewal is the delivery of water from the partial assignment of Mercy Springs Water District in the Delta Mendota Canal Division to Westlands Water District Distribution District #1, and Santa Clara Valley WD. Mercy Springs Water District assigned 6,260 acre-feet of its CVP Contract to the Pajaro Valley Water Management Agency (PVWMA), Westlands Water District Distribution District #1, and the Santa Clara Valley WD in 1999. [In conjunction with this Partial Assignment, PVWMA, Santa Clara Valley WD and Westlands WD Distribution District #1

executed the "Agreement Relating to Partial Assignment of Water Service Contract" (Related Agreement).

- Generally, the Related Agreement allows Santa Clara Valley WD and Westlands WD Distribution District #1 to take delivery of the water on an interim basis unless and until the PVWMA is eventually ready to take delivery of the CVP water for beneficial use in its service area.] PVWMA could begin to take delivery in year 10 of the contract (2009), but for purposes of this project description, PVWMA is assumed to take water after year 20 of the assignment. According to the contract, ... "during the first Ten (10) years following the effective date of this Agreement, the total quantity of the water delivered to Santa Clara shall not exceed Twenty-five (25) percent of the total Subject Water Supply provided by the United States during said Ten (10) year period,..." No water was delivered to SCVWD under this contract in water year 2004 or 2005 to date (USBR in litt., 2006).

The proposed action does not include an analysis of the construction of a conveyance structure or effects of the delivery of CVP water to PVWMA's service area.

Effects of contract water deliveries under the subject contract within the Santa Clara Valley Water District (SCVWD) have been addressed in our 2000, 2002, and 2004 biological opinions on interim renewal of CVP contracts. We hereby incorporate by reference those opinions, and find that effects to the listed species addressed in the 2001, 2002, 2004, and 2006 biological opinion within the SCVWD need not be further addressed.

Since we issued the 2006 biological opinion on interim contract renewals, 19,746-acres was proposed as critical habitat in Santa Clara and San Mateo counties for the threatened Bay checkerspot. Critical habitat units 5 thru 12 are contained in the place of use for SCVWD.

Supplemental analysis is herein provided for these species and critical habitat (red-legged frog Units STC - 1A and STC - 1B) for interim renewal of the SCVWD contracts

### **Cross Valley Unit**

The Cross Valley Unit consists of the contractors shown above in Table 2. Under their interim contracts, they will be enabled to receive up to 128,300 acre-feet of CVP water. The Cross Valley Unit contractor service areas are located along the eastern edge of the San Joaquin Valley. The Sacramento Fish and Wildlife Office issued a no jeopardy biological opinion on long term renewal of the Cross Valley Unit CVP water service contracts on January 19, 2001 (Service File No. 1-1-01-F-0825). Reclamation, however, has not yet executed the long term contracts. Reclamation and the Cross Valley contractors have committed to comply with the requirements in the biological opinion addressing the long term contracts.

Effects of contract water deliveries within the Cross Valley Unit have been addressed in subsequent biological opinions on interim renewal of these contracts in 2002, 2004 and 2006. We hereby incorporate by reference those opinions, and find that effects to the listed species

addressed in the 2001, 2002, 2004, and 2006 biological opinion within the Cross Valley Unit need not be further addressed except as updated herein.

Supplemental analysis is herein provided for these species and critical habitat for interim renewal of the Cross Valley CVP contracts.

### **Interim Contracts**

Execution of interim contracts is needed to continue delivery of CVP water to interim contractors until the long-term contracts can be executed. The period of renewal for each interim contract would be for up to two years, as permitted under subsection 3404(c)(1) of the CVPIA. The current contract provisions are those that are included in the existing water service contracts, with only minor, administrative changes to the contract provisions. Existing contract provisions such as payment, water quality, water measurement, water conservation, water shortage, discretionary provisions of the Reclamation Reform Act, Endangered Species Act compliance, and standard articles have not changed. Interim CVP water contract renewals are not subject to the tiered pricing provisions of the CVPIA.

In addition, Article 3(b) of the existing Interim renewal contracts includes mutual and dependent covenants mutually agreed upon by the parties, related to Water to be Made Available and Delivered to the Contractor as follows, "The Contractor shall utilize the Project Water made available to it pursuant to this interim renewal contract in accordance with all applicable requirements of any Biological Opinion addressing the execution of this interim renewal contract developed pursuant to section 7 of the ESA of 1973 as amended, and in accordance with environmental documentation as may be required for specific activities, including conversion of Irrigation Water to M&I Water." Part of the Service and Reclamation strategy to ensure compliance with the ESA includes a commitment for Reclamation to "provide necessary information to the Service's Sacramento Fish and Wildlife Office (SFWO) Endangered Species Division in situations where a determination of *no affect* [*sic*] has been made, sufficiently in advance, to enable the Service's review. Reclamation actions subject to this requirement include conversion of Irrigation Water to M&I water (CVPIA programmatic biological opinion, p. 2-70, Service File no. 1-1-98-F-0124).

Water will be delivered to the interim water service contractors and Cross Valley Unit contractors in quantities up to the contract totals. These 2008 interim renewal contract quantities remain the same as in the existing water service contracts.

No changes to district boundaries are part of the proposed action. Reclamation will consult with or notify the Service (as appropriate) on future inclusions and exclusions to any interim renewal contract service-area boundaries if any inclusions, exclusions, or annexations affect listed species. The Service Area boundary for the County of Fresno has changed since the 2006 biological opinion, and this change was dealt with under separate ESA compliance with the Service (Service File 1-1-06-TA-0822)

No water transfers are part of the proposed action. Appropriate environmental compliance and section 7 consultations will be completed for any other requests from interim contractors for Reclamation approval of CVP water transfers.

Warren Act contracts for conveyance of non-federal water using federal facilities are not part of the proposed action. The Mendota Pool Pumpers Exchange Agreement and other non-Central Valley Project Waters that are pumped into the Mendota Pool are also not part of the proposed action.

Potential impacts arising from future assignments of water are also not included in the proposed action. They are separate independent actions and require their own NEPA and ESA compliance.

Changes to the existing Operations and Criteria and Plan (OCAP) were addressed in our February 15, 2005 biological opinion (Service File No. 1-1-05-F-0055) and are discussed below in the **Environmental Baseline**.

### **Action Area**

The action area for this consultation comprises the aggregate service areas of the 15 contracts for which we determined that interim renewal may adversely affect listed species (see **Description of the Proposed Action**) organized roughly as follows: Western San Joaquin Valley (Westlands Water District #1 and #2); Eastern San Joaquin Valley (Cross Valley Contractors); and the CVP place of use within the Santa Clara County (SCVWD). In addition, the diversions and contractual entitlements addressed in this consultation have interrelated effects throughout the rivers, storage facilities, and Sacramento/San Joaquin River Delta that constitute the CVP water supply because Reclamation operates the CVP as an integrated system with the State Water Project in accordance with the Operations Criteria and Plan (OCAP) and the Coordinated Operations Agreement. We therefore incorporate by reference the action area addressed in our February 15, 2005, OCAP biological opinion (File No. 1-1-05-F-55), and refer the reader to that document for a review of all effects on the greater aquatic system.

### **Related Consultations**

We are currently engaged in formal or informal consultation with Reclamation on the following related actions in the action area:

- Long term contract renewals for the San Luis Unit
- Long term contract renewal for the City of Tracy
- Operations Criteria and Plan (OCAP)

### **Environmental Baseline and Status of the Species in the Action Area**

Please refer to the 2000 Interim biological opinion for a discussion of baseline conditions for most species. This section provides important updates as well as baseline information for species

added in the current consultation. More detailed information regarding species distribution, biology and conservation needs can be found in the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998a); Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS 1998); Final Recovery Plan for the California Red-legged Frog (USFWS 2002a), and the Draft Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2004).

### **Completed Consultations on CVP Actions**

#### ***Central Valley Project Improvement Act Programmatic Biological Opinion***

This long-term water service contract renewal consultation tiers from the November 2000 Programmatic *Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP* (CVPIA PBO) (U.S. Fish and Wildlife Service 2000a) to address incremental and cumulative effects of the proposed renewal action. This tiering automatically carries forward all conservation measures and other components of the Project Description of the CVPIA PBO into the environmental baseline for this consultation on the long term renewal of the Roseville Contract. Reclamation's program to implement the CVPIA included the renewal of all existing CVP contracts as a core program (CVPIA PBO page 2-29 to 2-36).

The CVPIA Project Description listed eight significant areas of commitment that provided the basis of the PBO no jeopardy finding (Page 2-50 to 2-71).

Commitment 8 on Page 2-70 of the CVPIA PBO requires Reclamation to "provide necessary information to the Service's SFWO Endangered Species Division" on CVP actions "where a determination of *no effect* has been made, sufficiently in advance, to enable the Service's review". This commitment applies to all future Central California Area Office's CVP or CVPIA actions, including those specifically listed above under "Related Actions Not Part of the Proposed Action Project Description".

Since the issuance of the CVPIA PBO in 2000, Reclamation has been working with the Service to address each CVPIA PBO commitment associated with long-term contract renewal of CVP water service contracts and/or refine them so that they are clearly understood and meet the original intent of avoiding and/or addressing impacts to listed species related to the renewal of long-term water contracts. Reclamation has stated that all CVPIA PBO commitments associated with long-term contract renewal of CVP water contracts will or have been addressed to ensure that the renewal of the long-term Settlement Contracts fully comports with the requirements of the CVPIA PBO and Endangered Species Act as it pertains to federal actions.

Reclamation is committed to implement all conservation measures described in the CVPIA PBO consultation. The following is a list of the more significant measures:

The Central Valley Conservation Program - A program funded by Reclamation and jointly implemented by Reclamation and the Service that funds activities and land conservation strategies that address species that have been impacted by the CVP.

CVPIA (b)(1) Other Program - A CVPIA program jointly administered by the Service and Reclamation specifically designed to address needs of listed species that have been impacted by the CVP.

Wildlife Habitat Augmentation Program - This was part of a program identified in the CVPIA PBO as a Wetlands Development Program. That program was terminated but those portions of the Wetland Development program that were related to commitments related to listed species were retained, reorganized and renamed. This program funds activities that have a general benefit to listed species, particularly those related to wetlands.

Comprehensive Mapping Program - This continuing Reclamation program develops spatial data on lands/habitat types and presence of species on lands that are related to CVP actions, specifically the service areas of the CVP contracts. This provides important information of the extent of habitats, trends in land use and known occurrences of listed species.

### ***Central Valley Project Operations Criteria and Plan (OCAP)***

The OCAP describes the coordinated operation of the CVP and State Water Project (SWP) by Reclamation and the California Department of Water Resources. On July 30, 2004, the Service issued biological opinion 1-1-04-F-0140, which addressed the effects of operating the CVP/SWP and delivering CVP water for renewing water contracts and other actions on the threatened delta smelt (*Hypomesus transpacificus*). On February 15, 2005, the Service issued biological opinion 1-1-05-F-0055 in response to Reclamation's November 3, 2004 request for reinitiation of formal consultation on the OCAP to address potential critical habitat issues and effects of the OCAP on delta smelt.

On April 7, 2006, NOAA Fisheries listed the southern distinct population segment of North American green sturgeon as threatened under the Endangered Species Act. The operators of the CVP and SWP facilities may be required to alter the releases from the dams or to change the pumping regime from the Delta to avoid affecting this species or habitat suitable for its use. Because this newly listed species had not been consulted on under Section 7 of the Act Reclamation requested that NOAA Fisheries consultation on OCAP be reinitiated. Because of the potential for revising the OCAP, Reclamation requested that the Service also reinitiate consultation on delta smelt. This formal request was received by the Service on July 6, 2006.

Subsequent to receiving this request for reinitiation consultation, Reclamation and the Natural Resources Defense Counsel (NRDC) *et al* reached a settlement on the long-standing lawsuit over the reestablishment of flows in the San Joaquin River from Friant Dam to the confluence with the Merced River. See the Friant Division (below) for additional details.

As a result of the changes to the operating regime that will result from the listing of the green sturgeon and the parties reaching a settlement in the NRDC vs Friant Water Users lawsuit, the OCAP consultation is re-analyzing the effects of numerous new actions on the delta smelt and its designated critical habitat, including storage of CVP and SWP water in reservoirs, water releases from reservoirs, river operations, operation of the Federal/State diversion facilities, and the CVP/SWP export-pumping operations in and through the Delta. The OCAP consultation will address the operation of the CVP/SWP in the Sacramento Valley, and included all commitments of the SWP and CVP, such as meeting requirements of the CVPIA PBO (USFWS 2000), the obligations contained in the Central Valley Water Quality Control Board water right permits, obligations of CVP water service contracts, Sacramento River Settlement contracts, San Joaquin exchange contracts, the Friant Settlement, and other requirements. Therefore, the OCAP BO will address all the aquatic effects of operating the CVP/SWP.

In contrast, the Service's consultations on the long-term water-service contract renewals addressing the diversion of water at prescribed diversion points and times for the use of that water on a specified land area (the contractors' service area). All renewal contracts, while identifying a full contract amount, recognize that the delivery of full contract amount is subject to availability of water and other obligations of the CVP (such as CVPIA and biological ESA consultation requirements). In other words, the contracts address a demand (among other demands) for CVP water and the OCAP consultation addresses how the CVP projects are operated to meet those demands. There clearly is a linkage between contract renewals and the operation of the CVP. These linkages must, and are being addressed in separate but parallel individual consultations such that all of the possible effects on listed species and designated critical habitat are being identified and consulted on.

### ***Central Valley Project Long-term Water Service Contract Renewals***

Reclamation either has renewed, or intends to renew about 119 CVP Water Service contracts throughout the Central Valley. All of the renewing CVP contracts are required by the *Biological Opinion on Implementation of the CVPIA (Central Valley Project Improvement Plan) and Continued Operation and Maintenance of the CVP* (CVPIA PBO) to incorporate provisions needed to comply with applicable law, including provisions of the CVPIA. Renewal contracts will incorporate applicable provisions of the CVPIA, including payment into the CVP Restoration Fund.

The CVP water service contracts include an annual maximum quantity of approximately 5.6 million af per year of CVP water and provide water service to approximately 3.2 million irrigable acres of land and an urban population in excess of 4.3 million people. The long term water contracts renewals, while authorizing a maximum contract amount, recognize that the delivery of the entire contract amount is subject to the availability of water and other CVP obligations.

For efficiency, Reclamation has grouped the CVP water-service contract renewal environmental-documents by similar regional issues. Reclamation requested separate consultations for the

following CVP regions: Shasta and Trinity Divisions, Sacramento River Division (Corning Canal, Tehama-Colusa Canal, and Black Butte Units), Feather River Water District, American River Division, Contra Costa Canal Unit, San Felipe Division, Delta-Mendota Canal Unit, and the West San Joaquin Division.

#### *Shasta and Trinity Divisions*

On August 17, 2004 the SFWO determined that renewing the CVP water service contract would not likely adversely affect listed species in four of the ten districts in the Division: Shasta County Water Agency, Bella Vista Water District (WD), Shasta Community Service District (CSD), and Mountain Gate CSD. On November 12, 2004 the same conclusion was reached for: City of Redding, City of Shasta Lake, and Clear Creek CSD. On March 17, 2005 consultation was completed on the remaining CVP contracts in this Division: the contracts for the Centerville Community Service Area, Shasta County Service Area 25 – Keswick, and the U.S. Forest Service – Centimundi Marina.

#### *Sacramento River Division*

On August 17, 2004 the SFWO determined that renewing the water service contract would not likely adversely affect listed species in 11 of the 20 districts in the Division: 4E WD, Colusa County WD, Corning WD, County of Colusa (including 7 sub-contracts), Davis WD, Dunnigan WD, Feather WD, Kanawha WD, La Grande WD, Orland-Artois WD, Stony Creek WD, and Westside WD. On November 12, 2004 the same conclusion was reached for Thomes Creek WD and reconfirmed for Corning WD, and Orland-Artois WD based on updated Exhibit A maps. On February 14, 2005 the same conclusion was reached for Proberta WD, and on February 15, 2005 informal consultation was completed on the contracts for Glide WD, Kirkwood WD, Stonyford WD, U.S. Forest Service, and Whitney Construction, Inc.

#### *Sacramento River Settlement Contracts*

In addition to the water service contracts, SFWO completed consultation on long-term renewal of 138 Sacramento River Settlement Contracts on February 18, 2005. On March 9, 2005 the consultation on the renewal of the Settlement Contract for the Natomas Central Mutual Water Company was completed; on May 12, 2005 consultation was completed on the renewal of the Settlement contracts for Anderson-Cottonwood Irrigation District and the City of Redding, and on May 26, 2005 consultation was completed on the long-term renewal of the water service contract for Colusa Drain Mutual Water Company. These contracts provide for a total of about 1.8 million af of base supply (based on prior water rights) and about 400,000 af of CVP contract water to the Settlement contractors.

#### *Delta Division*

Delta-Mendota Canal (DMC) Unit: On February 15, 2005 the SFWO determined that renewing the water service contract would not likely adversely affect listed species in 20 of the 21 districts in the DMC Unit. Consultation has also been completed for the contract to provide water to the San

Joaquin Veterans Cemetery. The contract for the City of Tracy has been deferred pending the conclusion of contract negotiations with Reclamation

Contra Costa County Water District: On March 11, 2005 the SFWO completed a formal consultation and conference on the renewal of this long-term renewal of this water service contract.

