Engineering, Operations & Technology Committee

Source Water Protection Update

Item 6d

February 12, 2024

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Source Water Protection Update

Subject

Update on efforts to protect the quality of Metropolitan's source waters

Purpose

Provide background information on the primary constituents of concern and water quality challenges that impact Metropolitan's source waters, control measures, and remediation actions to improve and protect source water quality

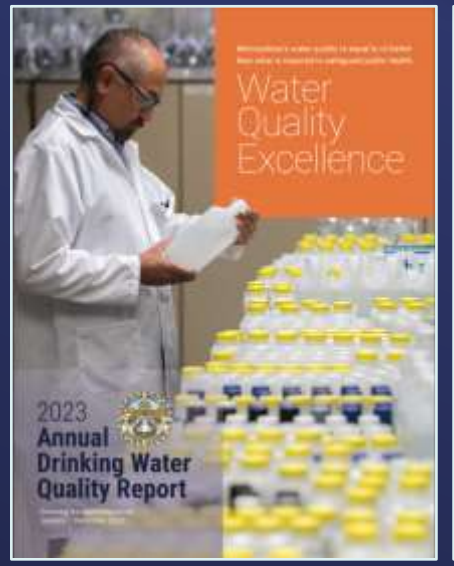
Next Steps

Continue advocating for protective and mitigation measures and participate in state and regional forums

Safeguard the Public's Drinking Water

Water Quality's Mission

- Multi-barrier approach to protecting public health
  - Source Water Protection
    - Watershed Sanitary Survey Updates
  - Water Treatment
  - Distribution System Integrity
  - Monitoring



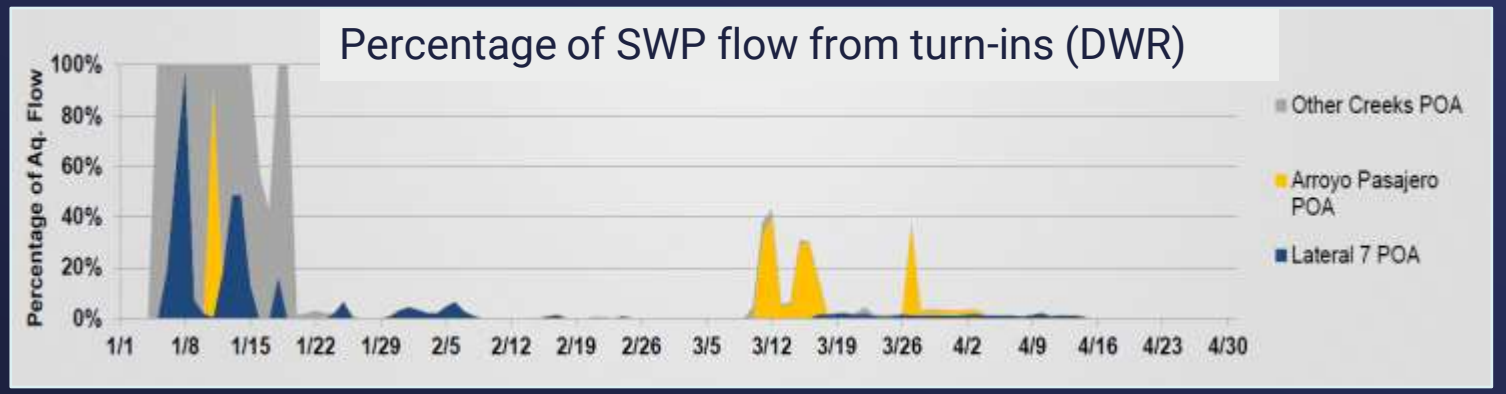
Water Quality Challenges in the State Water Project

