

Is a Long Term EWA In our Future ?



Jerry Johns, DWR

Sacramento-San Joaquin River Delta (Delta)

CALFED Bay-Delta Program

Record of Decision
August 2000

EWA First Year
2000-01



What is EWA

- Cooperative Management Program
 - to provide protection to fish of the Bay/Delta
 - by changes in operation of the CVP & SWP
 - at no uncompensated costs to project users
 - Four year program extendable by EWA Agencies
- Goals
 - Water Supply Reliability for CVP and SWP
 - Trajectory for Recovery of At Risk Fish Species of the Bay/Delta Estuary

Management of EWA

- Management Agencies - DFG, USFWS, NMSF
- Project Agencies - DWR, USBR
- Water Operations Management Team (WOMT)
- EWA Team (EWAT)

EWA Assets in the 2000 CALFED ROD

- Fixed – Water Purchase Targets 185 TAF
 - UOD 35 TAF SOD 150 TAF
 - Variable - operational tools
 - E/I relaxation (est. 30 TAF)
 - SWP Pumping of b(2) releases (est. 40 TAF)
 - SWP pumping capability (125 TAF – W 75, S 50)
 - Total EWA 380 TAF SOD Actions
 - Source shift – Obtain 100 TAF
 - (bridge loan to get past low point in San Luis Reservoir)
 - Borrowing - Obtain 200 TAF SOD
 - Within years and between years
- Cost Estimate \$50 Million /Year

Observations on EWA

- EWA is working. 2 Dry years, 1 Above Normal and 1 Below Normal Year - no big fights
- Fish have benefited – Stable water supply
- 2002 70 % CVP and SWP allocation in a dry year
- Focused on Delta with coordinated upstream benefits
 - Yuba, Merced, American (Power Bypass)
- 4 years + 1 MAF in fish actions - \$143 Million
- Average: Actions 252 TAF, Purchases 236 TAF
Variable 55 TAF, Costs \$35.85 M
- What Price Peace?

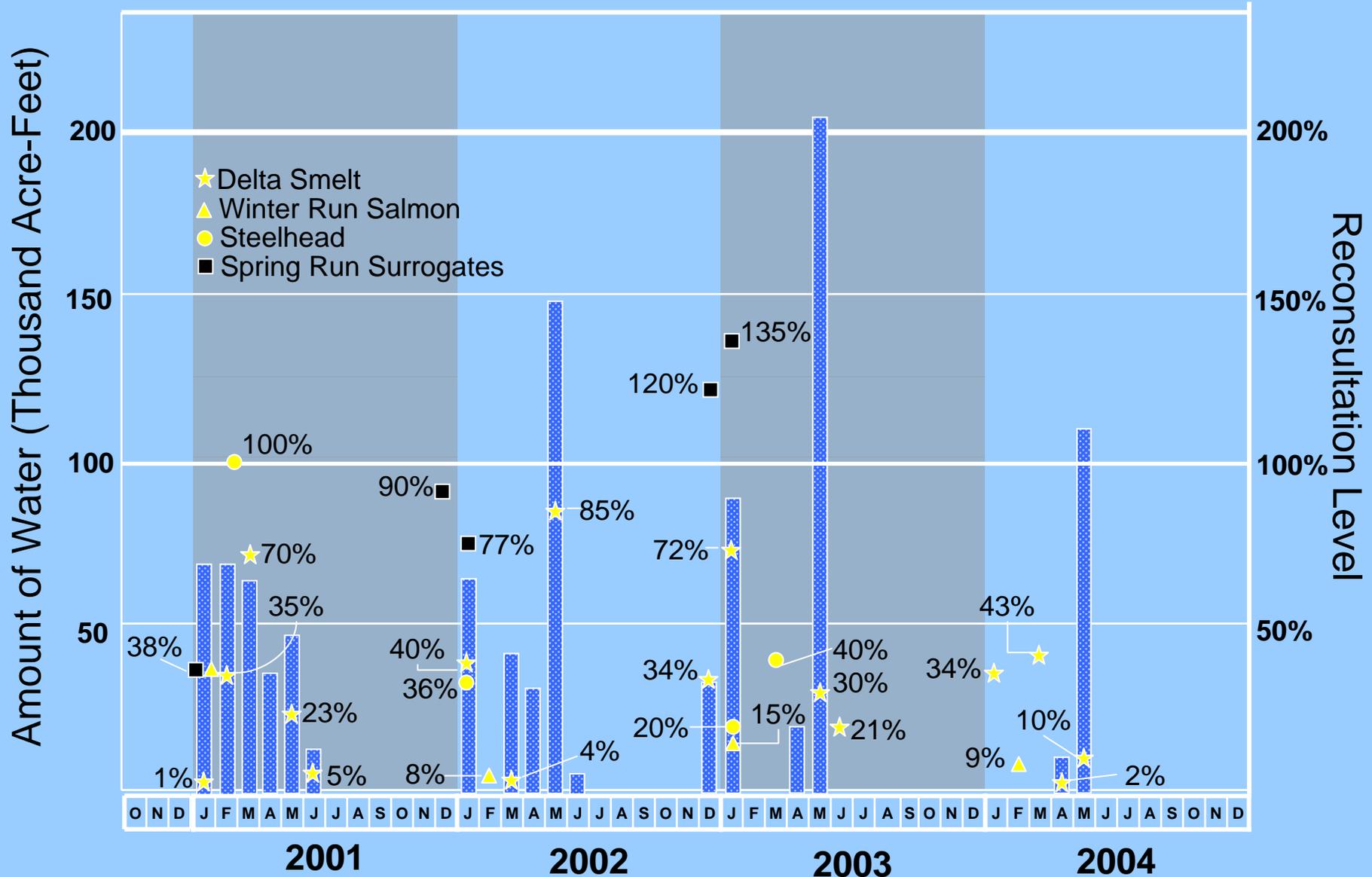
EWA Asset Acquisition, Use, Costs 2001 through 2004

