

## **Attachment 1: Detailed description of each of the environmental water management programs.**

**1. Environmental Water Account (EWA):** A Calfed Bay-Delta Program whose purpose is to provide protection to the fish of the Bay-Delta estuary beyond the regulatory baseline through environmentally beneficial changes in SWP/CVP operations at no uncompensated cost to the project's water users. The EWA program acquires and manages water to curtail exports in the Delta and augment instream flows to protect listed species and provide ESA regulatory commitments. The EWA has been funded from Proposition 204 and Proposition 50 funds and purchases surface water and groundwater from willing sellers both north and south of the Delta. The EWA agencies responsible for managing EWA assets and implementing EWA fish actions are DWR, CDFG, FWS, USBR, and NOAA Fisheries.

The technical basis for EWA fish actions includes published literature, CDFG reports, IEP investigations, Biological Opinions for Delta smelt and listed salmonids, Delta smelt and Chinook salmon Decision Trees based on real-time monitoring, and annual external scientific reviews by the EWA Technical Review Panel. EWA fish actions are monitored, evaluated, and may be modified based on the best science available.

The EWA was first implemented in water year (WY) 2001 and annual EWA fish actions have ranged from 123,000 to 348,000 acre-feet (AF). The majority of the EWA fish actions taken to date have been Delta export curtailments. EWA purchases have been made both south and north of the Delta, usually from willing sellers in larger tributaries upstream of the Delta that have significant surface storage. Projected cross-Delta conveyance capacity to San Luis Reservoir is a key consideration when deciding how much water to buy upstream of the Delta in a given year type. Consequently, most transfers of EWA water from upstream tributaries to San Luis Reservoir are based on available pumping capacity in summer. However, a few EWA transfers have been timed to augment upstream flows and improve instream habitat conditions for fish. During its first four years, EWA fish actions have been integrated and coordinated with other (b)(2) and WAP fish actions. The integration and coordination occurs through weekly meetings of the EWA Team (EWAT), the (b)(2) Interagency Team (B2IT), the Data Assessment Team (DAT), and the Water Operations Management Team (WOMT).

**2. Environmental Water Program (EWP):** A Calfed Bay-Delta Program that focuses on acquiring up to 100,000 AF of water per year from willing sellers to improve salmon spawning and juvenile survival in selected upstream tributaries in the Central Valley to assist in carrying out the flow related goals of the Ecosystem Restoration Program (ERP). The EWP is funded through the Calfed Ecosystem Restoration Program and the implementing agencies are CDFG,

FWS, and NOAA Fisheries, in coordination with DWR and USBR.

The technical basis for EWP actions is structured around designing actions to test hypotheses regarding water management in a manner which incorporates appropriate monitoring, facilitates learning through adaptive management, and lends itself to external scientific review prior to approval.

Five priority streams (Tier 1) have been identified for the initial phase of the EWP. They are Clear Creek, Mill Creek, Deer Creek, Butte Creek, and the Tuolumne River. See the attached EWP guidance and EWP status reports.

The EWP planning has been coordinated with the EWA, (b)(2), and WAP water management programs. As the program develops there will be increased opportunities to coordinate and integrate EWP actions with the other water management programs. The Calfed ROD provides that half of any ERP or (b)(2) upstream releases pumped by the SWP after they have served their ERP and (b)(2) purposes becomes an EWA asset.

**3. CVPIA Section 3406 (b)(2):** A Central Valley Project Improvement Act (CVPIA) program that dedicates and manages annually 800,000 AF of CVP water to augment instream flows in Clear Creek, the Sacramento, American, and Stanislaus Rivers or curtail exports in the Delta for the primary purpose of fish, wildlife, and habitat restoration; to assist meeting the WQCP, and to help meet post-1992 ESA obligations.

