

Provisional
Updated December 27, 2005

**2005 Interim Protocols For
The Operation of The
Environmental Water Account**

2005 Interim Protocols for the Operations of the Environmental Water Account

Table of Contents

Section	Page
A. Introduction.....	1
B. Storage.....	1
C. Conveyance.....	6
D. Pumping Priorities at the Export Facilities.....	7
E. Borrowing.....	8
F. Energy and Facility Services for the EWA.....	8
G. Release of Assets.....	11
H. Incidental Take Associated with Acquisition and Use of EWA Assets.....	12
I. Losses – Carriage, Conveyance and Storage.....	12
J. Operation of the Delta Cross Channel Gates Between November and January.....	13
K. Definition of Functional Equivalent.....	13

2005 Interim Protocols for the Operations of the Environmental Water Account

A. INTRODUCTION

The interim protocols contained herein for operating the Environmental Water Account (EWA) in 2005 are based on the EWA Operating Principles Agreement developed as part of the CALFED Program Programmatic Environmental Impact Statement/Environmental Impact Report Record of Decision (CALFED ROD) (August 2000). The EWA Operating Principles Agreement (2000) was extended through 2007 in conjunction with the EWA agencies (U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Departments of Water Resources and Fish and Game) agreement in September 2004 to extend the “short-term” EWA program through 2007 in accordance with the CALFED ROD. In addition, for years 2004 through 2007, the EWA agencies are implementing the EWA program as described in the “Flexible Purchase Alternative” (Preferred Alternative) in the EWA Environmental Impact Statement/Environmental Impact Report, which was completed in March 2004.

The following interim protocols for the EWA, which clarify specific EWA operating principles contained in the EWA Operating Principles Agreement (2000), may be modified or added to, as needed, during the course of the year by the EWA agencies. The interim protocols presented below sequentially follow the EWA operating principles identified in the EWA Operating Principles Agreement (2000).

B. Storage

1) Article II. Section 2.e.i. Priority of EWA to Project Storage

The priority for storage space in upstream project reservoirs is as follows:

- SWP (from highest to lowest priority)
 - ✓ SWP Project Water
 - ✓ Water acquired for SWP users
 - ✓ EWA Water

- CVP (from highest to lowest priority)
 - ✓ CVP Project Water
 - ✓ Water acquired for CVP users
 - ✓ Refuge Level IV Water
 - ✓ EWA Water
 - ✓ Non-Project Water

The priority for storage space in San Luis Reservoir is as follows:

- SWP (from highest to lowest priority) (See Figure 1, page 4)
 - ✓ SWP Project Water
 - ✓ SWP Contractor Non-Project water
 - ✓ EWA Water
 - ✓ CVP/Third Party Water

- CVP (from highest to lowest priority) (See Figure 2, page 5)
 - ✓ CVP Project Water
 - ✓ Rescheduled Water
 - ✓ CVP Contractor Non-Project Water
 - ✓ Refuge Level IV Water
 - ✓ Cross Valley Canal Contractors' Water
 - ✓ EWA Water
 - ✓ SWP and Non-CVP Water

The issue of the SWP using the CVP share of San Luis Reservoir is addressed in the second paragraph of Article II. Section 2.e.i. of the Operating Principles, but is silent on the CVP using the SWP share of storage. The Project Agencies concur with the Management Agencies that the intent of this paragraph is to apply the same rules to the CVP as to the SWP. The following provides additional clarification on the priorities of EWA storage in San Luis Reservoir.

- The CVP can encroach into the SWP share of San Luis to the extent that such encroachment does not (1) impact the SWP operations or (2) cause the EWA to be spilled out of the SWP share of San Luis.

- The same rule applies for the SWP use of the CVP share of San Luis Reservoir.

An issue that has arisen is the use of physical (actual) space in the CVP's share of San Luis Reservoir and the potential for the SWP to surcharge/encroach in such space and how this would relate to the "spill" of EWA debt.

- To the extent that such space is due to an EWA debt in the CVP's share of San Luis Reservoir, then this space can only be used for the placement of water by the CVP on behalf of the EWA to either reduce or remove any or all debt (i.e.: "spill" debt) and cannot be utilized by the SWP to store water.

- To the extent that such space is due to the CVP's inability to fill for reasons other than EWA actions, then the SWP may surcharge into this portion of the CVP's share, as has been the mode of operation historically. The EWA debt would not "spill" under this scenario. If the EWA has additional water stored by the SWP, then the action of surcharging delays the "spilling" of such credit. The decision to end the action of surcharging will be made after evaluating the current hydrology and forecasted operations.

