2025 Water Resources Workshop

WATER AGENCY PERSPECTIVES

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Sonoma Water

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MODERATOR

CONTRA COSTA WATER DISTRICT

CHANGE AND RESILIENCY

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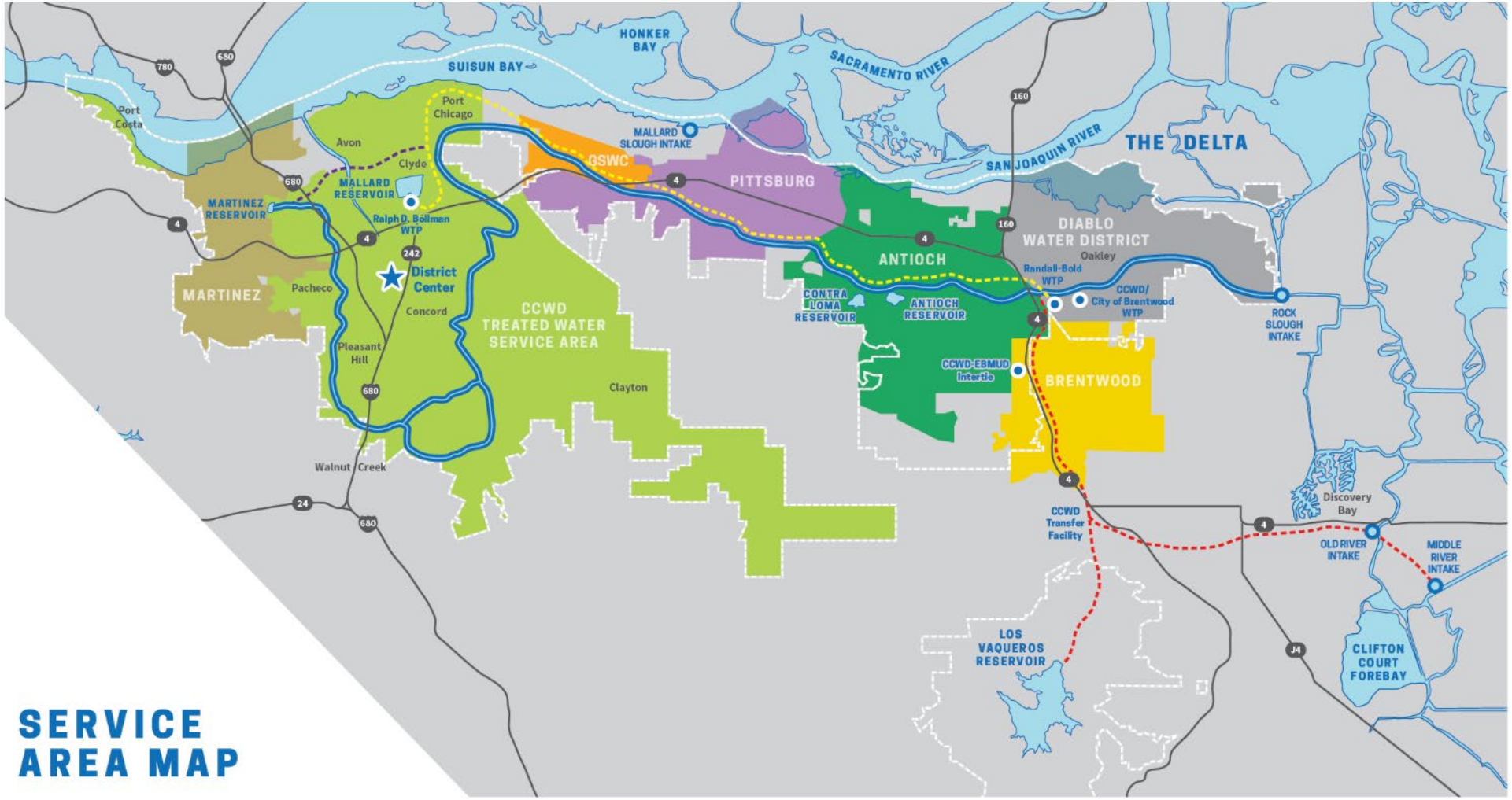
BPC WATER RESOURCES WORKSHOP

