**DRAFT ENVIRONMENTAL WATER ACCOUNT PAPER AND IMPLEMENTATION PLAN**

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# 1. Introduction

a. What is the Environmental Water Account

The Environmental Water Account (EWA) is a new concept being evaluated as one element of CALFED's Water Management Strategy (described in the CALFED Phase II report) through a Gaming and Evaluation Process undertaken by the DNCT. Fishery standards have traditionally been fixed, prescriptive rules that were designed to provide favorable conditions for fish. The implementation of prescriptive rules has seldom relied on knowledge of current conditions.

In contrast, the Environmental Water Account involves two new concepts. First, the EWA could have a set of assets dedicated to benefit fish and their habitat. Second, the EWA would have a set of flexible operating rules to allow targeting a specified level of protection for fish depending upon their existing pattern of distribution and population needs. Thus, high levels of fishery protection could be achieved by allocating assets during periods of greatest need, and not wasting assets when not needed. Rather than achieving a fixed set of environmental conditions with prescriptive standards, the objective would be to optimize benefits to fish populations based on real-time fish distribution and habitat conditions.

b. Conclusions

A number of conclusions came out of the EWA Gaming and Evaluation Process:

- With the flexibility inherent in the EWA, gallon for gallon the EWA could be more effective in reducing fish entrainment at the south Delta pumping plants than prescriptive standards. For a given level of protection, the EWA could allow more exports than prescriptive standards.
- The effectiveness of the EWA would be greater with a greater amounts and diversity of assets.
- There are uncertainties in application of the EWA, thus early in Stage 1 it is likely that assets would be used to evaluate the various options and that allocation may then be adjusted based on results of these experiments.
- Considerable uncertainty remains as to the potential benefits and effectiveness of an EWA particularly given unforeseen meteorological, biological, and other future events.
- The burden for fish population recovery should not be solely that of the EWA. The EWA with other CALFED and CVPIA program elements (e.g., Ecosystem Restoration Program and Anadromous Fish Restoration Program) would combine to provide the desired level of recovery.
- There were synergies between Delta and Upstream actions such that the aggregate benefits were greater than the sum of individual benefits, with the same or lesser water costs.
- Application of the EWA could provide incidental benefits to water supply and export water quality.

- Various assets (e.g., surface water storage south of the Delta) provided greater value than others.

c. Major Issues and Solutions

The Gaming and Evaluation Process also identified major issues and solutions:

- **The water supply generated under simulated baselines was not adequate to meet expected future water supply needs. While the EWA generally improved upon the water supply benefits over the baselines, the EWA did not make up the deficits.** Potential solutions include:
  (1) In-Delta Storage - Webb and Bacon complexes could add several hundred TAF of water supply assets.
  (2) Relaxation of existing standards could add additional supply.
  (3) A portion of the expanded Banks capacity and relaxing restrictions on such use.
  (4) Additional north and south of Delta surface and ground water storage.
  (5) Additional water transfer capabilities.
  (6) Making In-Delta AFRP requirements the responsibility of the EWA rather than water contractors.
- **The 1995-level of water supply demands used in the simulation resulted in higher export levels than recent historical levels.** An appropriate level of water supply demands must be set before determination of the size and assets of the EWA are established. If demands are set to increase during Stage 1, then the size of the EWA and its assets should increase as well.
- **While the EWA provided some incidental benefits to water quality in simulations, the EWA was not used to improve water quality.** The EWA did ensure that its actions would not negatively affect water quality. The availability of separate resources for water quality allowed for water quality objectives to be met.
- **Considerable disagreement exists on the level of existing and future environmental protections in the Delta and the need and priority for the Environmental Water Account because of differences in interpretations and evaluations of available scientific information.** Hypotheses regarding these differences have been clearly described, and while some could be analyzed within the next several months, most will require additional field experiments or long-term monitoring for resolution. A process to test and resolve disagreements is under development.
- **EWA constraints on exports at times took on such rapid and substantial debts in San Luis Reservoir (up to several hundred TAF per month) that the ability to repay debt was in doubt and the summer low-point in San Luis was put at risk as was the next year's water supply.** Potential solutions include:
  1. Increasing groundwater assets south of Delta and the potential rate of extraction of ground water assets.
  2. Ability to shift demands from before summer low-point to after low-point. Options include transfers, borrowing MWD storage, paying farmers to pump groundwater rather than demand surface water, etc.
  3. Providing EWA a share in expanded Banks capacity to be used at the discretion of EWA to repay debt in San Luis or further reduce exports.