| EWA Assets Acquired | 2001 | 2002 | 2003 | 2004_{a/} |
|---|------------------------|-----------------|-----------------|--------------------------|
| Water Purchases | TAF | TAF | TAF | TAF |
| Sources upstream of Delta | 105 | 142 | 70 | 120 |
| Sources in export area | 231 | 98 | 145 | 35 |
| Total purchases | 336 | 240 | 215 | 155 |
| Operational Assets (e.g. E:I flexibility) | 48 | 83 | 91 | <1 |
| Losses _{b/} | -17 | -51 | -16 | -28 _{c/} |
| Total Net Assets Obtained | 367 | 272 | 290 | 127 |
| Assets Carried Over from Prior Year | | 77 | 58 | 0 |
| Total Assets Available for WY | 367 | 349 | 348 | 127 |
| EWA Asset Costs | TAF | TAF | TAF | TAF |
| State | \$54.4 M | \$17.8 M | \$30.1 M | \$19.6 M |
| Federal | \$10.0 M _{d/} | \$11.5 M | \$0 M | \$0 M |
| Total EWA Costs for WY | \$64.4 M | \$29.3 M | \$30.1 M | \$19.6 M |
| Average price/acre-foot _{e/} | \$179/AF | \$118/AF | \$ 144/AF | \$126/AF |
| EWA Asset Use | | | | |
| SWP/CVP pumping reductions | | | | |
| Chinook salmon / steelhead | 86 | | | |
| Salmonids and delta smelt | 137 | 67 | 121 | |
| VAMP period | 43 | 45 | 32 | 20 |
| Post – VAMP period: delta smelt and Chinook salmon | 24 | 137 | 195 | 104 |
| Total EWA pumping reductions for fish protection | 290 | 249 | 348 | 124 |
| Pumping reduction during conversion of EWA water to project water in San Luis reservoir | | 38 | | |
| Upstream use for Chinook salmon | | 4 | | |
| Total EWA Expenditures for WY | 290 | 291 | 348 | 124 |

EWA Asset Acquisition, Use 2001 through 2004

- a/ Numbers for water year 2004 are preliminary
- b/ Includes carriage water associated with EWA Delta transfers, San Joaquin River tributary conveyance losses, and water spilled from Lake Oroville during flood control operations.
- c/ Based on assumed carriage losses and operational losses in 2004. Actual losses are not known until EWA transfers are concluded and operations/Delta water quality modeling is completed.
- d/ Amount paid for water purchased by Reclamation initially for CVP purposes and subsequently provided to EWA.
- e/ Average Price calculations exclude operational assets.