NOVEMBER 6, 2025

CHANGE AND RESILIENCY

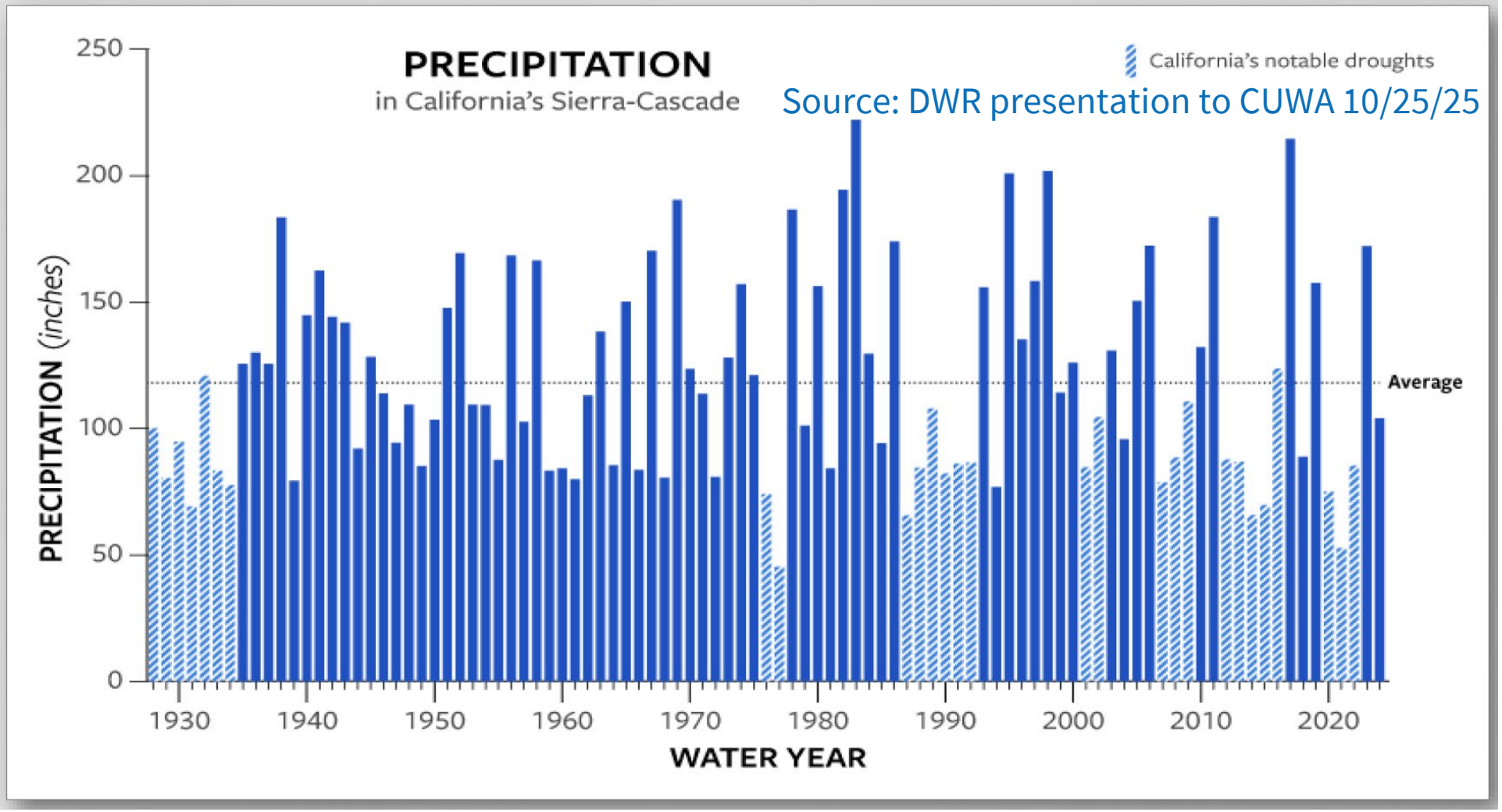
CONTRA COSTA WATER DISTRICT



SERVICE AREA MAP

CHANGE AND RESILIENCY

Weather Extremes



Weather Extremes (Cont.)