*Friant Division, Cross Valley Unit, Hidden and Buchanan Units*

The Friant Division consists of three units having a total of forty-one water districts; the Cross Valley Unit consists of eight water districts; and the Hidden and Buchanan Divisions. The consultation for the Friant and Cross Valley Division Contractors (FWS 1-1-01-F-0825) was completed on January 19, 2001. The CVP water delivery contracts for the Cross Valley Unit have never been executed and the Friant Division was the subject of on-going litigation that has challenged the validity of the biological opinions issued for these water delivery contracts.

Reclamation and NRDC *et al* have reached a settlement on the long-standing lawsuit over the reestablishment of flows in the San Joaquin River from Friant Dam to the confluence with the Merced River.

This settlement, formally announced on September 13, 2006, is based on two goals and objectives:

1. A restored San Joaquin River with continuous flows to the Sacramento-San Joaquin River Delta and naturally reproducing populations of Chinook salmon.
2. A water management program to minimize water supply impacts to San Joaquin River water users.

The parties will work together on a series of projects to improve the river channel in order to restore and maintain healthy salmon populations. Flow restoration is to be coordinated with these channel improvements, with spring and fall run Chinook salmon populations reintroduced in approximately six years. At the same time, the Settlement limits water supply impacts to Friant Division long-term water contractors by providing for new water management measures that are to be undertaken by Reclamation. These measures include: a recirculation plan that would allow Friant Division contractors to capture water from downstream areas after it has served its 'Restoration Purpose' and the water could be delivered to the contractor using either the SWP or CVP delivery system; and the creation of a 'Recovered Water Account' which would allow participating contractors to purchase water during certain wet conditions when water is available that is not needed to meet contractual obligations or Restoration Flows

Restoring continuous flows to the approximately 60 miles of dry river will take place in a phased manner. Planning, design work, and environmental reviews will begin immediately, and interim flows for experimental purposes will start in 2009. The flows will be increased gradually over the next several years, with salmon being re-introduced by December 31, 2012. The settlement

continues in effect until 2026, with the U.S. District Court retaining jurisdiction to resolve disputes and enforce the settlement. After 2026, the court, in conjunction with the California State Water Resources Control Board, would consider any requests by the parties for changes to the restoration program.

The agreement also requires that long-term Friant Division water service contracts be amended to conform to the contracts to the terms of the settlement.

These projects or consultations are not considered part of the Environmental Baseline because final biological opinions have not yet been issued for them.

### ***Operation and Maintenance of Central Valley Project Water Conveyance***

The CVPIA programmatic biological opinion (CVPIA PBO) anticipated that it may be desirable to cover some operations and maintenance (O&M) activities under long term contract renewal biological opinions (page 2-46). Pursuant to pages 2-46 to 2-49 of the CVPIA PBO and requirements of the biological opinions for CVP Interim Water-Service Renewal Contracts (1995, 1998, 2000, 2002), Reclamation has prepared regional operations and maintenance plans (O&M Plans) to describe the general and routine maintenance and operational procedures Reclamation conducts on their CVP facilities throughout California. Because Reclamation aggregated information at different geographic scales and levels of specificity for long term contracts and facility operation and maintenance, the Service determined it was necessary to conduct separate, but concurrent, consultation on operation and maintenance to meet Reclamation's target dates for long term contract renewal. On February 9, 2005 SFWO issued a biological opinion covering the O&M of the federal features in the American River Division. The service has also completed consultation on the O&M Plans for the Northern California Area Office (NCAO), the Central California Area Office (CCAO), and the South Central California Area Office (SCCAO), which includes the *Operations and Maintenance Guidelines, Integrated Pest Management Plans*, and Reclamation's *Listed Species Manual*. Those consultations analyzed effects of operation and maintenance of the CVP facilities associated with contract renewals, other than those effects analyzed in the OCAP biological opinion. The Service issued the biological opinion for the CCAO on February 9, 2005 (Service file number 1-1-05-F-0038), the biological opinion for the NCAO on February 14, 2005 (Service file number 1-1-05-F-0057) and the biological opinion for the SCCAO on February 17, 2005 (Service file number 1-1-05-F-0368).

### ***San Luis Drainage Feature Reevaluation***

The SFWO in consultation with Reclamation's Western Regional Office in Denver, Colorado, completed an evaluation of four alternative methods for providing drainage services for agricultural lands as part of the San Luis Drainage Feature Re-evaluation (SLDFR) project to determine the effects of the alternatives on protected species in Fresno and Kings Counties. The SLDFR planning area contains about 730,000 acres, most of which are intensively managed agricultural land. Of these 730,000 acres, about 379,000 acres are, or are projected to be, drainage impaired within the 50-year project planning horizon.

All phases of the project assume that farmers will be adopting on-farm and in-district drainage reduction actions regardless of which ultimate drainage solution alternative the Federal government selects. Drainage reduction actions include recycling drainwater, managing shallow groundwater and reducing canal seepage. Following on-farm and in-district actions, the alternatives include varying amounts of land retirement, reuse areas, conveyance collection systems, reverse osmosis treatment plants, selenium biotreatment facilities and evaporation basins. Common elements to all four alternatives include the treatment of reuse facility drainwater with reverse osmosis (RO) and selenium biotreatment before disposal in evaporation basins. Final selenium concentrations in the treated effluent from full-scale biotreatment plants would not exceed 10 ppb on average, and as determined necessary to minimize risk to wildlife, would include a post treatment oxidation step to convert residual selenium in the effluent to selenate.

On March 16, 2006 Reclamation and the Service completed ESA consultation on the SLDFR project, and on March 9, 2007 Reclamation signed the Record of Decision selecting the In-Valley/Water Needs/Land Retirement alternative described in the Final EIS, and to finalize an estimate of the Project costs, which is expected to confirm the need for new authorizing legislation to increase the appropriations ceiling beyond what was authorized by the San Luis Act (Act of June 3, 1960, 74 Stat. 156). Implementation of this project would also require appropriation of funds by Congress for implementation of the alternative and apportionment of such funds by the Office of Management and Budget.

Development of any such legislative proposal(s) for presentation to Congress would be subject to requirements of Exec. Order No. 12,322; 46 Fed. Reg. 46,561 (1981), and Circular No. A-19 of the Office of Management and Budget; as well as the President's authority to make such legislative recommendations to Congress as he shall judge necessary and expedient. The In-Valley Water Needs Land Retirement Alternative is the plan closest to the Westside Regional Drainage Plan. The In-Valley Water Needs Land Retirement Alternative includes drainage reduction measures, drainage water reuse facilities, treatment systems, and evaporation ponds. It also includes retiring 194,000 acres of land from irrigated farming (44,106 acres have already been retired).

### **Santa Clara Valley Water District**

The Project Description for the 2002 interim contract renewal consultation included a commitment that Santa Clara County Water District would complete a biological assessment for their stream maintenance program. The biological assessment was completed and the Sacramento Fish and Wildlife Office issued a no jeopardy biological opinion on a 10-year stream maintenance permit on July 5, 2002 (Service file no. 1-1-F-0314).

### **Conservation Measures**

CVPIA workplans provide information on accomplishments of the CVPIA Habitat Restoration Program for listed species for 2002-2003. The status of other conservation measures that are part of the environmental baseline is contained in the information accompanying the request for

consultation (Attachment 5). Reclamation has committed to continued implementation of the conservation actions included in the CVPIA programmatic biological opinion of 2001 (Service File No. 1-1-98-F-0124).

## **Species and Designated Critical Habitat**

### **Critical Habitat – Conformance with Gifford Pinchot**

This document does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete the section 7(a)(2) analysis with respect to critical habitat.

### **Central California tiger salamander Distinct Population Segment (DPS).**

Status: The California tiger salamander was federally listed as threatened throughout its range on August 4, 2004 (69 FR 47213). This rule finalized the proposed reclassification from endangered to threatened of the Santa Barbara and Sonoma distinct population segments (DPSs) of California tiger salamander, the proposed listing of the Central DPS of the California tiger salamander as threatened, and eliminated listing status for the individual DPSs. Detailed information about the Central population of the tiger salamander can be obtained in this document. In the final listing rule we also finalized a special rule exempting routine ranching activities from the definition of take in section 9 of the Endangered Species Act and Service regulations at 50 CFR 17.31. The special rule was finalized in accordance with section 4(d) of the Endangered Species Act.

On October 13, 2004, a complaint was filed in the U.S. District Court for the Northern District of California (*Center for Biological Diversity and Environmental Defense Council v. U.S. Fish and Wildlife Service et al.* (Case No. C-04 4324)). On August 19, 2005, a court order was filed on the above complaint, which upheld the section 4(d) rule exempting routine ranching activities from section 9 prohibitions, but vacated the downlisting of the Santa Barbara and Sonoma populations and reinstated their endangered status as distinct population segments. By vacating the downlisting of the other two DPSs, this action also re-established separate listing status for the Central DPS of the California tiger salamander as threatened.

Tiger salamanders continue to be threatened by human activities. Current factors associated with declining populations of the tiger salamander include continued destruction, degradation, and fragmentation of habitat due to urbanization, and conversion to intensive agriculture. Other factors that contribute to the decline of the species include hybridization with nonnative tiger salamanders and nonnative predators. Isolation and fragmentation of habitats within many watersheds precludes dispersal between sub-populations and jeopardized the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange

individuals through dispersal, and are capable of colonizing or “rescuing” extinct habitat patches).

The California tiger salamander occurs in the Coast Ranges in southern Sonoma County, San Mateo County south to San Luis Obispo County, and northwestern Santa Barbara County. In the Central Valley and Sierra Nevada foothills the species is patchily distributed from northern Yolo County southward to northwestern Ken County and northern Tulare and Kings County.

**Species Description and Life History.** The tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 207 mm (8.2 in). Tiger salamanders exhibit sexual dimorphism; males tend to be larger than females. Coloration of the tiger salamander is white or yellowish markings against black. As adults, tiger salamanders tend to have the creamy yellow to white spotting on the sides with much less on the top, whereas other tiger salamanders have brighter yellow spotting with more on the top. The eggs of tiger salamander are usually laid singly or in small clusters of two to four, whereas the eastern tiger salamander lays eggs in larger globular or oblong masses consisting of from 23 to 110 eggs (Bishop 1943; Stebbins 1962).

Tiger salamanders require both wetland and adjacent upland habitat to complete their life cycle (Shaffer *et al* 1993). During the rainy season tiger salamanders breed in wetlands, where their aquatic larvae complete their development and metamorphosis. At the onset of the dry season metamorphosed juveniles and adults retreat to burrows in nearby uplands and enter estivation (a state of dormancy or inactivity in response to hot, dry weather). Each year breeding salamanders migrate back and forth between their upland estivation habitat and wetland breeding habitat.

Vernal pools are important California tiger salamander breeding habitat in the Central Valley, Southern San Joaquin Valley, and Sonoma County. Stock ponds have become important breeding habitat in the Bay Area, Coast Ranges, and Santa Barbara regions, largely due to destruction of vernal pool habitat in these regions.

Tiger salamanders spend much of their adult lives in small mammal burrows, particularly those of ground squirrels and pocket gophers (Loredo and Van Vuren 1996; Trenham 1998a). During summer estivation, tiger salamanders apparently eat very little, but they may emerge from estivation to feed during cool, moist nights (Shaffer *et al* 1993). Between November and January, the first heavy fall and winter rains prompt adults to emerge from the burrows at night, feed, and migrate to the breeding ponds (Storer 1925; Stebbins 1985; Shaffer *et al* 1993; Loredo and Van Vuren 1996; Trenham 1998b). Migration distances between estivation and breeding sites vary widely, with most observations ranging from 100 to 1600 m (330 to 5280 ft.) (Austin and Shaffer 1992; Hunt 1998; Trenham 1998a).

**Factors Affecting Population Size.** Populations of tiger salamanders likely fluctuate from year to year. When conditions are favorable, tiger salamanders may experience extremely high rates of reproduction and thus produce large numbers of dispersing young with a concomitant increase in the number of occupied sites. In contrast, tiger salamander populations may temporarily decrease in an area when conditions are stressful (*e.g.*, drought). Nonnative predators such as

bullfrogs, mosquitofish, sunfish, catfish, and bluegill may affect local population size by diminishing or eliminating California tiger salamander larvae in individual ponds. Control of burrowing mammals also may affect local population size of California tiger salamander by destroying estivation habitat and possibly estivating salamanders. Lifetime reproductive success for California and other tiger salamanders is low; the mechanisms for recruitment depend on numerous factors, including migration, terrestrial survival, and population turnover, whose interaction is not well understood (Trenham 1998b). It is thought that reproductive output in most years is not sufficient to maintain populations, which suggests that the species requires occasional large breeding events to prevent extirpation (Trenham *et al.* 2000). With such low recruitment, isolated populations are susceptible to unusual, randomly occurring natural events as well as from human-caused factors that reduce breeding success and individual survival. Factors that repeatedly lower breeding success in isolated vernal pools or ponds can quickly lead to localized extirpation.

**Historical Distribution.** Historically, the tiger salamander inhabited low elevation grassland and oak savanna plant communities of the Central Valley, adjacent foothills, and the inner Coast Ranges in California (Storer 1925; Shaffer *et al.* 1993) from sea level up to about 1,500 feet. Along the Coast Ranges of California, the species occurred from the Santa Rosa area of Sonoma County south to the vicinity of Buellton in Santa Barbara County. In the Central Valley and surrounding foothills, the species occurred from northern Yolo County (Dunnigan) and southern Butte County southward to northwestern Kern County and northern Tulare County.

**Reasons for Decline and Threats to Survival.** A primary cause of the decline of the California tiger salamander is the conversion of habitat for urban and agricultural activities (D. Wake *in litt.* 1992; T. Jones *in litt.* 1993, Shaffer *et al.* 1993, U.S. Fish and Wildlife Service 2004b, CNDDDB 2004). Some of the largest remaining subpopulations are in areas severely threatened by new urban development, including the Livermore Valley, Santa Clara Valley, and Fresno areas. In addition to direct loss of habitat, the widespread conversion of land to residential and agricultural uses has fragmented habitat throughout the range of the tiger salamander and has isolated remaining populations (Shaffer *et al.* 1993). Urban effects include housing, commercial, and industrial developments; road construction and widening; golf course construction and maintenance; trash dumping, landfill operation and expansion; and operation of gravel mines and quarries.

Agricultural effects include discing and deep-ripping; and cultivation, planting and maintenance of row crops, orchards, and vineyards. Historically, approximately 15.59 million acres of valley and coastal grasslands blue oak/foothill pine, valley oak, or mixed hardwood lands (Kuchler 1988), existed. Urbanization and intensive agriculture have eliminated virtually all valley grassland and oak savanna habitat from the Central Valley floor. Currently there are about 1.1 million acres where the tiger salamander potentially is still extant.

The relative loss of habitat has been even more extreme with respect to vernal pools, the historic breeding habitat of the tiger salamander. Remaining vernal pool complexes are now fragmented and reduced in area. Where vernal pools remain, they are often disturbed and degraded by drainage modification, overgrazing, off-road vehicle use, non-native plant invasion, trash

dumping, road construction, and urban development (Jones and Stokes Associates 1987, U.S. Fish and Wildlife Service 1994c, Keeler-Wolf *et al.* 1998).

While the California tiger salamander does breed successfully in stockponds, they often are poorer habitat for tiger salamanders than natural vernal pools. Hydroperiods may be so short that larvae cannot metamorphose, or so long that predatory fish and bullfrogs (*Rana catesbeiana*) can colonize the pond (Shaffer *et al.* 1993, Seymour and Westphal 1994). Extirpation of a tiger salamander occurrence is likely if fish are introduced (Shaffer *et al.* 1993, Seymour and Westphal 1994).

A number of nonnative species have adversely affected the California tiger salamander through predation and competition. A strong negative correlation exists between bullfrog presence and tiger salamander presence (Shaffer *et al.* 1993, Seymour and Westphal 1994). Morey and Guinn (1992) documented a shift in amphibian community composition at a vernal pool complex, with salamanders becoming proportionally less abundant as bullfrogs increased in number. Western mosquitofish (*Gambusia affinis*) have also likely adversely affected tiger salamanders via predation and competition. Loredó-Prendeville *et al.* (1994) failed to find any tiger salamanders inhabiting ponds containing mosquitofish. About 50 local mosquito abatement districts plant the fish throughout the state (Boyce *in litt.* 1994). Wild pigs (*Sus scrofa*) have had pronounced negative ecological effects on tiger salamanders (Waithman *et al.* 1999). Detrimental effects of wild pigs include both predation and habitat modification.

A number of other non-native species have either been directly implicated in predation of tiger salamander or appear to have the potential for such. Introductions of largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), catfish (*Ictalurus* spp.), and fathead minnows (*Pimephales promelas*) likely eliminated tiger salamanders from several breeding sites in Santa Barbara County (U.S. Fish and Wildlife Service 2000b). Non-native sunfish, catfish, and bullheads (*Ameiurus* spp.) have been and still are widely planted in ponds in California for sportfishing. Crayfish (*Pacifastacus*, *Orconectes*, and *Procambarus* spp.) are also known to prey on California newt eggs and larvae, despite toxins they produce (Gamradt and Kats 1996).

