

September 30, 2005  
Work Plan for Fiscal Year 2006

I. San Joaquin River Comprehensive Plan 3406(c)(1)

II. Responsible Entities

Agency	Staff Name	Role
Reclamation	Michael Jackson	Deputy Area Manager
Reclamation	Valerie Curley	Program Manager

III. Program Objectives for FY 2006

**A. Continuation of on-going data gathering and study tool development activities.**

1. Reclamation will continue the Millerton Lake hydrodynamic temperature model (CE-QUAL-W2) development, San Joaquin River hydrodynamic temperature model (HEC-5Q) development, and San Joaquin River HEC-RAS modeling efforts. These three model development efforts need to continue in FY06.
2. Reclamation has initiated Millerton Lake water quality monitoring and San Joaquin River water quality monitoring programs. The Millerton Lake data gathered is essential for the CE-QUAL-W2 reservoir model calibration and the river monitoring data is essential for the HEC-5Q river modeling calibration.

**B. Initiation of new activities to add to the study tools available for San Joaquin River rehabilitation planning.**

1. Reclamation will initiate a groundwater monitoring program along the corridor of the San Joaquin River. The data from the monitoring program will be used to support a groundwater modeling effort of the San Joaquin River. Before a successful rehabilitation program can be developed, it is necessary to understand the interactions, if any, between the surface water and groundwater in various reaches of the San Joaquin River; specifically the hyporheic flows, stream-aquifer interaction, and thermodynamic processes affecting water temperature.
2. Efforts will be conducted to scope the development of reach-specific or targeted sediment transport modeling in support of future decision making regarding rehabilitation actions affecting fluvial geomorphic processes.
3. A geomorphic and ecological assessment which will include a review of historical data, all studies and demonstration efforts conducted to date by Reclamation, Fish and Wildlife Service, and others will be considered for the development of a San Joaquin River comprehensive plan. Additional analyses will be defined to address outstanding questions impacting rehabilitation.
4. Fishery issues are of a primary concern for San Joaquin River rehabilitation so a Fish Habitat Suitability and Fish Population model scoping effort will be initiated.

### **C. Development of Temperature and Water Quality Historical and Real-Time Database – Integrated Information Management System.**

1. In cooperation with other river system managers in the MP-Region, an Integrated Information Management System (IIMS) will be developed for the San Joaquin River over a 3-year period. The IIMS project is one of organizing and leveraging data sources for supporting scientific analysis and management decisions, and then provide an audit trail of the resulting actions. IIMS will: promote cooperation, exchange of data, and accuracy of the data; provide rapid access to the latest data to enable timely decision making and up to date reporting; facilitate integration and sharing of baseline data, monitoring data, and analysis; and enforce standard data collection practices through consistent data formats.

### **IV. Status of the Program**

The San Joaquin River Comprehensive Plan development process has been underway through various methods since the passage of CVPIA. Restoration funding was used by Reclamation and Fish and Wildlife Service to lead an effort from 1992 through 1996. From 1997 through 2005, restoration funding was also provided to other entities (i.e. Friant Water Users Authority (FWUA), California Departments of Fish and Game and Water Resources, etc.) to work collaboratively with organizations (i.e. Natural Resources Defense Council (NRDC) academia, etc.) to develop concepts, objectives, etc. for San Joaquin River rehabilitation planning. For FY06, Reclamation and Fish and Wildlife's primary focus will be to continue data collection and develop study/analysis methods for use in the development of the San Joaquin River Comprehensive Plan. These monitoring and modeling activities will provide critical data necessary to inform the future management plan development process for rehabilitation of the San Joaquin River.

### **V. FY 2005 Accomplishments**

In FY 2005, the CVPIA Restoration Fund allocated \$1,500,000 to support the San Joaquin River rehabilitation planning activities. These funds helped accomplish the following activities:

- Point Reyes Bird Observatory was able to continue their songbird monitoring program along the San Joaquin River 150-mile study area (Friant Dam to Merced River confluence).
- The California Department of Fish and Game was able to complete their 'point in time' San Joaquin River aquatic species inventory in the identified study area.
- The California Department of Fish and Game, in collaboration with the California Department of Water Resources, was able to initiate efforts to conduct the appropriate biological surveys and engineering modeling that will lead to a design to re-isolate the Milburn-Hansen Ecological Preserve (an abandoned gravel pit area along the San Joaquin River).

- The Endangered Species Recovery Program conducted by the CSU-Stanislaus was able to continue their Valley Elderberry Longhorn Beetle habitat surveys in the 150-river mile study area.
- The CE-QUAL-W2 Millerton Lake hydrodynamic temperature model development was initiated and 2004 water-year calibration completed using data collected through the Millerton Lake water quality monitoring program initiated in 2003.
- The CE-A protocol database that can be used to store historical and current data from different agencies was completed. The water quality, temperature as well reservoir operation data that were used to develop reservoir and river temperature models are stored in this protocol data base.
- The last of six new water quality monitoring stations on the San Joaquin River was successfully installed through a cooperative effort between Reclamation and Lawrence Berkeley National Laboratories (U.S. Dept. of Energy). In FY06, efforts will be made to place the last two of the six monitoring stations on CDEC to provide real-time (provisional) data to those accessing there Internet information.
- The HEC-5Q San Joaquin River hydrodynamic temperature modeling effort was initiated using data from the recently installed San Joaquin River monitoring stations and from data gathered during a recent flood control release event from April to June 2005.
- During April through June 2005, data was gathered in the 150-river mile study area to assist Reclamation in better understanding flood inundation, the river hydraulics, geomorphic conditions, and thermal conditions along the San Joaquin River. The field data were gathered through a cooperative effort between the California Department of Fish and Game, Friant Water Users Authority, with guidance input from a host of other interested agencies and stakeholder organizations. A technical memorandum summarizing the data gathering effort, methods, etc. and a compilation of the data gathered will be prepared and released in FY06.

