

**September 5, 2005**  
**Work Plan for Fiscal Year 2006**

**I. Red Bluff Diversion Dam Fish Passage Program CVPIA Section 3406(b)(10) (Fish Passage Planning Program)**

**II. Responsible Entities**

	<b>Agency</b>	<b>Staff Name</b>	<b>Role</b>
Lead	Reclamation	Paul Freeman/Buford Holt	Program Managers
Co-Lead	USFWS	Jim Smith	Biologist

**III. Program Objectives for FY 2006**

- A. Improve safe passage of juveniles migrating downstream, particularly Chinook salmon - (fall, late fall, winter and spring runs). (Source document, CVPIA)
- B. Improve upstream passage of adults. (Particularly Chinook Salmon – fall, late fall, winter and spring runs, and Steelhead). (Source document, CVPIA)
- C. Provide water to users (farmers and wildlife refuges) served by the Tehama-Colusa and Corning Canals. (Source document, CALFED)
- D. Continue to allow Lake Red Bluff to exist if possible, by leaving the gates in during the summer months, while meeting Objectives A, B, C and E.
- E. Select and implement further actions to minimize fish passage problems at Red Bluff Diversion Dam (RBDD). (Source document, CVPIA)
- F. Implement any actions required by the Section 7 consultation regarding the OCAP.
- G. Complete EIS/EIR.
- H. Complete fourth pump install in Research Pumping Plant.

**IV. Status of the Program**

The exploration of alternatives for further improvements of fish passage, compatible with irrigation needs and local interests, has led to general recognition of the efficacy of the operations already implemented in response to the 1993 Biological Opinion for the operation of the CVP and State Water Project on winter-run Chinook salmon. The increased duration of gate removal at RBDD, prompted by the Biological Opinion, dramatically improved baseline conditions for anadromous salmon, and changed the standard against which additional measures to minimize fish passage problems would be measured. This raised standard and the high cost of improvements or refinements at RBDD, which in the end could run counter to late CALFED decisions, led to acceptance of the resulting improvement in fish passage for the short term, and the suspension of new initiatives under the first four years of the six-year Fish Passage Planning Program that Reclamation implemented under Section 3406(b)(10) of the Act. It was agreed, by all agencies involved, that all steps had been taken that could be taken without risk of large, stranded investments pending new developments, such as decisions concerning a Sites reservoir, which were seen as being several years in the future.

The first such development came in FY 2000, when the Tehama-Colusa Canal Authority (TCCA) concluded the availability of CALFED funds opened new possibilities for resolution of water delivery and fish passage problems, leading to a renewal of investigations of pumping plants and river by-pass options. A Biological Assessment and a draft EIS/EIR for the Fish Passage Improvement Project at RBDD were completed in FY 2002, and made available for public review. A public hearing and public meeting on the EIS/EIR were also held in Red Bluff in FY 2002. The USFWS submitted a draft Fish and Wildlife Coordination Act report in August 2002, which was included as an appendix in the draft EIR/EIS document. Given guidance by the court on the timing of Endangered Species Act (ESA) and NEPA compliance activities, work on the EIS/EIR was suspended pending completion of the ESA consultation for the CVP as a whole, and the OCAP consultation. A final EIS/EIR is now anticipated in FY 2006.

Several other pending actions have also arisen that will further change the context from which additional measures to minimize fish passage problems must be considered. The pending decisions by the Secretary of the Interior concerning operation of USBR's Trinity River Division, the California State Water Resources Control Board pending decision concerning water quality standards in the Sacramento-San Joaquin Delta, and current judicial decisions and litigation in the San Joaquin Valley, may impact CVP operations and flows in the Sacramento River at RBDD. In addition, CALFED is seeking long-term solutions to ecosystem restoration and water supply reliability. Off channel storage adjacent to the Tehama-Colusa Canal is being considered as part of the CALFED process. The construction of additional storage in this area has the potential to dramatically impact the remaining fish passage issues at RBDD by changing the economics of canal operations.

The interests of the major players in the study of fish passage and water diversion options at Red Bluff remain unchanged. The fishery agencies would prefer to see full reliance on screened pumps, the local community is primarily interested in retention of Lake Red Bluff, and the TCCA is concerned about the continuing pressure to shorten the four month period, when diversions at Red Bluff can be made by gravity flow from Lake Red Bluff, and the unreliability of the Black Butte Reservoir supply, which is critical to meeting demands during gates-out periods.