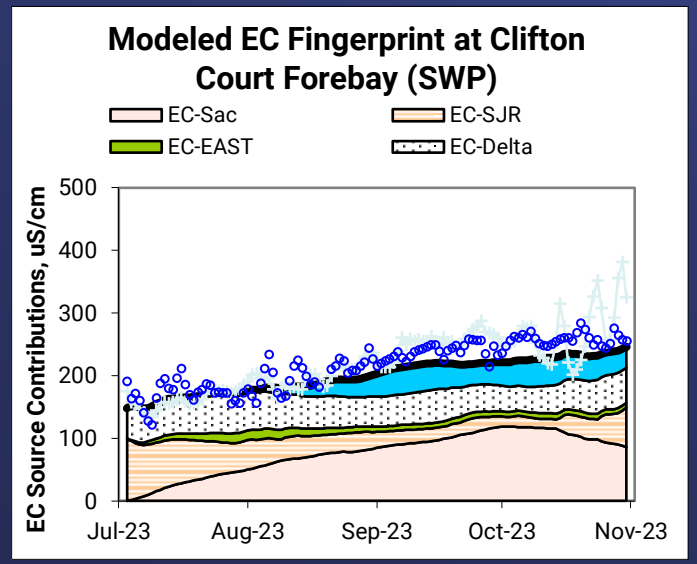
- Arsenic
- 1,2,3-Trichloropropane
- Nutrients
- Invasive Species
- Constituents of Emerging Concern
- Pharmaceuticals and Personal Care Products
- Total Organic Carbon
- Bromide
- Alkalinity
- Pathogens
- Pesticides and Herbicides

Municipal Water Quality Investigations Program

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


Banks Pumping Plant Monitoring Station (DWR)





Cyanobacteria Blooms in Source Waters

Diamond Valley Lake Cyanotoxin Bloom

- Cyanobacterial blooms are driven by nutrients (phosphorus) in source waters
- Cyanotoxins persisted through latter half of 2023
- Drinking water not impacted
  - Recreational water issue
- Followed the state's voluntary guidance for monitoring and posting recreational advisories
  - No regulatory requirements
- Caution and warning signs posted July to December 2023

Quagga Mussel Monitoring

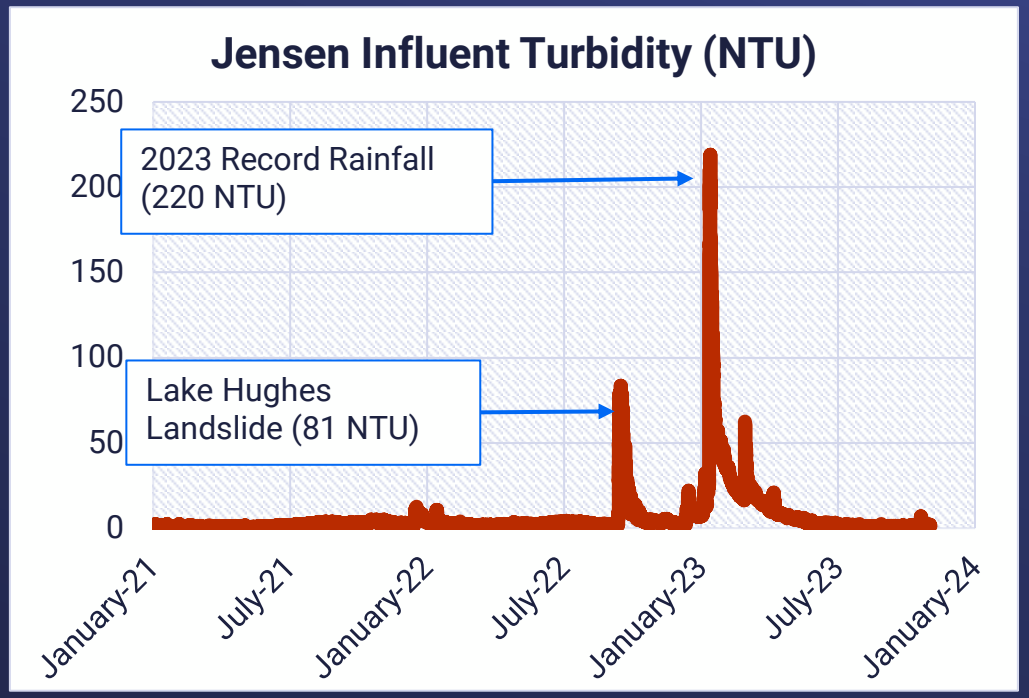
Quagga Mussels in West Branch State Water Project

