Regulations and Operations in CalLite

Nancy Parker, USBR

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Outline

- Regulatory Standards
  - Bay-Delta Plan (WQCP)/ D-1641
  - Biological Opinion RPA's
  - Other Regulations
- System Operations Options
- COA

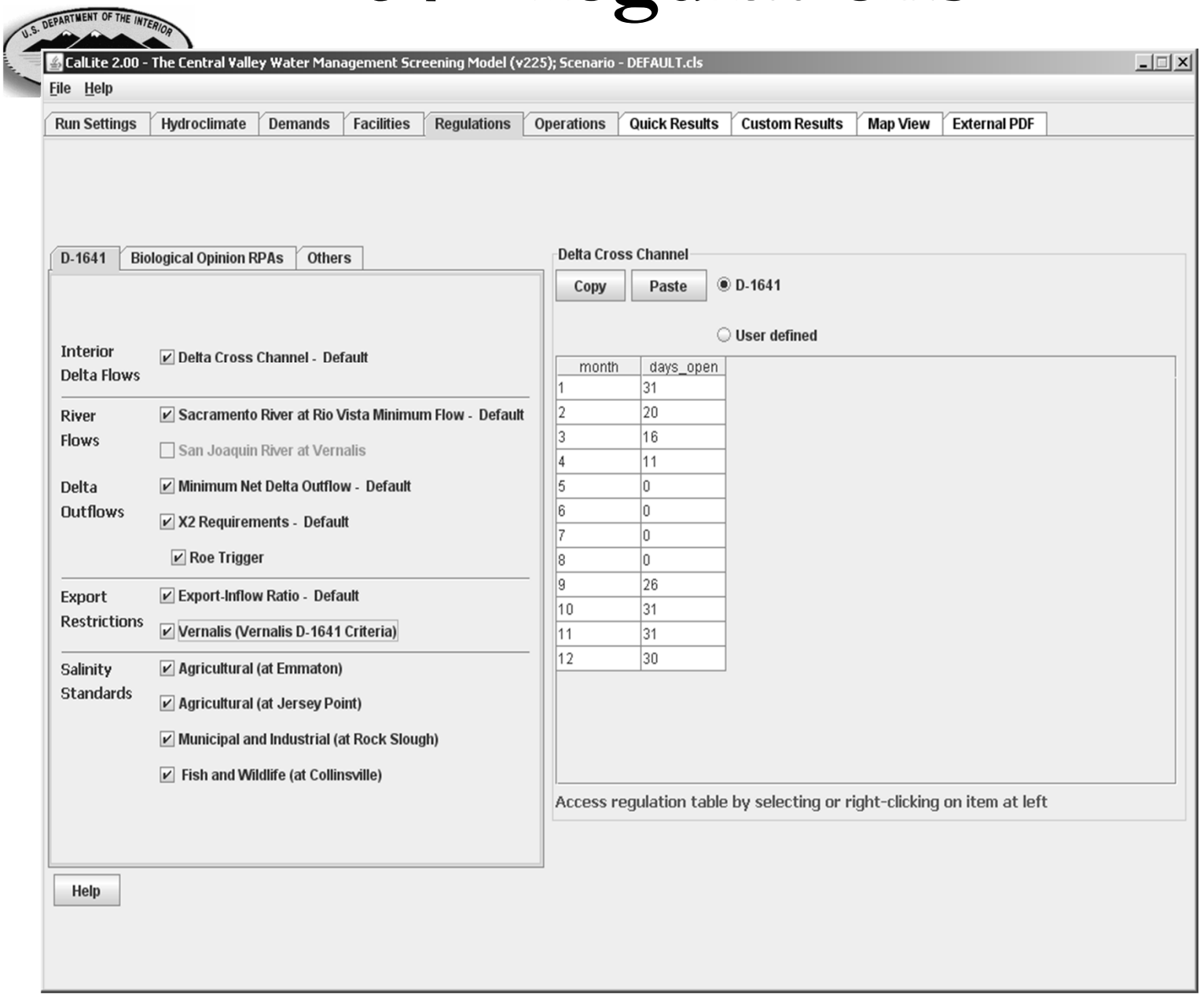
WQCP / D-1641

- Delta Outflow - NDOI – flow req. by month/wyt
- X2 position requirement
  - # days when X2 must be west of Roe Island, Chipps Island, or SJR/Sac Confluence based on previous month 8-river index
  - Roe trigger – modify X2 days if X2_last > 66.3 km
- Delta Salinity Standards
  - M&I – Rock Slough,
  - Agriculture – Emmaton, Jersey Point
  - F&W - Collinsville
- Export/Inflow Ratio – 35% Feb-Jun, 65% Jul-Jan