EWA Expenditures from October 2000 through September 2004



Long Term EWA Benefits

- Peace with Fishery Agencies
 - Can we move forward with Intertie, Contract Renewals, benefits of 8,500 cfs at Banks if we are fighting with the Fishery Agencies ?
 - Biological Opinions with OCAP
- Fish Agencies on a Budget
 - Past actions just take the water away
 - Now Fishery Agencies have to Manage their actions and budget

Benefits (continued)

- EWA has opened up water transfers and new water markets
 - For the first time fishery agencies actively making water transfers work
 - Yuba Transfers easier than just a few years ago
 - Cross Delta Issues no longer an issue
 - Dedicated EWA capacity helps upstream water Transfers. Not just dry years.

Concerns with EWA

- Fish Actions taken not really needed to improve fish populations
 - Perceptions are reality - B.O. Take Limits
 - Export Pumps are great fish collection devices
 - Independent Science Review
 - Changing paradigms takes time
 - Movement is happening - More will Happen

Concerns (continued)

- EWA Creates Competition for scarce water supplies and drives up prices - Users cannot compete with Government programs
 - Yes, EWA is a factor in the market
 - SOD purchases focused in wetter years not dry years - Price and Cross Delta Capacity
 - EWA should be used to help expand the water markets for everyone. More NOD Sources
 - New Exchange Program - Water Banking with EWA
 - Coordination of Water Transfers with others

Environmental Water Account

- Development of Straw Proposal For EWA
 - Support of EWA Part of Project Integration Proposal (Napa Proposition)
 - Integral part of SDIP, OCAP
 - Developed straw proposal
 - Contractors offered tools

Environmental Water Account

- Development of Straw Proposal For EWA
 - DWR, USBR worked with USFWS, NOAA Fisheries, DFG
 - EWA Agencies worked to game and model
 - Included in OCAP as part of Project Description for the future
 - Funding a big issue

Environmental Water Account

- Annual Water Purchases
 - Wet Year 250 TAF
 - Above Average Year 250 TAF
 - Below Average Year 250 TAF
 - Dry Year 230 TAF
 - Critical Year 210 TAF

Environmental Water Account

- Fish Agency Desired Actions
 - Wet Year 430 TAF
 - Above Average Year 490 TAF
 - Below Average Year 400 TAF
 - Dry Year 300 TAF
 - Critical Year 250 TAF

Status of Proposed Long Term EWA

October 7, 2003

| | <u>2000 CALFED ROD</u> | <u>10/7 - OCAP Proposal</u> |
|---|---|---|
| Fixed Assets (SOD Equivalents) | 185 TAF | 210/230/250 C/D/other |
| Variable Assets | <ul style="list-style-type: none"> - 50% State Gain - E/I Relaxation - Share Excess Capacity - Source Shift (100 TAF) -500 cfs @ Banks July - Sept | <ul style="list-style-type: none"> - Same as ROD - Same as ROD - Same as ROD - Same as ROD - Same but last 30 TAF based on actual capacity - 100 SLR debt carryover |
| Storage/Exchange | - 200 TAF SOD Storage | <ul style="list-style-type: none"> - 200 Semitropic - 200 Wet/dry exchange (adds 24 TAF Average) |
| Anticipated Fish Actions | 380 TAF | 250 - 490 TAF 374 Average |