- The same rule applies for the CVP use of the SWP share of San Luis Reservoir.

Another issue that has not been adequately addressed within the Operating Principles is the priority for moving water from San Luis Reservoir to avoid or minimize spilling EWA assets. The concern is that EWA water may be forced out of San Luis because the Projects are capable of filling the reservoir. The EWA may have a place to store the water (i.e. groundwater storage in Kern County), but will not have any way of conveying the water to the new storage location. To ensure this does not occur, DWR will provide 600 cfs of conveyance capacity to move EWA water from San Luis Reservoir to other storage facilities in the San Joaquin Valley through April 30. However, if an unexpected conveyance outage occurs that limits the amount of water that can be conveyed to meet SWP and EWA requirements, the capacity made available to the EWA would be prorated as:

$$EWA_{\text{conveyance}} = (\text{ACC}) * (EWA_{\text{rp}}) / (\text{TRP})$$

Where:

- ✓ ACC is the available conveyance capacity along the California Aqueduct.
- ✓ EWA_{rp} is the amount of pumping requested/needed for moving EWA water.
- ✓ TRP is the total amount of pumping desired to meet both SWP and EWA needs

2) Article II. Section 2.e.ii. Protocols or Standards For Storage, Spill, and Loss of EWA Water in Upstream Project Reservoirs

Flexibility of SWP operations to back off of upstream releases in whole or in part may be credited to EWA as an upstream asset for future use, however, EWA does not get credit against current curtailment.