WQCP / D-1641

- Delta Cross Channel Gates Closures – days/month
- Sacramento River at Rio Vista – flow req. by month/wyt
- Vernalis
  - Pulse period flow objective
  - Pulse period export restriction = max(1500 cfs, Vernalis flow)
  - Bay-Delta Plan baseflow standards Feb-Jun
    - Higher if X2 standard is west of Chipps Island
  - Salinity Standard – 1000 or 700 ppm

D-1641 Regulations



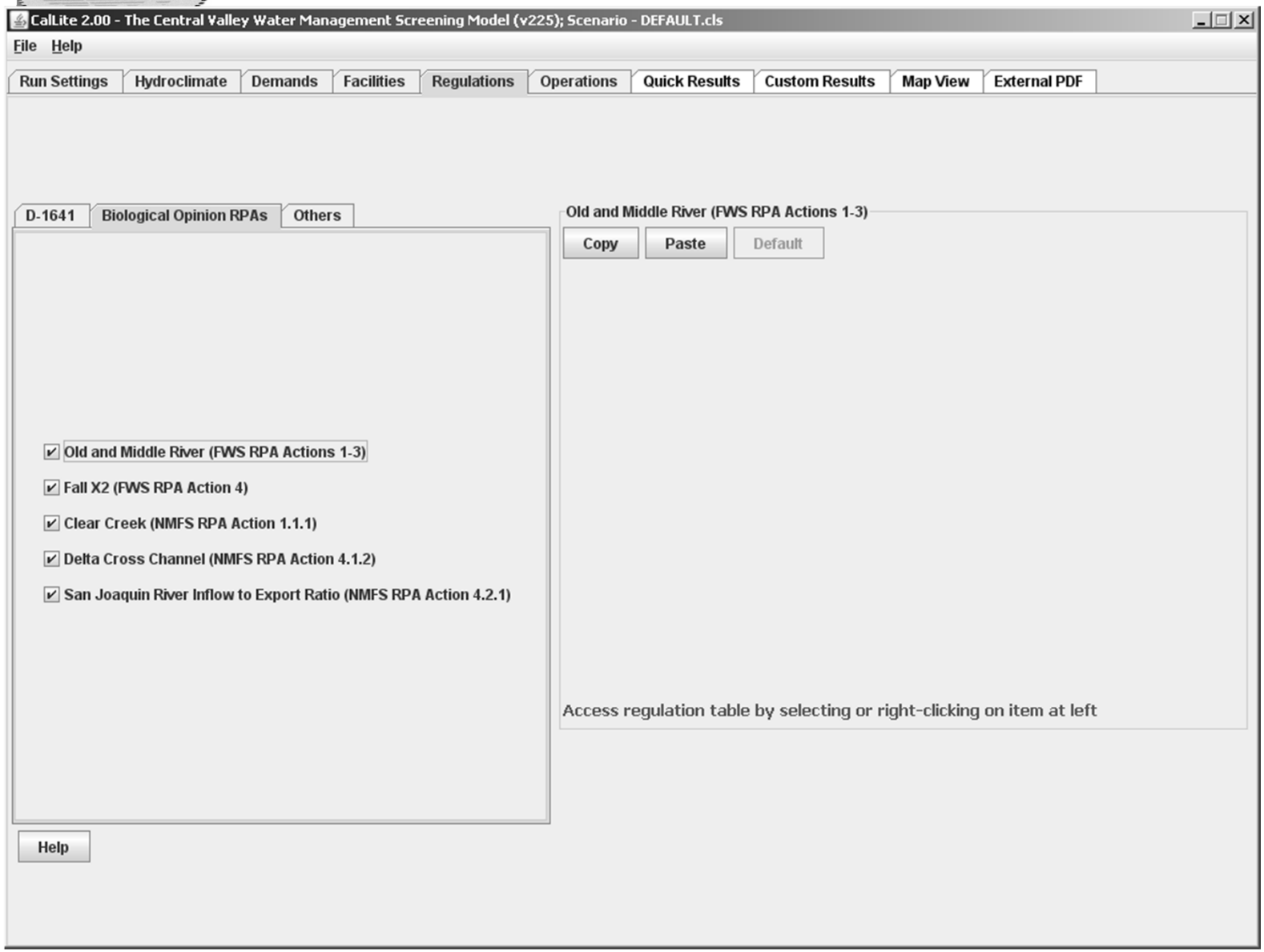
User-Defined (Modified) D-1641 Regulations

