

October 14, 2005
Work Plan for Fiscal Year 2006

I. Anadromous Fish Screen Program CVPIA Section 3406 (b)(21)

II. Responsible Entities

	Agency	Staff Name	Role
Lead	USFWS	William O’Leary	Program Manager
Co-lead	USBR	Dan Meier	Project Manager

III. Program Objectives for FY 2006

The primary objective of the Anadromous Fish Screen Program (AFSP) is to protect juvenile chinook salmon (all runs), steelhead trout, green and white sturgeon, striped bass and American shad from entrainment at priority diversions throughout the Central Valley. Section 3406(b)(21) of the Central Valley Project Improvement Act (CVPIA) requires the Secretary of the Interior to assist the State of California in developing and implementing measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin Rivers, their tributaries, the Delta, and the Suisun Marsh. All AFSP projects also contribute to the primary goal stated in the AFRP, as defined under Section 3406(b)(1), which requires Interior to make all reasonable efforts to double natural production of anadromous fish in Central Valley streams.

Additionally, all AFSP projects meet Goal 3 of the CALFED Ecosystem Restoration Program’s (ERP) Draft Stage 1 Implementation Plan (8/1/01, Page 22) which states that A...the goal is to maintain and/or enhance populations of selected species for sustainable commercial and recreational harvest, consistent with the other ERP Strategic Goals”.

Currently, there are approximately 2,200 unscreened agricultural diversions in the Sacramento-San Joaquin Delta, 740 in the Sacramento River system, 150 with the San Joaquin River system, and 370 in the Suisun Marsh basin. The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries) has estimated that up to 10,000,000 anadromous salmonid fish fry are lost annually to diversions from the Sacramento River alone. The AFSP contributes to the overall restoration of anadromous fisheries within the Sacramento and San Joaquin River systems, and the Delta by protecting juvenile fish from entrainment at these diversions. By protecting fish from entrainment, the AFSP enhances anadromous fish outmigrant success, thereby indirectly enhancing the commercial and recreational harvest of these species, which meets ERP Draft Stage 1 Implementation Plan Strategic Goals.

IV. Status of the Program

The AFSP has assisted irrigation districts, water companies, and municipalities with the screening of many diversions ranging from 17 cubic feet/second (cfs) up to 1,000 cfs since the mid 1990s. Since 1994, 21 fish screen projects have been completed with cost share funds from the AFSP. Currently, the AFSP is involved with seven applicants pursuing various phases of their projects.

The AFSP functions through two primary means. First, the AFSP provides funds to diverters who apply to the program to install fish screens on their diversions. Second, the AFSP Technical Team, comprised of experts from federal and State agencies, provides fish screen design review and technical guidance to the diverter and their consultants throughout project phases.

Funding for fish screen projects is prioritized as discussed in the AFSP Program Description (January 1999). The Program Description outlines the program purpose, scope, organization, and project priority guidelines for the AFSP. In addition, current AFSP fish screening project priorities are coordinated with CALFED to ensure consistency of the goals and objectives of the AFSP and with the goals and priorities of the CALFED Strategic Plan for Ecosystem Restoration and the ERP Draft Stage 1 Implementation Plan.

The AFSP future fish screen priorities are also being coordinated through the Fish Screen Evaluation Committee (FSEC). The FSEC was convened in 2004 at the request of the USFWS to identify criteria for whether a diversion should be screened, and based on these criteria, refine common interagency goals for future fish screen projects. The committee is formed of members representing NOAA Fisheries, CDFG, USFWS, DWR, Bureau of Reclamation, and the University of California, Davis.

The FSEC has assisted the AFSP in developing a 3-year field monitoring and assessment plan and existing literature search and data analysis of fish losses at unscreened diversions and is currently developing plans to assess and quantify the benefits of fish screen projects to overall fisheries restoration. In the interim, while obtaining and interpreting field monitoring results, the AFSP, with assistance from the FSEC, has developed new draft interim fish screen prioritization guidelines based on current knowledge of the size and locations of unscreened diversions, fish entrainment at diversions, and population and life history information for anadromous salmonids. These prioritization guidelines are more quantitative than those previously outlined in the AFSP Program Description.

