

CALFED Bay-Delta Science Conference



Welcome to the Water
Quality Session Focusing on
Drinking Water Quality

October 5, 2004



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BAY-DELTA
PROGRAM

Drinking Water Quality Sessions

- I. Protection
- II. Watersheds
- III. Delta
- IV. Treatment Technologies

Drinking Water Quality Session I. Protection

- ▲ ELPH, Multiple Barrier and Drinking Water Quality
- ▲ Drinking Water Regulatory Challenges to Bay Delta Water Users
- ▲ Challenges Facing Drinking Water Utilities
- ▲ Integrating Science and Management in the CBDA Drinking Water Quality Program
- ▲ A Synthesis of Processes Affecting DOM in the Sacramento-San Joaquin Delta

ELPH, Multiple Barriers and Drinking Water Quality



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William H. Glaze, Member, CBD
Independent Science Board



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Water

▲ *"Whiskey is for drinking; water is for fighting over."*

Mark Twain, 1884

▲ *"Water helped ancient man learn those first lessons about the rights of others and responsibility to a larger society.... It became part of the moral and mental legacy parents passed on to their children."*

M. Meyer, "Water in the Hispanic Southwest"



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the rights of others and responsibility to a larger society....

the moral and mental legacy we leave to our children and to future generations

CALFED Program Elements



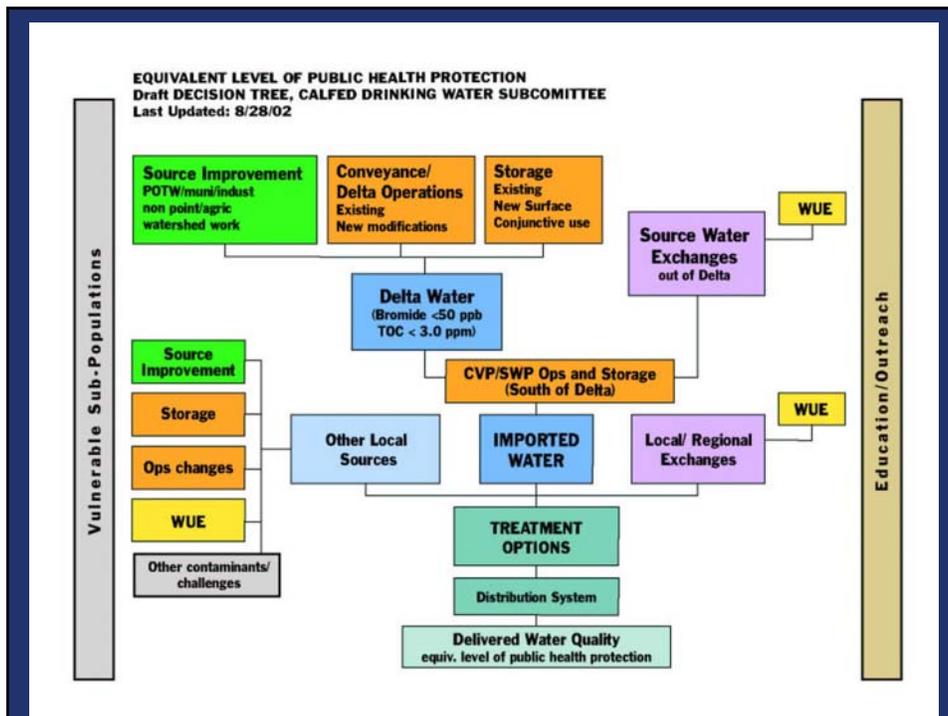
CALFED Water Quality Goals

- ▲ “Continuous improvement in water quality in the Bay-Delta system”
- ▲ “Provide good quality water for all beneficial uses”
 - ▲ “Provide safe, reliable and affordable drinking water to the 22 million Californians who rely on the Delta for all or part of their drinking water”

CALFED Drinking Water Quality Target

- ▲ “CALFED Agencies’ target for providing safe, reliable, and affordable drinking water in a cost-effective way, is to achieve either:
 - ▲ a) average concentrations at Clifton Court Forebay and other southern and central Delta drinking water intakes of 50 ug/L bromide and 3.0 mg/L total organic carbon, or
 - ▲ b) an equivalent level of public health protection (ELPH) using a cost-effective combination of alternative source waters, source control and treatment technologies.”