It is clear that construction of a full scale pumping plant with appropriate fish screens would eliminate the remaining impediments to fish passage with no more new risk (e.g. impingement) than occurs with other screened facilities. It is also clear this would address the need for reliability of diversions from the river. However, it is not clear that would lead to any recovery of the Spring run population in the upper Sacramento River, and benefits for the green sturgeon are unclear, although they would intuitively appear to be more substantial than in the case of the Spring run Chinook since some sturgeon would be blocked in their upstream migration and those adults returning to the sea after spawning may be subject to injury if they pass under the gates.

No convincing arguments have been advanced as to why one should expect recovery of the Spring run in the uppermost Sacramento River if all fish passage impediments at RBDD are removed. On the contrary, comparison of the experience in the Sacramento

River above RBDD, Mill and Deer Creeks, and Butte Creek imply that something other than access to spawning grounds is limiting recovery and that no benefit will be seen from changes at RBDD until those impediments are identified and removed. The population in Butte Creek has responded 20 fold to improvements in fish passage and stream flow during a decade in which the upper Sacramento population has shown no response to unimpeded passage for the earliest arriving 20% of the run. Since the two populations face the same hazards below the confluence of the Feather and the Sacramento Rivers, the problems must lie upstream of that point. Moreover, since the populations on Mill and Deer Creek, which have spawning grounds in landscapes that have seen little change in the past 100 years, and have changed little during this same period, it would also appear that spawning habitat is not the problem. It is possible that a lack of rearing habitat is the limiting factor since the Butte Creek population has extensive wetlands with slack water for rearing whereas the Sacramento, Mill and Deer populations have virtually no tributaries or side channels in which to rear. In other words, it appears that improving passage and flows on Butte Creek got results because those two variables were limiting, whereas the Sacramento population has not responded because neither passage nor spawning habitat was limiting for that population, which is also apparently true of the Mill and Deer Creek populations. The Sacramento River is devoid of such habitat from the 100 miles from the mouths of Big Chico/Stony Creek south to the Feather River/Knights Landing outfall. In any event, there is no reason to expect a benefit to the Spring run Chinook commensurate with the cost of construction of a screened 2500 cfs pumping facility at Red Bluff even if populations return to Clear and Battle Creek since the Spring run has persisted in Beegum Creek despite all passage impediments at Red Bluff.

Benefits for the green sturgeon may be greater, but the significance of any benefits to the green sturgeon are not yet clear.

Pending resolution of the question of benefits and costs, the data shown in the projected costs presume a worst case scenario in which a full scale pumping plant is built with financing from those CVP users not under 'ability to pay' relief.

## **V. FY 2005 Accomplishments**

The accomplishments for Objectives C, D and E are continuing administrative accomplishments, and are discussed in Status of the Project above. Discussions on the various alternatives to consider for the solution of the fish passage and water delivery problems at RBDD continue with the various agency representatives on the Study Management Group (SMG). The SMG is comprised of representatives of USBR, USFWS, National Marine Fisheries Service (NMFS), California Dept. of Fish and Game (CDFG), California Dept. of Water Resources (DWR) and CH2MHill.

The six alternatives, as outlined in the Red Bluff Fish Passage Program Improvement Project EIS/EIS, are as follow:

- No Action alternative: Maintain existing conditions, except add a fourth pump with fish screens to the RBRPP.
- Alternative 1a: Gates in four months, add a fourth pump to the RBRPP, improve the existing fish ladders, and build a 1,380 ft<sup>3</sup>/s pumping plant.
- Alternative 1b. Gates in four months, add a fourth pump to the RBRPP, improve the right bank fish ladders, add a 1,000 ft<sup>3</sup>/s bypass channel on the left bank, and build a 1,380 ft<sup>3</sup>/s pumping plant.
- Alternative 2a. Gates in two months, add a fourth pump to the RBRPP, improve the existing fish ladder, and build a 1,680 ft<sup>3</sup>/s pumping plant.
- Alternative 2b. Gates in two months, add a fourth pump to the RBRPP, and build a 1,680 ft<sup>3</sup>/s pumping plant (no improvement to existing ladders).
- Alternative 3. Remove the gates year-round and build a 2,180 ft<sup>3</sup>/s pumping plant.

During FY05 the installation of a fourth "fish-friendly" pump in the RBRPP, which will need fish screens downstream of the pump, was started. Completion is expected in FY06.