Figure 1
SWP Portion of San Luis Reservoir
Storage Priorities for EWA Purposes

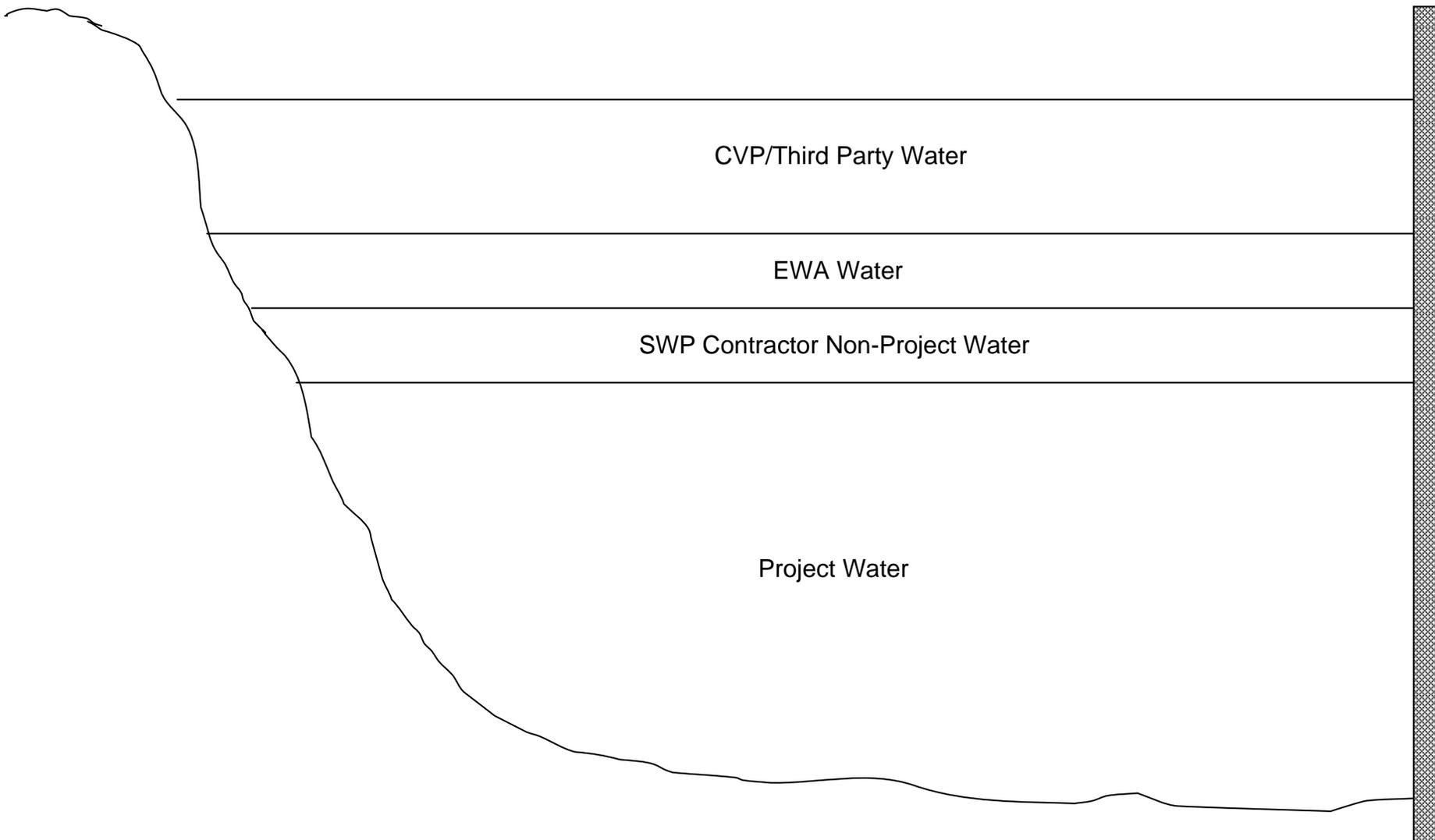
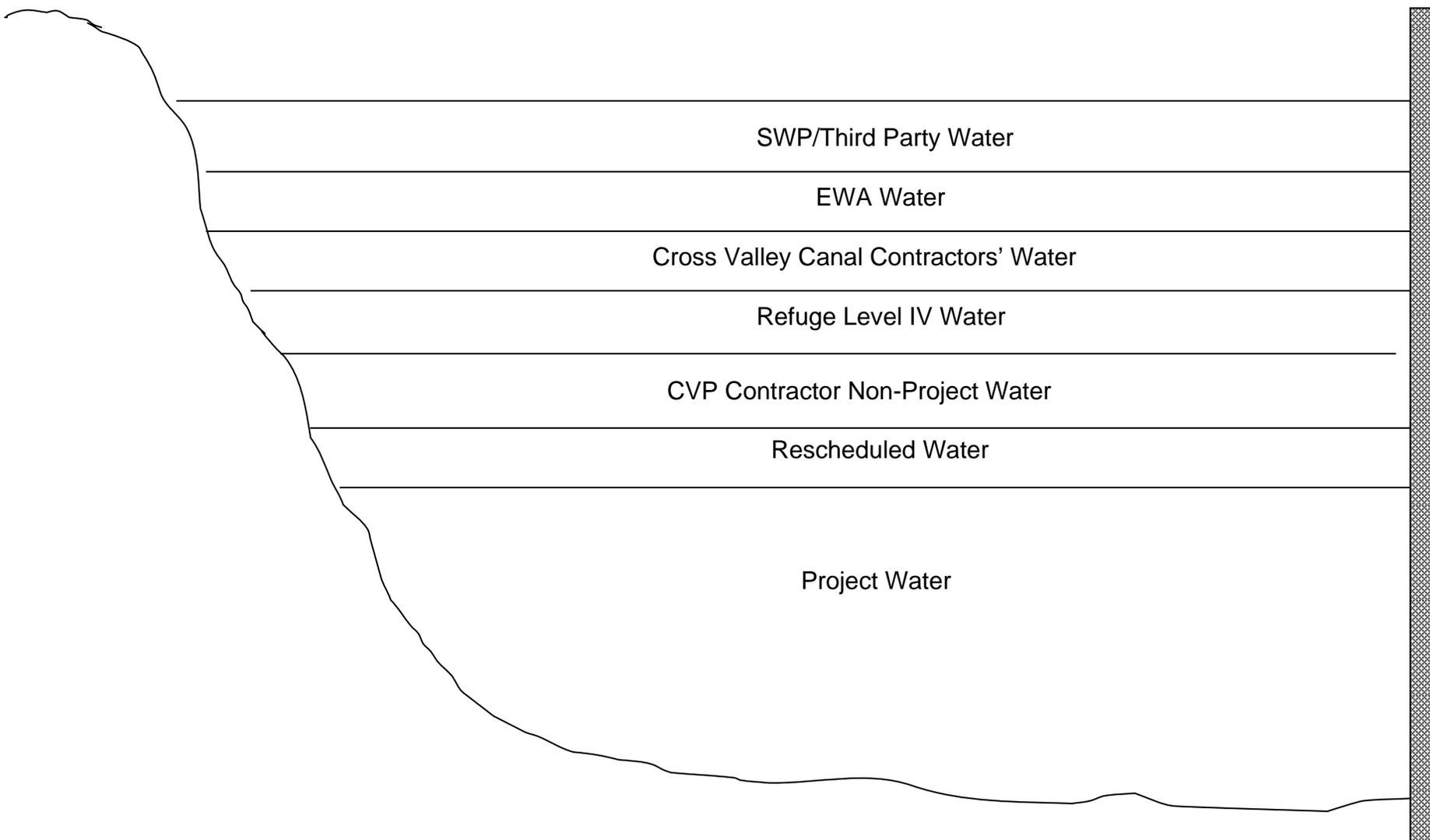


