

Water Quality Improvement Strategy



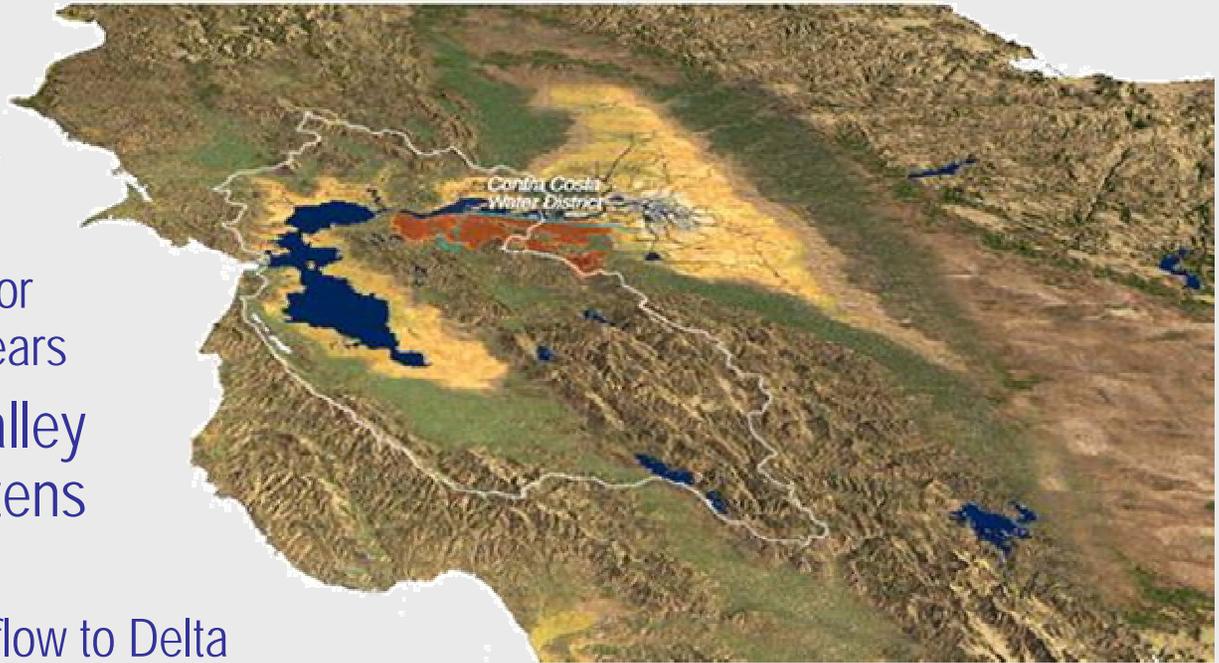
Delta Water Quality Standards

An estuary that supplies drinking water to 23 million Californians:

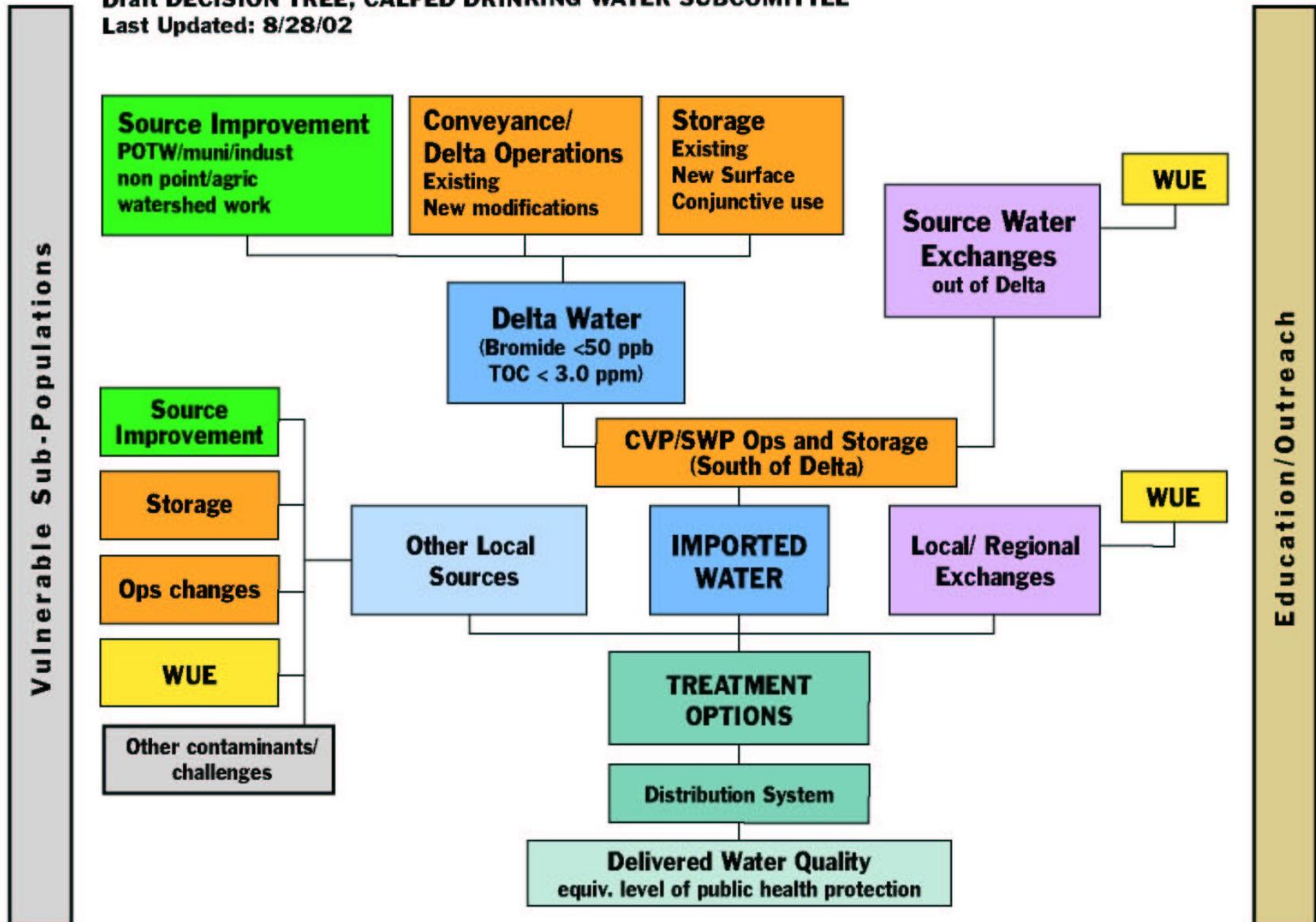
- Most protective water quality standard for **fish**
- Next most protective water quality standard for **agriculture**
- Next most protective water quality standard for **industry** (pulp water)
- Last is 250 ppm chloride standard (**gag rule**)

Future Changes Will Further Strain the Delta System and Water Resources

- State will have 60 million residents by 2040
 - More competition for water in drought years
- Planned Central Valley development threatens water quality
 - Less freshwater inflow to Delta
 - More urban runoff and wastewater flowing to Delta
- More Stringent Drinking Water Regulations
 - Need for new, costly treatment
- Continued Regulations to Protect Delta Environment
 - Restrictions on water diversions



EQUIVALENT LEVEL OF PUBLIC HEALTH PROTECTION
Draft DECISION TREE, CALFED DRINKING WATER SUBCOMITTEE
 Last Updated: 8/28/02



CALFED Bay-Delta Program Water Quality Projects

Potential Improvement Projects

- (1) Los Vaqueros Reservoir Expansion
- (2) Bay Area Blending/Exchange Project
- (3) Regional water treatment research
- (4) Source control
- (5) Frank's Tract
- (6) Intake relocation
- (7) Colusa Drain management

2 **3**
(Region-wide)