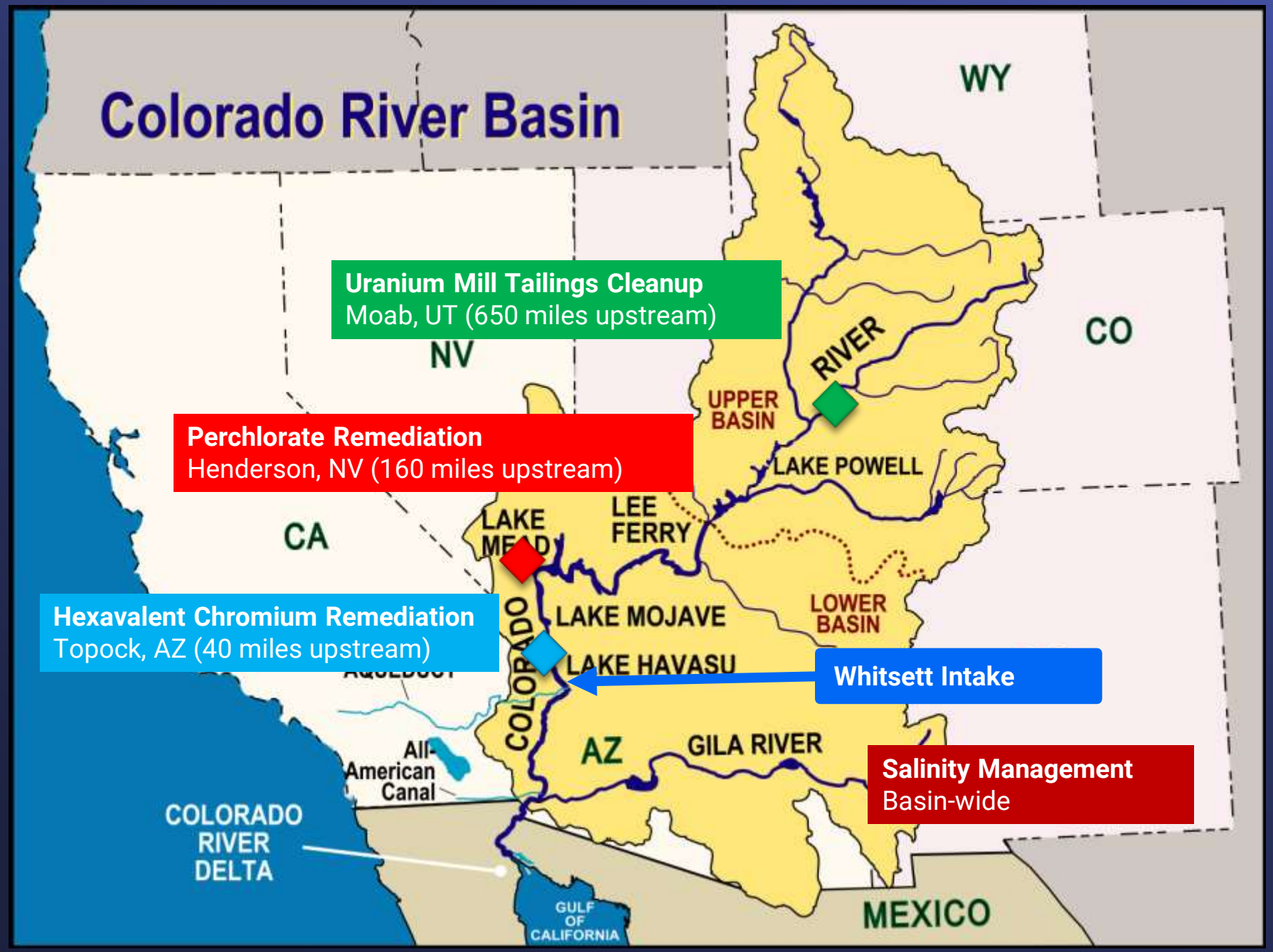
- Confirmed evidence of quagga mussel reproduction in SWP West Branch
  - Adult mussel discoveries in 2016, 2021, 2023
  - Veligers detected at multiple locations in 2023
  - Calcium in SWP lower than CRA so may not see same level of proliferation or impact
- Continued monitoring and assessing management and control options
- Ensuring raw water deliveries have no downstream impacts
- Coordinating with Member Agencies, LA County Public Works, DWR, and CDFW