Figure 2
CVP Portion of San Luis Reservoir
Storage Priorities for EWA Purposes



C. Conveyance

1) Article II. Section 2.d. Use of Excess Capacity

When there is a competing need for excess Delta export capacity between the EWA and Level 4 Refuge water, the Management Agencies and the Project Agencies will consult to seek a schedule that balances the needs of both environmental programs.

2) Article II. Section 2.d.i. Excess Capacity

The term “project operational requirements and contract commitments” include (1) pumping water from the Delta by one project and placing the water into the other project’s share of San Luis Reservoir, and (2) the movement of Level 4 water during balanced conditions at CVP facilities (this applies to the CVP only). The Projects allow for each to encroach into the other’s share of San Luis Reservoir. This is permissible as long as it does not result in the “spill” of EWA water that is being stored in San Luis Reservoir (see above Section B(1)).

3) Article III. Section 1.b.i. Sharing of b(2) and ERP water pumped by the SWP.

This section of the Operating Principles states that the SWP will share equally with the EWA any b(2) or ERP water that is pumped by the SWP which exceeds the export capacity of the CVP Tracy Pumping Plant. The Department agrees that one half of such water pumped by the SWP will be credited to the EWA and either (1) pumped into the SWP share of San Luis Reservoir or (2) convey to a storage facility elsewhere in the San Joaquin Valley. This sharing occurs when one of the following two conditions exist:

- a) The Delta is in balanced conditions with suspended COA accounting.

Balanced conditions are declared through mutual agreement by DWR and Reclamation and are based on conditions when releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley in-basin uses, plus CVP and SWP exports.

The COA accounting is suspended due to the inability of the CVP to export its share of storage withdrawals and unstored water for export. This imbalance must be caused in part by b(2) or ERP upstream releases.

- b) Project exports are controlled by the Export/Inflow ratio. The release of upstream b(2) or ERP releases may result in an incremental increase in SWP exports most likely due to the inability of the CVP to capture the incremental increase at its export facilities.

4) Article III. Section 1.b.ii. Joint Point: SWP Wheeling of CVP and EWA water

The principles contained in this section of the Operating Principles regarding the split between the CVP and EWA for use of JPOD at Banks also applies to use of JPOD at the Tracy Pumping Plant for CVP wheeling of SWP and EWA water.

5) Article III. Section 1.b.iv.(A). Relaxation of the Section 10 Constraint.

The Project Agencies have obtained a permit from the Corps of Engineers that increases the base diversion rate by the equivalent of 500 cfs to 7,180 cfs for the months of July, August, and September, through 2008. The purpose of this is to increase diversions into CCF for use by the SWP to recover export reductions made due to the Endangered Species Act (ESA) or other actions taken to benefit fishery resources. This 500 cfs will be dedicated in its entirety to pumping for the EWA. Permits and environmental documentation preclude the use of this asset for any other purpose. Permission has been obtained from the Corps to extend the permit through 2008.

6) Article III. Section 1.b.iv.(B). Relaxation of the Export/Inflow Ratio

This section of the Operating Principles adequately addresses flexing the E/I ratio for the EWA.

D. Pumping Priorities at the Export Facilities

This protocol clarifies the priorities for on/off peak pumping at each Project's export facility.