Like most amphibians, tiger salamanders inhabit both aquatic and terrestrial habitats at different stages in their life cycle. Therefore, they are exposed to both aquatic and terrestrial pollutants due to their highly permeable skin (Blaustein and Wake 1990). Oil and other contaminants from road runoff have been detected in ponds and linked to die-offs of and deformities in tiger salamanders and spadefoot toads (*Scaphiopus hammondi*) as well as die-offs of invertebrates that form most of both species' prey base (S. Sweet, *in litt.*, 1993).

During 2001, the 23 counties where tiger salamanders occur used over 105 million pounds of pesticides (California Department of Pesticide Regulation Internet website, December 2002), some of which are extremely toxic to aquatic organisms, including amphibians and the organisms on which they prey. Some of these pesticides, such as chlorpyrifos, malathion, and endosulfan are cholinesterase inhibitors. Reduced cholinesterase activity has been linked to uncoordinated swimming, increased vulnerability to predation, depressed growth, and increased mortality in tadpoles (Berrill *et al.* 1998, Bridges 1997, de Lamas *et al.* 1985, Rosenbaum *et al.*

1988, Sparling *et al.* 2001). Even when toxic or detectable amounts of pesticides are not found in breeding ponds or groundwater, salamanders may still be affected, particularly by chemicals applied during the migration and dispersal seasons. Sparling *et al.* (2001) examined pesticide usage and amphibian (*Rana* and *Bufo* spp.) population declines in California and provided evidence that pesticides are instrumental in declines of these species.

Widespread control of ground squirrels and pocket gophers may pose a significant threat to the tiger salamander. Ground squirrel control is done by trapping, shooting, fumigation, toxic (including anticoagulant) baits, and habitat modification, including deep-ripping of burrow areas (UCIPM Internet website, January 2003). Ground squirrel and pocket gopher control may have the indirect effect of reducing the number of upland burrows available to specific tiger salamander subpopulations (Loredo-Prendeville *et al.* 1994).

Light to moderate livestock (cattle, sheep, and horses) grazing is generally thought to be compatible with continued successful use of rangelands by the tiger salamander, provided the grazed areas do not also have intensive burrowing rodent control efforts (T. Jones, *in litt.* 1993, Shaffer *et al.* 1993, S. Sweet, pers. comm. 1998, Shaffer and Trenham, pers. comm., 2003). By maintaining shorter vegetation, grazing may make areas more suitable for ground squirrels whose burrows are essential to tiger salamanders.

**Conservation Needs.** Conservation of the California tiger salamander requires a five-pronged approach: (1) maintaining the current genetic structure across the species' range; (2) maintaining the current geographic, elevational, and ecological distribution; (3) protecting the hydrology and water quality of breeding pools and ponds; (4) retaining or providing for connectivity between breeding locations for genetic exchange and recolonization; and (5) protecting sufficient barrier-free upland habitat around each breeding location to allow for sufficient survival and recruitment to maintain a breeding population over the long term. Specific actions that help meet these goals include, but are not limited to, protection, restoration, and management of large blocks of contiguous aquatic and terrestrial habitat; management of stock ponds to eliminate or reduce populations of nonnative predators; elimination of nonnative tiger salamanders and their hybrids; and reduced exposure to contaminants, particularly in the vulnerable larval stages.

### ***Status of the Central DPS of the California Tiger Salamander in the Action Area***

The 2004 interim renewal biological opinion included a conference opinion on the effects of interim contract renewal on the then proposed Central Distinct Population Segment of the California tiger salamander. We hereby incorporate by reference that conference opinion and adopt it as our biological opinion for the 2008 to 2010 interim contract renewals for the Cross Valley Unit and the SCVWD. The California tiger salamander has been documented in the service area of the following interim contractors:

- Cross Valley Unit: County of Fresno, Hills Valley ID, Tri-Valley ID
- Santa Clara Valley Water District (SCVWD)

According to information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within most of the service areas of interim contractors with California tiger salamander records have been fairly stable for the period from 1993 to 2000, with the exception of the SCVWD, which showed an increase of 1,358 acres of urban lands (changed from irrigated agriculture, grassland, and woodland); and an increase of 38 acres of grassland (changed from irrigated agriculture and shrubland).

### **San Joaquin Kit Fox**

#### Listing.

The San Joaquin kit fox was listed as an endangered species on March 11, 1967 (Service 1967) and was listed by the State of California as a threatened species on June 27, 1971. This canine is the umbrella species for the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998).

#### Description.

The kit fox is the smallest canid species in North America and the San Joaquin kit fox is the largest subspecies in skeletal measurements, body size, and weight. Adult males average 80.5 centimeters (31.7 inches) in total length, and adult females average 76.9 centimeters (30.3 inches) in total length (Grinnell et al 1937). Kit foxes have long slender legs and are approximately 30 centimeters (12 inches) high at the shoulder. The average weight of adult males is 2.3 kilograms (5 pounds), and the average of adult females is 2.1 kilograms (4.6 pounds) (Morrell 1972).

General physical characteristics of kit foxes include a small, slim body, relatively large ears set close together, narrow nose, and a long, bushy tail tapering slightly toward the tip. The tail is typically carried low and straight.

Color and texture of the fur coat of kit foxes varies geographically and seasonally. The most commonly described colorations are buff, tan, grizzled, or yellowish-gray dorsal coats (McGrew 1979). Two distinctive coats develop each year: a tan summer coat and a silver-gray winter coat (Morrell 1972). The ear pinna (external ear flap) is dark on the back side, with a thick border of white hairs on the forward-inner edge and inner base. The tail is distinctly black-tipped.

#### Historical and Current Range.

In the San Joaquin Valley before 1930, the range of the San Joaquin kit fox extended from southern Kern County north to Tracy, San Joaquin County, on the west side, and near La Grange, Stanislaus County, on the east side (Grinnell *et al* 1937; Service 1998). Historically, this species occurred in several San Joaquin Valley native plant communities. In the southernmost portion of the range, these communities included Valley Sink Scrub, Valley Saltbush Scrub, Upper Sonoran Subshrub Scrub, and Annual Grassland.

Kit foxes currently inhabit some areas of suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains, from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west, and near La Grange, Stanislaus County on the east side of the Valley, and some of the larger

scattered islands of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced Counties.

The largest extant populations of kit foxes are in western Kern County on and around the Elk Hills and Buena Vista Valley, Kern County, and in the Carrizo Plain Natural Area, San Luis Obispo County. Though monitoring has not been continuous in the central and northern portions of the range, populations were recorded in the late 1980s at San Luis Reservoir, Merced County (Briden *et al* 1987); North Grasslands and Kesterson National Wildlife Refuge (NWR) area on the Valley floor, Merced County (Paveglio and Clifton 1988); and in the Los Vaqueros watershed, Contra Costa County in the early 1990s (Service 1998). Smaller populations are also known from other parts of the San Joaquin Valley floor, including Madera County and eastern Stanislaus County (Williams 1990). An additional population of kit foxes has been identified in close proximity to the action area (Service 1998). This "Panoche Core Population" is generally located on lands west of I-5 in the Panoche Valley and suitable lands to the north and south, such as the Silver Creek Ranch and lands from Little Panoche Creek up to Route 152. This population is just west of WWD. Kit foxes occur at varying densities in the areas between the core populations (e.g., Kettleman Hills), providing linkages between core populations, and also probably with smaller, more isolated populations in adjacent valleys and in the Kreyenhagen Hills and Anticline Ridge around Coalinga and Avenal. Maintain and enhance connecting corridors for movement of kit foxes between the Kettleman Hills and the Valley's edge through the farmed gap between the Kettleman and Gujarral Hills, and between the Gujarral Hills and Anticline Ridge; and around the western edge of the Pleasant Valley and Coalinga.

#### Essential Habitat Components.

Kit foxes prefer loose-textured soils (Grinnell *et al* 1937, Hall 1946, Egoscue 1962, Morrell 1972), but are found on virtually every soil type. Dens appear to be scarce in areas with shallow soils because of the proximity to bedrock (O'Farrell and Gilbertson 1979, O'Farrell *et al* 1980), high water tables (McCue *et al* 1981), or impenetrable hardpan layers (Morrell 1972). However, kit foxes will occupy soils with a high clay content, such as in the Altamont Pass area in Alameda County, where they modify burrows dug by other animals (Orloff *et al* 1986). Sites that may not provide suitable denning habitat may be suitable for feeding or providing cover.

#### Conservation Needs of San Joaquin Kit Fox in the Action Area

*Kit fox core population and corridors.* A potential core population of kit foxes has been identified just north of the WWD action area (Service 1998). This "Panoche Core Population" is generally located on lands west of I-5 in the Panoche Valley and suitable lands to the north and south, such as the Silver Creek Ranch and lands from Little Panoche Creek up to Route 152. Kit foxes occur at varying densities in the areas between the core populations (e.g., Kettleman Hills), providing linkages between core populations, and also probably with smaller, more isolated populations in adjacent valleys and in the Kreyenhagen Hills and Anticline Ridge around Coalinga and Avenal. Maintain and enhance connecting corridors for movement of kit foxes between the Kettleman Hills and the Valley's edge through the farmed gap between the Kettleman and Gujarral Hills, and between the Gujarral Hills and Anticline Ridge; and around the western edge of the Pleasant Valley and Coalinga. Because of the amount of available optimal habitat (e.g., saltbush scrub, arid grasslands), the Panoche population is probably not as

extensive as the Western Kern County and Carrizo Plain Core Populations. Thus, it is critical that connectivity be maintained between the Panoche Core Population and the 2 core populations further south. This necessitates that a viable corridor be maintained on remaining natural lands between I-5 and the foothills of the Coast Ranges. The need to conserve this corridor in the action area is identified prominently in Tasks 5.3.4, 5.3.5, 5.3.6, and 5.3.7 in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (Service 1998).

*Habitat Connectivity.* Very little suitable habitat for kit foxes remains in the action area; within the unit boundaries, there are only 5,559 acres (<1%) of suitable habitat and 20,543 acres (2.7%) of sub-optimal habitat. Much of the suitable habitat for kit foxes in the action area is located in the narrow band between the western boundary of WWD and Interstate 5; and in the oil fields and undeveloped areas around Avenal and Coalinga. The vast majority of the WWD lies east of Interstate 5, and in this area there currently is very little suitable habitat. What suitable habitat there is occurs as very scattered habitat fragments which are all too small in size to support even a single kit fox family group. Recently, in the Lokern area of western Kern County, home range was measured at 5.91 square kilometers (2.3 square miles) (Nelson 2005). The area of habitat required to support one family group varies according to carrying capacity elements such as prey abundance, shelter, and denning terrain. An average required area has been estimated at 1,200 acres for one mated pair or family group (Cypher 2006). In moderately suitable habitat, considerably more acreage may be needed to support a family group.

Currently, kit foxes in the action area primarily occur on natural lands with gentle relief west of Interstate 5. In particular, kit fox populations appear to persist in the Ciervo-Panoche area (particularly Panoche Valley) and the Coalinga-Pleasant Valley area (Service 1998).

Under current habitat conditions, corridors into the action area and on to suitable habitat east of the unit are relatively low in quality based on modeling results. The corridors that would provide the least risk for kit foxes would primarily originate in the Ciervo-Panoche region and traverse the Northerly Impaired and Westlands Impaired North sections of the SLU.

Conversion of croplands to permanent crops such as orchards has improved permeability somewhat for kit foxes, but also increase the likelihood that these lands will stay in agricultural production. Maintenance of movement corridor needs to be addressed in any regional kit fox conservation strategy. The importance of conserving this corridor also was reflected in modeling results, which suggest that foxes from the Pleasant Valley-Coalinga area likely would access the northern portions of the action area by first traveling 20-25 miles north along the western edge of the unit and then entering the unit. Thus, this western edge corridor should significantly enhance the probability and rate of colonization of retired lands by foxes by facilitating access from two existing kit fox population centers. This corridor also is essential for maintaining connectivity between the two source populations.

### **Blunt-nosed Leopard Lizard**

The blunt-nosed leopard lizard (*Gambelia silus*) was listed as Endangered by the Service in 1967 (32 FR 4001). Recovery of the blunt-nosed leopard lizard is discussed in the Recovery Plan for Upland Species of the San Joaquin Valley (Service 1998).

#### Life History and Habitat Requirements

The blunt-nosed leopard lizard was originally described and named from a specimen collected from Fresno County in 1890. This lizard is a relatively large lizard of the family Iguanidae (Stebbins 1985). Adult males are typically 3.4 to 4.7 inches from snout to vent and weigh between 1.8 and 37.4 grams. The adult females are similar in length (range 3.4 to 4.4 inches), but weigh only 20.6 to 29.3 grams (Tollestrup 1982, Uptain *et al.* 1985 in Service 1998). The blunt-nosed leopard lizard inhabits Nonnative Grassland, Valley Sink Scrub, Valley Needlegrass Grassland, and Alkali Playa communities on the floor of the San Joaquin Valley (Holland 1986). It also is found in low foothills, canyon floors, plains, washes, arroyos, and open areas with scattered low bushes on alkali flats, particularly those Saltbush Scrub communities within the foothills of the southern San Joaquin Valley and the adjacent Carrizo Plain. The above habitat classifications by Holland (1986) are subsumed within the more general Alkali Desert Scrub and Annual Grassland habitat types described by Mayer and Laudenslayer (1988).

Blunt-nose leopard lizards are typically absent where habitat conditions include steep slopes, dense vegetation, or areas subject to seasonal flooding (Montanucci 1965). Preferred substrates range from sandy or gravelly soils to hardpan. It prefers flat terrain and tends to avoid dense or tall herbaceous cover that restricts vision for foraging and escape from predators (Warrick *et al.* 1998).

These lizards frequently seek refuge in small mammal burrows (Stebbins 2003), using small rodent burrows for shelter from predators and temperature extremes. Burrows are usually abandoned ground squirrel tunnels or kangaroo rat burrows (abandoned or occupied). In areas of low mammal burrow density, lizards will construct shallow, simple tunnels in earth berms or under rocks. Burrows are important structures that enable blunt-nosed lizards to moderate temperature extremes and avoid a wide-range of predators. Species preying upon blunt-nosed lizards include: snakes, shrikes, hawks, owls, eagles, squirrels, skunks, badgers, coyotes, and foxes (Montanucci 1965, Tollestrup 1979).

The diet of the blunt-nosed lizard consists primarily of insects and other lizards (Service 1998). Insects consumed include grasshoppers and crickets in the Order Orthoptera and moths of the Lepidoptera. Other lizards consumed by blunt-nosed lizards include: side-blotched lizards (*Uta stansburiana*), coast horned lizards (*Phrynosoma coronatum*), California whiptails (*Cnemidophorus tigris*), and the spiny lizards (*Sceloporus* spp.) (Service 1998). Interspecific competition is hypothesized to occur between blunt-nosed lizards and California whiptails because they consume similar food items (Montanucci 1965, Service 1998).

Above ground activity of blunt-nosed lizards is primarily dependent on temperature with optimal activity occurring when air temperatures are between 74 and 104 degrees Fahrenheit (°F) and ground temperatures are between 72 and 97 °F. Smaller lizards and young have a wider activity

range than adults and as a result they emerge from hibernation earlier than adults, remain active later in the year, and begin their activity earlier during the day (Montanucci 1965). These temperature-related patterns result in adult lizards being active above ground from March or April through June or July. By the end of June or July, the majority of sightings are of sub-adult and hatchling lizards (Service 1998).

Breeding begins within a month of emergence from dormancy and typically lasts from the end of April through the beginning of June, but occasionally may last through the end of June. Adults are paired and frequently occupy the same burrow during the breeding period and for up to several months afterwards (Montanucci 1965, Service 1998). Two to six eggs are laid in June or July in a chamber excavated for a nest or in an existing burrow system. Adverse conditions can delay or halt reproduction, while variable environmental conditions may result in more than one clutch of eggs being produced per year (Service 1998).

#### Historical and Current Distribution

This species is endemic to the San Joaquin Valley (Montanucci 1970, Tollestrup 1979 *in* Service 1998) and is thought to have once occurred from the Tehachapi Mountains in Kern County northward to Stanislaus County (Service 1998). Although the boundaries of its original distribution are uncertain, blunt-nosed leopard lizards probably occurred in the San Joaquin Valley from Stanislaus County in the north to the Tehachapi Mountains of Kern County in the south, and from the Coast Range Mountains, Carrizo Plain, and Cuyama Valley in the west to the foothills of the Sierra Nevada in the east. In general, blunt-nosed leopard lizards are not found in areas with steep slopes, dense vegetation or in areas subject to seasonal flooding.

The current range is thought to include scattered populations throughout the undeveloped land of the San Joaquin Valley and in the foothills of the Coast Range below 2,600 feet (Montanucci 1970, Service 1998). Lizards occur on scattered parcels of undeveloped land on the valley floor, most commonly annual grassland and valley sink scrub. The lizards also inhabit alkali playa and valley saltbush scrub. This species occurs in the San Joaquin Valley from Stanislaus County through Kern County, and along the eastern edges of San Luis Obispo and San Benito Counties. In the southern San Joaquin Valley, extant populations are known to occur in the Kern and Pixley National Wildlife Refuges, Liberty Farms, Allensworth, Antelope, the Casrizo and Elkhorn Plains, Buttonwillow, Elk Hills and Tupman Essential Habitat Areas, north of Bakersfield around Poso Creek, and western Kern County around the towns of Maricopa, McKittrick, and Taft.