1

4

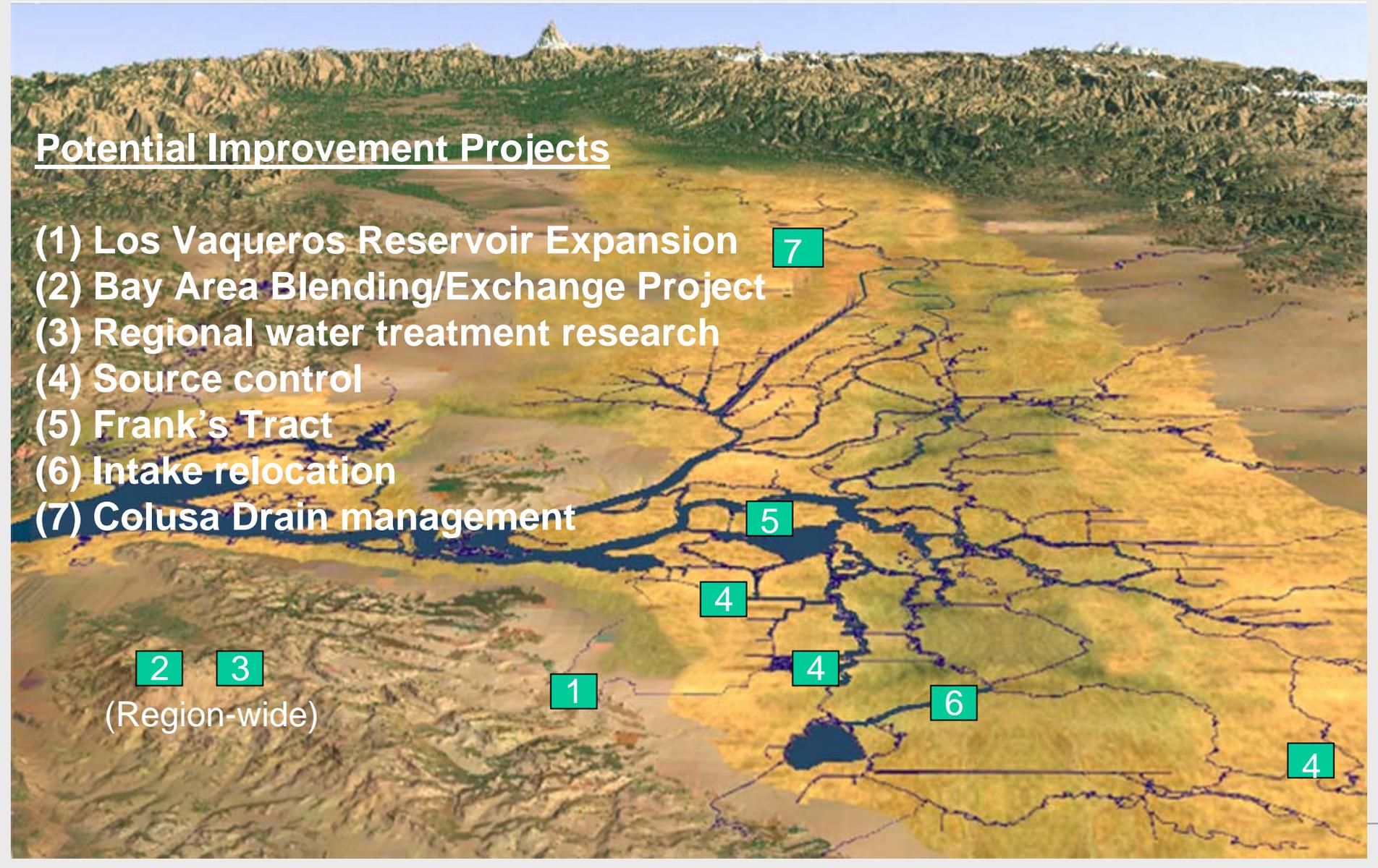
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7



Central Delta Water Quality Improvements

0% 1% 16% 32% 33%
Low Dissolved Oxygen
Impedes Fish Migration
Measurements <5.0 mg/l