- Delta Cross Channel Gates – set # days open/month
- Sac. River Rio Vista Min Flow – req'ts by month/wyt
- Net Delta Outflow Index – set min flows by month/wyt
- X2 Requirements
  - Modify required location
  - Use Roe trigger or not
- Export/Inflow Ratio – modify required values
- Vernalis-based pulse period export limit – check on or off

Biological Opinion RPA's

- Old and Middle River Flow Restrictions
- Fall X2
  - Requires X2 positions to be met in September-November
- Delta Cross Channel Gate Closures
- Clear Creek 6-day pulse flow in May/June
- San Joaquin River – based Export/Inflow Ratio
  - Pulse period flow objective

BO RPA's


CalLite 2.00 - The Central Valley Water Management Screening Model (v225); Scenario - DEFAULT.cls
File Help
Run Settings Hydroclimate Demands Facilities Regulations Operations Quick Results Custom Results Map View External PDF
D-1641 Biological Opinion RPAs Others
Old and Middle River (FWS RPA Actions 1-3)
Fall X2 (FWS RPA Action 4)
Clear Creek (NMFS RPA Action 1.1.1)
Delta Cross Channel (NMFS RPA Action 4.1.2)
San Joaquin River Inflow to Export Ratio (NMFS RPA Action 4.2.1)
Help
Old and Middle River (FWS RPA Actions 1-3)
Copy Paste Default
Access regulation table by selecting or right-clicking on item at left

