



Source Water Protection Update

Engineering and Operations Committee

Item 6b

February 7, 2022

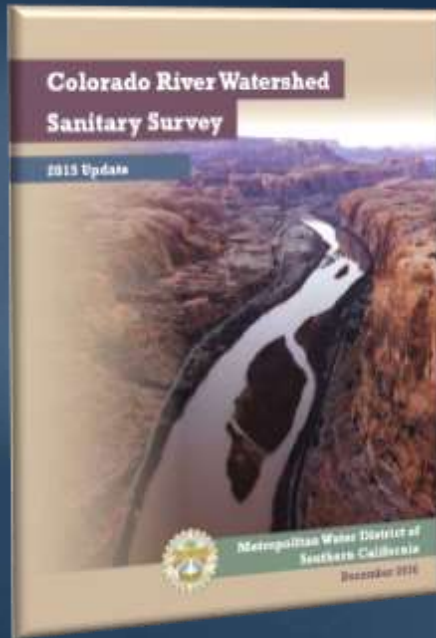
Source Water Protection

- *Water Quality's Mission*
 - *To safeguard the public's drinking water*
- *Multi-barrier approach to protecting public health*
 - **Source Water Protection**
 - *Water Treatment*
 - *Distribution System Integrity*
 - *Monitoring*



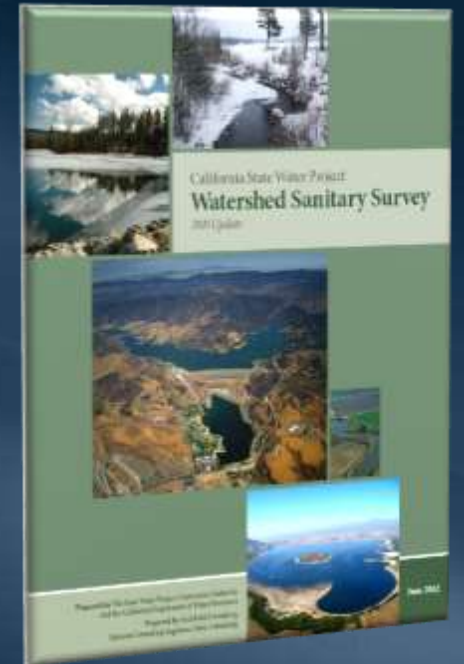
Watershed Sanitary Surveys Updates

- California's Surface Water Treatment Rule requires public water systems to conduct a sanitary survey of its watershed(s) every 5 years



To be submitted by
April 1, 2022

- Description of watershed
- Regulatory review
- Water quality analysis
- Contaminant sources
- Watershed management
- Recommendations



To be submitted by
June 30, 2022

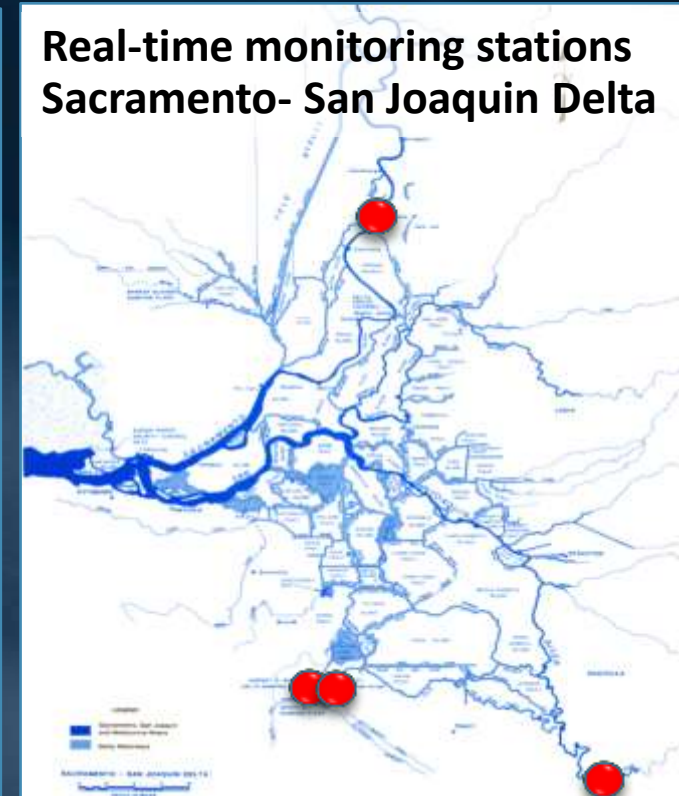
State Water Project – Water Quality Challenges