## VI. FY06 Tasks, Costs, Schedules and Deliverables

### A. Narrative Explanation of Tasks

The following projects are critical elements for continuing the data collection efforts that will lead toward a San Joaquin River Comprehensive Plan:

**Millerton Lake Hydrodynamic Temperature Model Development** to include 2005 water year CE-QUAL-W2 model calibration and sensitivity simulations - \$75,000

**San Joaquin River Hydrodynamic Temperature Model Development** to

include 2005 water year HEC-5Q model calibration - \$85,000

**Millerton Lake Water Quality Monitoring** to include data collection and processing for CE-QUAL-W2 reservoir model calibration - \$40,000

**San Joaquin River Water Quality Monitoring** to include data collection and processing for HEC-5Q river model calibration - \$75,000

**San Joaquin River HEC-RAS Modeling** to include model refinement via comparison of flood inundation predictions for comparison with 2005 flood releases aerial imagery - \$30,000

**Geomorphic and Ecological Assessment** to include review of historical data and performing additional analysis to address outstanding questions impacting rehabilitation - \$45,000

**Surface-Groundwater Interaction Modeling** to include scoping and initial model development - \$50,000

**Groundwater Monitoring** to include development and implementation of a monitoring and data processing program in support of model development and implement a monitoring program - \$30,000

**Sediment Transport Modeling** to include scoping for initial model development, and monitoring program - \$10,000

**Temperature and Water Quality Historical and Real-time Database Development** initiated, to include identification of goals and objectives for the Integrated Information Management System (IIMS) - \$50,000

**Fisheries Biologist Support** to include consultation on model(s) development and fisheries issues - \$15,000

**Fish Habitat Suitability and Fish Population Modeling** to include scoping for initial model development and monitoring program - \$10,000

**Program Management** - \$75,000

**B. Schedule and Deliverables**

#	Task	Dates		Deliverables
		Start	Complete	
A.	<b>Continuation of on-going data gathering and study tool development activities.</b>	10/01/05	09/30/06	Data from on-going river and reservoir water quality monitoring
B.	<b>Initiation of new activities to add to the study tools available for rehabilitation planning.</b>	10/01/05	09/30/06	Data and tools for groundwater monitoring and scoping of various models being initiated for the subject study effort
C.	<b>Initiation of development of Integrated Information Management System (IIMS)</b>	10/01/05	09/30/06	Scoping and identification of goals and objectives for San Joaquin River rehabilitation IIMS.

C. Summary of Program Costs and Funding Sources

#	Task	Total Cost	Bureau of Reclamation	US Fish & Wildlife Service	
1	<b>On-Going Data Gathering Efforts</b>	\$305,000	\$305,000	TBD	
2	<b>New Data Gathering and Study Tool Development Efforts</b>	\$235,000	\$235,000	TBD	
3	<b>Integrated Information Management System (IIMS)</b>	\$50,000	\$50,000	TBD	
<b>Total Program Budget</b>		<b>\$590,000<sup>1</sup></b>	<b>\$590,000</b>		

<sup>1</sup>\$1 million of restoration funding is provided under 3406(b)(1). \$590,000 will be applied to 3406(c)(1) FY06 efforts.

D. CVPIA Program Budget

#	Task	FTE	Direct Salary and Benefits Costs	Contract costs (Internal & External to Reclamation)	Miscellaneous Costs	Administrative Costs	Total Costs
1	<b>On-Going Data Gathering Efforts</b>	2.5	\$75,000	\$230,000	\$0	\$0	<b>\$305,000</b>
2	<b>New Data Gathering and Study Tool Development Efforts</b>	3.0	\$0	\$235,000	\$0	\$0	<b>\$235,000</b>
3	<b>Integrated Information Management System (IIMS)</b>	1.0	\$0	\$50,000	\$0	\$0	<b>\$50,000</b>
<b>Total by Category</b>		<b>6.5</b>	<b>\$75,000</b>	<b>\$515,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$590,000</b>

**Table E. DRAFT CVPIA 5-Year Budget Plan FY 2007 – 2010**  
(\$ Thousands)

Program Description and Section		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Total (\$)
	W&RR	\$0	\$0	\$0	\$0	\$0	\$0
	RF	\$590	\$2,000	\$2,000	\$2,000	\$3,000	\$9,590
	FWS	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total:</b>		\$590	\$2,000	\$2,000	\$2,000	\$3,000	\$9,590

*Explanatory Notes:* This table only includes CVPIA Restoration Funds; it does not include any funding from W&RR, the U.S. Fish and Wildlife Service, other Federal agencies, or any State of California cooperating agencies.

Major Activities:

FY 2007

Complete development of modeling tools for alternative development and analysis

FY 2008

Initiate development of alternatives

FY 2009

Analyze alternatives and initiate environmental analysis

FY 2010

Initiate the environmental compliance documentation