CALFED ROD, August 28, 2000



Source Improvement

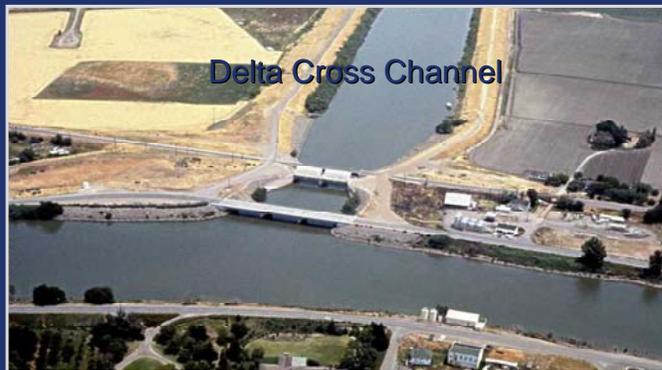


Objective: Reduce discharge of pollutants from urban and rural areas to improve Delta water quality

Tools

- ◆ Increase treatment of point sources (POTWs, industry)
- ◆ Increase monitoring and treatment of non-point sources (agriculture, storm runoff)
- ◆ Improve watershed function/ quality through pollution prevention, BMPs and restoration
- ◆ Priority Assessment (science, economics, policy)

Delta Conveyance & Operations



Objective: Improve operations and conveyance to enhance Delta outflow and reduce seawater intrusion

Storage

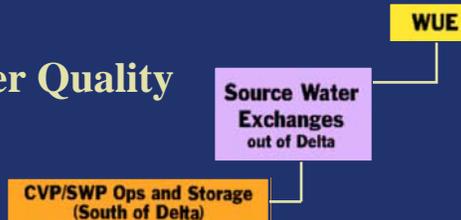


Objective: Utilize storage upstream of Delta to manage Delta outflow and improve water quality

Options

- ▲ Use existing storage to improve water quality
- ▲ Dedicate portion of new storage to improve water quality
- ▲ Use conjunctive use projects to improve water quality

Imported Water Quality Tools



Water Use Efficiency

Source Water Exchanges

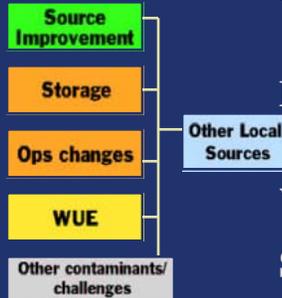
- ◆ Exchange Delta water for higher quality water

CVP/SWP Ops and Storage

- ◆ Operate South of Delta storage to improve water quality

Local Source Water Quality Improvement Tools

Vulnerable Sub-Populations



Local Source control

- Watershed efforts

Local Storage to improve drinking water quality

Modifications to operations to improve water quality

Water Use Efficiency

Special Projects to address local water quality/public health concerns

Advanced Treatment



- All ELPH elements funnel through Treatment
- While Multiple barrier approach for public health protection is mandatory, treatment is the last line of defense

Delivered Water Quality Improvement Tools

Improved water treatment technology

- ◆ Ultraviolet Light, Membranes, Multiple Disinfectants

Point of Use/ Point of Entry treatment

Distribution System improvements

Address vulnerable subpopulations and localized environmental justice issues

Drinking Water Subcommittee Recommendation: Advanced Treatment Studies

- ◆ Implementation of the ELPH strategic plan requires the information gained by advanced treatment studies
- ◆ CALFED conveyance and storage projects will require, as part of the environmental documentation, advanced treatment as part of an alternative analysis
- ◆ Ecosystem projects or actions that impact water quality could use advanced treatment as an alternative to offset or mitigate impacts

ACKNOWLEDGEMENTS

Lynda Smith
Metropolitan Water District of Southern California

Drinking Water Subcommittee of the
Bay-Delta Public Advisory Committee

"Ode, On the General Subject of Water"
by Kenneth Boulding; Feather River Anthology

*Water is far from a simple commodity,
Water's a sociological oddity,
Water's a pasture for science to forage in,
Water's a mark of our dubious origin,
Water's a link with a distant futurity,
Water's a symbol of ritual purity. Water is politics,
Water's religion,
Water is just about anyone's pigeon.
Water is frightening, water's endearing,
Water's a lot more than mere engineering.
Water is tragical, water is comical,
Water is far from Pure Economical,
So studies of water, though free from aridity
Are apt to produce a good deal of turbidity.*