#### Reasons for Decline and Threats to Survival

Populations of the blunt-nosed leopard lizard declined to levels warranting listing because of the conversion and degradation of suitable habitat (Service 1998). Agricultural, urban, petroleum, mineral, and other development activities altered an estimated 94 percent of the wildlands on the Valley floor by 1985. The conversion of land for agricultural purposes along the Friant Kern Canal has led to a loss of patches of suitable habitat large enough likely to be inhabited by blunt-nosed leopard lizard. Ground disturbance, including that associated with agricultural practices, may kill or harm individuals. Due to its obligate use of burrows, the blunt-nosed leopard lizard can be adversely impacted by rodent control programs (through loss of burrows over time). Also,

there is some concern that the application of broad-spectrum insecticides on natural lands that harbor blunt-nosed leopard lizards-to combat agricultural pest species-may be an additional threat to their survival. It also is threatened by overgrazing and rodent control. Those lands where the species still exists are often heavily grazed or treated with pesticides, both of which have been shown to have detrimental effects on the lizard (Germano and Williams 1992).

The recovery plans for the blunt-nosed leopard lizard identified habitat units that are considered essential for the continued persistence of viable populations within the San Joaquin Valley but, having no legal status equivalent to critical habitat; the conversion of suitable habitat within these units has continued (Service 1980b). Consequently, habitat disturbance, conversion, and fragmentation continue to be the greatest threats to blunt-nosed leopard lizard populations. Other direct and indirect effects result from automobile and off-highway vehicle traffic, livestock grazing, and pesticides (Service 1998). The recovery strategy for this species includes identifying and protecting existing habitat, determining the best habitat management practices, and conducting public information and education programs (Service 1998).

### **San Joaquin Woolly-Threads**

#### Listing.

The San Joaquin woolly-threads (*Monolopia congdonii*) was listed as endangered on July 19, 1990 (55 FR 29361). Recovery of San Joaquin woolly-threads is discussed in the Recovery Plan for Upland Species of the San Joaquin Valley (Service 1998).

#### Life History and Habitat Requirements.

The San Joaquin woolly-threads, a dicot in the family Asteraceae, is an annual herb endemic to the southern San Joaquin Valley and surrounding hills. It has tiny yellow flower heads clustered at the tips of erect to trailing stems covered with tangled hairs. It is readily distinguished from *Eatonella*, its closest relative, by differences in growth habit, flower and seed morphology, and geographic range.

The San Joaquin woolly-threads grow in annual grasslands or saltbush scrub on alluvial fans, often with sandy soil. It occurs on neutral to subalkaline soils deposited in geologic times by flowing water. On the San Joaquin Valley floor, it typically is found on sandy or sandy loam soils, whereas in the Carrizo Plain, it occurs on silty soils. San Joaquin woolly-threads occupy microhabitats in nonnative grassland, valley saltbush scrub, interior Coast Range saltbush scrub, and upper Sonoran subshrub communities with less than 10 percent shrub cover but in either sparse or dense herbaceous cover. It has been reported from elevations ranging from 200 to 850 feet on the San Joaquin Valley floor and from 2,000 to 2,600 feet in San Luis Obispo and Santa Barbara Counties.

The seeds of San Joaquin woolly-threads may germinate as early as November, but usually germinate in December and January. Flowering generally occurs between late February and early April and may continue into May. Seed production depends on plant size and number of flower heads. In contrast to the more persistent skeletons of Hoover's woolly-star, all trace of San Joaquin woolly-threads plants disappears rapidly after seeds are shed in April or May. Seed

dispersal agents are unknown, but may include wind, water, and animals. Seed-dormancy mechanisms are thought to allow the formation of a substantial seed bank in the soil.

#### Historical and Current Distribution.

San Joaquin woolly-threads are endemic to the southern San Joaquin Valley and surrounding hills. Its original range extended from southern Fresno and Tulare Counties (excluding the Tulare lakebed) to the City of Bakersfield and the Cuyama Valley. San Joaquin woolly-threads currently exist as four metapopulations and several small, isolated populations. The largest metapopulation occurs on the Carrizo Plain, where occupied habitat has been observed to vary from a high of 2,800 acres in a favorable year, to much less in years of lower rainfall. Much smaller metapopulations occur in Kern County near Lost Hills, in the Kettleman Hills of Fresno and Kings Counties, and in the Jacalitos Hills of Fresno County. Isolated occurrences are known from the Panoche Hills in Fresno and San Benito Counties, near the City of Bakersfield, and the Cuyama Valley.

#### Reasons for Decline and Threats to Survival.

Throughout its range, most of its habitat has been eliminated by conversion to agriculture. Threats to remaining unprotected populations include heavy grazing (especially by sheep), oil field development, and possibly air pollution. Population and plant size can vary, depending on site and weather conditions. In years of below-average precipitation, few seeds of this species germinate, and those that do typically produce tiny plants.

#### Species Occurrence and Habitat Status in the Action Area.

Substantial populations of woolly-threads are present within the action area (Westlands Water District, City of Avenal, City of Coalinga), in the Kettleman Hills of Kings County, and in the Jacalitos and Panoche Hills of Fresno County.

### **California jewelflower**

#### Listing.

The California jewelflower (*Caulanthus californicus*) was listed as an endangered species on July 19, 1990 (55 FR 29361).

#### Species Description and Life History.

This is an annual herb belonging to the mustard family (Brassicaceae), and has flattened, sword-shaped fruits. Known populations of California jewelflower occur in non-native grassland, upper Sonoran subshrub scrub, and cismontane juniper woodland and scrub communities. Historical records suggest that it also occurred in the valley saltbush scrub community in the past.

Populations of California jewelflower have been reported from subalkaline, sandy loam soils at elevations of approximately 240 to 2,950 feet. Seeds of California jewelflower begin to germinate in the fall, and seedlings may continue to emerge for several months. The seedlings develop into rosettes of leaves during the winter months, after which stems elongate and flower buds appear in February or March. Flowering and seed set may continue as late as May in years of favorable rainfall and temperatures. It is thought that California jewelflower forms a persistent seed bank, but seeds appear to germinate only when exposed to conditions simulating prolonged

weathering. Seed dispersal agents are unknown, but may include gravity, seed-eating animals such as giant kangaroo rats, wind, and water. Pollinator-exclusion experiments indicated that insects are necessary for seed set in California jewelflower. Honeybees (*Apis mellifera*) have been observed visiting the flowers, but native insects also would be expected to serve as pollinators. Closely related species of the genus *Thelypodium* were visited by several species of bees (*Bombus* sp., *Apis* sp., and *Xylocopa* sp.) and butterflies (*Pieris* sp.)

#### Historic and Current Distribution.

The historical distribution of California jewelflower is known from 40 herbarium specimens, which were collected in 7 counties between 1880 and 1973. Approximately half of the collection sites were on the floor of the San Joaquin Valley in Fresno, Kern, and Tulare Counties. Several other collections came from two smaller valleys southwest of the San Joaquin Valley: the Carrizo Plain (San Luis Obispo County) and the Cuyama Valley (Santa Barbara and Ventura Counties). Three occurrences (i.e., collection sites separated by 0.4 kilometer [0.25 mile] or more) were in the Sierra Nevada foothills at the eastern margin of the San Joaquin Valley in Kern County. The remainder of the historical sites are in foothills west of the San Joaquin Valley, in Fresno, Kern, and Kings Counties. By 1986, all the occurrences on the San Joaquin and Cuyama Valley floors had been eliminated, and the only natural population known to be extant (i.e., still in existence) was in Santa Barbara Canyon, which is adjacent to the Cuyama Valley in Santa Barbara County. A small, introduced colony also existed at the Paine Preserve in Kern County at that time.

Since then, several more introductions have been attempted (see Conservation Efforts in the Recovery Plan for Upland Species of the San Joaquin Valley), and a number of colonies were rediscovered in two other areas where the species had been collected historically. The naturally-occurring populations known to exist today are distributed in three centers of concentration: (1) Santa Barbara Canyon, (2) the Carrizo Plain, and (3) the Kreyenhagen Hills in Fresno County. The Santa Barbara Canyon metapopulation occurs on the terraces just west of the Cuyama River and includes approximately 30 acres of occupied habitat.

The Carrizo Plain metapopulation is confined to the western side of the Carrizo Plain and encompasses approximately 10 acres of occupied habitat. The Kreyenhagen Hills metapopulation includes 4 small colonies within a small area of rolling hills.

#### Reasons for Decline and Threats to Survival

The primary reason for decline of California jewelflower was habitat conversion to agriculture and urban development. Potential threats to one or more of the remaining populations of California jewelflower include development on private land in the Santa Barbara Canyon area, competition from non-native plants, direct and indirect effects from pesticide and herbicide use for insect control and cropland management, and potential cattle grazing of populations on private lands. The small population size of the California jewelflower also makes it vulnerable to natural catastrophic events such as drought or fire.

#### Species Occurrence and Habitat Status in the Action Area.

Substantial populations of woolly-threads are present within the action area (Westlands Water District, City of Avenal, City of Coalinga), in the Kettleman Hills of Kings County, and in the Jacalitos and Panoche Hills of Fresno County.

### **Critical Habitat**

In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)).

The Service is required to list the known primary constituent elements together with the critical habitat description. Such physical and biological features include, but are not limited to, the following:

1. space for individual and population growth, and for normal behavior;
2. food, water, air, light, minerals, or other nutritional or physiological requirements;
3. cover or shelter;
4. sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
5. generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

### ***Vernal Pool Fairy Shrimp Critical Habitat***

We designated critical habitat for four vernal pool fairy crustaceans and eleven vernal pool plants on August 11, 2005 (70 FR 46924). A total of 597,821 acres was designated in Jackson County, Oregon; and Alameda, Amador, Butte, Contra Costa, Fresno, Glenn, Kings, Madera, Mariposa, Merced, Monterey, Napa, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Tehama, Tulare, Ventura, and Yuba counties, California. Included in this designation are 32 critical habitat units for vernal pool fairy shrimp.

### ***Primary Constituent Elements (PCEs)***

In designating critical habitat for Sacramento Orcutt grass, slender Orcutt grass, vernal pool tadpole shrimp, and vernal pool fairy shrimp, the Service identified the primary constituent elements essential to the conservation of these four vernal pool species. These features contribute to the filling and drying of the vernal pool, maintain suitable period of pool inundation, and maintain water quality and soil moisture to enable each species to complete its life cycle. These features include, but are not limited to, the restrictive underlying soil layers that perch water for extended periods of time, the surface soils associated with each species, and the topography that captures and delivers water to the vernal pools themselves.

Critical habitats for vernal pool fairy shrimp possess the following primary constituent elements (PCEs):

- 1) Topographic features characterized by a mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features, including swales, connecting the pools described in PCE 2, and which provide for dispersal and promote hydropools of adequate length in the pools.
- 2) Depressional features, including isolated vernal pools, together with underlying restrictive soil layers, that become inundated during winter rains and that continuously hold water in all but the driest years
  - a) for a minimum of 18 days (Helm 1998); thereby providing adequate water for incubation, maturation, and reproduction; or
  - b) or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species, and typically exclude both native and nonnative upland plants. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.
- 3) Sources of food in the pools, expected to be detritus contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding.
- 4) Structure within the pools described in PCE 2, consisting of organic and inorganic materials such as living and dead plants from species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

#### *Conservation Function of Critical Habitat*

Rather than designate every area containing PCEs, we designated only those areas which available evidence clearly demonstrated were essential to the conservation of the species. Areas for which evidence available at the time was less certain were not included, although we believe these areas are important to the species and we may include them in future recovery plans.

In our final determination of critical habitat for vernal pool fairy shrimp, we determined that areas essential to the conservation of the species represent at least one of the following:

- 1) the geographic range of the species;
- 2) the ecological distribution of the species, with the purpose of maintaining the full range of habitat types and characteristics in which the species is found;

- 3) areas necessary to allow movement of cysts, pollen, and seeds between areas representative of the geographic and ecological distribution of the species, and to accommodate their unique life history that may involve soil dormancy as cyst or seed for decades;
- 4) areas with the largest unfragmented vernal pool complexes or which already possess a measure of protection.

### ***Status of Vernal Pool Fairy Shrimp Critical Habitat in the Action Area***

Unit 24A and B, Madera Unit, Madera and Fresno counties (28,950 ac)

This unit occurs within Cross Valley Unit, County of Fresno service area. Land use change information provided by Reclamation in Attachment 6 of the information accompanying the request for consultation indicates relatively stable land use in this interim contractor service area between 1993 and 2000. The unit consists of two subunits (24A–24B) and is located between the Fresno River and San Joaquin River. This unit was known to be occupied by vernal pool fairy shrimp at the time of listing, is currently occupied, and contains the following vernal pool and associated upland features that are essential for the conservation of the species: mound and inter-mound topography (PCE 1, PCE 2) within a matrix of surrounding upland habitat which provide for cyst dispersal and adequate pool hydroperiods, and vernal pool wetland features within a matrix of upland habitat which provide for food, shelter, hatching, growth, and reproduction (PCE 3, PCE 4). This unit represents hardpan vernal pool complexes composed of numerous small pools and swales on mima mound topography (Holland 1998, Keeler-Wolf *et al.* 1998, CNDDDB 2001). Special management considerations within this unit include: habitat conversion to urban uses or intensive agriculture, hydrologic disruptions or modifications which may disturb vernal pool habitats and restrict or isolate vernal pool tadpole shrimp distribution, management of grazing animals, management of off-road recreational vehicles, and control of invasive plant species.

Information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the County of Fresno showed no change in acreage within all land use categories between 1993 and 2000. We are aware of changes that have occurred since then in the area to the south and east of Millerton Lake in Fresno Service Area #34, where grassland has been converted to urban uses in the Brighton Crest development.

Unit 27, Pixley Unit, Tulare County (15,465 ac)

This unit occurs within the Cross Valley Unit, Pixley Irrigation District. Land use change information provided by Reclamation in Attachment 6 of the information accompanying the request for consultation indicates relatively stable land use in this interim contractor service area between 1993 and 2000. The unit contains four subunits (27A–27D) and is located south of the Cities of Hanford and Lemoore, north of the City of Wasco, and east of the City of the Tulare. This unit was known to be occupied by vernal pool fairy shrimp at the time of listing, is currently occupied, and contains the following vernal pool and associated upland features that are essential for the conservation of the species: mound and inter-mound topography (PCE 1, PCE 2) within a

matrix of surrounding upland habitat which provide for cyst dispersal and adequate pool hydroperiods, and vernal pool wetland features within a matrix of upland habitat which provide for food, shelter, hatching, growth, and reproduction (PCE 3, PCE 4). This area represents the southern extent of vernal pool fairy shrimp range along the eastern margin of the Central Valley, and is the largest contiguous vernal pool habitat in this region (Holland 1998; CNDDDB 2001). Special management considerations within this unit include: habitat conversion to urban uses or intensive agriculture, hydrologic disruptions or modifications which may disturb vernal pool habitats and restrict or isolate vernal pool tadpole shrimp distribution, management of grazing animals, management of off-road recreational vehicles, and control of invasive plant species.

Information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the Pixley Irrigation District showed an increase of 88 acres of urban lands (changed from irrigated agriculture); a conversion of 13 acres of grassland to irrigated agriculture; and an additional 240 acres of dryland agriculture (from irrigated agriculture) between 1993 and 2000

### ***Critical Habitat for the Central Population of the California Tiger Salamander***

The Service designated 199,109 acres of critical habitat for the central population of the California tiger salamander on August 23, 2005 (70 FR 49380) in Alameda, Amador, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Clara, Solano, Stanislaus, Tulare, and Yolo Counties, California.

We have recognized four geographic regions in our critical habitat designation – the Central Valley, the Southern San Joaquin, the East Bay, and the Central Coast. The California tiger salamander is highly structured genetically, and the four geographic regions represent this genetic structure within the central population. Maintenance of this genetic structure is essential to the conservation of the Central population of the California tiger salamander (70 FR 49380). The designated critical habitat is designed to provide essential aquatic and upland habitat for salamanders to maintain populations over the long term in each of the four geographic regions.

Based on our current knowledge of the life history, biology, and ecology of the Central population of the California tiger salamander, and the relationship of its essential life history functions to its habitat, we have identified the following primary constituent elements:

- 1) *Aquatic habitat*. Standing bodies of fresh water (including natural and manmade (e.g., stock) ponds, vernal pools, and other ephemeral or permanent water bodies which typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall. This PCE provides space, food, and cover essential to support reproduction and to sustain early life history stages of larval and juvenile California tiger salamanders before they are capable of surviving in upland habitats. During periods of drought or below-average rainfall, these aquatic habitats may not hold water long enough for individuals to complete metamorphosis; however, these sites still would be considered essential because they constitute breeding habitat in years of average rainfall.

2) *Upland habitat surrounding aquatic habitat.* Upland habitats adjacent and accessible to and from breeding ponds that contain small mammal burrows or other underground habitat that are essential to California tiger salamanders for food, shelter, and protection from the elements and predation. This PCE provides space for juveniles and adults to disperse and to forage, and underground refugia for protection from desiccation and predators, and in which they can feed.

3) *Barrier-free dispersal habitat.* Accessible upland dispersal habitat between occupied locations that allows for movement between such sites. The third PCE provides habitat essential for California tiger salamanders to move freely across the landscape in search of aquatic breeding habitat and other upland habitats. Dispersal habitat is essential for the California tiger salamander to maintain gene flow and to recolonize sites that may become extirpated. Essential dispersal habitats generally consist of upland areas adjacent to essential aquatic habitats that are not isolated from aquatic habitats by barriers that salamanders cannot cross. Agricultural lands such as row crops, orchards, vineyards, and pastures do not constitute barriers for dispersal between locations within 0.70 miles of each other, a distance which has been predicted would be likely to capture 99 percent of interpond movement of breeding adults (Trenham pers. Somm. 2004 in 70 FR 49380).