Castaic Lake Turbidity Events (2022-2023) - Wildfire

Jensen Treatment Plant Influent Turbidity

- Lake Hughes Landslide – 0.5 inches of rain in 15 minutes
- 2023 Record Rainfall - 220 NTU reached during January 2023





Key Water Quality Activities

Other Colorado River Water Quality Issues

- Pathogens
- Constituents of Emerging Concern
- Pharmaceuticals and Personal Care Products
- Invasive Species

Uranium Mill Tailings Cleanup

- 16-million-ton pile of uranium mill tailings in Moab, UT near Colorado River
- Tailings removal and disposal began 2009
  - 14 million tons removed to date (88%)
  - Target completion in 2030s
- Metropolitan continues to advocate for funding for an expeditious cleanup

Mill Tailings Pile - Moab, UT (USDOE)

Railcars to Disposal Cell (USDOE)

FY 2022 Enacted	FY 2023 Requested	FY 2023 Enacted	FY 2024 Requested
$67 million	$67 million	$67 million	$67 million

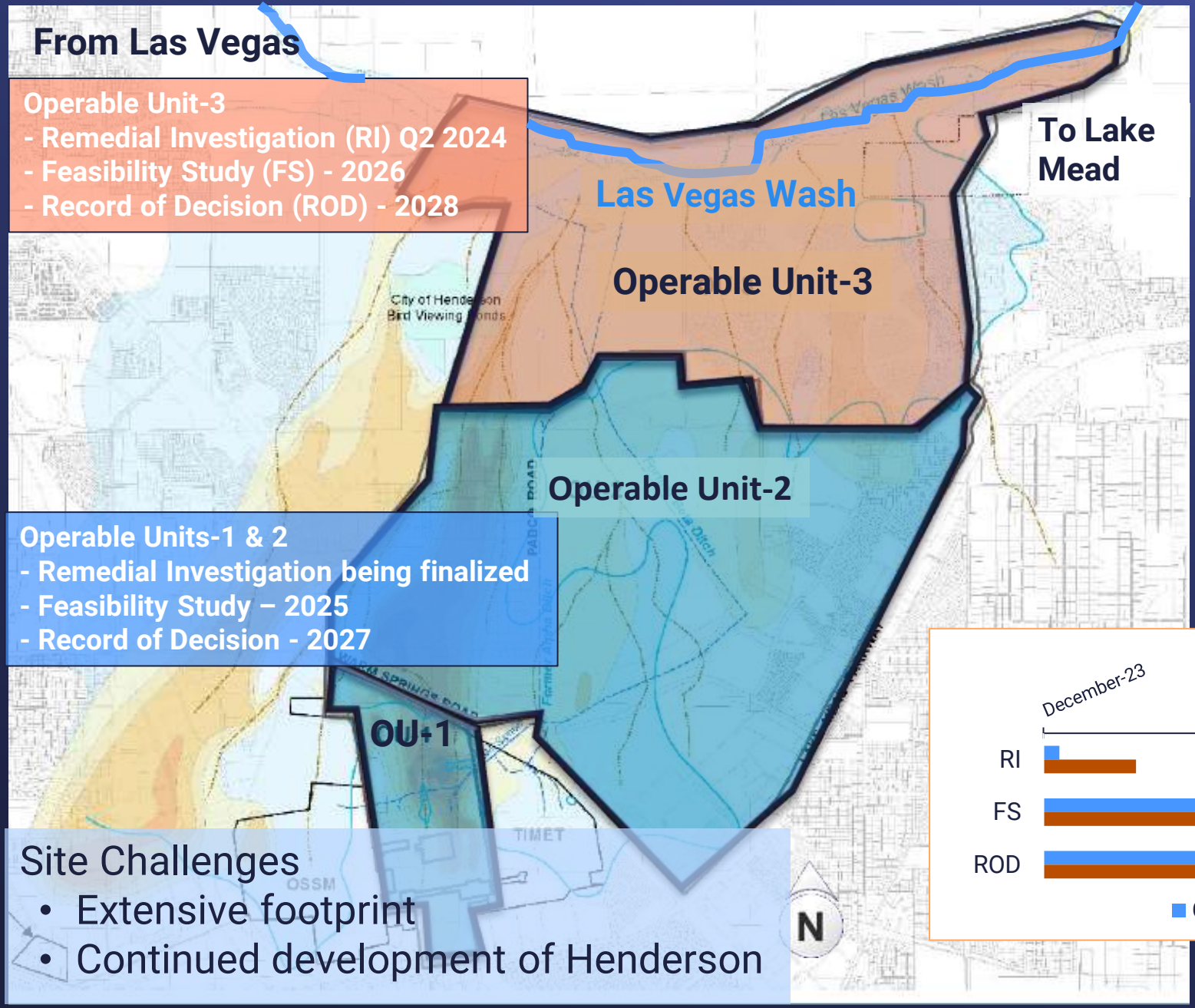
Mill Tailings Cleanup Funding Levels (USDOE)