The AFSP is also coordinated with other programs such as the Anadromous Fish Restoration Program (AFRP) and the Comprehensive Assessment and Monitoring Program (CAMP). The Restoration Plan for the AFRP identifies restoration actions, including fish protective measures at water diversions, throughout the Central

Valley/Bay Delta to help double populations of naturally produced anadromous fish. CAMP provides funding for assessing the effectiveness of various restoration activities. Both of these programs have been and will continue to be coordinated with the AFSP.

Lack of secure funding is often an impediment to diverters considering a fish screen for their diversion(s). Fish screen projects are constructed in phases, starting with a feasibility study, preliminary design (in conjunction with preliminary preparation of environmental documents), final design (in conjunction with completion of environmental documents), and ultimately construction. Thus, the diverter must commit to a project that will take several years to complete. Upon completion of the project, the diverter becomes the owner of the facility and is solely responsible for the operation and maintenance of the fish screen.

The AFSP has received \$3 million in FY04 and about \$12.5 million in FY05 and anticipates receiving \$3.5 million in FY06 for ongoing projects. AFSP project applicants previously received a commitment of over \$17 million in CALFED ERP funds for AFSP projects in FY02 and FY03 through the Ecosystem Restoration Program's FY02 PSP and Directed Action processes. These non-federal funds were awarded to Natomas Mutual Water Company (NMWC), Sutter Mutual Water Company (SMWC), Reclamation District 108 (RD 108), Meridian Farms Water Company (MFWC), the M&T Ranch, and Llano Seco Wildlife Refuge. An additional \$690,000 in CALFED funds were awarded to RD 108 in FY03, and an additional \$6.8 million in CALFED funds were awarded to SMWC in FY05.

All current and ongoing AFSP projects mentioned in this work plan are funded by both CVPIA and CALFED sources and are all identified in the CALFED Strategic Plan for Ecosystem Restoration and the ERP Draft Stage 1 Implementation Plan as high priority projects. The CALFED funds are non-federal and could constitute 50 percent or more of the cost of these AFSP projects.

Current AFSP project applicants will continue to receive federal funds as available, and should seek CALFED or other non-federal sources for cost share funding as opportunities became available. All AFSP project applicants will continue to submit CALFED proposals for funding through the AFSP Technical Team for review, and after AFSP approval, the application will be forwarded to the ERP program for CALFED review and approval. Current AFSP participants can apply and receive CALFED funding for construction only when they are finished with their engineering designs and State required environmental permitting.

Thus far, the CALFED ERP Program has provided the majority of non-federal cost-share funds for the current AFSP fish screen project participants. However, the ERP Program now has very limited funds to contribute to AFSP fish screen projects. With the CALFED non-federal cost share uncertain at this time, project applicants may need

to explore other possible non-federal sources to meet the 50 percent or greater non-federal cost share to complete their projects.

A full commitment of project funds in FY06 for projects mentioned in this work plan would greatly exceed the available \$3.5 million in CVPIA funding discussed here. That is, the current need for AFSP funding in 2006 based on current project schedules (and assuming additional non-federal funds become available) exceeds the proposed President's Budget for the AFSP.

V. FY 2005 Accomplishments

Accomplishments in FY 2005 include the following:

1. Completed screen design and environmental compliance activities for the SMWC Tisdale Pumping Plant Fish Screen in Sutter County to screen diversions totaling 960 cfs on the Sacramento River.
2. Continued to support screen design and environmental compliance activities for the NMWC Fish Screen located in Sacramento County to screen diversions totaling approximately 630 cfs on the Sacramento River.
3. Continued to support screen design and environmental compliance activities for the RD 108 Fish Screen to screen diversions totaling 300 cfs on the Sacramento River.
4. Continued to support screen design and environmental compliance activities for the MFWC Fish Screen in Sutter County for existing diversions totaling 195 cfs on the Sacramento River.
5. Continued to support screen design and environmental compliance activities for the Reclamation District 2035 Fish Screen located north of the City of Sacramento to screen diversions totaling approximately 300 cfs on the Sacramento River.
6. Continued to support screen design and environmental compliance activities for the Patterson Irrigation District Fish Screen to screen diversions totaling 190 cfs on the San Joaquin River.
7. Continued to support screen design and environmental compliance activities for the Reclamation District 999 Fish Screen in Sacramento County for existing diversions totaling 100 cfs on the Sacramento River.