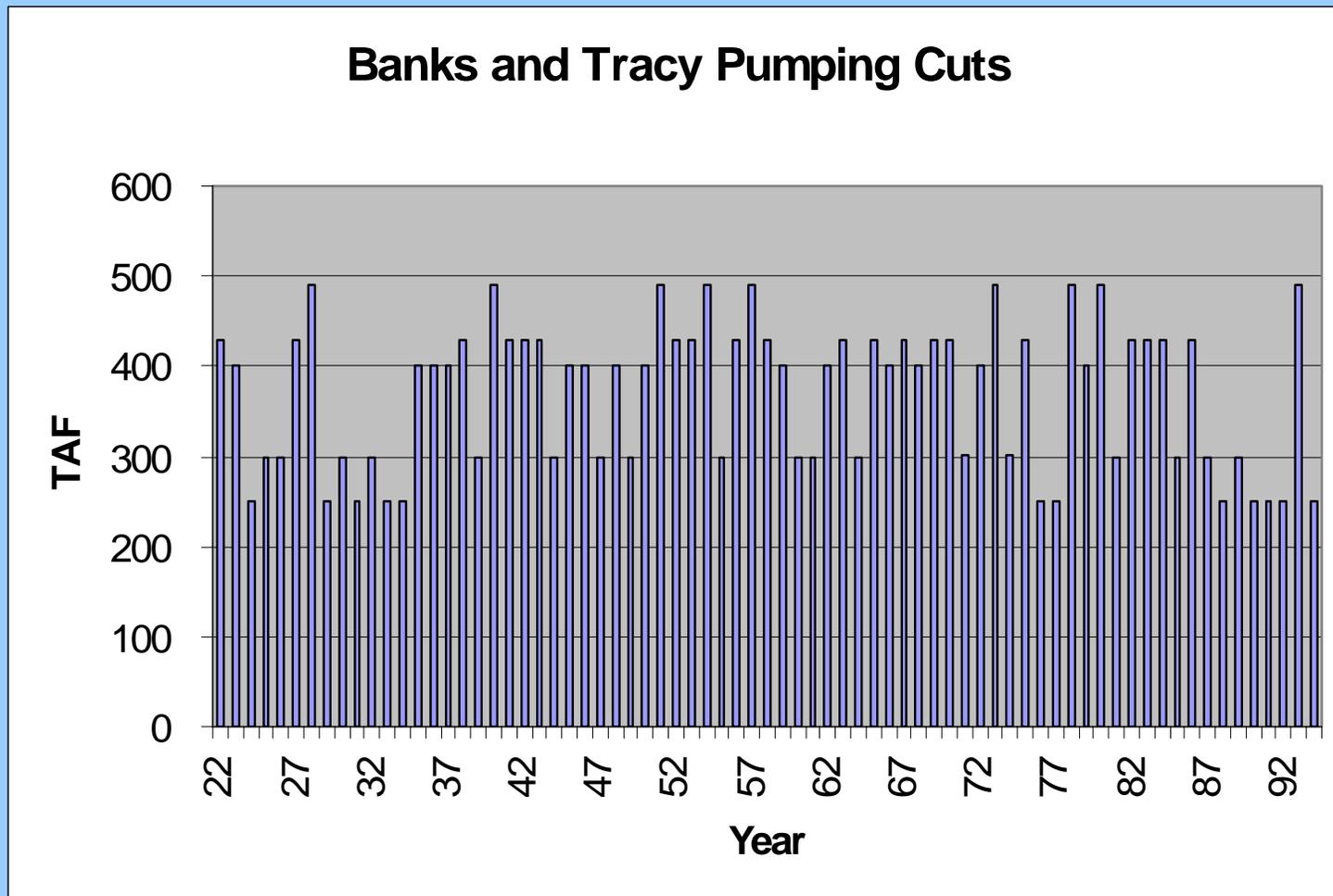
EWA Operations Model

- Model of 73 Years Hydrology
 - User-selected options
 - Includes water budget and cost
 - Based on CALSIM output
 - Addresses multiple asset sources
 - Allows operator to balance fish needs with asset development

EWA Operations Model

- Model Updates
 - Uneven exchanges (2:1) added to protect San Luis assets from spill
 - Debt spill limited to sum of winter fish actions, project debt, and excess debt
 - Provision to decrease and increase purchases in response to asset carryover and excess debt