## 2. A Sample Solution

One of the most important questions in establishing an Environmental Water Account is the nature and magnitude of assets that could be dedicated to providing fishery protections. The limited number and range of games that have been completed to date in the Gaming and Evaluation Process provide some help in answering this question. The question of assets and their application will however need to come from a policy-level balancing of the often conflicting objectives of fishery protection, water supply reliability/enhancement and water quality enhancement. The following sample solution is an example, not a recommendation, of the nature and magnitude of assets that could be established for an EWA. Possible operating requirements and functional capabilities, with structural implications, of an EWA are also presented.

**EWA Assets**

- Funds - $40-60M at start of Stage 1; $30-50M at end of Stage 1
- Water purchases or options -
  - up to 100 TAF in Sacramento River system
  - up to 150 TAF in San Joaquin River system
  - up to 250 TAF in export area
- Authority/ability to vary standards - at a minimum the E/I standard
- Adequately screened project south Delta diversions
- Joint Point of Diversion without restrictions
- Access to storage capacity
  - North of Delta project reservoirs
  - San Luis Reservoir
  - In-Delta storage with additional screened diversion capacity above that of projects
- Expanded Banks export capacity with a portion allocated to EWA.
  - 8,500 cfs capacity in early Stage 1
  - 10,300 cfs by end of Stage 1
- Access to and share in at least 600 TAF of groundwater storage SOD with facilities capable of providing recharge and extraction rates of 20TAF/month.

**Operating requirements**.

- **Default operating requirements**. Existing regulatory requirements. Relaxation of COE requirements on Banks pumping as south Delta improvements are implemented. AFRP flows not part of default baseline.
- **Stage 1 assets.** Over the course of Stage 1, the following assets come on line:
  - o b (2) water is incorporated into the EWA.
  - o The EWA and the SWP share rights to part of expanded Banks pumping capacity.
  - o The EWA gains rights to unused state and federal pumping, conveyance and storage capacity.