- What we observe:
  - More variability, more intensity
  - Less snow – more precipitation
- Our response:
  - Future Water Supply Study
  - Canal Replacement Program
  - Resiliency training for field crews and operators
  - Collect data, collaborate with partners, adjust operations

CONTRA COSTA WATER DISTRICT

Environmental Pressures

- Dynamic weather requires significant operational shifts
  - Water quality (salinity)
  - Water availability
- Warm, shallow water produces good habitat for:
  - Harmful algal blooms
  - Golden Mussels

CHANGE AND RESILIENCY

CONTRA COSTA WATER DISTRICT

Regulatory Shifts

- Changes are happening at all levels, at different speeds
- “Vertical” and “horizontal” consistency is an issue
  - Federal – state – local – judicial
  - Agency – agency
- Cannot miss comment periods
- Productive relationships with regulators and regulated community
- Engage legislators

CHANGE AND RESILIENCY

CONTRA COSTA WATER DISTRICT

Infrastructure Investments in the Future

- Utilities serve communities
  - Work with communities early and often on planning
- Develop people and a culture of resilience
- Know the system today
- Understand the planning horizon
- Identify the opportunities/vulnerabilities
  - Emerging technology? Developing new local supplies?
- Plan & deliver projects for what will be, not what is

Sonoma Water

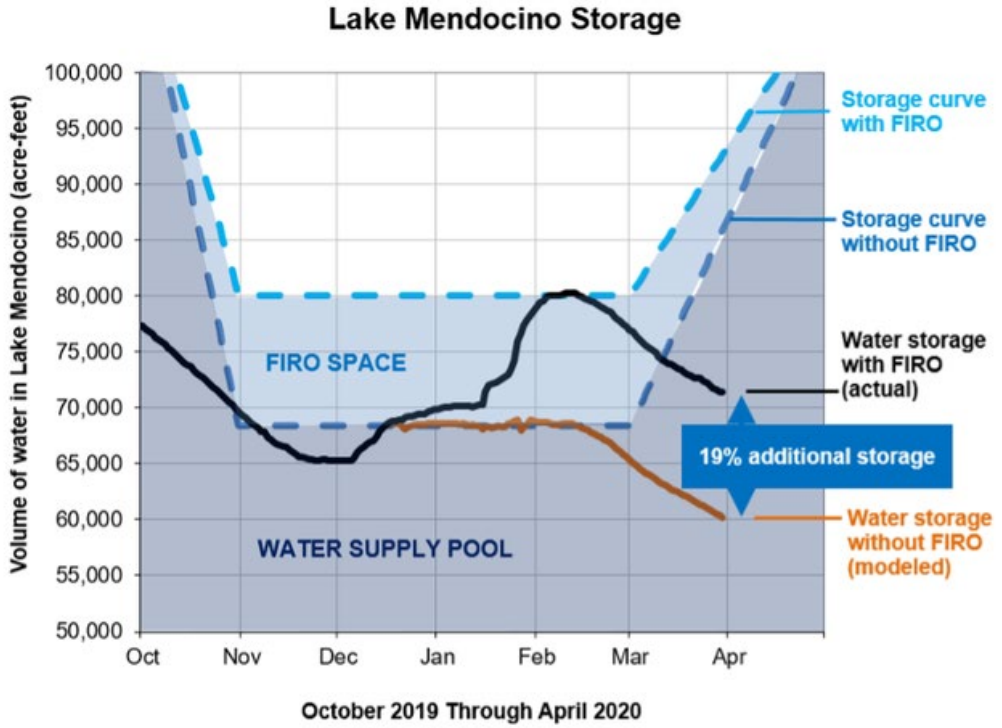
Clean. Reliable. Essential. Every Day.