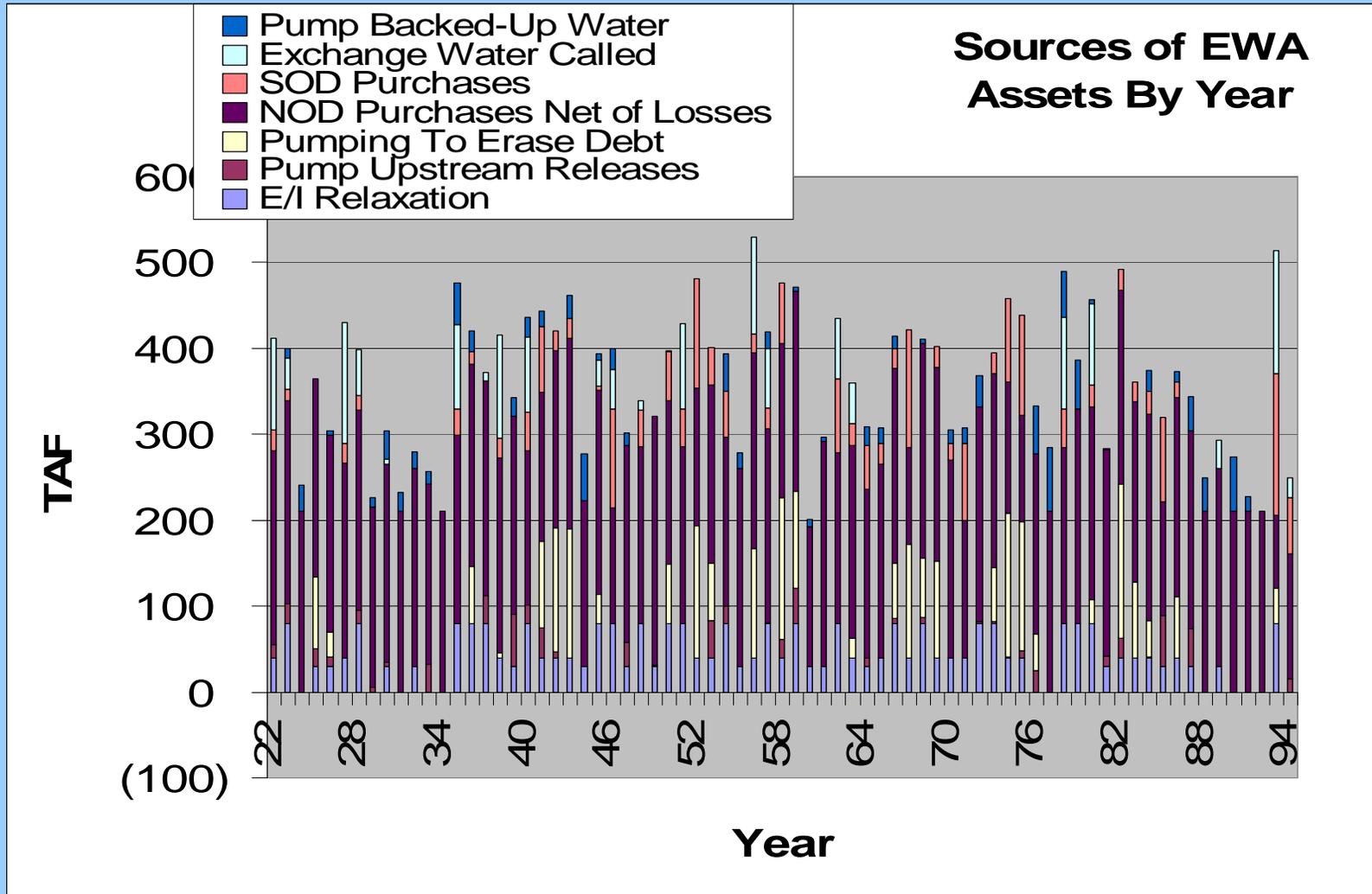
EWA Operations Model Output



Asset Acquisition: Potential Water Sources

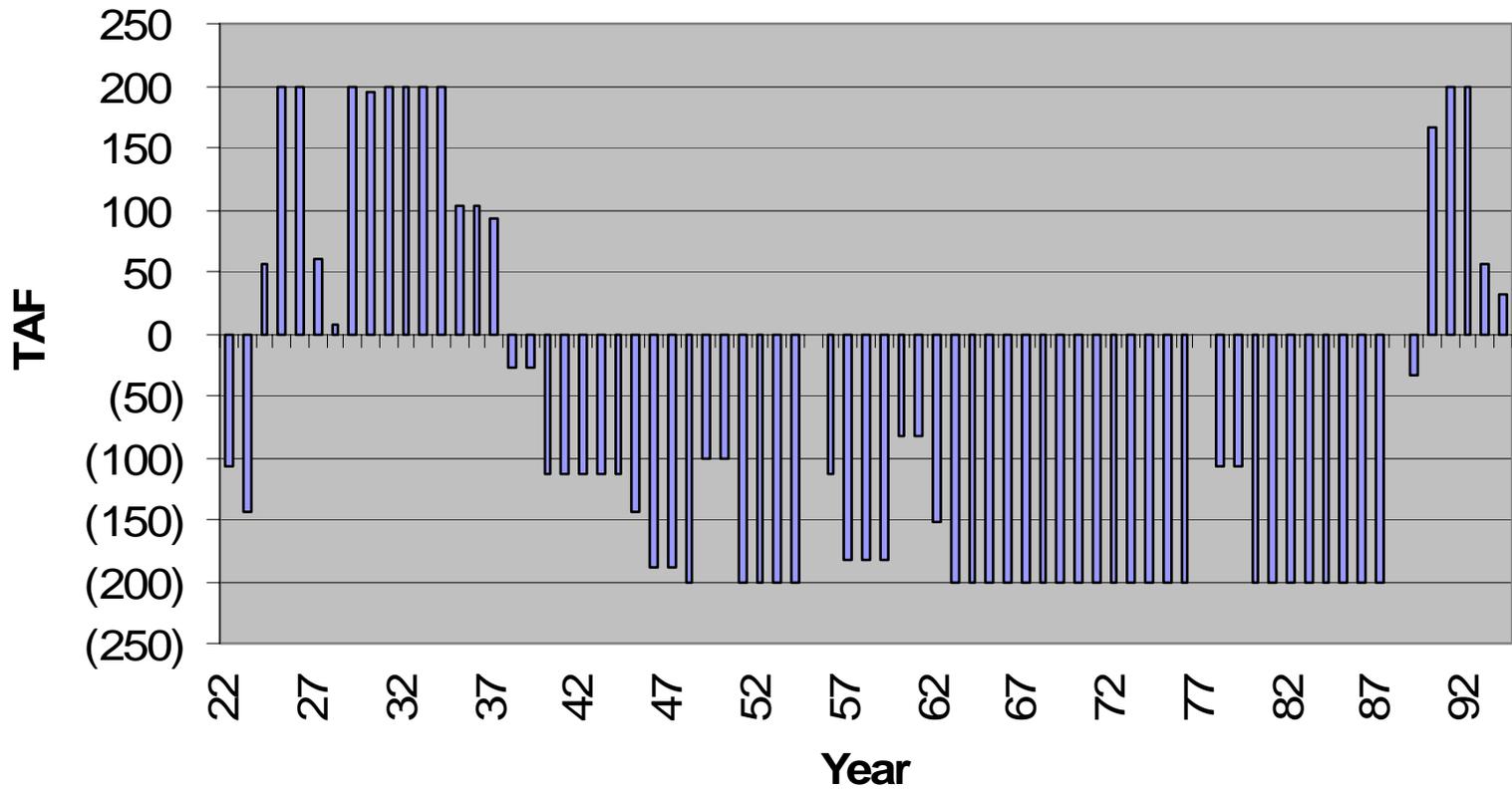
- Upstream from the Delta
 - Stored reservoir water
 - Groundwater substitution
 - Stored groundwater
 - Rice crop idling
- Export Service Area
 - Stored groundwater
 - Cotton crop idling