The priority for pumping is as follows:

- SWP (from highest to lowest priority)
 - ✓ SWP Pumping
 - ✓ Water Transfers for SWP Contractors
 - ✓ Wheeling for CVP and EWA (EWA shares its portion of JPOD with refuge Level 4 Water when needed.)
 - ✓ Water transfers for others

- CVP (from highest to lowest priority)
 - ✓ CVP Pumping
 - ✓ Water Transfers for CVP Contractors
 - ✓ Refuge Level IV
 - ✓ Cross Valley Canal
 - ✓ EWA
 - ✓ Water transfers for others

E. Borrowing

1) Article II. Section 2.c. Borrowing: No Reduction in Deliveries

The same principles that apply to the EWA borrowing Project water apply to the Project Agencies borrowing EWA water. Criteria for borrowing and payback will be provided in specific proposals submitted by the Project Agencies when they desire to borrow water from the EWA or Management Agencies when they desire to borrow water from the Projects. Proposals are to include (1) the quantity of water to be borrowed, (2) the term of the loan, and (3) specific criteria for repaying the water to the lender.

F. Energy and Facility Services for the EWA

1) Article II. Section 3. No Increased Costs

- Because EWA must have funds available to acquire needed power or pay for use of facilities as necessary for EWA operations, Reclamation and DWR will establish and maintain individual EWA accounts with adequate funding to compensate for CVP/SWP power and facility (includes capital and operations and maintenance associated with storage and conveyance) services provided to EWA. These accounts will be set up each year through September 30, 2005.
- Reclamation and DWR accounts for EWA will include funds for CVP/SWP power and facility services related to EWA operations. The funds for CVP/SWP power and facility services will be estimated in advance of EWA transactions and prior to approval by Reclamation and DWR. EWA funds from these accounts will be used to compensate Reclamation and DWR for CVP/SWP power and facility services rendered at the time of an EWA transaction.
- Exchanges of credits between Reclamation and DWR for CVP/SWP power and facility services will not be permitted unless agreed upon in writing by Reclamation and DWR beforehand.
- Unless otherwise approved by the Project Agencies, an advance notice of 72 hours is necessary prior to any adjustment of project operations for EWA purposes. This is necessary to maximize cost efficiency of the Projects and accommodate power scheduling.
- No retroactive reclassification of EWA operations will be permitted.

- For accounting purposes, it is assumed that EWA exchange operations between Projects will occur in O'Neill Forebay.¹, unless otherwise agreed to by the EWA Project Agencies.
- Calculation and accounting of EWA power costs will reflect the value of energy prices at the time the EWA transaction takes place.
- When EWA water crosses over between CVP and SWP facilities, the calculation and accounting of EWA facility costs for use of project facilities will reflect rates for non-project water at the time of the EWA transaction.

Energy

- Upstream Accounting - EWA will not accrue power credits or debits through adjustments of upstream project releases for EWA purposes. EWA water will be treated in the same manner as any other water passing through upstream reservoirs and will not receive generation credit or debit. EWA may however incur power costs for reductions in power generation resulting from bypassing flows around upstream generation facilities. Any requests for bypassing generation facilities will be evaluated on a case-by-case basis.
- EWA operations that increase pumping or reduce generation will be considered as increased power cost (debt) on the respective project account. EWA operations that increase generation or reduce pumping will be considered as reduced power cost (credit) on the respective project account. The amount of EWA increased or reduced power costs will be determined by calculation using power factors and the respective Reclamation or DWR "Power Value Index".
- Established power factors for facilities will be used where available. For facilities where an established power factor is unavailable, an estimate will be calculated by dividing the total daily power by the total daily water volume for that facility affected by the EWA operation. In the event there is no pumping or generation on a particular day for a facility, the power factor will be estimated using data from the preceding and succeeding days' pumping or generation. The EWA power will be estimated by multiplying the estimated increase or reduction of EWA water through a facility by the respective facility power factor.
- Reclamation and DWR power value indexes will be determined as follows..
 - A. Reclamation's "Power Value Index". The proposed Reclamation Power Value Index will vary based on the actual on-peak and off-peak energy prices from the Intercontinental Exchange (ICE) index for the actual hours that pumping curtailments occur. In addition, for those times when energy is purchased for

¹ Actual EWA transactions (purchases and deliveries) will occur throughout Northern/Central California. Those that impact Delta Export facilities will be reflected through accounting adjustments as though taking place in O'Neill Forebay.

EWA purposes, the actual spot market purchase (or best price negotiated if for longer periods) will be used for Reclamation's Power Value Index.

