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ENVIRONMENTAL WATER ACCOUNT DEVELOPMENT PLAN

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I. Introduction

Environmental Water Account

The Environmental Water Account (EWA) is a new concept envisioned to become one element of CALFED's Water Management Strategy. Broadly speaking, the Water Management Strategy is expected to provide for quality and quantity needs of those diverting water for consumptive purposes and for instream environmental needs. The Water Management Strategy involves providing certain assets (water storage, transport etc.) operated under certain rules to address each need. Virtually every action designed to address one need affects every other need. Hence the Water Management Strategy inherently involves the integrated whole of assets and operating rules for all purposes.

Environmental needs have traditionally been addressed through a set of prescriptive standards to assure some set of environmental conditions favorable for the environment. Such standards are characterized by a set of fixed rules based on past experience and knowledge. While the rules often provide for protective measures which vary in relation to such things as biological seasons and water supply magnitude, prescriptive rules seldom rely on knowledge of current conditions in their implementation.

In contrast, an Environmental Water Account would assign a set of assets and operating rules to be used flexibly to achieve environmental benefits in response to real time assessment of need. There would be no assurance of achieving any fixed set of conditions, but a goal of optimizing satisfaction of biological needs.

While this paper is triggered by the need to define a process for establishing an Environmental Water Account, the inherent relationship of an EWA to all other aspects of CALFED's Water Management Strategy necessarily leads to the paper dealing with the entirety of the Water Management Strategy for Stage 1 of CALFED's program.

Computer Simulations and Evaluation Conclusions

In order to better understand the potential advantages and disadvantages of an EWA, CALFED evaluated simulations of how such an account could be operated. A number of conclusions came

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out of the Computer Simulations 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 amount and diversity of assets.
- There are uncertainties in application of the EWA, thus early in Stage 1 it is likely that EWA assets would be used to evaluate the effectiveness of various application options and that the allocation may then be adjusted based on results of these experiments.
- 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.

II. Issues and Possible Solutions

The Computer Simulation and Evaluation Process also identified major issues and potential 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. Relaxation of existing standards could add additional supply.
  2. Additional north and south of Delta surface and ground water storage.
  3. Additional water transfer capabilities.
  4. Making In-Delta AFRP requirements the responsibility of the EWA rather than water contractors, which may in turn require a larger EWA.

- **EWA assets would have to be increased as demand grows, if the same level of environmental protection is to be maintained.**
  Potential solution:

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.**
  Potential solution:
  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.**
  Potential solution:
  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.

III. 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 simulations that have been completed to date in the Computer Simulation 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. Negotiation issues associated with possible operating requirements and functional capabilities 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.

Development Issues

- **Define default operating requirements**. Define the flow, water quality, diversion, and storage rules that will govern operations in the absence of an EWA. A key issue will be the form of the relationship between b(2) water management program of the CVPIA and the EWA. Can b(2) water be operated within or in coordination with the EWA? A possible solution could be the integration of the two programs.

- **Define the relationship between the EWA and the state and federal projects**. A large percentage of EWA actions will affect or utilize state and federal facilities. The relationship between EWA and the Projects should, therefore, be spelled out in detail. What rights does the EWA have to use surplus capacity. The EWA should be provided access to project facilities. What priority do EWA operations have compared to water transfers or the delivery of unscheduled water? The EWA should be assigned priorities relative to other uses of facilities including water transfers and deliveries of scheduled and unscheduled water. How will the costs of EWA operations be calculated? Cost of

EWA use of facilities or indirect effects to water users or operators should be developed. How much debt will EWA be allowed to take on at various locations? Limitations on the EWA assuming various types of debt should be developed. Sources of collateral and debt repayment schemes and procedures should be developed. How much debt will the EWA be allowed to carryover into succeeding water years? What are the repercussions if the EWA cannot repay a debt in a timely manner?

- **Define new Stage 1 assets and divide them between the EWA and the water users**. Assets are physical, institutional, and financial mechanisms for modifying water operations. Possible assets include: (1) rights to a share of allowable diversions; (2) rights to a share of conveyance capacity; (3) rights to a share of storage capacity; (4) the right to grant variances to default operating requirements; and (5) contracts for water deliveries or purchases. Implicit is the notion that usable assets must be backed by adequate financial resources. As an example, the right to increased Banks pumping might simply increase SWP assets, or the right (the asset) could be shared with the EWA. Coupled to JPOD, the increase in Banks pumping might also represent a new asset for the CVP.

- **Relationship to ESA and CVPIA agencies.** The governance of the EWA will be heavily determined by the EWA's role within the broader CALFED solution. Is the primary goal of the EWA to enhance general ecosystem conditions and processes, and/or is the primary goal to protect and enhance endangered species? Governance will also involve asset allocation and debt payment. Will the EWA be required to find replacement water for some or all ESA actions? The EWA could be part of a regulatory assurance and be used as a substitute for separate ESA-type actions. Will the EWA also have upstream responsibilities or be confined to the Delta?

- **Decision Making**. The responsibility for decision making needs to be assigned to existing or new agencies with some specific ground rules as to how decisions are to be made and for coordination with other agencies and stakeholders.

- **Financing**. The EWA must have a reliable revenue stream. Sources and form of distribution will need to be defined and developed prior to implementation. How will that revenue be provided? Who will provide the revenue?

IV. 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 managed as outlined in CALFED Interim Governance Plan (Section 4.4.9, CALFED Implantation Plan, June 1999). The general organization on how the EWADT relates to the CALFED program is shown

below:

EWADT- Includes CALFED Policy and stakeholder representatives. This team, with the support of the DNCT, will develop the information needed for decision making on the mix and size of assets, governing rules, possibilities of use, potential contracts, and finance. The Team

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will also develop a detailed strawman EWA to serve as a starting point for decision making and the process to be used. Once the EWA is developed, the Interim Governance Plan will guide its implementation.

EWADT leader- CALFED will assign a full time person to lead the work of EWADT and DNCT to develop the EWA. The leader will provide direction on the development of the recommended EWA. The leader recommends leaders for the assets feasibility and 1990-2000 EWA actions team. The leader will also ensure coordination with CVPIA, b(2), ERP and other ongoing programs and will work closely with the implementation coordinators of the CALFED Programs, such as the South Delta Program.

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 simulations 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 be involved are: Coordination, Governance, Finance, Asset Feasibility, and 1999-2000 Actions. Specific involvement in each task are listed below:

Coordination- The leader will ensure 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 BDAC Governance subgroup and DNCT to develop the details of the interim governance plan.

Finance- The leader will provide 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- The leader will appoint a small team consisting of Operations Group and DNCT members that will recommend to the EWADT early implementation 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.

V. Milestones and Schedule

Milestones	Schedule
Form the EWADT	Aug 18
Assign the EWADT Leader	Aug 25
Assign Task teams and leaders	Aug 30
Outline Decision Making Process	Sep 15
Define Feasibility of Assets	Sep 30
Develop Sharing Benefits	Sep 30
Develop EWA Strawman	Oct 1
Develop Technical Tools for Implementation	Oct 15
Develop EWA implementation Package (with draft agreements)	Nov 15