New Water Quality Monitoring Stations

CCWD Intake Protections

Discovery Bay

Franks Tract

Salinity Intrusion

Franks Tract
Canal Lining
Veale & Byron Tract drain relocations
New stations



Water Quality Monitoring Stations

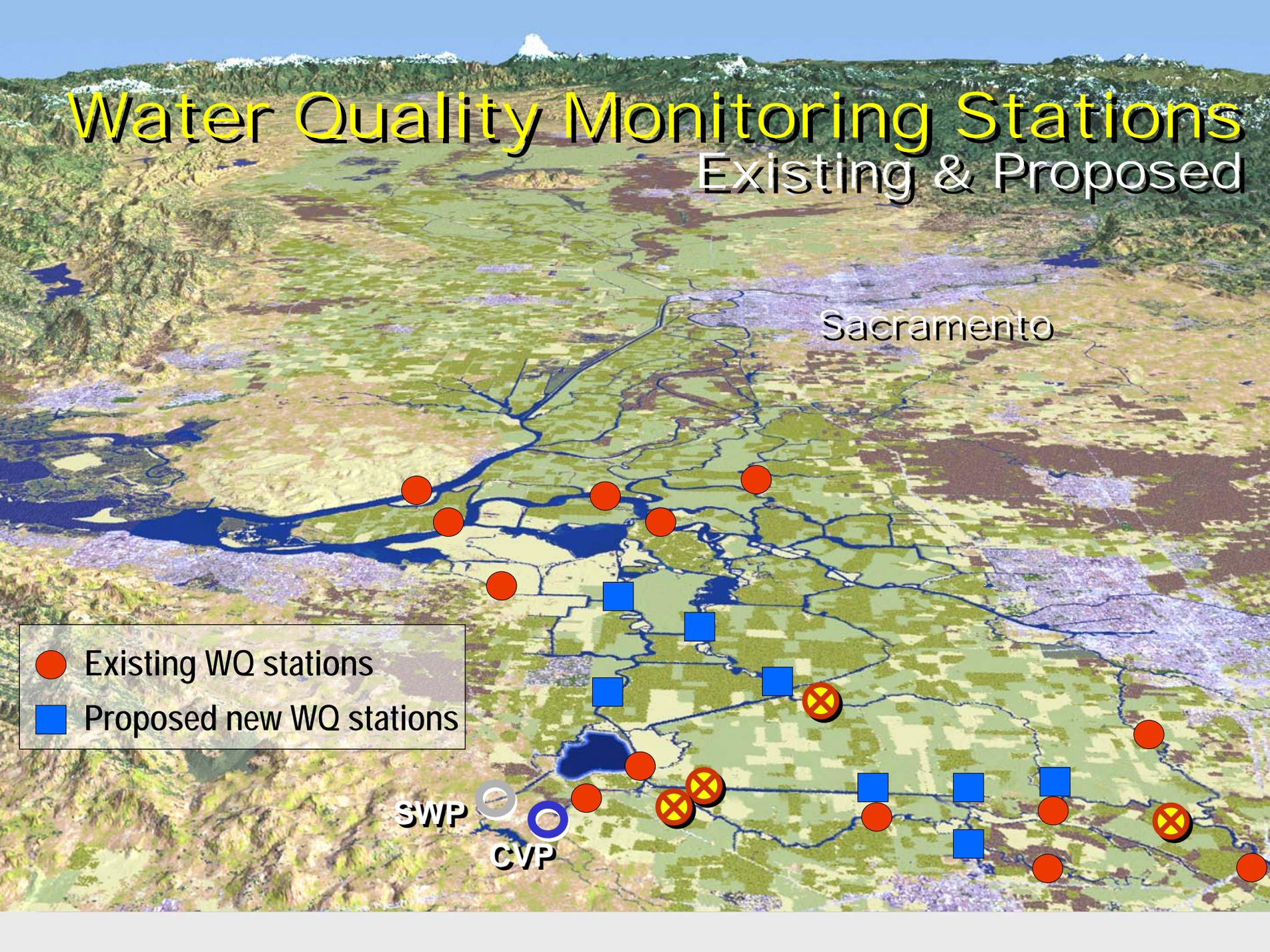
Existing & Proposed

Sacramento

- Existing WQ stations
- Proposed new WQ stations

SWP

CVP



Frank's Tract Restoration

Improved Water Quality, Ecosystem Restoration and Levee Protection

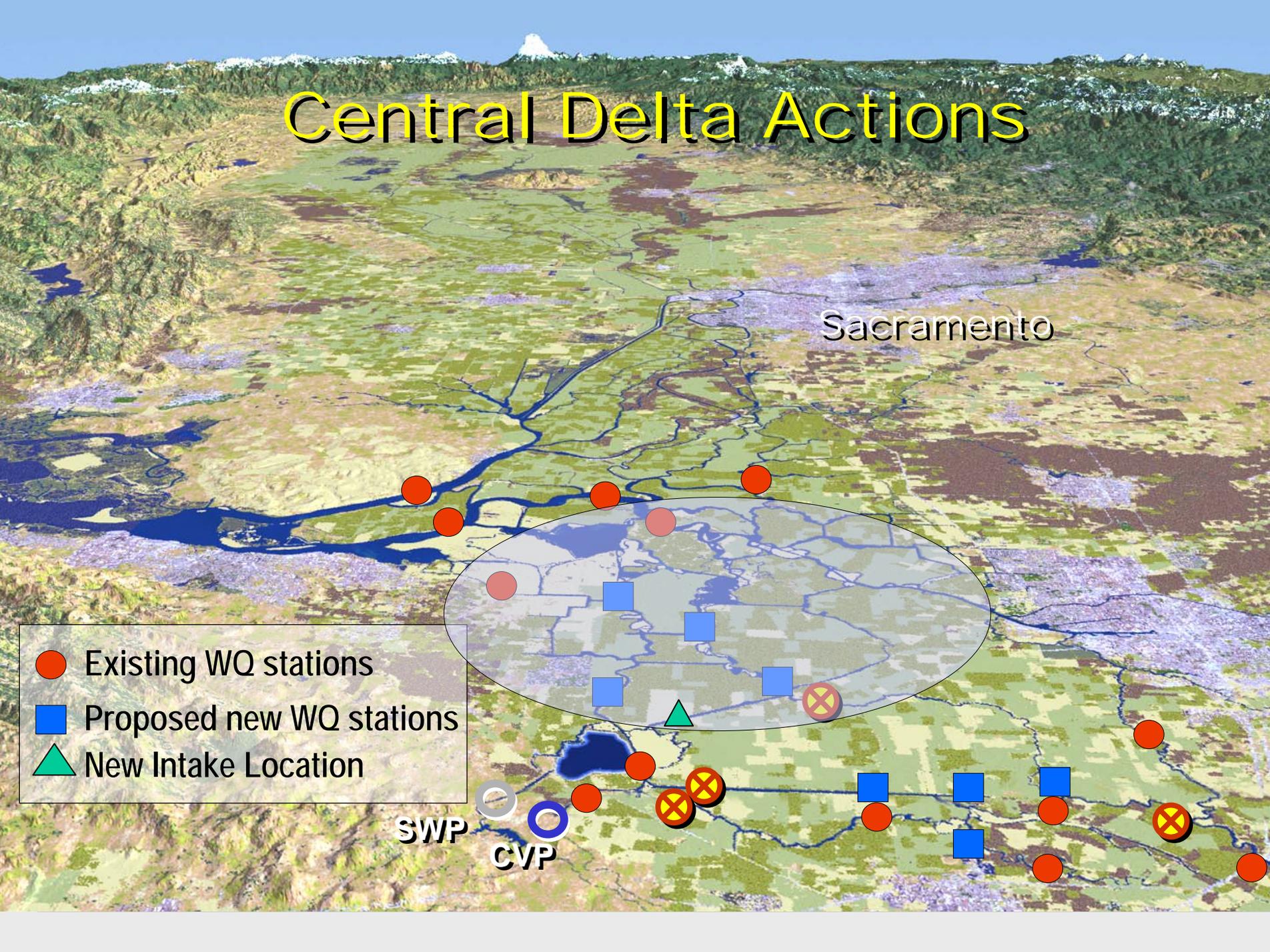


Central Delta Actions

Sacramento

- Existing WQ stations
- Proposed new WQ stations
- ▲ New Intake Location

SWP
CVP



Central Delta Water Quality Improvements

Sac

New Water Quality Monitoring Stations

CCWD Intake Protections

Discovery Bay
Urban development

Contra Costa WD
Old River Intake
(250 cfs)

Byron Tract
Drainage
(80 cfs)

Canal Lining

Veale & Byron Tract
drain relocations

New stations



CALFED Rock Slough & Old River Water Quality Improvement Projects

- Identified in CALFED Record of Decision (2000)
- Studies began in 2000 with CALFED agency (EPA and DWR) funding and are co-managed by DWR and CALFED Drinking Water Program
- Linkage to Permanent Barriers (and now 8,500 cfs)
- Schedule critical to:
 - Meet ROD and BDA timeframes
 - Attain cost savings

