

Work Plan for Fiscal Year 2002

I. Program Title. Tracy Pumping Plant CVPIA Section 3406(b)(4) Tracy Fish Facilities Improvement Program

II Responsible Entities.

| | Agency | Staff Name | Role |
|---------|--------|----------------|--|
| Lead | USBR | Ron Brockman | Program Manager |
| | USBR | Debbie Coleman | Program Support |
| | USBR | Charles Liston | Research Director |
| | USBR | John Fields | Water Quality Monitoring |
| | USBR | Ron Silva | Site Management |
| Co-Lead | USFWS | Mike Thabault | Co-Lead |
| | USFWS | Ryan Olah | Fish and Wildlife Technical Assistance |

III Program Objectives for FY 2002. The program objectives are enumerated below.

A. Improve Fish Protection and Fish Salvage at TFCF

Action is in compliance with CVPIA 3406(b)(4), Biological Opinions for Winter-Run, Delta Smelt, Splittail, Central Valley Steelhead, and the July 1992 Agreement with DFG to Reduce and Offset Direct Fish Losses Associated with the Operation of the Tracy Pumping Plant and the Tracy Fish Collection Facility@.

B. Determine Best Practical Fish Protection Technology for making Long-term Future Improvements at Tracy and Other South Delta Facilities Proposed by CALFED -

Species Benefitted - Chinook salmon (fall- and winter-run), Steelhead, Delta smelt, Splittail, Sacramento blackfish, Longfin smelt, Striped bass, and American shad.

IV Status of the Program.

The Tracy Fish Facility Improvement Program (TFFIP) is identifying and making physical improvements and operational changes, assessing fishery conditions, and monitoring salvage operations at the Tracy Fish Collection Facility (TFCF) per agreements with DFG in 1992 and Section 3406(b)(4) of the CVPIA. Research and evaluation efforts to date have included predator removals, louver efficiency estimates, holding tank surveys, biology and movements of local native species (splittail), secondary louver netting, water quality monitoring, egg/larval density studies, improved fish handling, and improved fish identification. Facility improvements have included new fish hauling trucks, new louver cleaner rakes, predator removal screens, improved instrumentation, and surface painting of holding tanks to minimize fish abrasion. All activities accomplished under the TFFIP are documented in Reclamation Reports as part of the Tracy Report Series. To date approximately 20 reports have been completed or currently under preparation.

In FY00 an expanded program was continued with activities aimed at both improving the existing operations and assisting development of a modern onsite fishery evaluation and testing facility that could provide new technology for a new TFCF, or a major retrofit of the old facility. An Annual Work Plan for the Tracy Fish Test Facility describes this effort.

V FY 2001 Accomplishments.

The following studies and evaluations were conducted primarily by Reclamation Biologists and Engineers at the Tracy Fish Collection Facilities and Denver Technical Service Center/Research Hydraulics Laboratory where physical models have been constructed for investigating fishery engineering solutions to fish salvage problems. Many of the following studies will have peer-reviewed reports prepared describing the results.

- Engineering and biological evaluations of the operating mitten crab traveling screen at Tracy Fish Collection Facility; including experimental injections of splittail and striped bass to assess louvering efficiency

- Upgrading hydraulic measuring systems and monitoring at the Tracy Fish Collection Facility

- Quality assurance, taxonomic refinement and identification of fish samples taken at the Tracy Fish Collection Facility conducted under contract.

- Assessment of a decade of Delta Smelt collection data at the Tracy Fish Collection Facility

- Laboratory traveling screen for removing debris and potential fish sorting and guidance
- Design primary louver by-pass modifications for the Tracy Fish Collection Facility
- Evaluations of fish survival and damage in existing holding tanks at the Tracy Fish Collection Facility for various operational time periods
- Monitor and assess basic water quality at existing Tracy Fish Collection Facility

VI Tasks, Costs, Schedules and Deliverables.

A. Narrative Explanation of Tasks.

- 1 Program Management - Planning, budget oversight, and coordination of all activities and offices associated with this multi-year program is accomplished by the Program's Coordinator and Research Director. In addition, staff from the Tracy Office assisting with the following Research Program subtasks or directly involved with holding and rearing of test fish in the aquaculture facilities have been included under Program Management Task.
- 2 Fisheries Engineering Research Program - Research continues on a number of subtasks at either the Denver Technical Service Center/Research Hydraulics Laboratory or at the Tracy Fish Collection Facilities. Study plans are currently under development which will then be provided in August 2001 to the interagency Tracy Technical Advisory Team which oversees activities associated with improving or researching new technologies for the TFCF. Following are the proposed research activities for FY 2002. Costs for each sub-tasks will be available after the Tracy Technical Advisory Team has reviewed and commented on proposed study plans and a decision can be reached on which studies will be undertaken with the funding available for this task. Reports as appropriate will be prepared to document study results, recommendations, and modifications of existing facilities.
 - 2.1 Primary Louver Bypass Modification a TFCF - Existing fish bypasses have deteriorated and will be replaced. A current model study is evaluating intake design details that will improve the attraction of the bypass to fish. A second model study is proposed for 2002 for fine tuning louver and guide wall treatments that maintain the best possible velocity field conditions at the entrance to the bypass.
 - 2.2 Tracy Mitten Crab Screen Debris Studies - The existing traveling screen for the removal of Mitten Crab will be further studied for debris removal strategies while not affecting fish passage through the secondary channels. It is anticipated that crab problems will be minimal this year which will provide the opportunity to perform these added tests. Initial two years of operations demonstrate that the Crab screen can successfully remove crabs while

minimizing adverse impacts on fish passage.