- Pesticides and Herbicides
- Arsenic
- 1,2,3-Trichloropropane
- Nutrients
- Invasive Species
- Chemicals of Emerging Concern
- Pharmaceutical and Personal Care Products
- Total Organic Carbon
- Bromide
- Alkalinity
- Pathogens



Municipal Water Quality Investigations (MWQI) Program

- Established in 1990
- Funded by participating State Water Contractors
- Benefits
 - Monitoring and sampling
 - Water quality forecasting
 - Database management
 - Scientific studies
 - SWP Sanitary Survey



Aquatic Vegetation Management

- Aquatic vegetation in the Delta has increased
 - Vegetation is problematic for operations
 - Herbicides are used for control
 - Potential endothall residual concentrations downstream
- Studies conducted to evaluate endothall degradation
- Department of Water Resources optimizing endothall application



Aquatic weeds in Delta waters

State Water Project Pump-In Programs

- Supplement demand during low SWP allocation years
- Monitor pump-in water quality
 - Nutrients
 - Arsenic
 - 1,2,3-Trichloropropane
- Ensure constituents do not exceed regulatory limits
- Participate in State Water Contractor Facilitation Group for non-project water



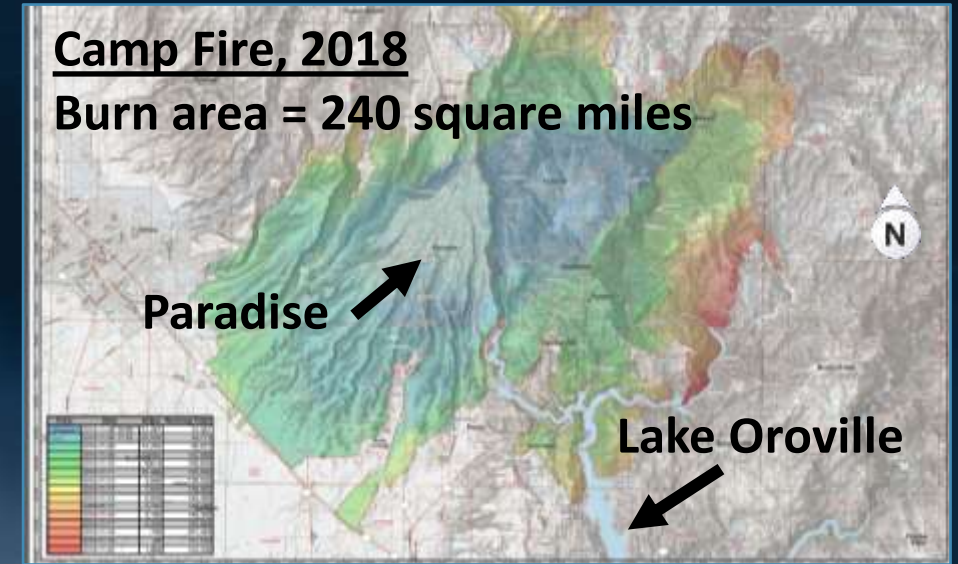
Pump-in along CA Aqueduct



Arsenic treatment of pump-in water

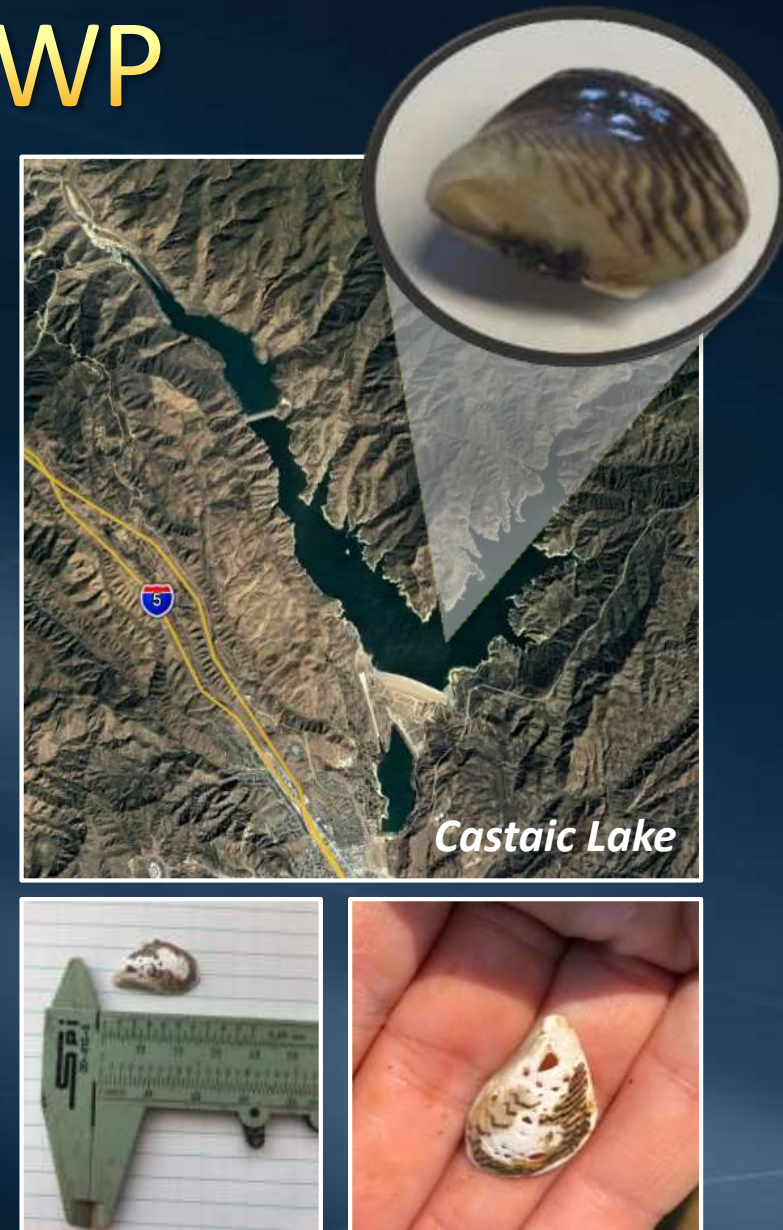
Wildfires and Watersheds

- Fires can encroach on watersheds of source waters
 - Burn protective vegetation
 - Increase sediment nutrient loading
- Mitigation and prevention measures
 - Prescribed burns
 - Monitoring
 - Treatment optimization when necessary
 - Stakeholder collaboration



Quagga Mussels in the Southern SWP

- A few invasive quagga mussels discovered
 - December 2016- Pyramid Lake
 - August 2021- Castaic Lake
- No evidence of widespread infestation
- DWR increased boat inspections at Castaic
- Currently no impact on water operations



Photos courtesy of DWR

Colorado River – Water Quality Challenges

- Uranium
- Perchlorate
- Chromium-6
- Salinity
- Pathogens
- Chemicals of Emerging Concern
- Pharmaceutical and Personal Care Products
- Invasive Species