## VI. Tasks, Costs, Schedules and Deliverables

### A. Narrative Explanation of Tasks.

1. Program Management – There are four Program Management funding requirements. USBR, as the lead Federal agency; the USFWS, as a co-lead Federal agency; the Tehama-Colusa Canal authority (TCCA), as lead state agency, and CH2M Hill, the consultant.
  - 1.1 Program Management – The USBR program manager is responsible for oversight of the program including budgeting and disbursement of federal funds and administering a grant to the TCCA, which provides funding to the TCCA to procure the sub-contractor (CH2M Hill).
    - 1.1a. Program Management – the USFWS, as a member of the SMG, will assist USBR and TCCA in developing the alternatives for fish passage improvement at RBDD.
  - 1.2 Program Management – The TCCA program is responsible for administering the contract provided for under the grant and Prop 204 funding.
  - 1.3 Program Management – CH2M Hill is responsible for providing the resources to accomplish the Tasks listed below, (2 through 5, 7, and 8).
2. Alternative Refinement – Develop fish impact assessment criteria. Assess potential of each alternative to meet the applicable fish passage criteria established by the agencies. Develop screening evaluation factors. These factors will include fish passage improvements, water supply reliability improvement, socioeconomic issues, environmental and permitting issues.

3. Environmental Documentation – Prepare environmental documentation to meet the requirements of CEQA/NEPA and address the impacts and benefits of each alternative developed carried forward.
4. Initiate Permitting – Initiate permit applications not expected.
5. Update Implementation Plan – Resole implementation constraints and issues.

#### **Additional Funding Needs**

6. Completion of the Research Pumping Plant – Contractor on site working on Research pumping plant 4th pump and fish screen installation. This will address, but not fully meet, Objective C by providing additional water to irrigators and will indirectly address Objective A, by delaying the onset of rediversions at Stony Creek and thus incrementally reducing risks to juvenile salmon in Stony Creek.
7. Program Management – Provide management and administrative support to complete EIS/EIR after a determination is made of the listing status of the green sturgeon.
8. Design Specification – Additional funds may be needed in FY06 to begin final design and construction specification drawings depending on Record of Decision (ROD).
9. Acquire Land – None expected in FY06.

## B. Schedule and Deliverables

No.	Task	Dates Start	Dates Complete	Deliverable
1	Program Management	10/01/05	09/30/06	Monitor program for accomplishment, schedule and budget; provide deliverables as stated in Tasks 1.1, 1.2, 1.3 below
1.1	Program Management (BOR)	10/01/05	09/30/06	Provide a revised FY04 Work Plan and a new FY05 Work Plan; provide grant to TCCA for Phase III.
1.1a	Program Management (USFWS)	10/01/05	09/06	Assist in completion of EIS/EIR. Continue conducting biological studies to monitor passage of adult and juvenile salmonids at RBDD in response to pump installation and gate manipulations
1.2	Program Management (TCCA)	10/01/05	9/30/06	Provide schedule for Phase III
1.3	Program Management (CH2M)	10/01/05	9/30/06	Provide reports and documents as noted below for Tasks 2 through 9.
2	Alternative Refinement	10/01/05	9/30/06	Select a preferred alternative
3	Environmental Documentation	10/01/05	7/01/06	Provide a final NEPA/CEQA document and the Record of Decision
4	Initiate Permitting	10/01/05	12/31/06	Obtain permits, required by other Agencies, for construction
5	Update Implementation Plan	10/01/05	4/30/06	Final Implementation Plan Report after final OCAP Decision
6	Award Contract for Installation of Fourth Pump	9/30/05	2/16/06	Installed pump with all components needed for successful water delivery and fish bypass to river.
7	Program Management (CH2M Hill only)	10/1/05	9/30/06	Monitor program for accomplishment, schedule and budget; same as Task 1, 1.1, 1.2, 1.3 above and assist in Tasks 8 and 9 below.

### Schedule and Deliverables - Additional Funding Needs

No.	Task	Dates Start	Dates Complete	Deliverable
8	Final Design <i>Delayed until final ROD Determination</i>	To be Determined	To be Determined	Begin final design for pumping plant and provide construction specification depending on ROD.
9	Land Purchase <i>Delayed until final ROD Determination</i>	To be Determined	To be Determined	Begin acquisition process for land for the construction and operation of the pumping plant depending on ROD.