- B. DWR's "Power Value Index". Currently DWR has not determined a Power Value Index. The amount of power and its various costs are being tracked for each power cost debt or credit due to EWA actions on the SWP.
- The increased or reduced power cost calculation will be based on the quantity of water involved, multiplied by the KWh/AF pumping factor (or KWh/AF generation factor for increased generation), multiplied by the appropriate Reclamation or DWR Power Value Index for each period of reduced or increased pumping or generation at the time of the EWA action.
 - The total amount will be reflected as a credit or debt and will be valued in dollars. The value will include cost adjustments and will be based on the Power Value Index used in the calculation. Such power costs (per KWh) will be further adjusted to include all applicable CAISO related costs (or agency succeeding CAISO) such as imbalance, reliability services, and grid management charges.
 - EWA will not receive any monetary compensation from Reclamation or DWR for reduced power costs resulting from EWA transactions at CVP/SWP facilities. Any power credit resulting from reduction of power use will be used as necessary to compensate Reclamation or DWR for future EWA transactions that result in increased power costs.

Facility Usage (Cost of Conveyance/Storage of Non-Project Water)

- EWA operations that increase the use of CVP or SWP project facilities will be considered as a cost to EWA. When EWA water is moved through either the CVP or SWP facilities and delivered to the respective project's contractors as project water, Reclamation and DWR will not assess EWA a service charge for use of project facilities. However, when EWA operations require additional services for storage, conveyance, and conveyance pumping under crossover situations between the CVP and SWP that result in an increased use of CVP/SWP project facilities, Reclamation and DWR will assess EWA and record a service charge or a "Use of Facility Fee."
- Facility costs will be determined by multiplying the total EWA water passing through CVP/SWP facilities by a "Use of Facility Fee". The EWA water will be adjusted to account for facility losses, as described in Section H. The facility costs for CVP/SWP services required by EWA will be maintained within Reclamation's and DWR's respective accounts.
- CVP "Use of Facility Fees"

For EWA's use of CVP facilities, two separate fees will apply: 1) Reclamation's "CVP Facility Use Fee" (includes project capital costs associated with storage,

pumping, and conveyance, plus storage O&M where applicable), and 2) San Luis & Delta- Mendota Water Authority's (SLDMWA) "O&M Fee" associated with using the Tracy Pumping Plant the Delta Mendota Canal, and the CVP side of the San Luis Unit. Each fee will be accounted for separately. Reclamation will assess EWA the "CVP Facility Use Fee" and EWA will pay this fee to Reclamation. The SLDMWA will assess EWA the "O&M Fee," as appropriate depending on the facility used, and EWA will pay this fee to SLDMWA. EWA's payment of these fees to Reclamation and SLDMWA will be via contract agreements between Reclamation, DWR, and SLDMWA.

For EWA water stored in a CVP reservoir for more than 30 days and used for non-CVP purposes, Reclamation will assess EWA its CVP Facility Use Fee for storing non-project water. In addition, for EWA water that results in a "spill" situation in a CVP reservoir, Reclamation will assess EWA the storage CVP Facility Use Fee for the remaining water that did not convert to project water.

- SWP "Use of Facility Fee"

The charge for using SWP facilities is calculated for each Reach of the SWP affected by EWA operations. Conveyance of EWA water is charged at the annual SWP Non-Project conveyance rate. This charge includes Capital Costs, Minimum Operation, Maintenance, Power, and Replacement, Variable Operation, Maintenance, and Replacement, Water System Revenue Bond Surcharge, Off-Aqueduct Facility, San Luis Reservoir Facility Use Fee, and Fish Replacement.

As EWA water is released to replace the SWP's previous export curtailment, the facility costs (debt) associated with moving that quantity of water in that projects' account will be removed from the account.

G. Release of Asset

1) Article II. Section 2.b.iii. Time of Release of Asset

Article II. Section 2.c.iv. Disencumber of Collateral or Release of Asset

In order to assure prompt release of assets to pay back borrowed water, and to assure that EWA will not have to pay unnecessary facility, conveyance and energy costs, the following procedures will take place by default unless Management and Project Agencies agree in advance to some alternative management of assets.

- If EWA has debt at the time of delivery, all water delivered to O'Neill Forebay on behalf of EWA shall be instantaneously released to the Projects to the extent of the unpaid debt, or as payment for a concurrent fish action.

- All uncommitted EWA assets will be conveyed to and stored in San Luis Reservoir following delivery to O'Neill Forebay unless the Management Agencies specifically request that they be stored elsewhere.
- Interagency memoranda documenting the release will follow and need not be in place at the time of the release.