Colorado River Basin

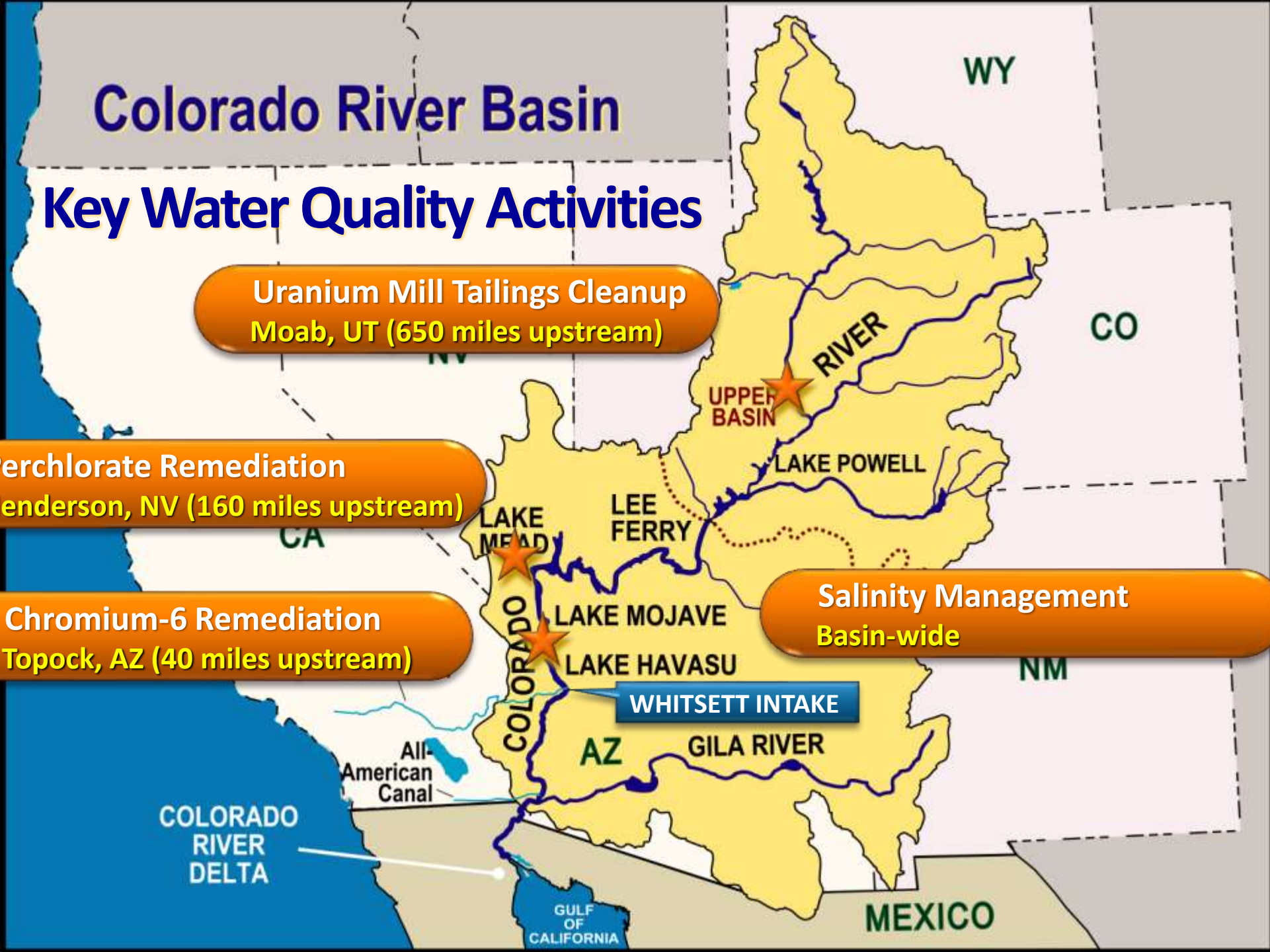
Key Water Quality Activities

Uranium Mill Tailings Cleanup
Moab, UT (650 miles upstream)

Perchlorate Remediation
Henderson, NV (160 miles upstream)

Chromium-6 Remediation
Topock, AZ (40 miles upstream)

Salinity Management
Basin-wide



Uranium Mill Tailings Cleanup

- 16-million-ton pile of uranium mill tailings in Moab, UT near Colorado River
- Tailings removal and disposal began 2009
 - 12.1 million tons removed to date
 - Target completion in 2030s
- Metropolitan continues to advocate for funding for an expeditious cleanup



Perchlorate Remediation

- Historical perchlorate plumes in Henderson, NV
 - First detected in 1997
 - Perchlorate CA MCL is 0.006 mg/L
- Perchlorate levels below detection limit at Whitsett Intake
- Over 6,000 tons of perchlorate removed
- Nevada Environmental Response Trust developing long-term remedy



Perchlorate Regulatory Update

- Federal (USEPA)
 - July 21, 2020 – Decision to not regulate perchlorate
 - Jan. 20, 2021 – USEPA under executive order to review this final determination
- California (SWRCB)
 - July 1, 2021 – Detection Limit for Purposes of Reporting (DLR) reduced from 0.004 mg/L to 0.002 mg/L
 - Jan. 1, 2024 – Future DLR reduction to 0.001 mg/L



Chromium-6 Remediation

- Found in groundwater at PG&E site next to Colorado River near Topock, AZ
 - Total chromium CA MCL is 50 ppb
 - Chromium-6 is non-detect in the river
- Long-term remedy construction underway
 - Bio-remediation system
 - Estimated completion in 2025
 - Full system startup in early 2026
- New draft MCL value expected in 2022



Salinity Management

- Salinity sources in basin
 - Prehistoric salt deposits
 - Human activity (irrigation/discharges)
 - 9 million tons of salt pass through Hoover Dam
- Colorado River Basin Salinity Control Program
 - Canal lining
 - Improved irrigation systems
 - Deep-well brine injection (Paradox Valley Unit)
- 1.2 million tons/year removed → 100 mg/L reduction



Lower Colorado River Water Quality Partnership

- MOU to coordinate and collaborate on water quality issues of mutual interest
 - Metropolitan
 - Southern Nevada Water Authority
 - Central Arizona Project
- Share water quality data and information
- Jointly advocate for source water protection



Metropolitan's Continuing Actions to Protect Source Waters

- Understand watersheds and sources of contamination
- Monitor and track watershed changes
- Proactively monitor source water quality
- Assess impacts on treatment
- Collaborate with partners
- Engage in legislative and regulatory processes
- Advocate for protecting source waters