Change and Resiliency

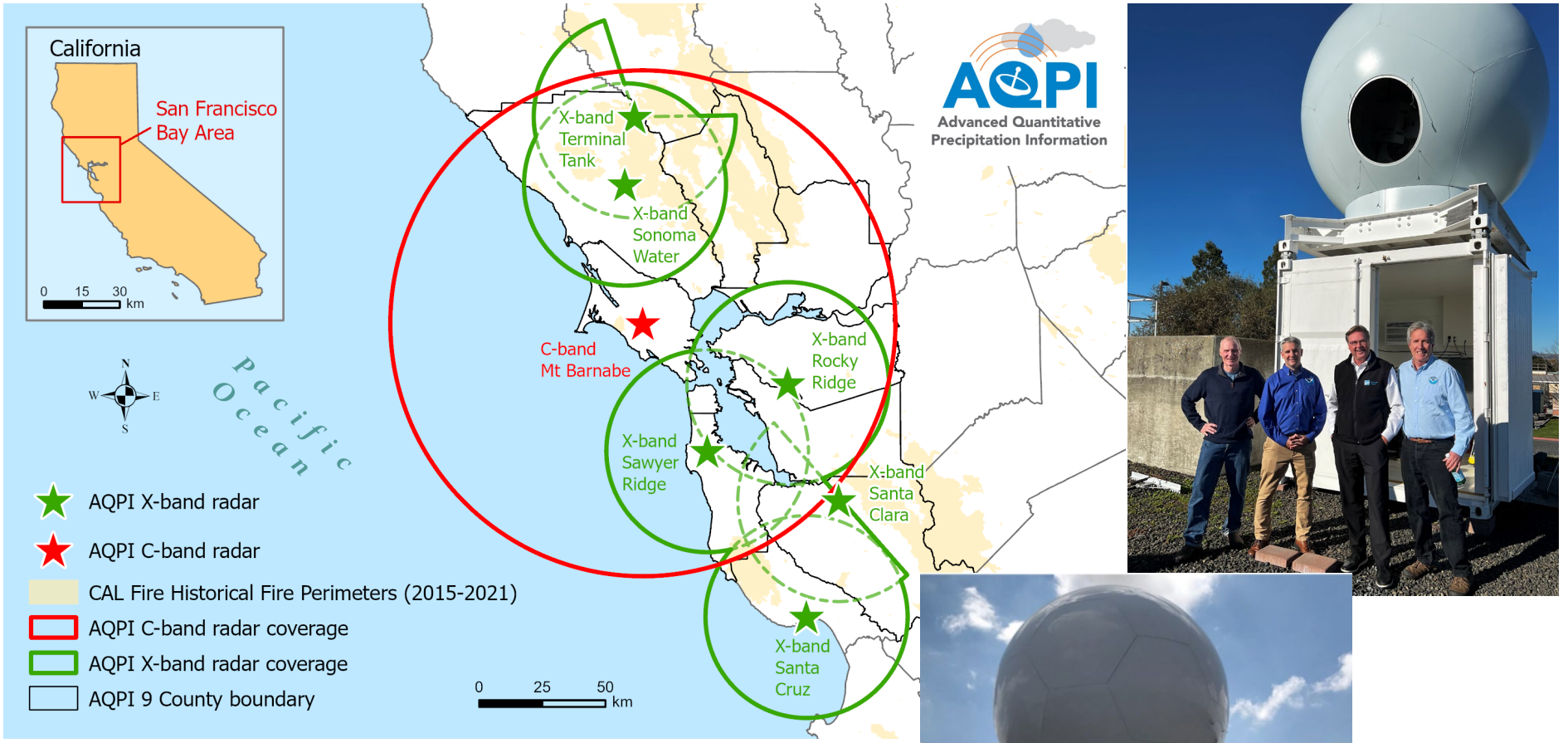
Brad Sherwood
Assistant General Manager

sonomawater.org

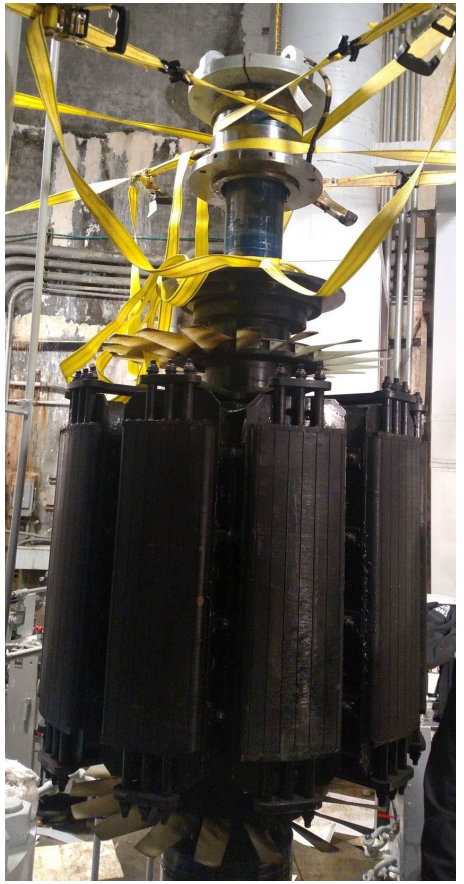
Forecast Informed Reservoir Operations



Advanced Quantitative Precipitation



Climate Adaptation Plan



Sonoma Water

For more information visit Sonomawater.org
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sonomawater.org

EBMUD Water Agency Perspective

Bay Planning Coalition

November 6, 2025

About Us:

- 1.4 million water users
- 740,000 wastewater customers
- 57,100 acres of watershed lands