Construction of the fish screen at the SMWC Tisdale Pumping Plant was initiated in summer 2005. This diversion at 960 cfs is the largest unscreened diversion on the Sacramento River. This fish screen project, when completed in 2007, will protect outmigrating spring, fall, and winter-run Chinook salmon, Central Valley steelhead, and Sacramento splittail, as well as resident game and non-game fish from entrainment.

The AFSP has also developed a 3-year field monitoring and assessment plan to

quantitatively assess benefits of current and future fish screen projects on Central Valley fisheries. The AFSP has provided approximately \$187,000 in 2005 to initiate these efforts. The AFSP also developed a scope of work with Jones and Stokes Associates to conduct a literature search and data analysis of fisheries losses at unscreened diversions within California and elsewhere. The results of this \$125,000 contract will be used, in conjunction with the field monitoring results, to develop revised future AFSP fish screen prioritization guidelines. This reprioritization effort will be conducted through the AFSP and the FSEC.

In 2005, the AFSP, with assistance from the FSEC, developed new draft interim fish screen prioritization guidelines based on current knowledge of the size and locations of unscreened diversions, fish entrainment at diversions, and population and life history information for anadromous salmonids. These quantitative prioritization guidelines facilitate better funding strategies and coordination between the AFSP and CALFED.

In 2005, Value Engineering continued to be implemented for all on-going fish screen projects with construction costs over \$1 million. Value Engineering is a federally required management tool used to ensure that project costs are minimized while maintaining the essential objectives of the project. Value Engineering studies were conducted in FY04, with final evaluations and recommendations made by the AFSP in FY05. The AFSP is requiring implementation of numerous Value Engineering proposals which will result in overall cost reductions for fish screen projects.

VI. Tasks, Costs, Schedules, and Deliverables

A. Narrative Explanation of Tasks.

1. Program Implementation

The AFSP will continue work on current fish screen projects and will conduct studies and assessments to improve knowledge of fish screen criteria. To date, \$3,500,000 has been identified for the AFSP from the CVPIA Restoration Fund in FY06. Of this total, \$1,000,000 is for the SMWC Tisdale Pumping Plant Fish Screen, \$250,000 is for NMWC, \$250,000 is for RD108, \$853,789 is for monitoring and assessment efforts, and the remaining is for USFWS and Reclamation program management and hired engineering expertise.

1.1. Sutter Mutual Water Company

SMWC completed its environmental permitting and final design in FY05 and has initiated construction. Currently this fish screen project has federal cost share funding of \$8,790,505, and non-federal cost share funding of \$8,126,500 from CALFED. Although this funding was expected to complete project funding requirements, the sheet-pile and general contractor construction bids received by SMWC were higher than the original construction cost estimate. Consequently, SMWC is expected to need an estimated \$2,000,000 of additional funds to complete the project. With the addition of \$1,000,000 of federal funds committed to SMWC in FY06, the SMWC would have its full federal cost share secured for this project. The non-federal match would need to be acquired.

Estimated Cost = \$1,000,000

1.2 Natomas Mutual Water Company

NMWC has a screen project involving the consolidation of five unscreened diversions into two screened diversions, totaling approximately 630 cfs. This consolidation effort would remove all NMWC unscreened diversions off the Natomas Cross Canal, leaving the two screened diversions on the Sacramento River. After environmental documentation and final design phases are completed in late FY05 or early FY06, and all necessary funds to complete the project are made available, construction could begin as early as FY06. This project is anticipated to have a total design and construction cost in excess of \$32.4 million. Up to 50 percent of the total project cost is anticipated to be provided through the AFSP. With \$9.802 million currently obligated to the project through FY05 from the AFSP, and \$14.95 million from CALFED, NMWC would need about \$6.4 million in federal funds and \$1.25 million in non-federal funds in FY06 to start construction of the project.