EWA Operations Model Output



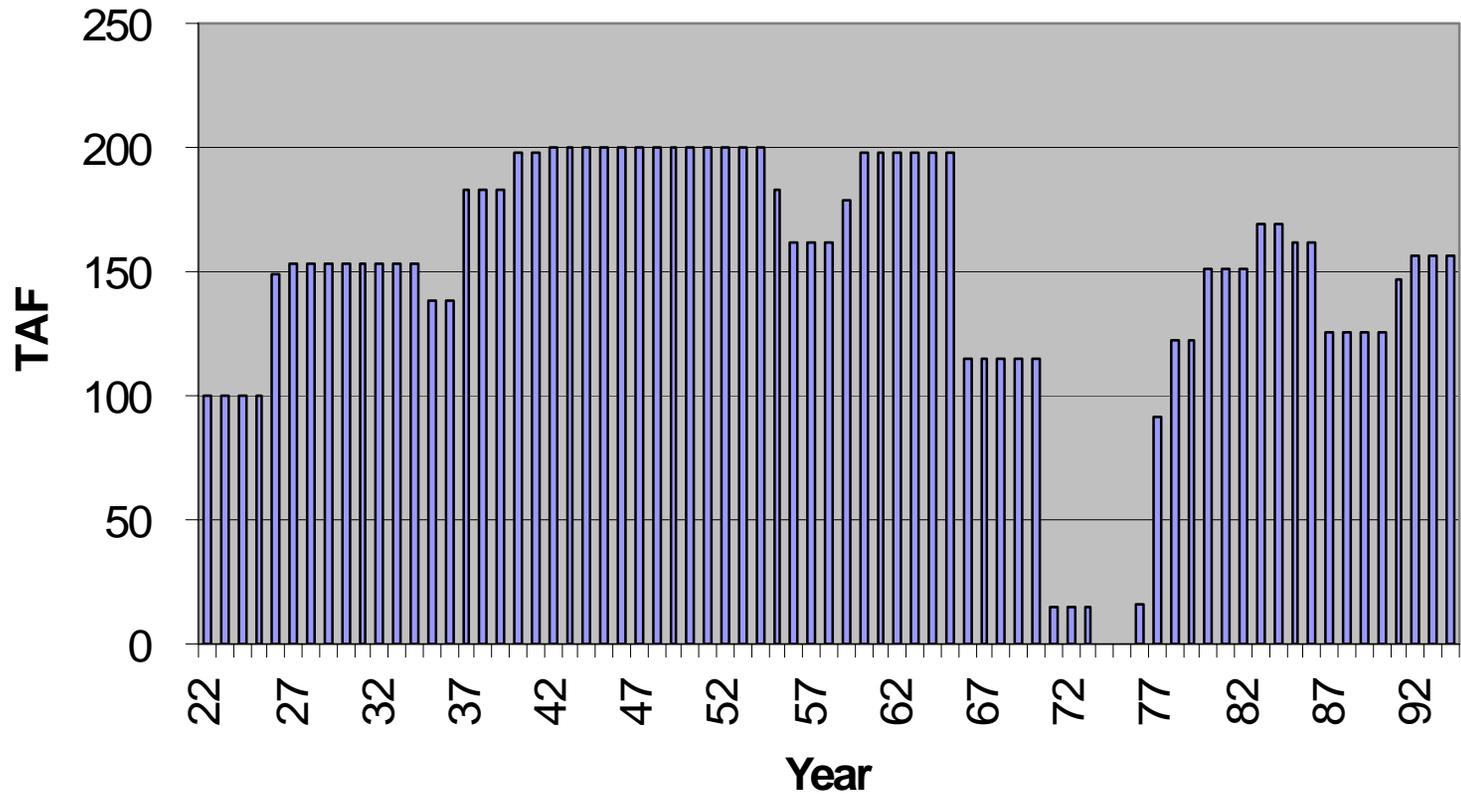
EWA Operations Model Output

EWA Exchange Balances

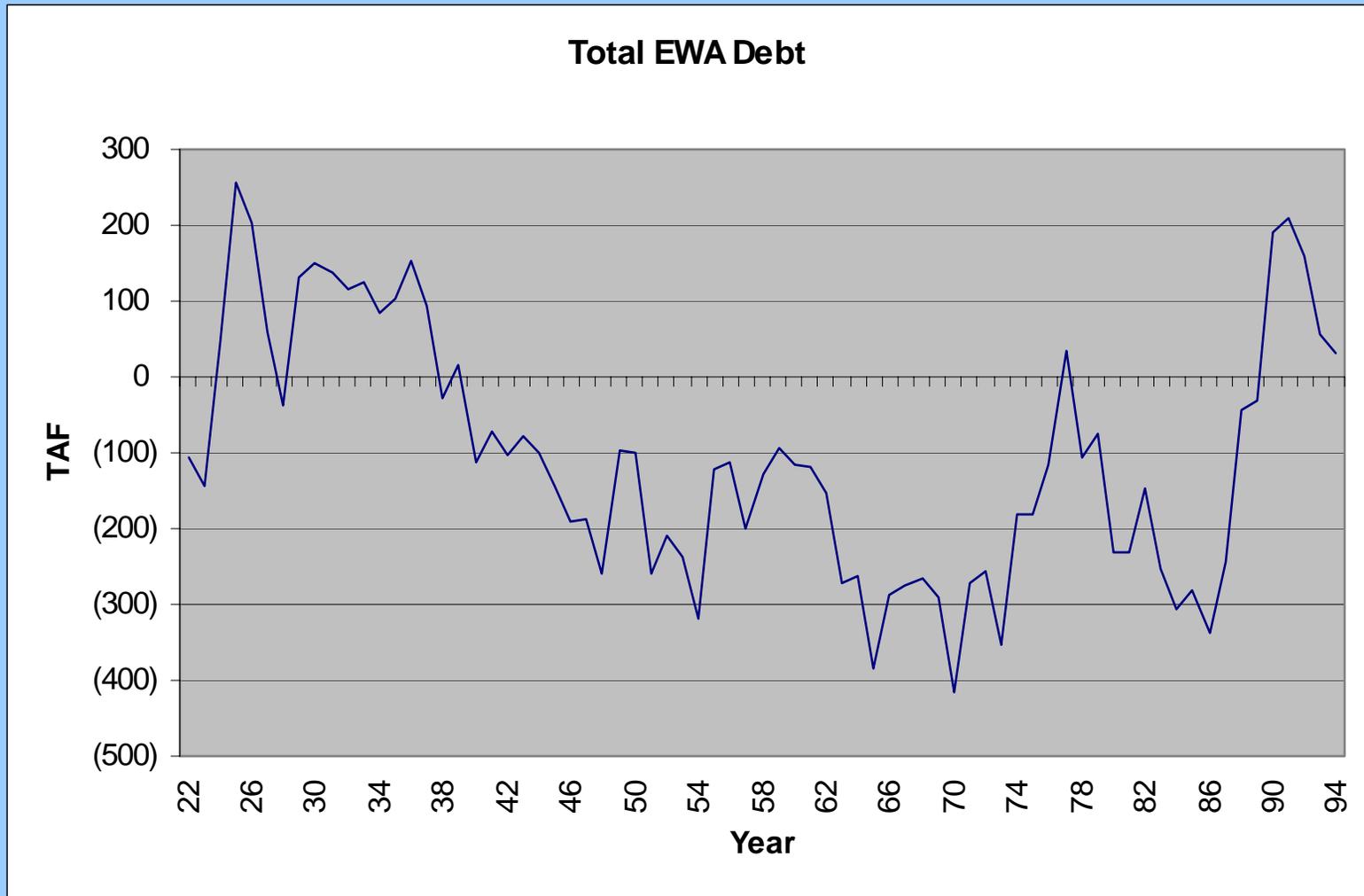


EWA Operations Model Output

Semitropic Water Balances, Beginning of Year



EWA Operations Model Output



Long Term EWA

- Appears Technically Feasible
- Costs \$33 Million Per Year – Average
- Large Swings in Costs due to exchanges

Does EWA Continue?

If so, In What Form?

- Who Benefits
 - Water supply Reliability – SWP/CVP
 - Trajectory Towards Recovery – F&W, Public
- Size of EWA
 - With 6680, with 8500 and Intertie
- Formulation and Funding
 - Public Funding – State and Federal
 - SWP Funding – Mitigation of Delta Smelt and Indirect Impacts
 - Participation by CVP and Federal funding
- Timing – Next Ten Years
 - Near Term – next 3 Years through 2007
 - Long Term with 8,500 at Banks -

EWA Issues Ahead

- Clarify the **Purpose** of EWA and its beneficiaries
- Integration of **Science** in EWA and policy decisions
- **Long-term ESA Commitments** with a long term EWA
- **Operating rules** with 8,500 and Intertie (400 cfs)
- **Stable Access to Water Supplies SOD** in Wetter Years
- **Financing** of EWA long-term