### ***Status of Critical Habitat for California Tiger Salamander in the Action Area***

#### **Southern San Joaquin Valley Geographic Region Unit 2 – Northeast Fresno (4,961 ac)**

This unit is located in the service area of Cross Valley Unit contractor County of Fresno. Land use change information provided by Reclamation in Attachment 6 of the information accompanying the request for consultation indicates relatively stable land use in this interim contractor service area between 1993 and 2000. This unit is located northeast of Fresno, southwest of Millerton Lake, east of Friant Road, and generally west of Academy. It represents the Southern Sierra Foothills vernal pool region within Fresno County, the northern end of the Southern San Joaquin Geographic Region, and the southern portion of the species' distribution in the San Joaquin Valley. This unit contains all three of the PCEs and six extant occurrences. Threats that require special management include urban development and construction of associated infrastructure, including roads; and agricultural conversion. This unit is essential for the conservation of the California tiger salamander because it is needed to maintain the current geographic and ecological distribution of the species in the Southern San Joaquin Valley Geographic Region.

Information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the County of Fresno showed no change in acreage within all land use categories between 1993 and 2000. We are aware of changes that have occurred since then in the area to the south and east of Millerton Lake in Fresno Service Area #34, where grassland has been converted to urban uses in the Brighton Crest development.

#### **Southern San Joaquin Valley Geographic Region Units 3a and 3b – Hills Valley Unit, Fresno and Tulare Counties (4,181 ac)**

This unit occurs within the Cross Valley Unit, Hills Valley Irrigation District and Tri-Valley Water District. Land use change information provided by Reclamation in Attachment 6 of the information accompanying the request for consultation indicates relatively stable land use in this interim contractor service area between 1993 and 2000. This unit is located south of State Highway 180, generally west of George Smith and Sand Creek Roads, north of Curtis Mountain, and east of Cove Road. It represents the foothills of northwest Tulare County, the Southern Sierra Foothills vernal pool region, and the southeastern portion of the species' distribution in the Southern San Joaquin Valley Geographic Region and rangewide. This unit contains all three of the PCEs and five extant occurrences. Threats that require special management include urban development and construction of associated infrastructure, including roads; and agricultural conversion. This unit is essential for the conservation of the California tiger salamander because it is needed to maintain the current geographic and ecological distribution of the species in the Southern San Joaquin Valley Geographic Region.

Information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the Hills Valley Irrigation District showed no change in acreage within all land use categories between 1993 and 2000.

East Bay Geographic Region; Santa Clara County Units 3, 5, 6, 7, 8, 9, 10a and 10b, 11, 12 – 39,450 acres

These units occur within the CVP place of use for the SCVWD. The critical habitat units in Santa Clara County represent the north-central portion of the California tiger salamander's distribution within the East Bay Geographic Region. Special ecological regions represented include the Livermore and Central Coast vernal pool regions. These units represent a unique combination of genetic, ecological, geographic features that are necessary to conserve the Central population of the California tiger salamander. They are essential to maintain the genetic structure of the salamander, and the geographic and ecological distribution of the salamander both in the East Bay Geographic Region and the entire range. Land ownership of these units is primarily private with the exception of 2,767 acres of state lands owned by the University of California. According to information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the SCVWD showed an increase of 1,358 acres of urban lands (changed from irrigated agriculture, grassland, and woodland); and an increase of 38 acres of grassland (changed from irrigated agriculture and shrubland) between 1993 and 2000.

***Designated Critical Habitat for the California Red-Legged Frog***

The Service designated 450,288 acres of critical habitat for the California red-legged frog on April 13, 2006 (71 FR 19244) in 20 California counties.

*Primary Constituent Elements (PCEs)*

Based on our current knowledge of the life history, biology, and ecology of the California red-legged frog, and the relationship of its essential life history functions to its habitat, we have identified the following primary constituent elements:

- 1) **Aquatic Breeding Habitat.** Essential breeding habitat is defined as standing bodies of fresh water (with salinities less than 7.0 parts per thousand), including natural and manmade ponds, slow moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 15 weeks in all but the driest of years. This amount of time would allow the frog to complete the aquatic portion of its life cycle.
- 2) **Non-breeding Aquatic Habitat.** Essential non-breeding habitat is defined as fresh water habitats as described in (1) above which may or may not hold water long enough for the subspecies to hatch and complete its aquatic lifecycle which provides shelter, foraging, predator avoidance, and aquatic dispersal habitat for juvenile and adult California red-legged frogs. Other wetland habitat which would be included in this PCE would include, but would not be limited to, plunge pools within intermittent creeks, seeps, quiet water refugia during high water flows, and springs of sufficient flow to withstand the summer dry period.
- 3) **Upland Habitat.** Essential upland habitat is defined as upland areas within 200 feet of the surrounding aquatic habitat comprised of various vegetation series such as grasslands, woodlands, or wetland or riparian plant species. Upland habitat includes natural or manmade structures such as the spaces under boulders or rocks; organic debris such as downed trees or logs; agricultural features and light construction debris such as drains, watering troughs; abandoned sheds, or under stacks of hay, brush piles, or other vegetation.
- 4) **Dispersal Habitat.** Essential dispersal habitat is defined as accessible upland or wetland habitat within designated critical habitat units and between occupied locations within 0.7 miles of each other that allows for movement between such sites. Dispersal habitat includes various barrier-free natural habitats and altered habitats such as agricultural fields. Dispersal barriers are such things as heavily traveled roads (Vos and Chardon 1998) that possess no bridges or culverts. Dispersal habitat does not include moderate to high density urban or industrial developments with large expanses of asphalt or concrete, and large reservoirs over 50 acres, which do not contain PCE 1, 2, or 3. Accessible dispersal habitat provides opportunities for (a) movement and establishment of home ranges by juvenile recruits; (b) maintaining gene flow by the movement of juveniles and adults between subpopulations; and (c) recolonization of breeding habitat after local extirpations.

*Conservation Function of Critical Habitat*

Rather than designate every area containing PCEs, we designated only those areas which available evidence clearly demonstrated were essential to the conservation of the species. Areas

for which evidence available at the time was less certain were not included, although we believe those areas are important to the species and we may include them in future recovery plans.

In our proposal to designate critical habitat for the California red-legged frog, we determined that areas essential to the conservation of the species represent provide the following:

- 1) maintain the current geographic, elevational, and ecological distribution of the subspecies;
- 2) maintain the current population structure across the subspecies' range;
- 3) retain or provide for connectivity between breeding sites that allows for the continued existence of viable and essential metapopulations, despite fluctuations in the status of subpopulations;
- 4) large blocks of occupied habitat, representing source populations or unique ecological characteristics; and
- 5) sufficient upland habitat around each breeding location to allow survival and recruitment sufficient to maintain a breeding population over the long term.

***Status of Proposed Critical Habitat for the California Red-Legged Frog in the Action Area***

STC-1A and 1B, Santa Clara County (57,784 acres)

These units occur within the CVP place of use for the SCVWD. The critical habitat units in Santa Clara County provide connectivity between populations along the coast and inland, and represent the species distribution in the northern portion of the central coast. Land ownership is primarily private, but included within these units is 27,983 acres of state lands in Henry Coe State Park and 8,384 of local government land. According to information provided in Attachment 6 of the information accompanying Reclamation's request for consultation, land use within the SCVWD showed an increase of 1,358 acres of urban lands (changed from irrigated agriculture, grassland, and woodland); and an increase of 38 acres of grassland (changed from irrigated agriculture and shrubland) between 1993 and 2000

**Effects of the Proposed Action and Cumulative Effects for Species and Critical Habitat Not Addressed in Previous Biological Opinions**

This biological opinion analyzes the reasonably foreseeable effects of implementation of the 15 interim water contracts over a period of two years, from the year 2008 through 2010. Refer to the Introduction for a discussion of the relationship of this consultation to related Reclamation actions that also require consultation.

### Key Assumptions

Because of the complex history as well as the complex present environmental and regulatory context of Interim Water Contract renewals, and because this action is related to a number of other Reclamation actions, the Service has had to make a number of assumptions about likely future events and context of the interim renewal action. While not exhaustive, the following list of key assumptions has been central to our effects analysis and findings of no jeopardy. As such, the failing of any key assumption should be considered reason for reinitiating consultation on the 2006-2010 Interim Water Contract renewals. The Service assumes the following:

- 1) In response to several proposed highway projects proposed by the Santa Clara Valley Transportation Authority and the potential need for the Service to consult on the long-term renewal of Santa Clara Valley WD's Federal Central Valley Project Water Contracts, the Service has requested that a Habitat Conservation Plan (HCP), meeting federal standards, be prepared to address potential direct and indirect impacts to federally listed species and their habitat in Santa Clara County from anticipated development in the City and County. The County of Santa Clara, the City of San Jose, and the Santa Clara Valley WD have each submitted letters indicating their respective commitment to work cooperatively towards the development of a multi-species HCP. The Santa Clara Valley WD and the Service will carry out the commitments stated in Tony Estremera, Chairperson, Board of Directors, Santa Clara Valley Water District letter dated June 27, 2001. Current commitments by SCVWD that are underway include:
  - a) The SCVWD, along with the County of Santa Clara, the City of San Jose, the Santa Clara Valley Transportation Authority, the California Department of Fish and Game, the United States Fish and Wildlife Service and National Oceanic and Atmospheric Administration are negotiating a formal Planning Agreement for the development of the HCP/NCCP. This Planning Agreement is being negotiated for the purposes of but not limited to 1) defining the geographic scope of the planning area; 2) identifying preliminary conservation objectives for the planning area; 3) ensuring coordination among the local agencies and wildlife agencies; and 4) establishing an interim process during HCP/NCCP plan development that encourages conditions conducive to achieving the preliminary conservation objectives.
  - b) Funding of approximately \$1,000,000.00 assumed to be required to support preparation of the HCP/NCCP will be jointly funded between the agencies and projects which will benefit. SCVWD agrees to contribute a proportionate share of the cost, commensurate with the District's interests.
  - c) SCVWD agrees to develop an interim process in coordination with the USFWS to keep conservation and recovery options open for affected species, and to ensure SCVWD compliance with the ESA with regard to the issuance of discretionary permits where federal jurisdiction applies during the period prior to a decision on the HCP/NCCP, and issuance of incidental take permits.

- 2) Reclamation will continue to implement in a timely manner relevant environmental commitments, conservation measures, and terms and conditions from other biological opinions as appropriate. These commitments include implementation of the CVPIA and Continued Operation and Maintenance of the CVP (November 21, 2000, Service File No., 1-1-98-F-0124), the Friant Long Term Contract Renewals (Service File No., 1-1-01-F-0027) and the Grassland Bypass Project (Service File No., 1-1-01-F-0153). Other CVP-related, non-CVPIA (Central Valley Project Improvement Act) actions benefiting fish, wildlife, and associated habitats and related to effects of Interim Contract Renewals will continue, with at least current funding levels, including:
  - a) the Central Valley Habitat Monitoring Program's Comprehensive Mapping;
  - b) implementation of the Central Valley Habitat Monitoring Program's Land Use Monitoring and Reporting;
  - c) CVP Conservation Program and CVPIA B(1)(other) Habitat Restoration Program.
- 3) Reclamation will implement the Proposed Action in a manner consistent with implementation of any listed species recovery plans, including the Final Recovery Plan for California red-legged frog (USFWS 2002), Draft Recovery Plan for the Giant Garter Snake (USFWS 1999), Final Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada foothills (USFWS 2002), Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, September 1998a), Recovery Plan for Upland Species in the San Joaquin Valley (USFWS, September 1998b), Draft Recovery Plan for the Least Bell's Vireo (USFWS, 1998), Recovery Plan for the Large-flowered Fiddleneck (USFWS, 1997), Recovery Plan for the Sacramento/San Joaquin Delta Native Fishes (USFWS, 1995), and Recovery Plan for Valley Elderberry Longhorn Beetle (USFWS, 1984).
- 4) We assume the proposed action will be implemented as described in the Description of the Proposed Action section, above, and any documentation referenced in that section, such as appendices or attached documents.
- 5) We assume Reclamation will consult on actions interrelated with this consultation, including but not limited to operations and maintenance, exchanges, assignments, transfers, conveyance, and management of flood waters (215 water, *etc.*), and other actions described in the Introduction as being under simultaneous consultation with this action, including requesting concurrence for any determination that an action is not likely to adversely affect listed species or critical habitat. Reclamation has completed consultation on operations and maintenance of Reclamation water conveyance facilities as described in the Environmental Baseline.
- 6) The analysis for this opinion is based on the assumption that CVP water contract amounts and deliveries will remain consistent with those provided and analyzed in the Final PEIS for CVPIA and the 2005 OCAP biological opinion. We assume Reclamation will initiate

- consultation under section 7 of the ESA on any infrastructure modifications or other actions which result in modification of the current delivery regime.
- 7) Reclamation commits to the continued implementation of the conservation actions that were included in the programmatic consultation on the implementation of the CVPIA and Continued Operation and Maintenance of the CVP (1-1-98-F-0124, November 21, 2000).
  - 8) Preliminary information provided by Reclamation indicates that for contract agricultural service areas there may have been little conversion of native lands during the period from 1993 to 2000. Information on trends in land use changes is provided in Reclamation's June 29, 2005 report entitled *Land Use Change in the Friant and Delta Divisions, Central Valley Project, 1993-2000*.
  - 9) Reclamation is not consulting on any "on-farm" actions such as cropping practices, fallowing, and enrollment in conservation programs.
  - 10) Reclamation and the Service assume end users of water (those that are actually responsible for on-the ground activities) will comply with Federal laws such as the ESA. Reclamation has, and will continue to, inform contractors of ESA requirements.
  - 11) The proposed action does not include any non-Federal actions on non-Federal land relative to the end use of water. "Take" coverage for these private actions is not being requested by the contractors or Reclamation.
  - 12) Any water delivered pursuant to the proposed interim contracts will comport with all biological opinions addressing CVP operations (i.e., the existing and any new biological opinions addressing CVP/SWP Operations Criteria and Plan (OCAP)).

### **Direct Effects and Effects of Interrelated and Interdependent Actions**

The Service anticipates no direct effects to listed species or designated critical habitat associated with the proposed execution of up to 15 interim contracts listed in Table 2 for up to two years between March 1, 2008 through February 28, 2010. Operation and maintenance of CVP water conveyance facilities, which can be considered interdependent actions, have received no jeopardy biological opinions (see **Environmental Baseline**).

### **Indirect Effects**

Indirect effects of the proposed action include the effects of agricultural, municipal, and industrial activities that utilize the contract water. Continued delivery of water under these contracts is vital to sustain the agricultural, residential, commercial, and industrial activities that occur within contract service areas. Although many of these activities use CVP water in combination with other supplies, including groundwater, private water rights, and water from the State Water Project, these activities would not be sustainable at the same scale, extent, intensity, and duration absent federal water supplies. On the other hand, the land use activities that are

sustained by or that will utilize contract water are not controlled by Reclamation, nor are they controlled by the water contractors. Water districts are retailers of CVP water, whereas land use is controlled by end-users such as individual farmers in the case of agricultural use, or by local or state government in the case of residential, commercial, and industrial activities. Since these land uses are not controlled by the consulting Federal agency or the Federal agency applicant, no incidental take will be authorized in this biological opinion for actions related to agricultural, residential, commercial, and industrial land uses that ultimately utilize contract water. To the extent that these activities have effects that result in take, such activities must obtain authorization for such take through either section 7 or section 10 of the Endangered Species Act.

### **Effects Overview**

The following represents a general overview of the types of effects that we anticipate will arise from the proposed two-year interim contract renewal and which are applicable to the species and critical habitat in Table 1. We anticipate that effects will be similar in scope and significance as those analyzed in our recent evaluations of the previous contract renewals (Service file nos. 1-1-00-F-0056, 1-1-02-F-0070, and 1-1-04-F-0360), and in the programmatic biological opinion on implementation of the Central Valley Project Improvement Act (Service file no. 1-1-98-F-0124).

Reclamation provided information generated by the Central Valley Habitat Monitoring Program for interim renewal contractors in Attachment 6 of the Supplemental Information on Interim Renewal Contracts. This information summarizes land use changes in water districts between the years 1993 and 2000. Information from these reports is used in the following analysis.

### *Conservation measures*

Essential to the findings below are Reclamation's past and continuing conservation efforts to recover listed species through the Central Valley Improvement Act (b)(1)(other) and VP Conservation Program. These programs have provided funding for habitat acquisition and management, surveys, and research that have contributed to the recovery of numerous listed species that have been adversely affected by the CVP. Accomplishments and work plans for these programs over the past two years are summarized in Attachment 5 of the information provided with Reclamation's request for consultation on these actions.