Estimated Cost = \$250,000

1.3 Reclamation District 108

RD108 has submitted the 100% final project design to the AFSP in May 2005. The project design entails consolidating their three existing facilities on the Sacramento River into one screened diversion of approximately 300 cfs. Currently, the three individual diversions total about 377 cfs. The consolidated alternative would require the construction of new and more efficient canal systems interconnecting the three separate diversions, thereby requiring fewer intake facilities and less water to meet the same irrigation needs. This project will have a total design and construction cost in excess of \$21 million, with roughly 50 percent of the cost anticipated to be provided through the AFSP. The District has received \$4,937,705 through FY05 from the AFSP for completion of project design and environmental documents, and the initiation of construction. Non-federal cost share funding of \$630,000 was secured through the CALFED Directed Action process in FY03. Non-federal cost share funding of \$7.4 million has also been identified in the CALFED ERP Multi-year Program Plan for RD108 in FY06. If remaining needed federal and non-federal funds are made available, project construction could be initiated in FY06.

Estimated Cost = \$250,000

1.4 Program Management

Costs for the AFSP involves salaries and benefits for Program Manager, technical support, administrative support, engineers, biologists, and overhead costs (Table D). Program tasks for the AFSP include design review, contract administration, developing and tracking budgets, reviewing invoices, coordinating Technical Team actions, preparing cooperative agreements and grants, and coordinating environmental compliance. Additional tasks provided by the AFSP will be to continue with efforts through the FSEC to evaluate the contribution of fish screen projects on overall fisheries restoration and prioritize future screening efforts.

Estimated Cost=\$ 964,527

1.5 Monitoring and Assessment

The AFSP and the Fish Screen Evaluation Committee have identified the need to monitor and assess fish losses of unscreened diversions within the Sacramento and San Joaquin river systems and Delta. This effort was initiated in FY05 and is anticipated to continue into the future. The AFSP has developed a 3-year field monitoring and assessment plan and is also currently developing a scope of work to conduct a literature search and data analysis of fisheries losses due to unscreened diversions within the Central Valley. The results of the literature search and data analysis will be used, in conjunction with the field monitoring results, to develop revised future AFSP fish screen prioritization guidelines. The reprioritization effort will be conducted through the AFSP and the FSEC.

Estimated Cost =\$853,789

1.6 Engineering Expertise

Engineering services are provided to the AFSP through a separate annual contract with the NOAA Fisheries. Engineering services include technical design assistance and review of project deliverables, dive inspections of existing and newly constructed facilities, and post-construction hydraulic and other field evaluations. Engineering services will also include technical input and involvement in the FSEC and the 3-year field monitoring and assessment plan.

Estimated Cost =\$181,684

Total CVPIA Estimated Cost=\$3,500,000

New Funding Requests

While new project applicants may request participation in the AFSP, funding for projects that have not already received funding from AFSP is unlikely because there are insufficient funds to complete currently approved projects in a timely manner. Ultimately, the fish screen criteria developed by the FSEC will be applied to all diversions of interest to determine if a screen is needed, and if so, the priority relative to other diversions. Until the FSEC criteria are developed, the interim prioritization guidelines will be used.

Recent new projects brought to the attention of the AFSP include the Coleman National Fish Hatchery unscreened diversions on Battle Creek, unscreened diversions covered under the Family Water Alliance Sacramento River Small Diversion Fish Screen Program on the Sacramento River and Delta, the Yuba City unscreened municipal intake on the Feather River, and unscreened diversions on the San Joaquin River such as the San Luis National Wildlife Refuge Complex, the West Stanislaus Irrigation District, the Feather Water District on the Feather River, and RD833 in the Butte Sink area. Thus far, the AFSP and ERP have not committed to funding these screening projects.

Unforeseen immediate funding needs may occur on some on-going AFSP projects, and under limited circumstances, the AFSP may agree to assist the project applicant with cost share funding to assure that project implementation is moving forward as efficiently as possible.

B. Schedule and Deliverables

#	Task	Dates		Deliverable
		Start	Complete	
*1.1	Sutter Mutual Water Co.	10/01/05	9/30/06	Construction meeting notes, construction management reports
1.2	Natomas Mutual Water Co.	10/01/05	9/30/06	Continuation of design and environmental compliance
1.3	Reclamation District 108	10/01/05	9/30/06	Continuation of design and environmental compliance
1.4	Program Management	10/01/05	9/30/06	Design review, contract administration, developing and tracking budgets, reviewing invoices, coordinating Technical Team actions, preparing cooperative agreements and grants, and coordinating environmental compliance, Final design, initiation of construction
1.5	Monitoring and Assessment	10/01/05	9/30/06	Monitoring Program and Data Assessment Deliverables and Progress Reports
1.6	Engineering Expertise	10/01/05	9/30/06	Design review, construction/dive inspection, tech assistance