- Steward of successful Lower Mokelumne River fishery
- 90 miles of East Bay trails
- Generator of green energy

California Water Management: The Great Balancing Act

All the Things We're Trying to Balance:

- Different uses of water
  - Water supply, ecosystem, hydropower
- Storage and flood control
- Innovation and reliability
- System upgrades and affordability
- Different stakeholder needs

Me, on a good day

Today's Agenda:
How do we keep our balance when confronted with…

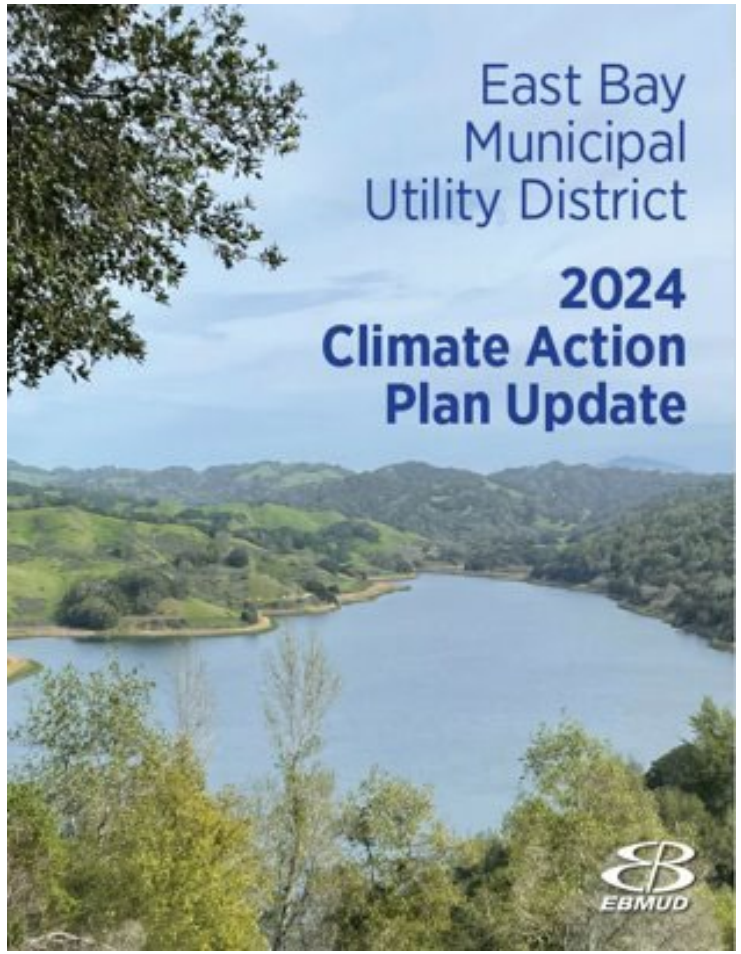
- Climate change
- Weather extremes
- Regulatory shifts
- Emerging technologies