The measures described in the project description or commitments are intended to reduce, ameliorate, or reverse effects of water diversions and deliveries on listed and proposed species within the action area. Some, but not all, measures have been fully implemented. The conservation measures help offset the effects of habitat conversion and fragmentation by identifying, protecting, and restoring habitat that has been identified as important for recovery, and providing funding for other high priority recovery actions. Actions funded by these programs contribute to stabilizing or improving the overall status of listed species that have been affected by past operation of the CVP. Were it not for the continuing commitment of Reclamation and the applicants to implement the conservation measures and terms and conditions of past biological opinions on interim contract renewals, there would be little to counterbalance ongoing adverse effects of land use changes related to Federal water deliveries that eliminate or degrade habitat of

listed species. Reclamation will continue to work with our office to implement the conservation measures over the two-year period of the interim contract renewals.

#### *Existing agricultural uses*

Reclamation has stated that the proposed contracts would provide unchanged amounts of water to the contractors. We anticipate that continued application of Federal water to existing uses over the next two years, without alteration of use, will result in effects to listed species similar to those ongoing effects described in the **Environmental Baseline** section, above. However, some conversion between different agricultural uses receiving unchanged deliveries of contract water could result in impacts, or benefits, to listed species. For example, some row crops have low habitat value for kit fox, while orchards can have higher values. Conversion of orchards to row crops may adversely affect kit foxes without triggering Reclamation or District review. Information provided by Reclamation indicates that uses on lands already converted to agriculture as of this date within the districts will remain on average the same over the two-year period analyzed in this biological opinion and that there will be no significant adverse changes in the status of listed species that occur within agricultural water districts as a result of the proposed interim renewal of 15 water service contracts.

#### *Habitat conversion and fragmentation*

A substantial threat to listed species populations remaining in interim contract areas is continued conversion of useful habitats to non-habitat or less useful habitats. Habitat conversions may in many cases occur as a result of, or be related to, federal water deliveries, since water supplies are limited and water is needed for agricultural and municipal and industrial developments in the semi-arid southern Central Valley. Attachment 6 of the information accompanying Reclamation's request for consultation provides information on the status and findings of the Central Valley Habitat Monitoring Program. Based on this preliminary information on trends between 1993 and 2000, it appears conversion of native habitat within contract Service areas may be small in the majority of interim contract service areas. Two areas of special concern are the Santa Clara Water District and County of Fresno, which are addressed separately below because part of their service area includes rapidly developing urban areas. Based on the low amount of within water district habitat conversion over the seven-year period of 1993 to 2000, we anticipate no significant change in that trend during the two-year period of the proposed interim contract renewals, *i.e.*, ongoing effects to listed species described below will continue, but because of the brief nature of the Federal action, we can make a finding that these trends will not appreciably reduce the likelihood of both the survival and recovery of listed species.

As noted above, most habitat conversions are outside the control of Reclamation or the contractors. Conversions inside the contract service areas that use groundwater and are not directly supplied with Federal water could continue unabated.

Habitat conversions also can fragment remaining habitat and break habitat connectivity needed to allow a species to disperse throughout its range. Dispersal promotes gene flow and among different portions of a species range, and is important to maintain stable populations within

available habitat through the species' range as populations fluctuate over time. Loss of connecting habitat that reduces gene flow and population interchange may reduce the likelihood of survival and recovery of listed species by isolating populations within small habitat patches that are at increased risk of extirpation from stochastic events, inbreeding depression, or other factors. We consider that habitat conversions that fragment and reduce the connectivity between remaining pieces of habitat are likely to have such effects on all listed species addressed in this consultation. Habitat fragmentation that results from land use changes remains a major threat for the listed species addressed herein within the action and throughout their ranges. As noted elsewhere in this discussion, the brief nature of the federal action is a significant factor in the findings of this biological opinion.

Habitat conversion and fragmentation affect listed species by modifying or destroying habitat to an extent that results in death of wildlife or impairment of essential behaviors in many ways, including (a) through starvation, by destroying prey base and other food sources; (b) displacing animals and forcing movement to adjacent areas of non-habitat, increasing exposure to predators or other sources of mortality, such as roadways, dogs, and cats, or forcing animals into adjacent habitat in which they must compete with resident individuals; (c) eliminating breeding and rearing habitat (burrows, trees, and the like); (d) truncating hydrologic connections within seasonal wetland complexes that changes hydroperiods to regimes unsuitable for listed species that reproduce in seasonal wetlands, or by making hydroperiods suitable for predators of listed species such as bullfrogs; (e) increasing exposure to oil, pesticides, and other toxic substances associated with urban environments; (f) increasing exposure to stressors such as noise, light, human presence, off-road vehicles associated with urban environments. The significance of these effects on survival and recovery of species addressed in this consultation, both within the action area and throughout their respective ranges, underscores the importance of continued implementation and expansion of conservation programs throughout areas that receive Central Valley Project water.

#### *Pesticide use*

An interrelated effect of Federal water deliveries to contractors is the use of pesticides, including insecticides, acaricides, herbicides, fungicides, and other chemicals, on crops grown benefiting from Federal water. Effects of pesticide use on listed species are addressed in the 2002 biological opinion on interim contract renewal (Service file 1-1-02-F-0070). We anticipate effects of the proposed contract renewal to be similar in frequency, intensity, duration, and significance, to those analyzed in the 2002 biological opinion.

Currently available information on the California tiger salamander (Davidson *et al.* 2001, 2002 as cited in FR 68:28648) indicates that researchers have been unable to find a significant overall relationship between upwind agriculture and decline of California tiger salamander. California tiger salamanders are otherwise adversely affected by habitat loss and fragmentation as described above. Based on information provided in Appendices D and E of the Draft FONSI (USDI-BOR 2003b), we do not anticipate that habitat loss and fragmentation within the 15 interim contract service areas will rise to a level that would preclude the survival and recovery of the species over the next two years. Longer term effects in these areas are potential for concern, however.

### *Fertilizers*

Fertilizers can directly adversely affect amphibians such as the California tiger salamander. Runoff into ponds or direct application to ponds or upland areas where salamanders are active may result in mortality and sub-lethal effects (Schneeweiss and Schneeweiss 1997). Fertilizer input can lead to eutrophication of vernal pools, which can kill vernal pools species by reducing the concentration of dissolved oxygen (Rogers 1998).

### *Selenium-related Effects*

The effects of selenium drainage were analyzed in the 2002 biological opinion and are expected to remain the same through the two year term of interim contract renewal. Long term effects of selenium drainage have been analyzed during long term contract renewals and consultation on the San Luis Drainage Feature Re-evaluation.

### *Cross Valley Unit*

Information provided in Attachment 6 of the information accompanying Reclamation's request for consultation (Central Valley Habitat Monitoring Program) indicates that land use has been stable in the water districts that contain vernal pool fairy shrimp units 24B (County of Fresno) and 27B (Pixley Irrigation District), and California tiger salamander units 2 (County of Fresno) and 3 (Hills Valley and Tri-Valley Irrigation Districts). We anticipate this trend to continue in the largely agricultural districts (Pixley, Hills Valley, Tri-Valley) for the interim contract period, as we have no information indicating large scale urban development is likely to occur in these districts over the next two years.

### *Effects on Critical Habitat*

Within the County of Fresno, however, we are aware of projects approved by the County within designated critical habitat units 24B (vernal pool fairy shrimp) and 2 (California tiger salamander). These areas are likely to be similarly exposed to the growth related habitat effects described above. This means that one or more of the PCEs may be adversely affected or lost on a localized basis as a result of individual development projects within and adjacent to critical habitat and that conservation functions and values have the potential to be degraded over time by implementation of individual projects and the combined direct and indirect effects that such development may have on the PCEs. It is likely that most development projects that would affect one or more of the PCEs in these units also would require a Clean Water Act permit from the U.S. Army Corps of Engineers and would require additional review under section 7 of the ESA for the potential to adversely modify these critical habitat areas. This will help ensure that direct effects of individual project implementation do not impair the conservation function and value of critical habitat, but it will remain very difficult to ensure that indirect effects of individual project implementation do not impair the conservation function and value of critical habitat. In addition, the commitment of Reclamation and Cross Valley contractors to implement the conservation measures of the 2001 biological opinion on long term renewal of the Friant Division and Cross

Valley Unit contracts, particularly Item 22, will help ensure that interrelated or interdependent actions that could destroy essential habitat obtain ESA compliance prior to authorization of CVP water delivery to that area.

We conclude that these critical habitat units remain vulnerable to decreases in conservation function in the absence of a regional conservation strategy that can guide implementation of individual projects and manage both direct and indirect effects in a way that maintains and enhances the conservation function and value of the critical habitat. As discussed above, these effects will not occur all at once, but over a 20 to 30 year or more planning horizon. Reclamation and the Service are working with developers and the County of Fresno to address effects to listed species and designated critical habitat of planned development that will utilize CVP water. We therefore conclude that critical habitats for the vernal pool fairy shrimp and California tiger salamander are likely to retain their conservation function over the interim period.

### *Santa Clara Water District*

As stated in the Project Description, Santa Clara Valley WD can use up to 6,260 acre-feet of CVP water from the assignment during the two year period of the interim renewal contract. To date, Santa Clara Valley WD has diverted approximately 4,382 af of water, with all of that coming in the 2002 water year (Attachment 2, supplemental information accompanying the request for consultation).

Trend data provided by Reclamation in Attachment 6 of the supplemental information accompanying the request for consultation indicates that more than 500 acres of natural lands have been converted to urban uses in the period from 1993 to 2000 and that an additional 30 acres of grassland has been converted to irrigated agriculture. Information has not been provided as to whether these lands supported federally listed species. As discussed in the Project Description, Santa Clara Valley Water District, in conjunction with the City of San Jose and Santa Clara County, have committed to the development of a multi-species Habitat Conservation Plan. Although the plan will not be in place during the two year period of interim contract renewal, the land use agencies are working with resource agencies, including the Service, to develop interim strategies to address regional growth effects until the plan is complete and permits are issued. Compliance with the ESA for interim projects will be obtained, as appropriate, through incidental take exemption under section 7 or 10 of the ESA during the interim period.

The potential effects of the proposed water contract deliveries to Santa Clara Valley WD for the next two years are considered small based on the following considerations: the relatively small amount of the contract (6,260 acre-feet) compared with total annual water use within the County is about 400,000 af; the short term of the interim water contract authorization (two years); and the nature of the supply. This partial assignment is a dry year supply to compensate for shortages. It is assumed if the proposed water contract were not renewed the Santa Clara Valley WD would makeup the needed 6,260 af through any one or combination of the following alternative sources: groundwater, groundwater banking, conservation, or temporary transfers.

### *Effects on Critical Habitat*

Based on our consultation history in Santa Clara County, we anticipate urban, industrial, and infrastructure projects to be proposed within the CVP place of use that may adversely affect one or more of the PCEs within designated or proposed critical habitat. Based on our consultation history, we anticipate that many of these projects will have a federal nexus through agencies such as the U.S. Army Corps of Engineers or Federal Highway Administration. Such actions would be held to the standard for adverse modification established in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) (*Gifford Pinchot*). As discussed in the introduction to the effects analysis, Reclamation and SCVWD do not have land use authority and thus do not control the nature, scope, or location, or timing of development that may utilize a CVP water supply. Thus, we believe that many of the interdependent actions will undergo future section 7 review under the Gifford Pinchot standard for adverse modification.

As stated above, the potential effects of the proposed water contract deliveries to Santa Clara Valley WD for the next two years are considered small based on the following considerations: the relatively small amount of the contract (6,260 acre-feet) compared with total annual water use within the County is about 400,000 af.; the short term of the interim water contract authorization (two years); and the nature of the supply. This partial assignment is a dry year supply to compensate for shortages. It is assumed if the proposed water contract were not renewed the Santa Clara Valley WD would make up the needed 6,260 af through any one or combination of the following alternative sources: groundwater, groundwater banking, conservation, or temporary transfers. This, combined with the fact that interdependent actions which would need to consider effects to critical habitat would have a federal nexus, and such actions would be held to the Gifford Pinchot standard for adverse modification, allow us to conclude that it is unlikely that the conservation function of proposed or designated critical habitat within SCVWD would be lost or compromised with implementation of the proposed federal action.

### *Westlands Water District*

Much of the effects discussion in the 2000 Interim biological opinion is generally applicable to Westlands WD. Westlands WD includes habitat types with value to listed species, including lands that have not been irrigated. San Joaquin kit fox, kangaroo rats, blunt-nosed leopard lizards, and other listed species are likely to use the area. These species are most likely to exist on "expansion lands", which are mostly naturally-vegetated lands outside the "consolidated place of use" (pursuant to State Water Resources Control Board D-1641) which have not yet been converted. Reclamation will not deliver CVP water to these lands until they have been included in the authorized place of use through application to the State Water Resources Control Board. Westlands also includes "encroachment lands", which are formerly naturally-vegetated lands that were converted to agricultural and municipal uses with CVP water while outside the CVP authorized place of use. These lands are now included in the consolidated place of use in accordance with State Water Resources Control Board D-1641. Most of Westlands is converted, irrigated farmland. Reclamation has taken steps to assure that the Interim contracts do not result in conversion of listed species habitat, and according to Westlands WD the water would be used

on existing irrigated croplands. We therefore expect that the impact of the proposed federal action to the conservation status of listed species would not be appreciable for the two year interim period. There is no proposed or designated critical habitat within Westlands WD.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The discussion of cumulative effects in the 2000, 2002, 2004, and 2006 biological opinions on interim contracts is incorporated by reference.

Most of the indirect effects of the proposed action are also cumulative effects, because they are carried out by State, local, or private entities, not the action agency or the applicants. We anticipate the cumulative effects to listed species to be very similar to those described above for indirect effects and effects of interdependent actions. We do not anticipate significant cumulative effects in the primarily agricultural water districts over the next two years because so little habitat remains. While we expect that continued habitat loss and fragmentation throughout the action area will continue to adversely affect the listed species addressed in this opinion, recent trends of habitat conversion within the primarily agricultural water districts do not indicate that these effects will rise to a level of significance that would preclude the survival or recovery of these species during the next two years. To the extent that these actions have effects that result in incidental take of listed species, the sponsors, applicants, or proponents of such actions must obtain exemption for such take through either section 7 or section 10 of the Endangered Species Act.

In the water districts where CVP water will comprise a portion of the municipal water supply for rapidly expanding urban areas such as San Jose in Santa Clara Water District and the County of Fresno, the likelihood of significant cumulative effects during the next two years is greater than in the primarily agricultural water districts. We believe that early efforts toward a regional conservation planning process being undertaken by Santa Clara Water District, Santa Clara County, and local jurisdictions, in partnership with our office, will prevent cumulative effects from rising to a level of significance that would preclude the survival or recovery of these species during the next two years. Within the City of Tracy, the effects of growth over the next two years and beyond, including those actions that are not related to CVP water deliveries, are covered by their section 10(a) (1)(B) permit issued for the San Joaquin Multi-Species Conservation Plan.

### *Cumulative Effects on Critical Habitat*

We have little specific information about reasonably foreseeable non-federal actions that are likely to occur within the Cross Valley Unit that may affect one or more of the PCEs proposed or designated critical habitat with the exception of proposed development in the County of Fresno

in the vicinity of Millerton Lake. Based on information in our section 7 logs, we anticipate such actions are also likely to occur within the SCVWD. None of these actions would, by definition as cumulative effects, have a section 7 nexus and thus would not be held to the Gifford Pinchot standard for adverse modification. Such actions have at least the potential to modify or destroy one or more of the PCEs and significantly reduce the conservation function of critical habitat in which they occur without review under section 7 of the ESA. Perhaps more realistically, actions that would negatively affect one or more of the PCEs to that extent also would be likely to result in take of a listed species in violation of ESA section 9 by disrupting essential behaviors such as breeding, feeding, or sheltering that are supported by the PCEs. Such actions would require a permit in accordance with section 10(a)(1)(B) of the ESA. The Service's issuance of any section 10(a)(1)(B) permit would us to apply the Gifford Pinchot standard of adverse modification

### **Conclusion**

After reviewing the current status of the species in Table 1, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the interim renewal of 15 water service contracts, as proposed, is not likely to jeopardize the continued existence of the species listed in Table 1, and is not likely to destroy or adversely modify critical habitat of listed vernal pool species, the California red-legged frog, or the central population of the California tiger salamander.

These conclusions are based on (1) the assumption that the action is implemented as described in this biological opinion, particularly in regard to the conservation measures described in the Project Description, and (2) the short duration of the proposed Federal action.

### **Incidental Take Statement**

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with this Incidental Take Statement.

Sections 7(b)(4) and 7(o)(2) of the ESA, which refer to terms and conditions and exemptions on taking listed fish and wildlife species, do not apply to listed plant species. However, section 9(a)(2) of the ESA prohibits removal, reduction to possession, and malicious damage or destruction of listed plant species from areas under Federal jurisdiction, as well as any act that

would remove, cut, dig up, or damage or destroy any such species on any area in knowing violation of any State law or regulation, including the California Endangered Species Act, or in the course of any violation of a State criminal trespass law. Actions funded, authorized or implemented by a Federal agency that could incidentally result in the damage or destruction of such species on Federal lands are not a violation of the Act, provided the Service determines in a biological opinion that the actions are not likely to jeopardize the continued existence of the species.

The species in Table 1 are likely to be subject to some adverse effects through habitat loss and fragmentation associated with land use changes supported in whole or in part by water provided under the 15 interim water service contracts. As noted previously, neither the federal action agency nor the applicants exercise control over or implement those actions that result in take of listed species; either due to indirect effects, or from the effects of interdependent actions. For this reason, this biological opinion provides no exemption for incidental take.