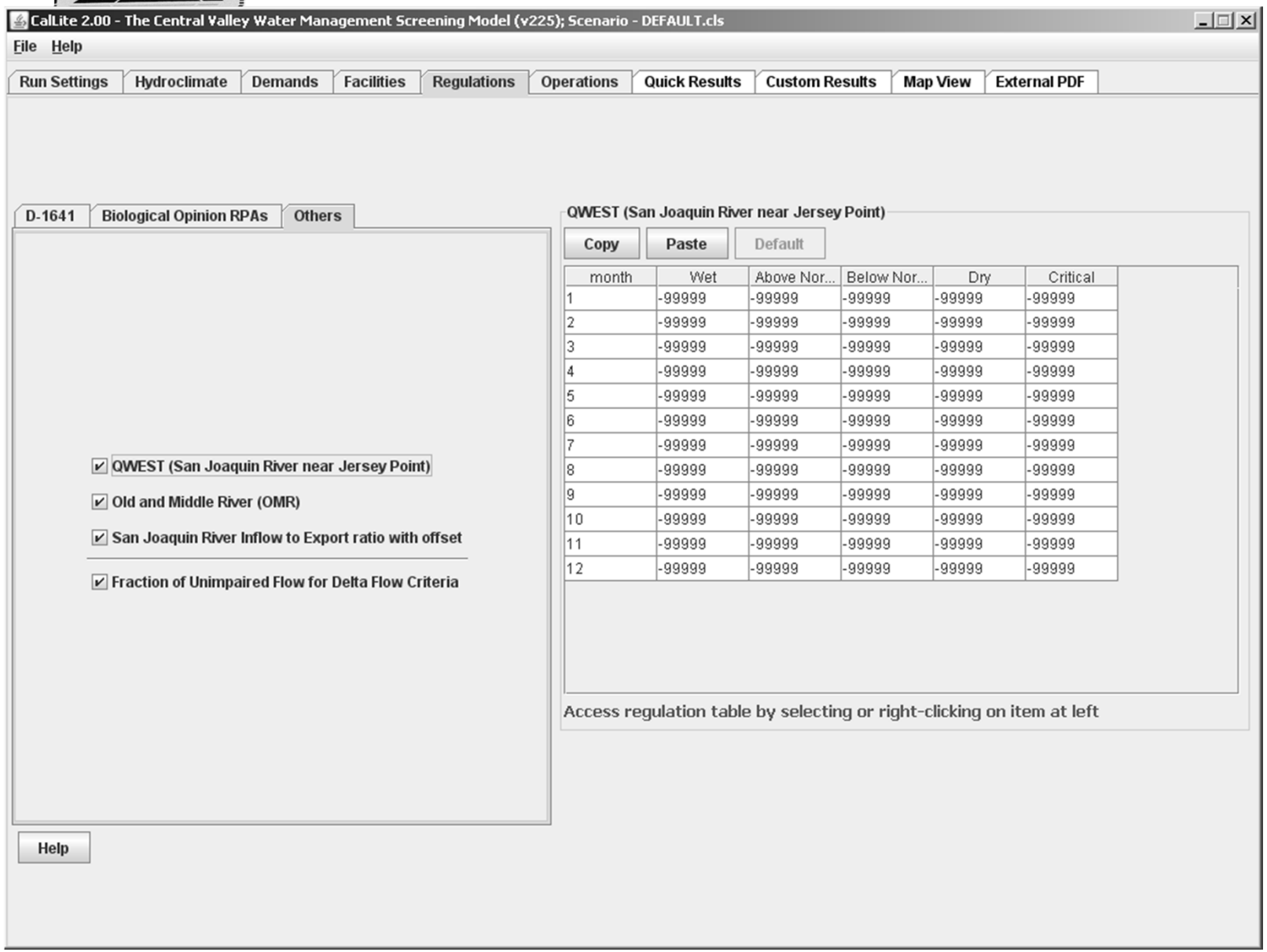
No User-Defined RPA's

- Not sensible to "modify" a Service BO
- User may toggle the actions on and off to assess their effects on system behavior

Other Regulations

- QWEST (SJR near Jersey Point)
  - Enter your own set of flow constraints by month/wyt
- Old and Middle River Flows
  - Enter your own set of flow constraints by month/wyt
- San Joaquin River Inflow/Export Ratio with Offset
  - Enter a set of multipliers and offsets to control exports relative to Vernalis flow – vary by month/wyt
  - Exports < Offset + Multiplier * Vernalis Flow
- Delta Flow Criteria – fraction of unimpaired flow
  - Model will report diffs between actual flows and the specified fraction of unimpaired flow