- 2.3 Improve Removal Procedures from Fish Holding Tanks - Recently conducted studies indicate that survival of fish in holding tanks could be improved with new fish removal procedures, especially during high debris events. The studies will consider new designs that would have application to both the Tracy and Federal fish facilities. Tank and valve development, fish separation strategies, and consideration of fish pumping will be analyzed.
 - 2.4 Improved Early Life Stages Trapping - Studies conducted in 2001 demonstrated that light trapping (using lights to trap young fish) was proven effective. For 2002, the technology will be focused on improving young fish holding, handling, and release.
 - 2.5 Delta Smelt Collection and Synthesis/Taxonomy - The existing careful identification of small post larvae smelt will be continued. Being able to accurately distinguish Delta Smelt, which are endangered, from Wakasagi, an introduced smelt, is important since the latter smelt are not considered in the entrainment limits established for the Delta Smelt. In 2002, additional training by the contractor will be provided to Reclamation employees which will need to take over the taxonomic work when the contractor retires later in 2002.
- 3 Water Quality Monitoring - The physical characteristics of the water pumped through the Tracy Fish Facility into the Delta Mendota Canal is measured. A Hydrolab records pH, E.C., redox, dissolved oxygen, turbidity, temperature, and water depth as a function of time. The Hydrolab is calibrated and serviced weekly and the physical measurements are downloaded into an Excel spreadsheet. The data provides a record of water quality at the Tracy Fish Facility.

B. Schedule and Deliverables.

| # | Task | Dates | | Deliverable |
|---|--------------------------|----------|----------|--|
| | | Start | Complete | |
| 1 | Program Management | 10/01/01 | 09/30/02 | Program coordination, Budget Oversight |
| 2 | Research Program | 10/01/01 | 09/30/02 | Complete studies, Prepare Research Reports |
| 3 | Water Quality Monitoring | 10/01/01 | 09/30/02 | Perform Hydrolab activities, Prepare Water Quality Reports |

C. Summary of Program Costs and Funding Sources.

| # | Task | Total Cost | Funding Sources | | | | | |
|-----------------------------|--------------------------|---------------------|-----------------|---------------------|---------------|---------------|---------------|---------------|
| | | | RF | W&RR | Prop 204 | | | |
| 1 | Program Management | \$128,343.00 | \$0.00 | \$128,343.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| 2 | Research Program | \$341,657.00 | \$0.00 | \$341,657.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| 3 | Water Quality Monitoring | \$30,000.00 | \$0.00 | \$30,000.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Program Budget | | \$500,000.00 | \$0.00 | \$500,000.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |

D. CVPI A Program Budget.

| # | Task | FTE | Direct Salary and Benefits Costs | Contracts Costs | Miscellaneous Costs | Administrative Costs | Total Costs |
|---|--------------------------|------------|----------------------------------|---------------------|---------------------|----------------------|---------------------|
| 1 | Program Management | 0.5 | \$24,866.00 | \$85,587.00 | \$2,000.00 | \$15,890.00 | \$128,343.00 |
| 2 | Research Program | 0.0 | \$0.00 | \$341,657.00 | \$0.00 | \$0.00 | \$341,657.00 |
| 3 | Water Quality Monitoring | 0.5 | \$30,000.00 | \$0.00 | \$0.00 | \$0.00 | \$30,000.00 |
| | | 0.0 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | | 0.0 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | | 0.0 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | | 0.0 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| | Total by Category | 1.0 | \$54,866.00 | \$427,244.00 | \$2,000.00 | \$15,890.00 | \$500,000.00 |

E. Quarterly Obligation/Expenditures.

| # | Task | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|--------------------------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|
| 1 | Program Management | \$32,085.75 | \$32,085.75 | \$32,085.75 | \$32,085.75 |
| 2 | Research Program | \$85,414.25 | \$85,414.25 | \$85,414.25 | \$85,414.25 |
| 3 | Water Quality Monitoring | \$7,500.00 | \$7,500.00 | \$7,500.00 | \$7,500.00 |
| Total CVPIA Budget by Quarter | | \$125,000.00 | \$125,000.00 | \$125,000.00 | \$125,000.00 |

Future Years Commitments/Actions.

FY01 work is part of a multi-year TFFIP, with focus on improving operations as per CVPIA requirements and DFG agreements. Included will be testing and evaluation of both past and new aspects of the fish salvage program at Tracy, louver and trash rack cleaning mechanisms, fish transportation, louver efficiencies, and, fish sorting by size and species. The present Tracy facility is expected to be in operation for approximately 10 years, (or until it can be replaced) over which time the TFFIP will continue to implement and evaluate improvements. If the TFCF can be replaced sooner using new technology being identified and developed with the new Tracy Fish Test Facility, the TFFIP could be reduced in scope or even eliminated. TFFIP is coordinated with CALFED, FWS, NMFS, and the State of California