### **Conservation Recommendations**

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions from the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibilities for these species. In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

The Service recommends that Reclamation:

1. Continue to take affirmative actions to offset the impacts of past and present CVP implementation and its consequences on listed species. In particular, assist the Service and other organizations in permanently conserving lands important as habitat or movement corridors for listed species, and expand existing conservation and restoration programs for listed species and species trending towards listing.
2. Continue to assist the Service in the implementation of recovery actions in the Final Recovery Plan for California red-legged frog (USFWS 2002), Draft Recovery Plan for the Giant Garter Snake (USFWS 1999), Final Recovery Plan for gabbro soil plants of the Central Sierra Nevada foothills (USFWS 2002), Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, September 1998a), Recovery Plan for Upland Species in the San Joaquin Valley (USFWS, September 1998b), Draft Recovery Plan for the least Bell's vireo (USFWS, 1998), Recovery Plan for the large-flowered fiddleneck (USFWS, 1997), Recovery Plan for the Sacramento/San Joaquin Delta Native

Fishes (USFWS,1995), and Recovery Plan for valley elderberry longhorn beetle (USFWS, 1984).

3. Assist the Service and other relevant parties in implementation of recommended actions to reduce the extent and severity of drainwater contamination identified in the San Joaquin Valley Drainage Program's Final Report: A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### **Reinitiation–Closing Statement**

This concludes formal consultation on the 15 proposed 2008-2010 Interim water contracts. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Please contact Michael Welsh at (916) 414-6600 should you have questions regarding this biological opinion.

Attachments 1 – 9 – Service Area Maps  
Attachment 10 – Fresno County Service Area Map

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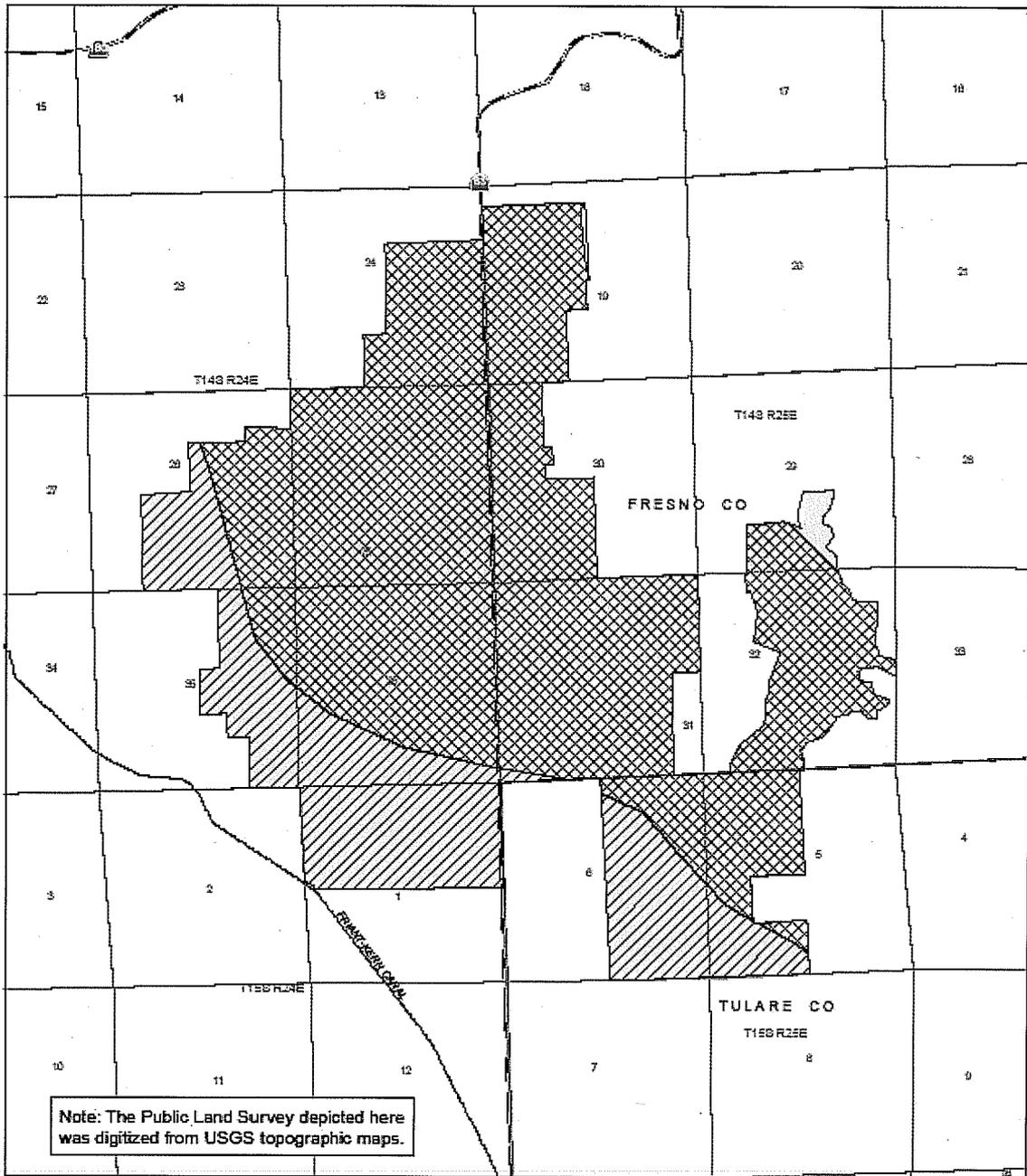
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**Hills Valley I.D.**

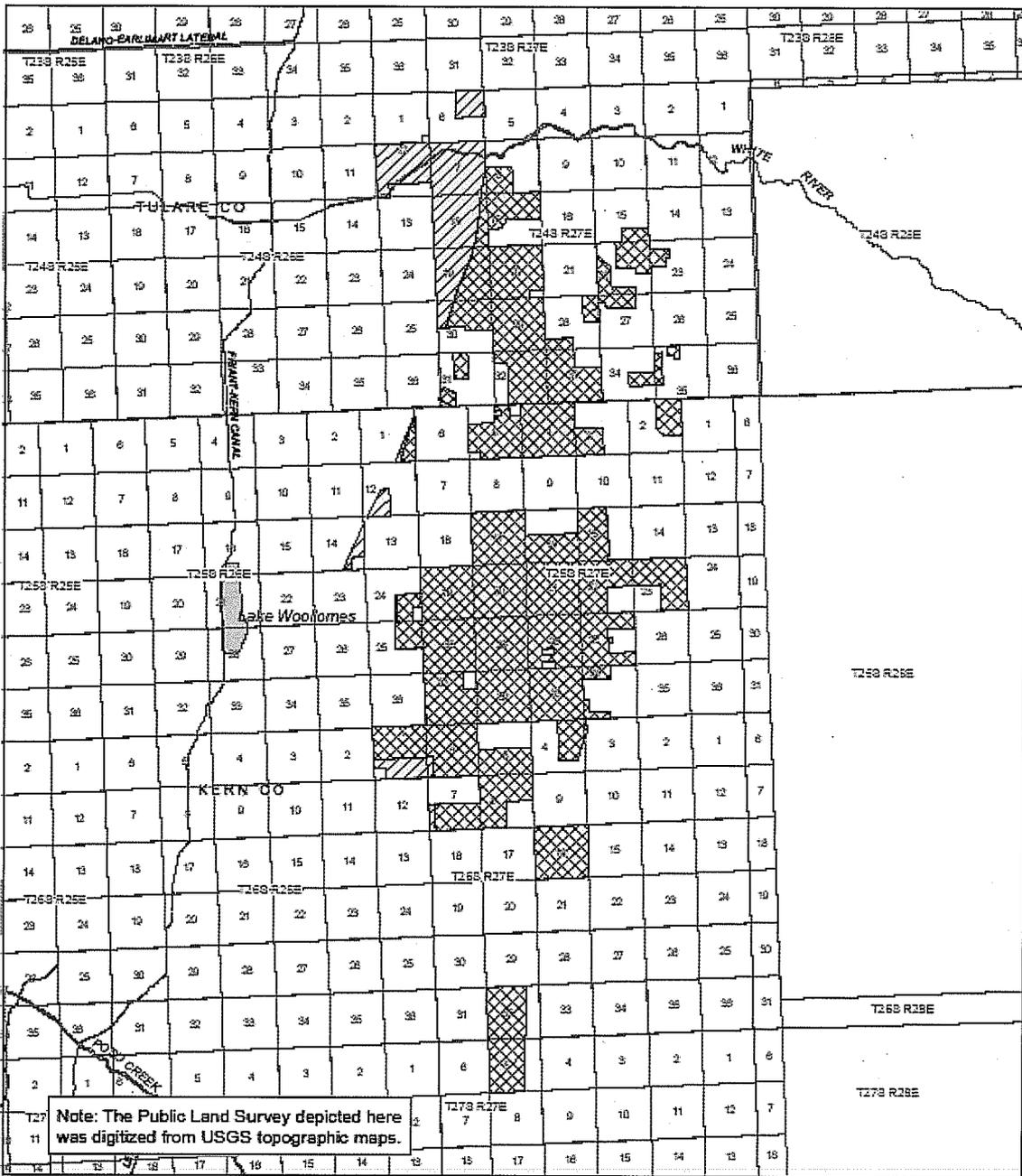
Project water delivered from the Friant Division  
Contract No. 14-05-200-8486A-LTR1  
EXHIBIT A

0 0.5 1 Miles

1785-202-2

- District Boundary
- Contractor's Service Area (Irrigation Only)
- Contractor's Service Area (Irrigation and M&I)

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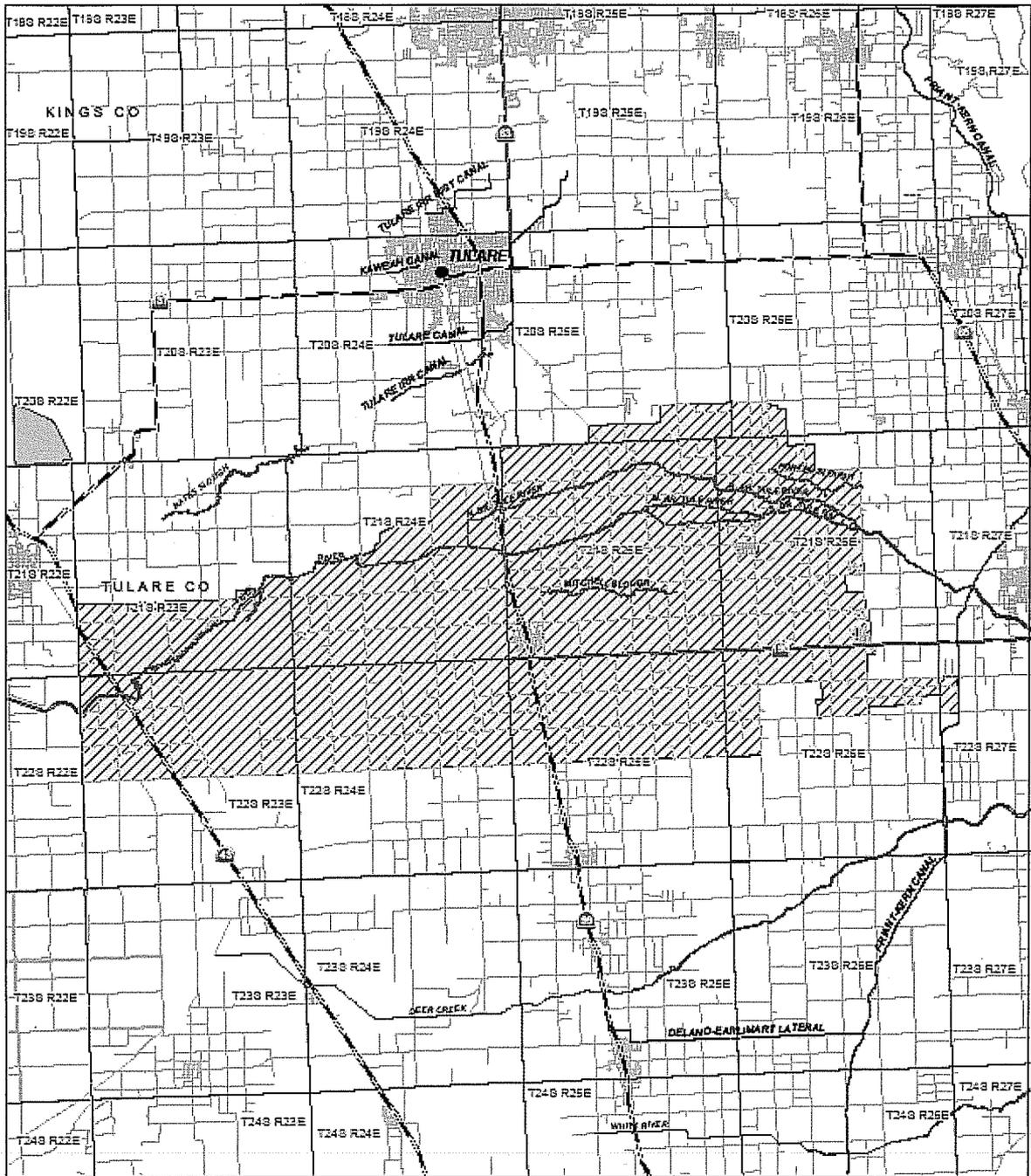


**Kern-Tulare W.D.**  
 Project water delivered from the Friant Division  
 Contract No. 14-06-200-8601A-LTR1  
**EXHIBIT A**

**Legend:**  
 □ District Boundary  
 ▨ Contractor's Service Area (Irrigation Only)  
 ▩ Contractor's Service Area (Irrigation and M&I)