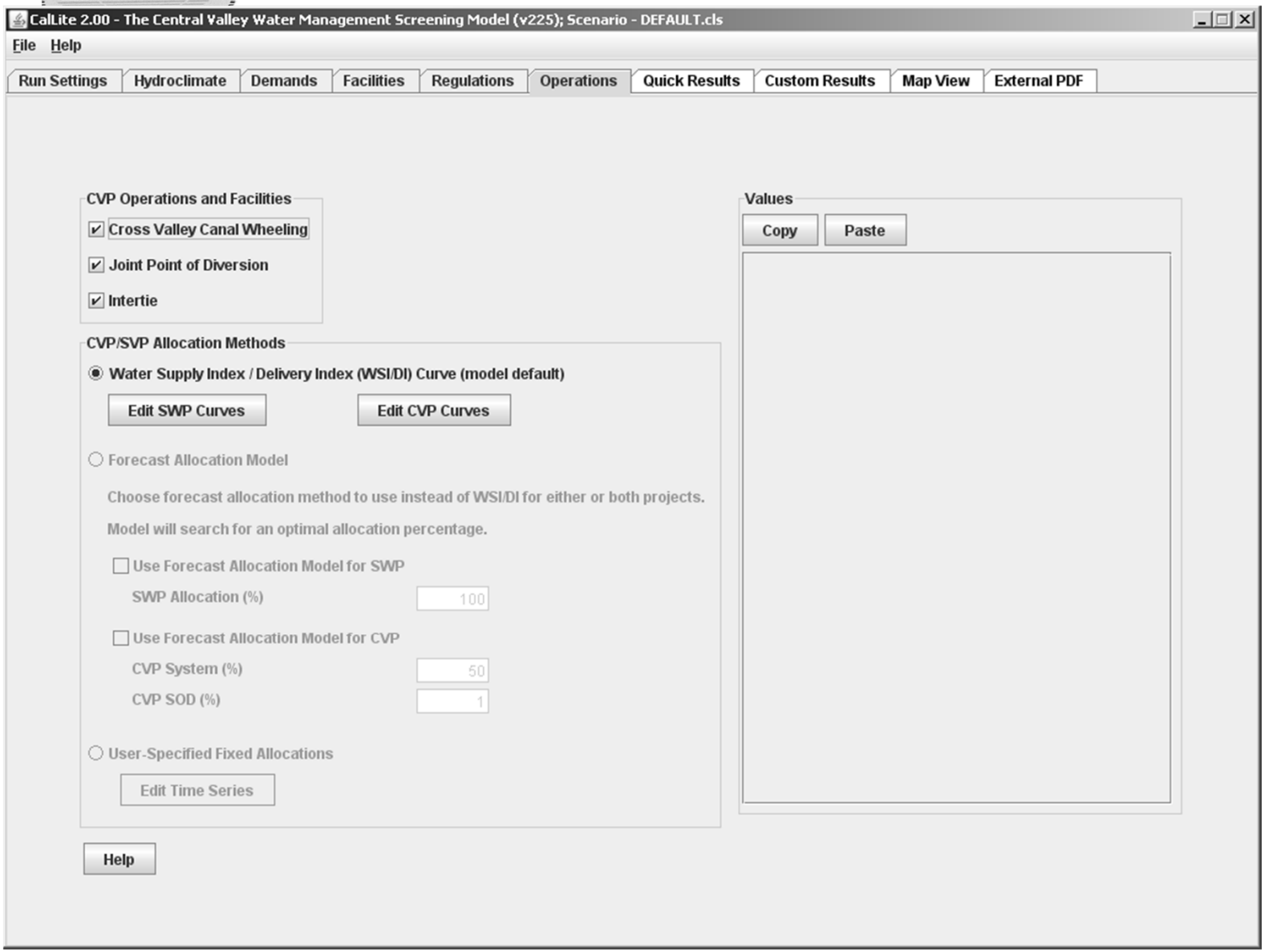
Other Regulations



Operations Options

- Cross Valley Canal Wheeling
  - Toggle CVC wheeling on and off
- Joint Point of Diversion Wheeling
  - Toggle JPOD on and off
- Intertie
  - Toggle use of the intertie on or off
- WSI-DI Curves
  - Edit curves to affect CVP and SWP allocations