Henderson, NV Perchlorate Plumes

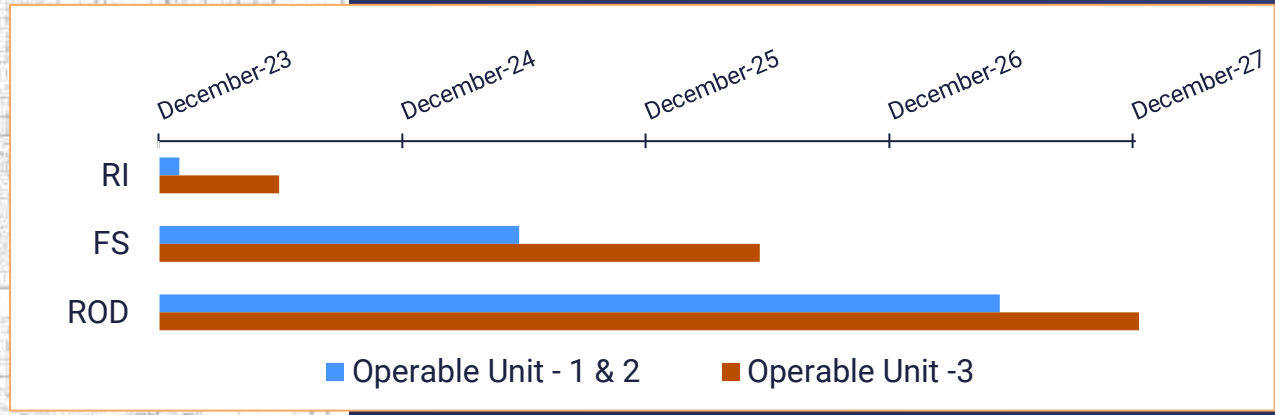
NERT Fluidized Bed Reactors (MWD)

- First detected in 1997
- CA MCL is 6 ppb
- Detection Limit for Reporting is 1 ppb
- EPA proposed MCL expected in 2025
- Over 8,200 tons removed by both parties
- Since 2013, average level in Colorado River is less than 2 ppb