The (b)(2) program was authorized by the CVPIA in 1992 and the implementing agencies are FWS and USBR, in coordination with CDFG, DWR, and NOAA Fisheries. The technical basis for (b)(2) fish actions is found in Anadromous Fish Restoration Program (AFRP) documents, IEP and CDFG reports, and in the CVPIA mandate to double the natural production of anadromous fish in all Central Valley rivers and streams. The AFRP documents summarize the flow-related limiting factors as: (1) inadequate timing and/or magnitude of flow to provide suitable conditions for one or more life stage of anadromous fish; (2) water temperatures that exceed tolerances of one or more life stage; and (3) direct and indirect impacts of CVP and SWP Delta pumping. The implementation of (b)(2) fish actions in CVP streams and in the Delta are monitored, evaluated, and may be modified based on the best available science.

Since 1993, this dedicated CVP water for (b)(2) fish actions has been applied to improve instream conditions for anadromous fishes, primarily salmon and steelhead. It has also been directed to help protect species listed under the federal Endangered Species Act and to assist in meeting the CVP share of protecting the Delta through implementation of the WQCP. It is currently implemented consistent with Interior's May 2003 (b)(2) Policy (see attachment which was issued prior to the January 2004 Ninth Circuit Court Order).

To date, actions under this program have included improved instream flows, Delta export curtailments, and Delta Cross Channel gate closures. These efforts have provided benefits for salmonids primarily in the form of improved adult immigration flows, better instream flows and temperatures for spawning, incubation, and juvenile rearing; and improved flows for juvenile outmigration. The (b)(2) fish actions have also helped to reduce mortality of both anadromous fish and the listed delta smelt in proximity to pumping facilities in the Delta. Application of dedicated water to meet these fish needs may also assist in restoring riparian and adjacent wetland habitats and estuarine areas, and may provide associated wildlife benefits.

Since 2001, Interior has coordinated and integrated the implementation of Section 3406 (b)(2) fish actions with the implementation of the EWA fish actions.

**4. CVPIA Section 3406 (b)(3) Water Acquisition Program (WAP):** A CVPIA program that acquires additional water for instream purposes to supplement the 800,000 AF of (b)(2) water, as well as level 4 refuge water to supplement level 2 refuge water and meet Interior's obligations under Section 3406 (d)(2) of the CVPIA.

The WAP was authorized by the CVPIA in 1992 and the implementing agencies are FWS and USBR, in coordination with CDFG, DWR, and NOAA Fisheries. The technical basis for WAP actions is found in AFRP documents, IEP and CDFG reports, and in the CVPIA mandate to double the natural production of anadromous fish. In the near future, WAP acquisitions and management will be based on a Decision Support Model (DSM) which integrates hydrology, biology, and economic data. The DSM focuses on the value to anadromous fish by producing four alternative approaches on 19 streams, with relative rankings totaling 76 water acquisition alternatives. See the attached Decision Support Model information. This model and water appraisal technical guidelines currently being developed by the WAP will be available for use by the EWP as well.

Interior has focused its efforts to acquire water in those areas offering opportunities to augment flows primarily for salmonids on non-CVP streams to contribute toward meeting the CVPIA's anadromous fish doubling goals. The main WAP acquisitions for instream flow augmentation have taken place on the San Joaquin River tributaries (Merced, Tuolumne, and Stanislaus Rivers) and Battle Creek (see the attached (b)(3) Acquisition Report 1994-2004).

Since 1994, annual WAP purchases for instream flow augmentation have ranged from 33,000 AF to 172,000 AF. In the lower San Joaquin drainage, WAP has acquired over 844,000 AF of water since 1994 in the Stanislaus, Tuolumne, Merced, and lower San Joaquin Rivers for fall-run Chinook salmon. Since WY 1999 the WAP has supported the San Joaquin River Agreement (SJRA) by guaranteeing flows for the Vernalis Adaptive Management Program (VAMP),

approximately April 15 – May 15 each year. On Battle Creek supplemental water for anadromous fish was acquired by paying for foregone power generation (86,500 AF from 1997 to 2001) to benefit Chinook salmon and steelhead.

Since WY 2001, Interior has coordinated and integrated the implementation of Section 3406 (b)(3) WAP fish actions with the implementation of EWA and (b)(2) fish actions during the spring for the VAMP and during the fall for the Chinook salmon upstream migration flows on the Stanislaus and Merced Rivers.