CIP = Capital Improvement Program

Climate Change

EBMUD 2024 Climate Action Plan Update

- Review the ***science*** on how climate change may affect EBMUD's operations and customers
- Identify ***mitigation*** actions to meet greenhouse gas reduction goals
- Describe ***adaptation*** plans to ensure ***resilience*** of EBMUD services over time



Responding to Climate Change

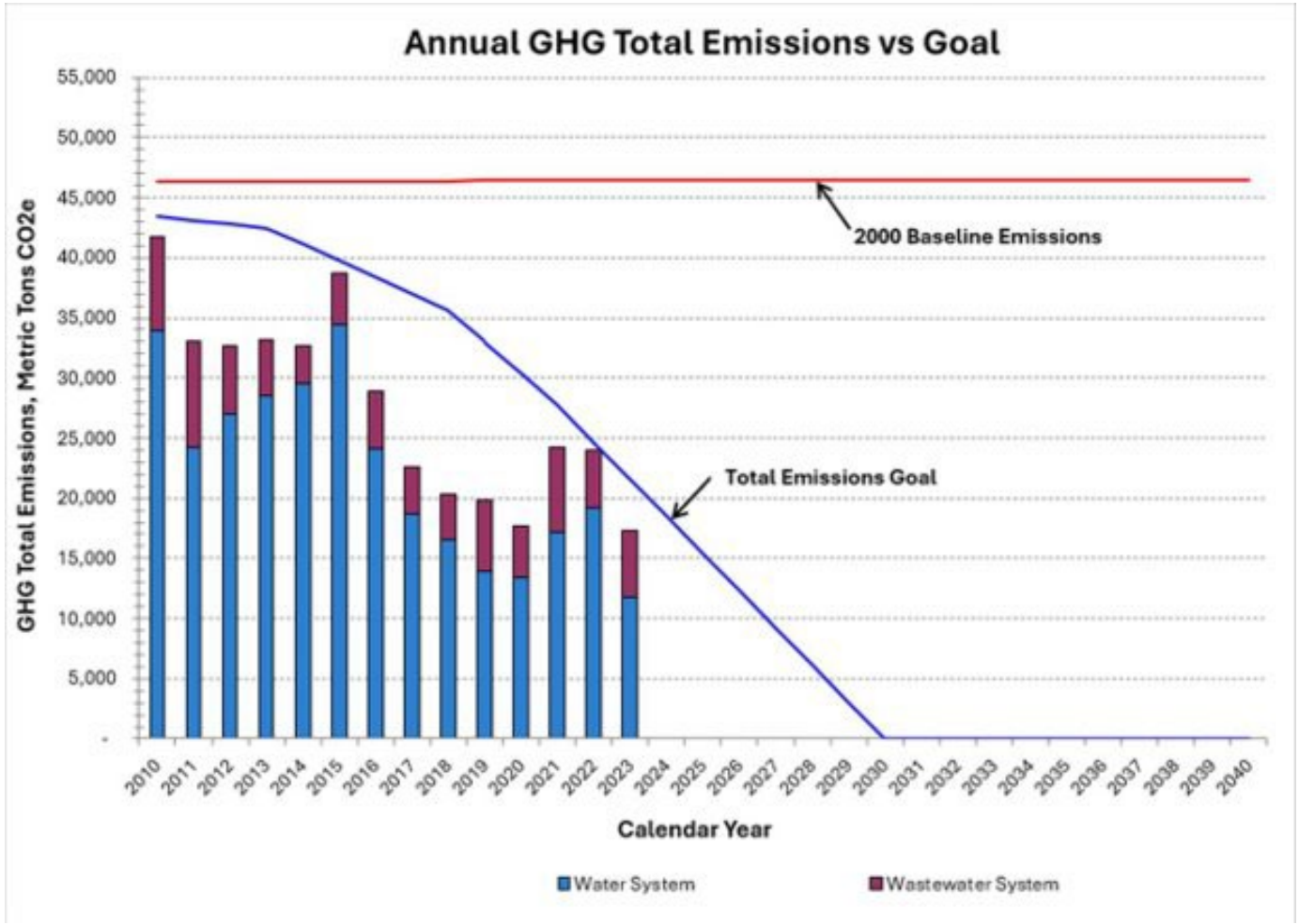
Mitigation Measures

- Goal: carbon neutral by 2030
- Purchase low or emissions-free energy
- Minimize energy use
- Develop renewable energy projects
- Solar, hydropower, energy production at MWWTP
- Transition to renewable diesel
- Convert fleet to Zero Emissions Vehicles (ZEVs)

Adaptation

- Diverse water supply portfolio
- Water Treatment Plant upgrades to ensure water quality
- Fuel reduction and fire prevention on the watershed
- Cold water pool management on the Mokelumne River

Achieving Carbon Neutrality by 2030



- How do we **balance** meeting our goal with keeping costs down?
- Should we buy carbon credits, or spend more on projects in our own backyard?
- Do we only want carbon credits based on “established” methodologies, or can we pursue innovative credits that have multiple benefits?

Converting Our Fleet to ZEVs

- Medium/heavy duty vehicles have limited commercial availability; Light duty/passenger vehicles are easier
- Requires:
  - Upgrades to District facilities to accommodate charging
  - Changes to how we operate
- Need to **balance** investment in emerging technology with operational reliability
  - Emergency response – availability of electricity/hydrogen after a major disaster?