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1785-202-3



### Lower Tule River Irrigation District

-  Contractor's Service Area
-  District Boundary

Contract No. 14-06-200-8237A-LTR1  
EXHIBIT A



Date: October 21, 2004  
File Name: \\hd\info\contract\lower\_tulare\job.mxd



1785-202-4



**Pixley Irrigation District**  
 Contract No. 14-06-200-8238A-LTR1  
 EXHIBIT A

Contractor's Service Area  
 District Boundary

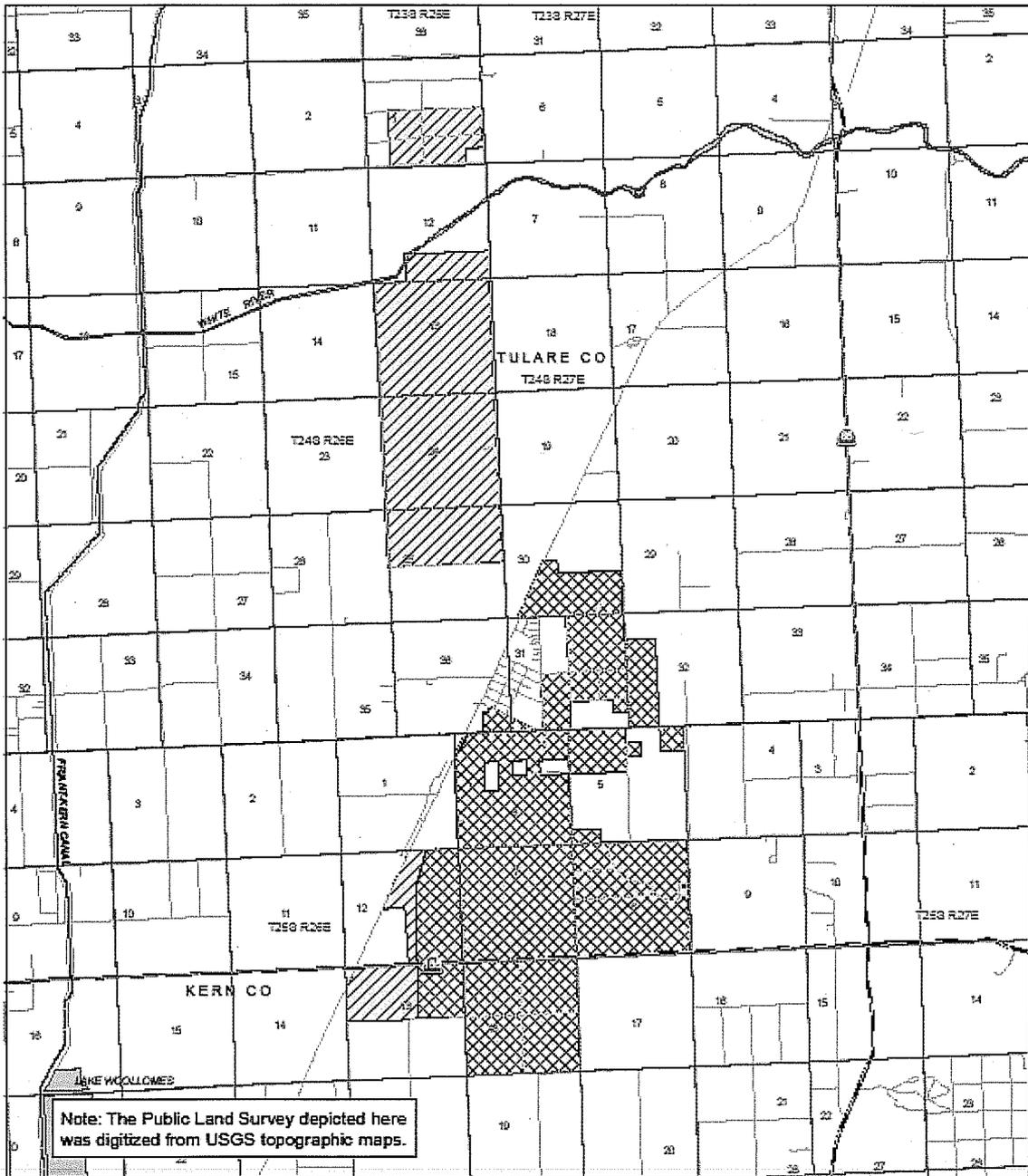
Miles

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1785-202-5

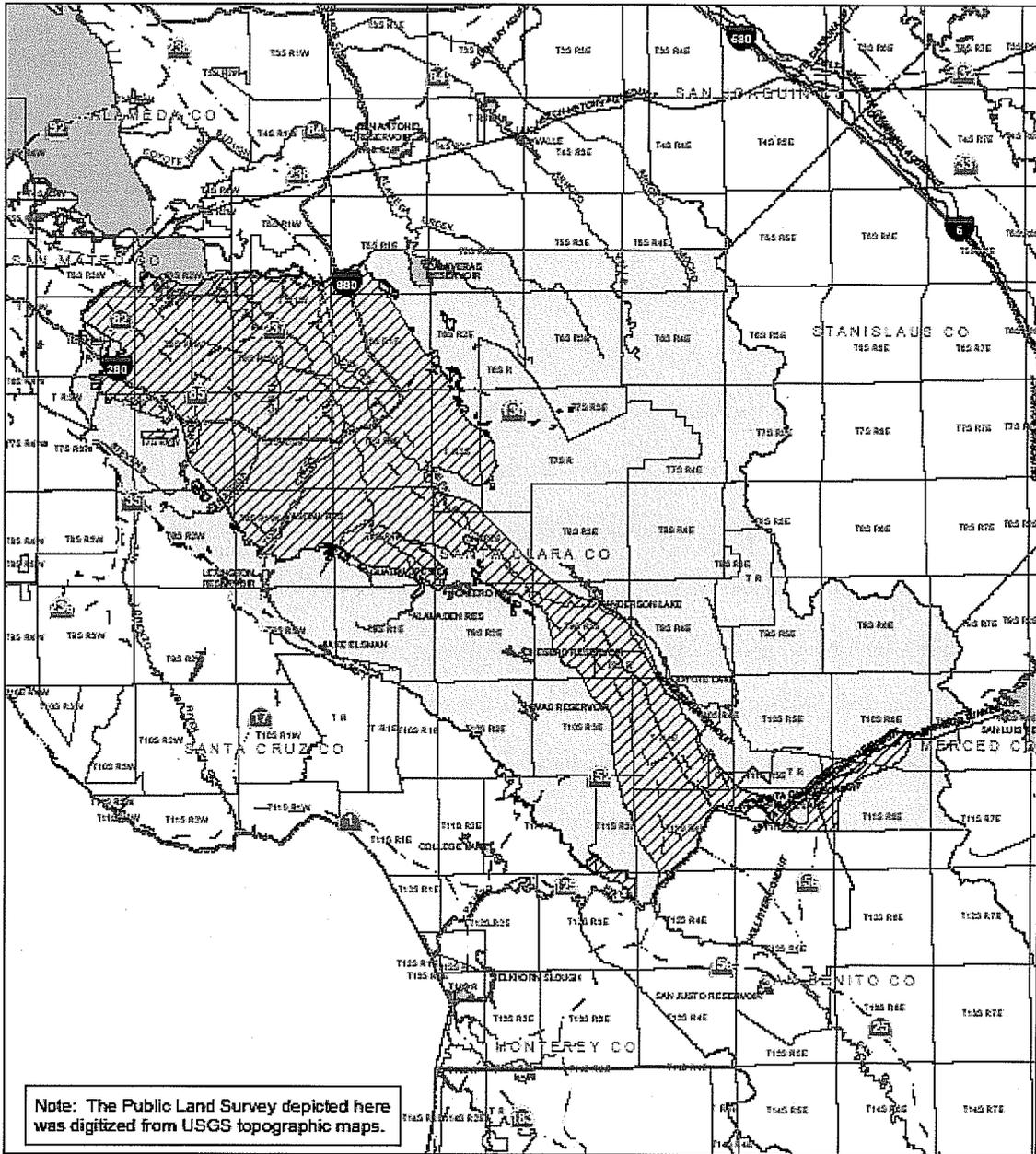
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**Rag Gulch Water District**  
 Project water delivered from the Friant Division  
 Contract No. 14-06-200-8367A-LTR1  
 EXHIBIT A

<ul style="list-style-type: none"> <li> Contractor's Service Area (Irrigation Only)</li> <li> Contractor's Service Area (Irrigation and MSJ)</li> <li> District Boundary</li> </ul>	<p>0 0.5 1 2 3 Miles</p>	<p>1785-202-8</p>
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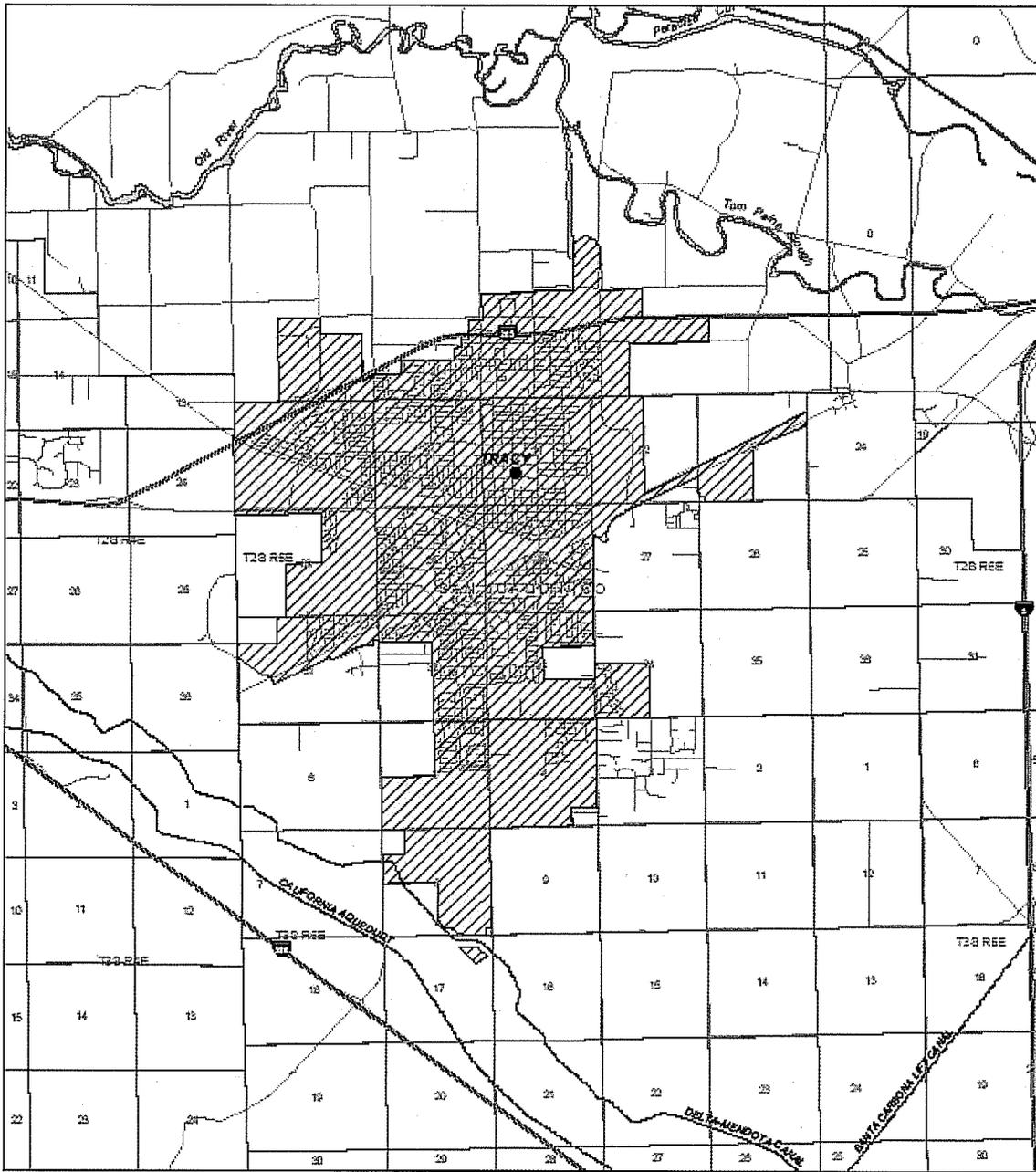
**Santa Clara Valley W.D.**  
 Contract No. 7-07-20-W0023-LTR1  
 Exhibit A

Contractor's Service Area

District Boundary

921-202-1

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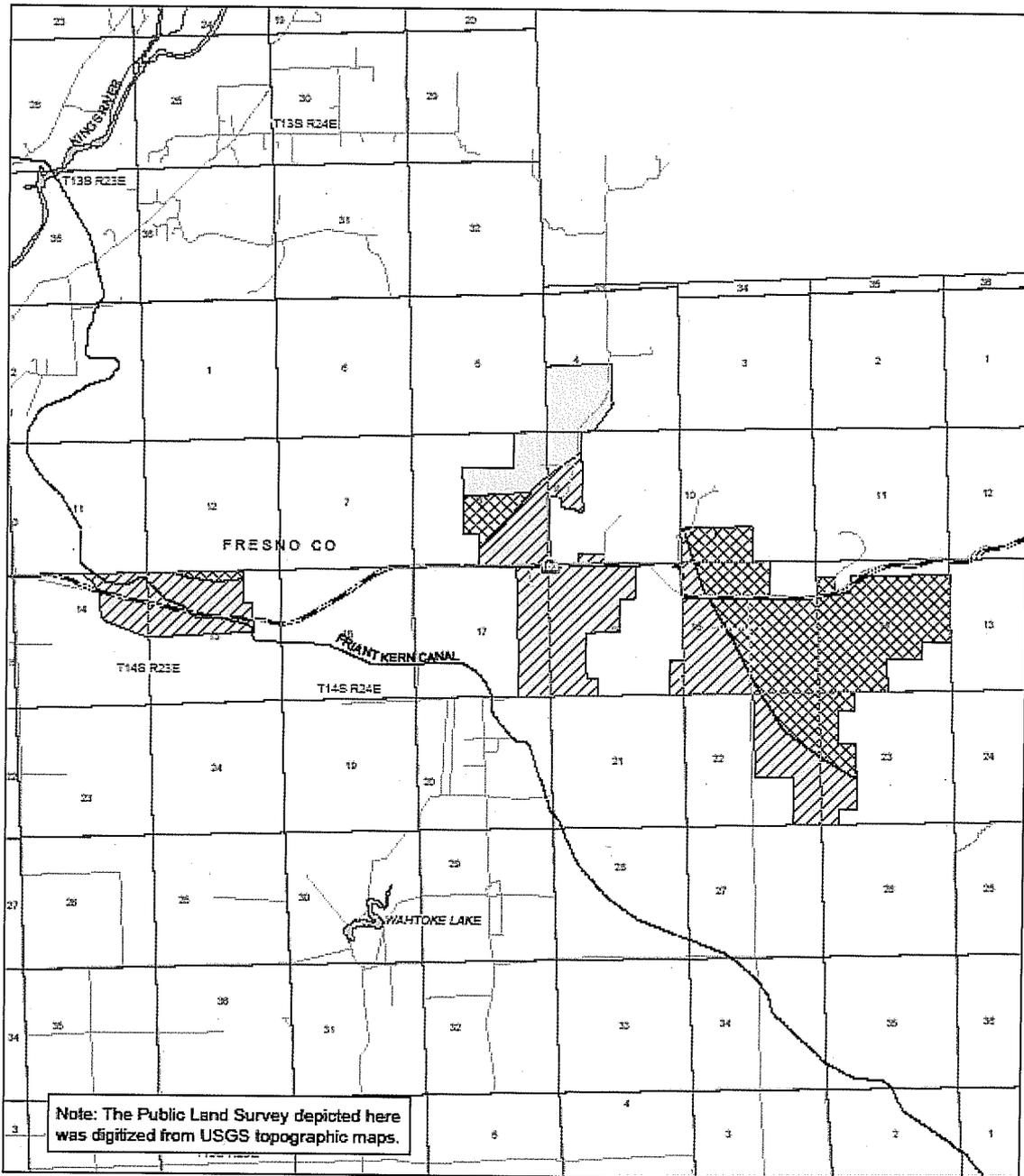
**City of Tracy**  
 Contract No. 14-06-200-7858A-LTR1  
 EXHIBIT A

District Boundary  
 Contractor's Service Area

Date: October 13, 2004  
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0 0.5 1 2 Miles

214-202-1



**Tri Valley Water District**  
 Project water delivered from the Friant Division

Contract No. 14-06-200-8585A-LTR1  
 EXHIBIT A

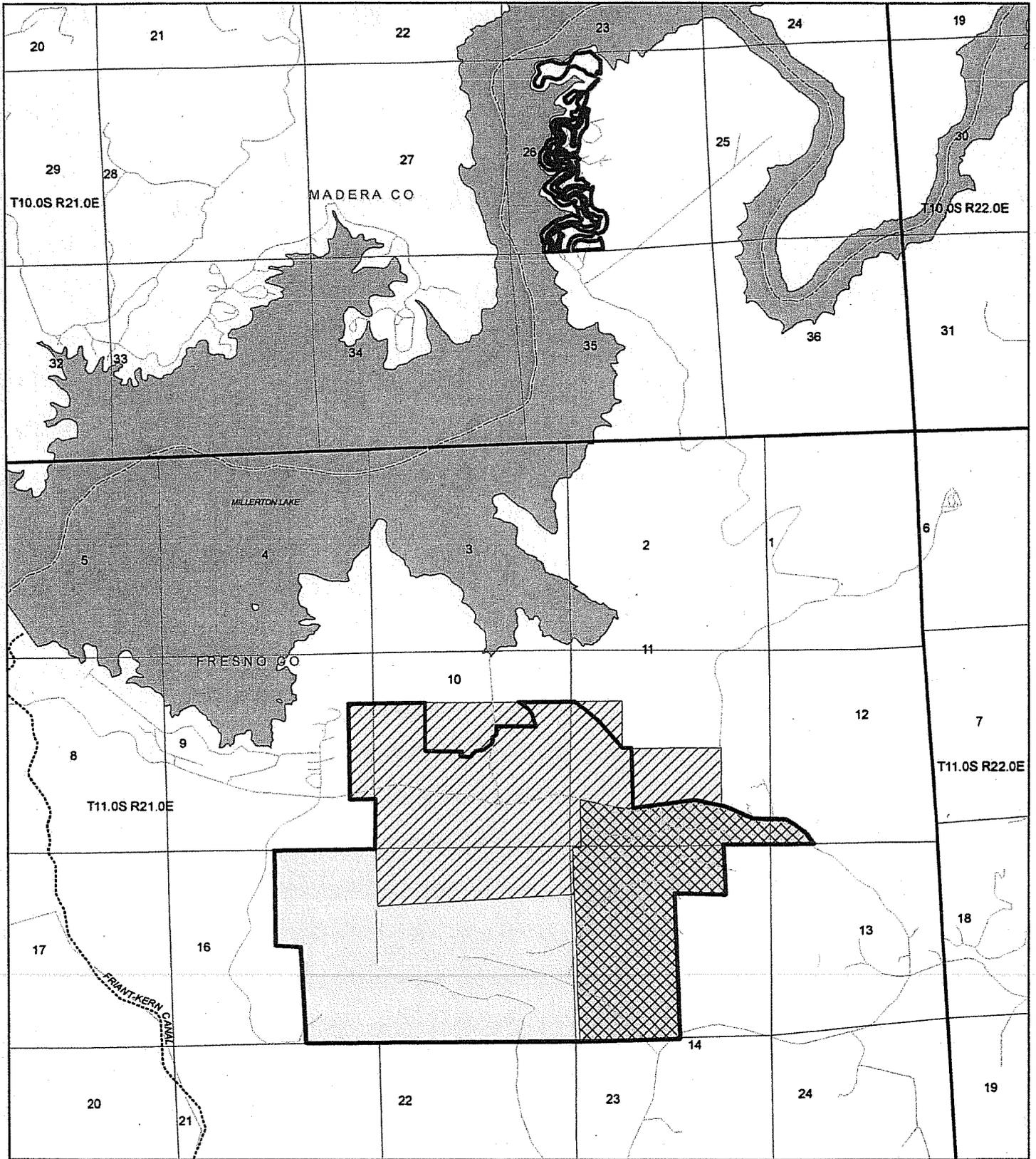
Contractor's Service Area (Irrigation Only)  
 Contractor's Service Area (Irrigation and M&I)  
 District Boundary

Date: October 21, 2004  
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0 0.5 1 2 3 Miles

1785-202-7



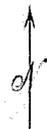


-  Fresno Co. Service Area #34 (Millerton New Town)
-  Fresno Co. Service Area #34A (Brighton Crest)
-  Sky Harbour
-  Contractor's Service Area (Irrigation and M&I)
-  Contractor's Service Area (Irrigation Only)
-  Irrigated/M&I Place-of-Use Boundary

Date: March 4, 2005, Revised 6/15/07, 7/18/07  
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# County of Fresno

## Contract No. 14-06-200-8292A-IR11



1785-202-1