Central Delta Actions

Sacramento

▲ Intake Possibilities

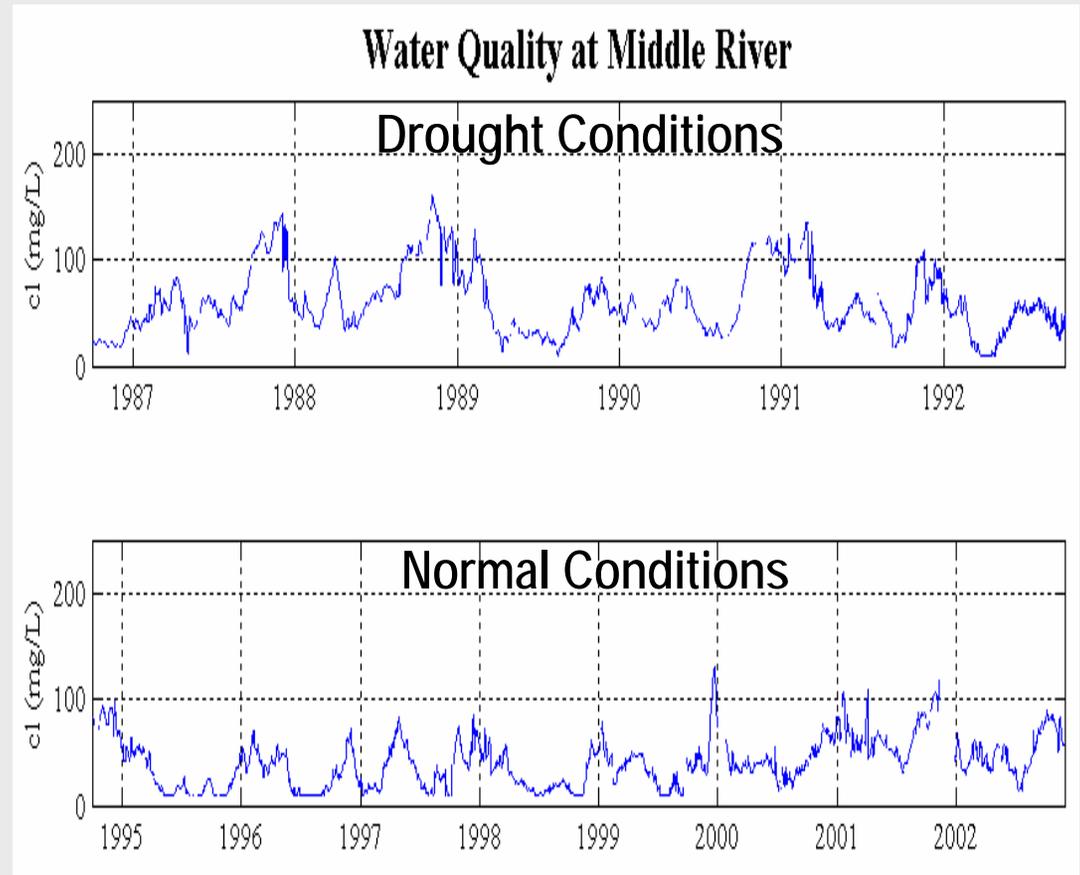
SWP

CVP



High Quality Water in Central Delta

- Water quality is typically below 100 mg/L Cl, even in drought conditions



Colusa Drain Management

- Drains into Sacramento River above Sacramento
- After reaching the Delta water quality does not improve
- Possible uses that will improve water quality and provide substitute supplies
- Needs studies to determine benefits, impacts, costs
- Potential for improving water quality for all Delta users from Sacramento south

- New technologies
 - Ultra-violet light disinfection
 - Membrane filtration
 - Multiple Disinfection
 - MIEX
- Research
 - \$1 million research project starting
 - Looking for additional support
 - South of Delta project
 - North Bay Aqueduct project
 - Bay Area regional project

Strategic Initiatives

- Water Quality Improvements:
 - Advanced Treatment
 - Drainage management
 - In-Delta flows and water levels
 - Intake location
 - Water quality standards
 - San Joaquin River Salinity management
 - Refuge salinity management
 - Stockton DO
 - Recirculation
 - Colusa Drain Management
 - Frank's Tract

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