Explanatory Notes: *1.1 –Completion of construction is expected in FY07

C. Summary of Program Costs and Funding Sources

#	Task	Total Cost	Fund Source
			RF
A.1	Sutter Mutual Water Company	\$1,000,000	\$1,000,000
A.2	Natomas Mutual Water Company	\$250,000	\$250,000
A.3	Reclamation District 108	\$250,000	\$250,000
A.4	Program Management	\$964,527	\$964,527
A.5	Monitoring and Assessment	\$853,789	\$853,789
A.6	Engineering Expertise	\$181,684	\$181,684
Total Program Budget		\$3,500,000	\$3,500,000

Explanatory Notes: The amounts of non-federal CALFED funds that will be received in FY06 is not known at this time.

D . CVPIA Program Budget

#	Task	FTE	Direct Salary and Benefits Costs	Contracts Costs	Miscellaneous Costs	Admin Costs	Total Costs
A.4	Program Management	-----					
	Fish & Wildlife Service	2.0	\$310,954	\$0	\$0	\$68,410	\$379,364
	Bureau of Reclamation	3.6	\$352,698	\$0	\$10,176	\$175,968	\$585,163
A.5	Monitoring and Assessment			\$853,789			\$853,789
A.6	Engineering Expertise			\$171,400		\$10,284	\$181,684*
A.1	Sutter Mutual Water Company			\$1,000,000			\$1,000,000
A.2	Natomas Mutual Water Company			\$250,000			\$250,000
A.3	Reclamation District 108			\$250,000			\$250,000
Total by Category		6.29	\$663,652	\$2,525,189	\$10,176	\$254,662	\$3,500,000

Explanatory Notes: * National Marine Fisheries Service Engineering Services

E. Five Year Total Budget Planning FY2007-2011 (\$ in Millions)

		FY07	FY08	FY09	FY10	FY11	Total
Anadromous Fish Screen Program Section 3406(b)(21)							
	W&RR						
	RF	11.9	5.6	5.6	5.5	5.5	34.1
	State						
	Other¹	11.9	5.6	5.6	5.5	5.5	34.1
Total:		23.8	11.2	11.2	11.0	11.0	68.2

¹ Some funds are already committed through CALFED and other non-federal sources.

Program capabilities as stated in Table E are those funds that could be expended on an annual basis for NMWC, RD 108, MFWC, RD 2035, Patterson Irrigation District (PID), and Pleasant Grove Verona Water Company (PGVMWC). These estimates reflect anticipated and/or desired construction dates starting in FY06. All program capabilities in Table E assume a 50/50 split of federal funds and non-federal funds. Non-federal funds could be State or other funds as secured by the program participants. Some of the funds identified as “Other” in Table E are already committed through CALFED and other non-federal sources.

FY2007: In FY07, Restoration Fund needs for NMWC and RD 108 are anticipated to be \$6.4 million and \$5.5 million respectively. The NMWC and RD 108 fish screen projects have projected construction completion dates for early FY08.

FY2008: In FY08, Restoration Fund needs for MFWC, RD 2035 and PID are anticipated to be \$1.5 million, \$2.5 million and 1.6 million, respectively, for a total of \$5.6 million. This funding would partially meet the construction funding needs for these projects.

FY2009: In FY09, Restoration Fund needs for MFWC, RD 2035 and PID are anticipated to be \$1.5 million, \$2.5 million and 1.6 million, respectively, for a total of \$5.6 million. This funding would meet the construction needs for PID and would partially meet the construction funding needs for MFWC and RD 2035. PID has a projected construction completion date of FY09.

FY2010: In FY10, Restoration Fund needs for MFWC, RD 2035 and PGVMWC are anticipated to be \$1.1 million, \$2.5 million and 1.9 million, respectively, for a total of \$5.5 million. This funding would meet the construction funding needs for these projects. MFWC, RD 2035 and PGVMWC have projected completion dates of FY10.

FY2011: Using the new future fish screen prioritization guidelines developed through the FSEC, new projects will be initiated. Projects initiated in FY09 and FY10 could be constructed in FY11. Project construction costs are estimated at \$5.5 million.