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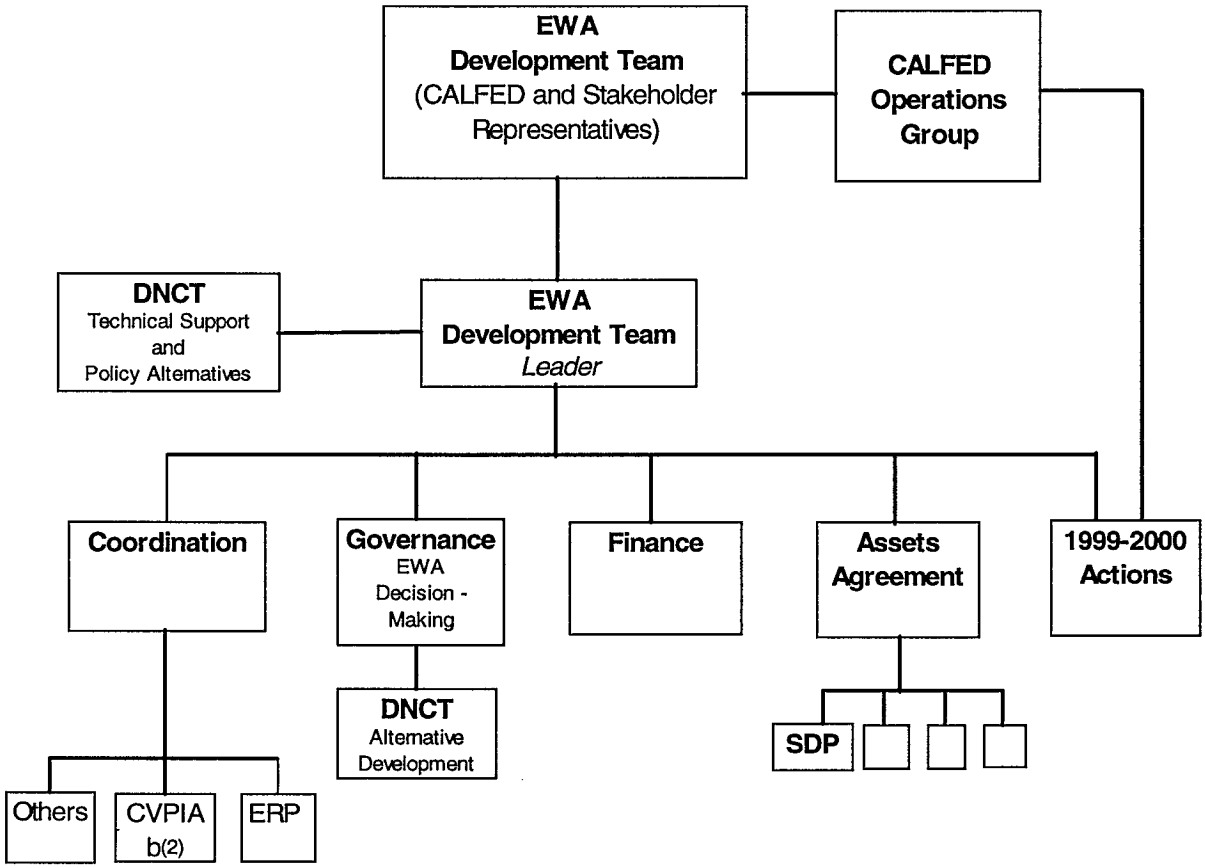
- The EWA and the SWP share rights to new Delta storage.
- The EWA, through contract, acquires water purchase and groundwater storage rights in various locations.
- JPOD is implemented.
- The EWA gains the right to grant export variances in order to export EWA water.
- The EWA gains to right to allow variances to the X2 standard in any given month, but must assure that average February - June X2 does not move upstream.
- CALFED investments in urban efficiency (conservation and reclamation) are tied to a requirement to deliver a portion of the water saved during wetter than average years to the EWA.
- The EWA is funded most heavily during early years, with funding tapering off to the extent that new non-market assets with lower operating costs come on line.

- **The relationship between the EWA and the state and federal projects**. State and federal operations have the highest priority access to state and federal facilities, including the delivery of unscheduled water. Next in priority will be a limited capacity reservation for market purchases (e.g., 60 TAF/month during the summer). The EWA will have the next priority for unused capacity. Finally, other transfers will have the lowest priority. However, EWA has the highest priority for its share of new Banks capacity and may sell access to this capacity. EWA may carry debt as long as the likelihood of a water consumption impact on water users remains below 5%. Any impact on water consumption patterns will be reimbursed by the EWA at the rate of $1000/AF.
- **Decision Making and the Relationship to ESA and CVPIA agencies. The EWA Mission**. EWA will balance the need to provide protection for ESA species with the need to support ecosystem functions, non ESA species, and the CVPIA fish doubling requirements. EWA will be required to reserve and, if necessary, allocate a portion of its assets for the protection of endangered species above all other priorities. If impacts occur beyond this level, the EWA will be responsible for repayment (via water or money) of 50% of the impacts. The second priority is meeting CVPIA anadromous fish doubling requirements. Other priorities may be specified. However, the EWA will retain flexibility to determine needs on a real time basis to the extent possible. The EWA will be governed by a Board of Directors composed of the fish agencies, the state and federal projects, and stakeholder groups. The Board will hire an executive director and delegate considerable operational discretion to the manager, within limits established by the Board.
- **Financing.** The EWA will be funded at $50 million per year initially, declining to $40 million per year as new infrastructure comes on line. Water users will pay user fees into the account, in recognition of the EWA responsibility to buffer the impacts of ESA actions. Additional funding will come from the state and federal governments. Capitol costs and the cost of CALFED's efficiency incentives will not come out of EWA funds.