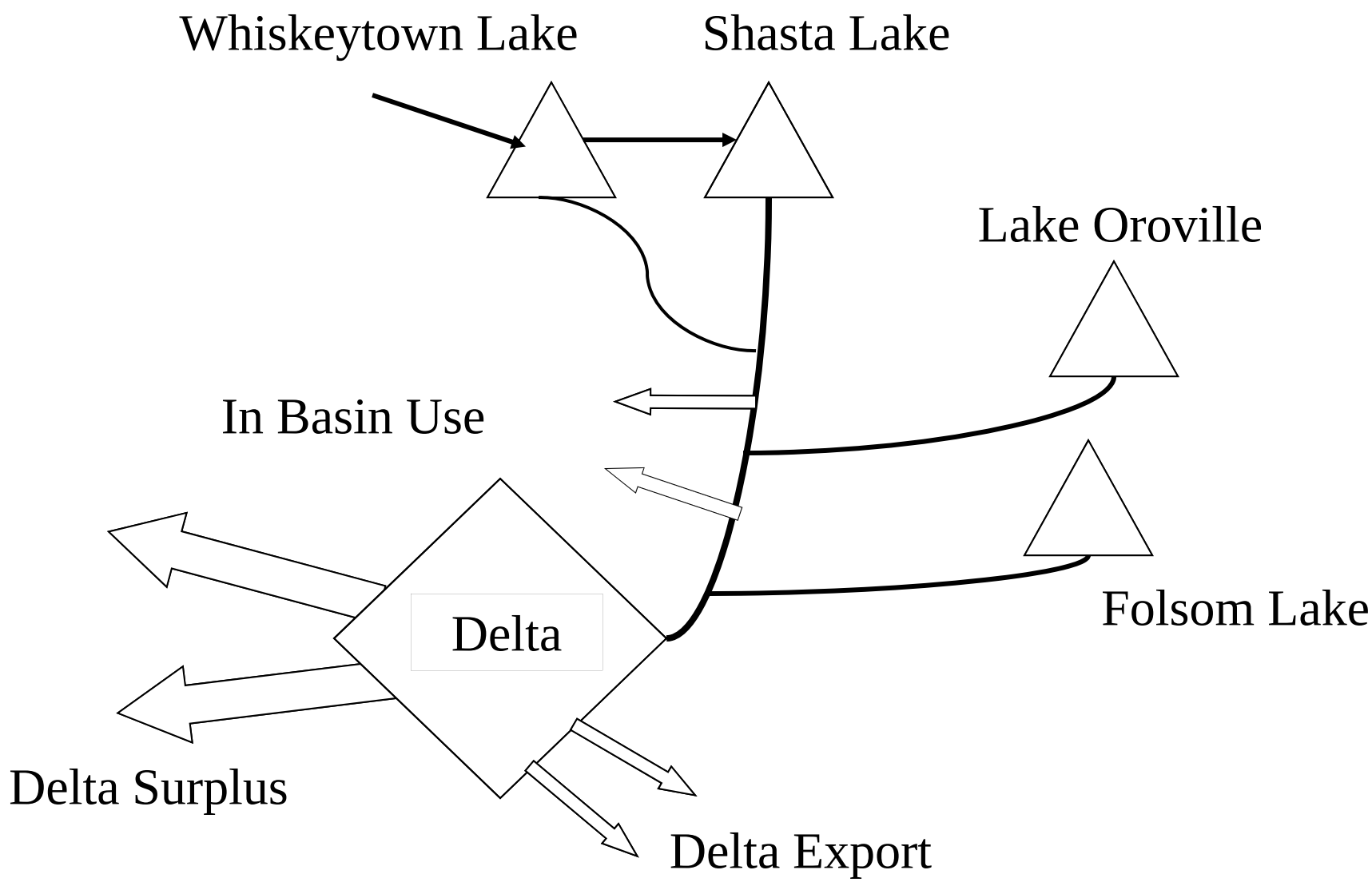
Operations Options



Coordinated Operations Agreement

BACKGROUND

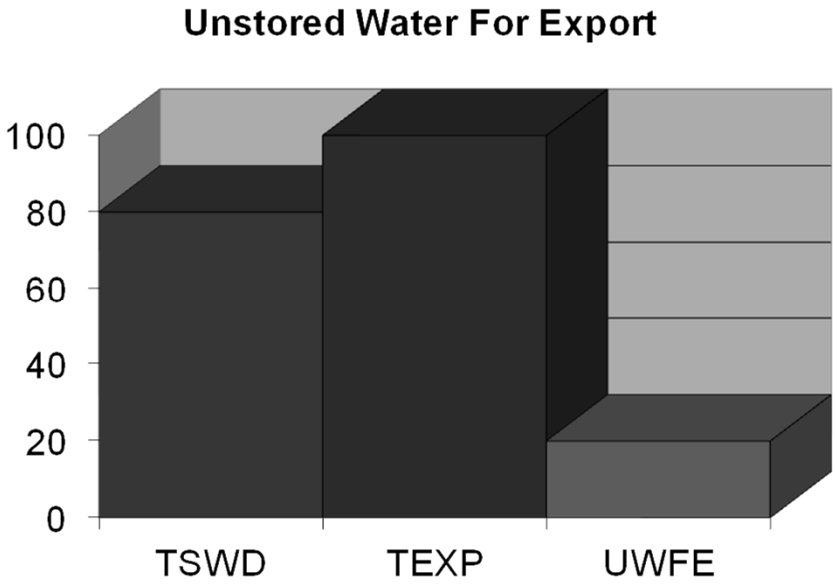
- COA establishes method for allocating water supply in the Sacramento River Basin between SWP (STATE) and CVP (FEDERAL) for in-stream requirements, storage and Delta exports
- 1971-1986 operations based on annual letter of agreement
- "Permanent" agreement approved in November 1986
- Implementation required legislation from U.S. Congress