H. Incidental Take Associated with Acquisition and Use of EWA Assets

1) Article II. Section 4. The EWA Shall Be Responsible For Mitigating Its Water Quality, Water Rights, and Environmental Impacts As Required By Law

Whenever an EWA asset is acquired, stored or moved under a project water right the existing regulatory actions will be utilized. This includes the incidental take statements under the existing biological opinions.

I. Losses – Carriage, Conveyance and Storage

Operational losses (which include carriage, conveyance, and storage) reduce the quantity of purchased water delivered from the seller to the buyer's point of delivery. When EWA actions are taken, losses are either avoided (by a curtailment) or occur along the system (moving water into storage), and must be accounted for to ensure that there was no net loss or net gain of water to the Projects.

SWP operational losses are determined as follows:

- Carriage losses – In order to negate the effects of water transfers on Delta salinity, incremental increases in Delta outflow may be needed to compensate for the incremental increase in Delta exports associated with a water transfer. This loss of carriage efficiency through the Delta or "carriage loss" is estimated through Delta simulation modeling for the specific period during which a water transfer occurs.
- Conveyance losses – are those losses (which include seepage, incremental incidental diversions, and evaporation) associated with the movement of water from upstream sources to the Delta export facility and losses within the aqueduct system. An annual percentage of loss for each Reach was calculated, for the years 1991 to 1998, as the total annual Reach loss divided by the total annual Reach conveyance³. The average of the annual percentage for this eight-year period is used in charging and crediting conveyance losses to EWA operations. Because total annual conveyances and losses are used for this calculation, all

³ This time period includes four Critical and four Wet/Above Normal years to represent the potential variance under varying hydrology. The average annual reach loss is considered to accurately reflect potential losses during EWA operations.

actions are charged or credited at the same rate regardless of when they occur. Losses are charged or credited only for those reaches and facilities of the aqueduct system affected by the EWA operation.

- Storage losses – are those losses associated with water stored in reservoirs or groundwater banks. Losses are assessed on the EWA water stored in reservoirs based upon daily evaporation as a percentage of total water storage. The total evaporation loss for an EWA asset is the accumulation of the daily evaporation (based upon the percentage of EWA water each day) for the duration that EWA asset is stored in the facility. Water stored in groundwater banks also has associated losses that vary by facility and quantity of water placed and/or recovered in each facility. These are assessed as a condition of the storage contract for each facility. The assets that are released immediately to the affected Project as payment for an operational curtailment do not accrue storage losses.

J. Operation of the Delta Cross Channel Gates Between November and January

1) Article II. Section 2.b.v. Cross Channel Gate Closure

Delta Cross Channel Gates will be operated pursuant Article II. Section 2.b.v. of the Operating Principles. The WOMT process will be used to ensure the full consideration of all appropriate factors identified therein.

K. Definition of Functional Equivalent

1) Article I. Section 2.f. One-Time Acquisition of Stored Water Equivalent

This section of the Operating Principles provides that actions to protect fish may be taken to the degree the EWA has assets to cover such water expenditures. As a means of providing collateral for such actions, the Operating Principles provided that 200 TAF of stored water (or its functional equivalent) would be provided for the EWA. During the first year of operation, insufficient funds were available to acquire 200 TAF of storage space that would be available to the EWA. Therefore, the Project Agencies will allow borrowing that is functionally equivalent to this EWA asset and its prudent recharge as set forth below.

In any given year, up to 100 TAF may be borrowed against the subsequent year's EWA assets provided the following:

1. The borrowed assets are paid back to the Projects. This occurs when (1) operational assets are used to pay back the debt as they accrue during the next year, or (2) hydrology is sufficient to allow San Luis Reservoir to be filled to the level it would have been absent EWA actions that required borrowing.

2. The borrowed assets may be carried over into a subsequent year beyond 2005 if the Project Agencies determine such action (1) will not impact CVP/SWP allocations in 2006 or (2) the EWA can provide sufficient source shifting to avoid impacting storage in San Luis Reservoir at its low point in 2006.

3. Sufficient funding must be provided to acquire the necessary purchased assets for 2005 plus additional water to repay the amount borrowed. If funding is insufficient to acquire the necessary assets and repay debt, and it is not possible to carryover the debt to 2006, the Project Agencies and Management Agencies will meet to consider alternative repayment options. The objective for both the Project and Management Agencies is to ensure continued EWA operations.