

Drinking Water Quality Challenges:

A Utility Perspective

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California Department of Health Services:
"To Protect and Improve the Health of All Californians"

USEPA's mission is to protect human health and to safeguard the natural environment — air, water, and land — upon which life depends.

*The Mission of the **Contra Costa Water District** is to strategically provide a reliable supply of high quality water at the lowest cost possible, in an environmentally responsible manner.*

It is the mission of the Alameda County Water District to provide a reliable supply of high quality water at a reasonable price to our customers

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Challenges Facing Utilities

Source Water Quality Degradation



More stringent and at times conflicting drinking water regulations



Consumer Expectations

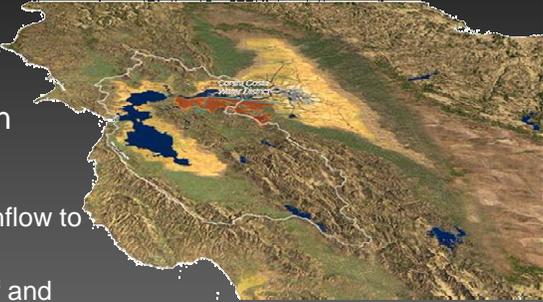


Emerging contaminants

Stresses on Delta Source Water Quality are Increasing

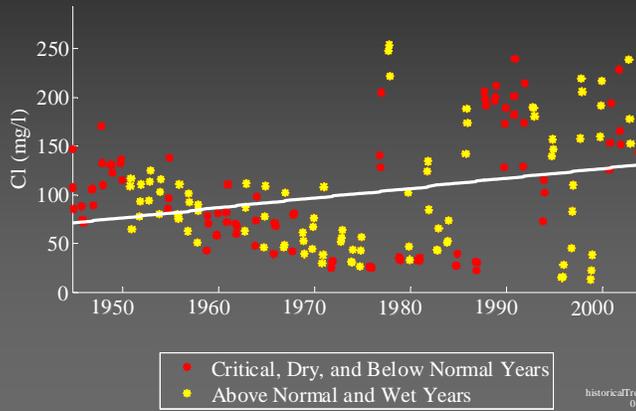
State will have 60 million residents by 2040 – large portion in Central Valley

- Less freshwater inflow to Delta
- More urban runoff and wastewater flowing to Delta
- More competition for water in drought years



Degradation at Delta Intakes

Measured Salinity at CCWD Rock Slough Intake, Oct-Dec



Constituents that pose problems for Delta drinking water quality

- Bromide
- TOC
- Pathogens
- Turbidity
- TDS
- Taste and Odor causing compounds





Consumer Expectations

- 52% to 65% of Americans use some type of tap water alternative (Mackey et al. 2003)
- Tap water alternative use is increasing – one survey estimates growth at 10% annually (WQA 1999)
- 57% of Point of Use device (POU) users and 28% of bottled water users choose the alternatives because of safety concerns (Mackey et al. 2003)
- 51% of all water users (tap and alternative) stated concerns about water quality resulting from the presence of contaminants (WQA 2001)



Emerging Contaminants

- Detection is outpacing health effects research
- Pharmaceuticals and Personal Care Products (PPCPs) - Include antibiotics, prescription and OTC medications, detergents, fire retardants, and hormones
- USGS 2002 study of 139 susceptible streams found minute but detectable quantities
- Few, if any, PPCPs are detectable in water after it has been treated



What Utilities Are Doing

- Collaborating on Research
 - Bay Area Advanced Treatment study
- Investigating unconventional approaches
 - AWWA Research Foundation, CCWD, LADWP Point of Use/Point of Entry Devices Pilot Study
- Exploring Regulatory Options for Source Water Protection
 - Central Valley Drinking Water Policy development
- Engaging the CALFED Drinking Water Program



New Direction for Water Provision

NOW

- Centralized treatment
- Single pipe system for distribution
- All water same high quality for all end

USES (Less than 1% of delivered water is ingested)

FUTURE?

- Decentralized treatment (POUs, neighborhood “polishing” plants)
- Dual pipes
- Quality based on use (small quantity of high quality water for drinking, bulk water for toilets, irrigation, commercial use, fire fighting)

CALFED



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