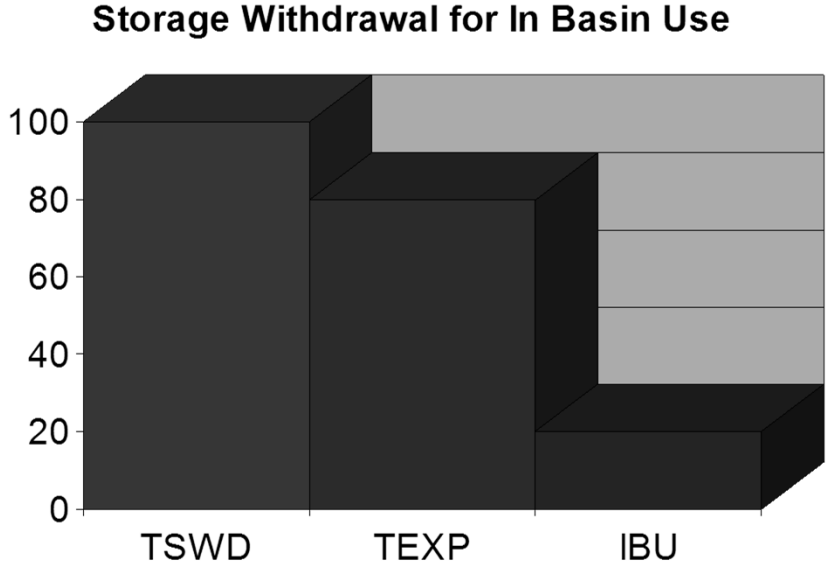

Whiskeytown Lake
Shasta Lake
Lake Oroville
In Basin Use
Folsom Lake
Delta
Delta Surplus
Delta Export

COA Terms

- United States Storage Withdrawal
- State Storage Withdrawal
- In-Basin Uses
- Un-stored Water for Export
- "Balanced" Water Condition
- "Excess" Water Condition
- Sharing Formula – 75/25 or 55/45

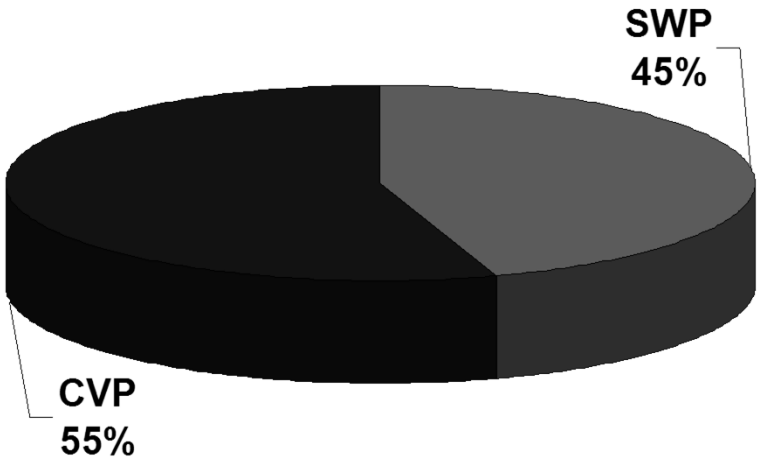
Key COA Definitions

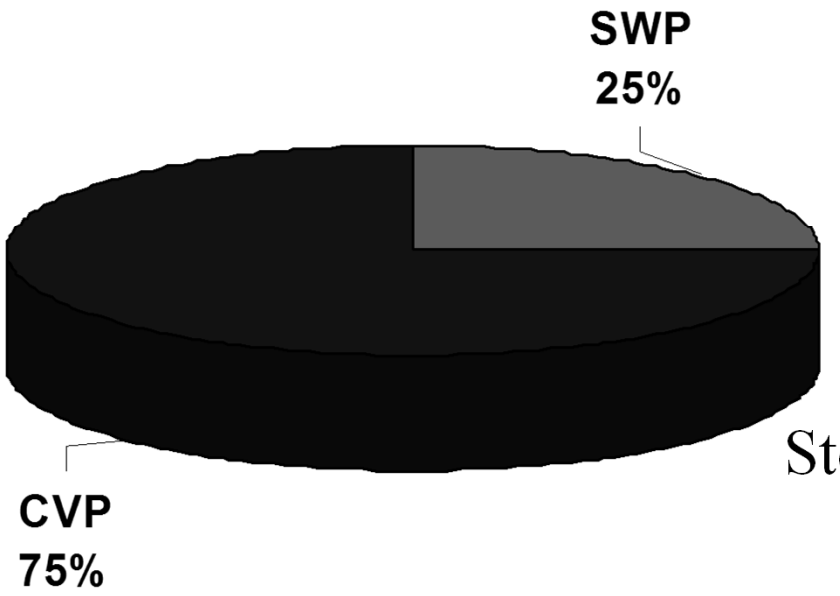




Sharing Arrangements

Sharing Formula:
Unstored Water For Export





Sharing Formula:
Storage Withdrawal for In Basin Use

COA Balance Equation

UWFE - IBU = TEXP + Delta Surplus - TSWD + TSI