NERT Remediation Progress




2023 Annual Stakeholders Meeting



Site Challenges

- Extensive footprint
- Continued development of Henderson

PG&E Topock Compressor Station

Topock, AZ Hexavalent Chromium

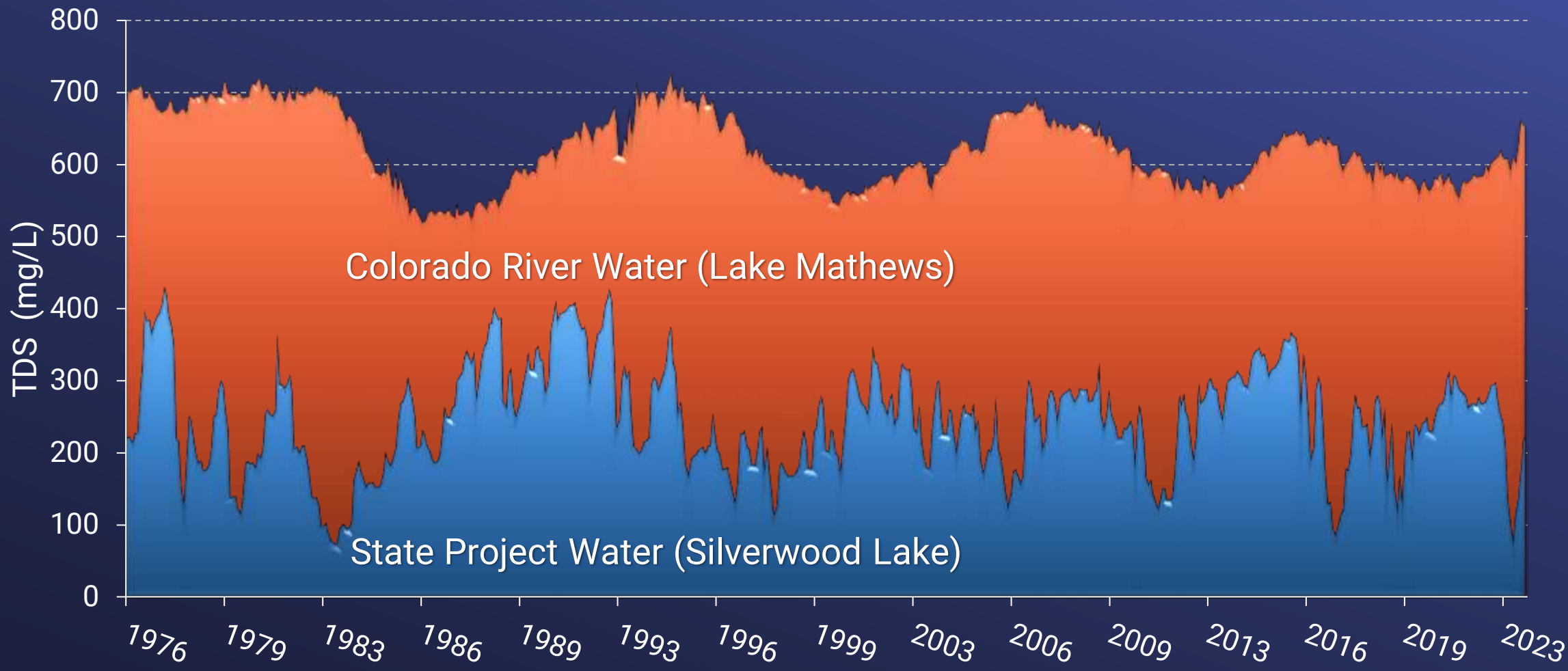
- Groundwater contamination at PG&E site next to Colorado River
- Total chromium CA MCL is 50 ppb
- Hexavalent chromium
  - CA proposed MCL of 10 ppb
  - Non-detect in the river
- Long-term remedy construction
  - Bio-remediation system
  - Phase 1 construction complete
  - Phase 2 under construction
    - Estimated completion in 2025
  - Full system startup in early 2027

2022 Hexavalent chromium plume >32 ppb (Jacobs)

Colorado River Salinity Management

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

Salinity in Metropolitan Supplies
Historical Trends



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
- Safeguard the public's drinking water


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928