## CALFED Environmental Water Account
Development Team (EWADT)




## 3. Proposed Organization of EWA Development Team

An EWA Development Team (EWADT) will be formed to address the issues associated with developing the EWA. This team's responsibility is to design the EWA that will be implemented after the CALFED's federal Record of Decision. Once established, the EWA will be under the CALFED interim governance plan.

The general EWADT organization is show below:

**EWADT**- Includes CALFED Policy and stakeholder representatives. This team, with the support of the DNCT, will develop the information needed for negotiations on the mix and size of assets, governing rules, possibilities of use, potential contracts, and finance. The Team will also develop a detailed strawman EWA to serve as a starting point for negotiations and the negotiation process to be used. Once the EWA is developed the Interim Governance Structure as outlined in the Governance Plan will implement the EWA.

**EWADT leader**- CALFED will assigns a full time person to work with the EWADT and DNCT to develop the EWA. The leader will ensure coordination CVPIA, b(2), ERP and Others. The leader will also work closely with the implementation coordinators of the CALFED Programs, such as the South Delta Program. The leader recommends needed agency liaisons and asset allocation, operations, and funding needs beginning with the fall of 1999.

**DNCT**- DNCT will provide the Technical support and develop Policy Alternatives for the EWADT. They will; 1) provide a list of potential assets, 2) work with the technical teams to provide input on how decisions are made to use EWA assets, 3) develop tools to analyze sharing, frequency, availability and reliability of assets, 4) conduct computer games to analyze alternatives, 5) work closely with CMARP on monitoring requirements, 6) develop tools to assist in managing EWA, 7) provide evaluations of baselines for water supply areas, and 8) in coordination with the Operations Group make recommendations to the EWADT on early development of assets in 1999-2000.

The five general areas that EWADT leader will direct are shown on the lower part of the organization chart: Coordination, Governance, Finance, Asset Agreement and 1999-2000 Actions. The leader may assign a small team and leader for each task. Specifics of each task are listed below:

**Coordination**- This task involves close coordination and integration of the EWA with other programs such as ERP and the CVPIA b(2) 800 TAF.

**Governance**- The leader will work with the large BDAC Governance subgroup and DNCT to develop the details of the interim governance plan.

**Finance-** This task provides input into the finance package for the CALFED program.

**Assets Agreement**- The leader will appoint a small team made up of stakeholders, state and federal water project and NoName group members to determine the technically feasibility of obtaining potential assets for the EWA. Availability, price, infrastructure needed to develop the asset, priority of use, and contractual needs are some of the variables that will be developed. The small team will also work with closely with the implementation coordinators of each of the CALFED programs.

**1999-2000 Actions**- A small team consisting of Operations Group and DNCT members will

recommend do the EWADT options for developing assets that may be used by the EWA at the start of Stage 1, such as water purchases, varying the E/I ratio, purchasing groundwater storage rights.

## 4. Milestones and Schedule

| Milestones | Schedule |
|---|---|
| Form the EWADT | Aug |
| Assign the EWADT Leader | Aug |
| Assign Task teams and leaders | Aug |
| Outline Negotiation Process | Aug |
| Define Feasibility of Assets | Sep |
| Develop Sharing Benefits | Oct |
| Develop Technical Tools for Implementation | Oct |
| Develop EWA Strawman | Oct |
| Proposed EWA implementation Package | Nov |



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