**EXPLANATORY NOTES:** Funding for these tasks was not provided for in the FY05 budget.

### C. Summary of Program Costs and Funding Sources

No.	Task	Total Cost	W&RR
1	Program Management	(n/a)	(n/a)
1.1	Program Management (BOR)	\$120,000	\$120,000
1.1a	Program Management (FWS)	\$100,000	\$100,000
1.2	Program Management (TCCA)	\$70,000	\$0
1.3	Program Management (CH2M)	\$12,000	\$12,000
2	Alternative Refinement (CH2M)	\$58,000	\$58,000
3	Environmental Documentation (CH2M)	\$80,000	\$80,000
4	Initiate Permitting (CH2M)	\$0	\$0
5	Program Management (CH2M)	\$10,000	\$10,000
6	Installation of Fourth Pump	\$780,000	\$780,000
7	Program Management (CH2M only)	\$20,000	\$20,000
8	Final Design (CH2M only)		
9	Land Purchase (CH2M only)		
10	Remaining unused CH2MHill Fish Passage Improvement Project Funds	- \$180,000	- \$180,000
<b>Total Program Budget</b>		<b>\$1,070,000</b>	<b>\$1,000,000</b>

**EXPLANATORY NOTES:** The CALFED (Prop 204 funds) will not provide any funding for the FY04 program. 6 includes funding for USBR Denver technical Service Center and MP Design and Construction Offices to assist in construction reviews.  
1.2 TCCA will provide in-kind services for their program management activities, which is valued at \$70,000.

#### D. CVPIA Program Budget

No CVPIA funds are anticipated for FY06 although substantial sums may be requested in FY06 for land acquisition and completion of final designs.

Table D - None needed

#### VII Future Years Commitments/Actions

We are engaged in the NEPA/CEQA process for this program. The completion schedule for Tasks 1 through 5 under Phase II of the Project is the end of the first quarter of FY05, with a Record of Decision (ROD) expected in the first quarter of FY06. Phase III of the Project begins at the start of FY06, and includes Final Designs and Land Acquisition. Phase IV follows with Project Construction and the Program concludes with Phase V, which is Monitoring of the Project.

Currently we are looking at six alternatives. Note that all alternatives include use of the Research Pumping Plant with an additional pump added to Bay #4. The cost estimates are in 2002 dollars (page 3-307 of the DEIS/EIR).

- A. **No Action Alternative**: Existing conditions, except for the addition of the Bay 4 pump. Cost estimates: \$3,700,000.
- B. **Alternative (1a)**: Leave the gates in at RBDD, i.e., utilize gravity flows to the T-C and Corning Canals, from May 15 to Sept 15 each year. Build a 1,380 ft<sup>3</sup>/s pumping plant with fish screens while continuing to use the existing pumping plant, install a fourth pump at the existing plant, and improve both existing right and left bank ladders. Cost estimate: \$80,300,000. All cost estimates are feasibility level.
- C. **Alternative (1b)**: Leave the gates in at RBDD, i.e., utilize gravity flows to the T-C and Corning Canals, from May 15 to Sept 15 each year. Build a 1,380 ft<sup>3</sup>/s pumping plant with fish screens while continuing to use the existing pumping plant, install a fourth pump at the existing plant, and, improve the existing right and install a fish by- channel on the left bank. Cost estimate: \$87,300,000. All cost estimates are feasibility level.
- D. **Alternative (2a)**: Gates in at RBDD from July 1 to August 31 each summer. Build a 1,680 ft<sup>3</sup>/s pumping plant with fish screens while continuing to use the existing pumping plant, install a fourth pump at the existing plant, and improve both existing left and right bank fish ladders. Cost estimate: \$90,300,000.
- E. **Alternative (2b)**: Same as Alternative (2a) except, no improvement to abutment fish ladders. Cost estimate: \$72,600,000.
- F. **Alternative (3)**: Gates at RBDD remain open year around, no gravity flow to canals. Build 2180 ft<sup>3</sup>/s pumping capacity with fish screens while continuing to use the existing pumping plant, and install a fourth pump at the existing plant. Cost estimate: \$80,300,000.

**Table E. Draft CVPIA 5-year Budget Plan FY2007- 2010**

<b>Program Description and Section</b>		<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>Total (\$)</b>
	W&RR	1,000,000	1,250,000	1,500,000	1,500,000	0	5,250,000
	RF						
	State						
	FWS						
<b>Total</b>		1,000,000	1,250,000	1,500,000	1,500,000	0	5,250,000

**Major Activities:**

**FY 2007**

- Contracts \$810,000
- Fish and Wildlife Service \$150,000
  - Green Sturgeon Activities
- Program Admin \$290,000

**FY 2008**

- Contracts \$905,000
- Fish and Wildlife Service \$200,000
  - Green Sturgeon Activities
- Program Admin \$395,000

**FY 2009**

- Contracts \$1,000,000
- Fish and Wildlife Service \$ 200,000
  - Green Sturgeon Activities
- Program Admin \$ 300,000

**FY 2010**

**No funding at this time**