  - Do we want to be on the “bleeding edge” of new technology? What if it breaks?
  - Training, maintenance

Piloted Front End Loader

Climate Change Adaptation: Extreme Weather

"Weather whiplash" – more extreme droughts *and* wet weather events

Impacts:

- More frequent and severe droughts
- More extreme storm events
- Increased turbidity from storms

Challenges:

- Ensuring a sustainable water supply
- Maintaining water quality
- Preventing flooding
- Protecting the ecosystem in all year types

Pardee Reservoir during drought

Pardee Reservoir after 2017 Atmospheric River event

Innovative Solutions

Groundwater Banking

- Store water in the aquifer during wet years, extract during dry years
- A “win-win” project: **balances** EBMUD’s need for drought supply with need to recharge the basin, provide water supply for agriculture

FIRO

- “Forecast Informed Reservoir Operations”
- Modernize flood control operations with better precipitation forecasting and runoff predictions
- **Balance** flood control and water supply

WTP Upgrades

- Ensure water quality
  - Increased turbidity from storm events
  - Purchased water during droughts
- Need to **balance** capital improvements with affordability

Regulatory Shifts

- The State is also trying to **balance** many different objectives and stakeholder needs:
  - Ecosystem
  - Housing
  - Climate change
  - Economy
  - Wildfire
- In recent years, regulations on GHG emissions, water efficiency
- New bills reduce CEQA requirements for new housing
- Significant uncertainty about changes at the federal levels

State Capitol Building, Sacramento

CA Bay-Delta Water Quality Control Plan

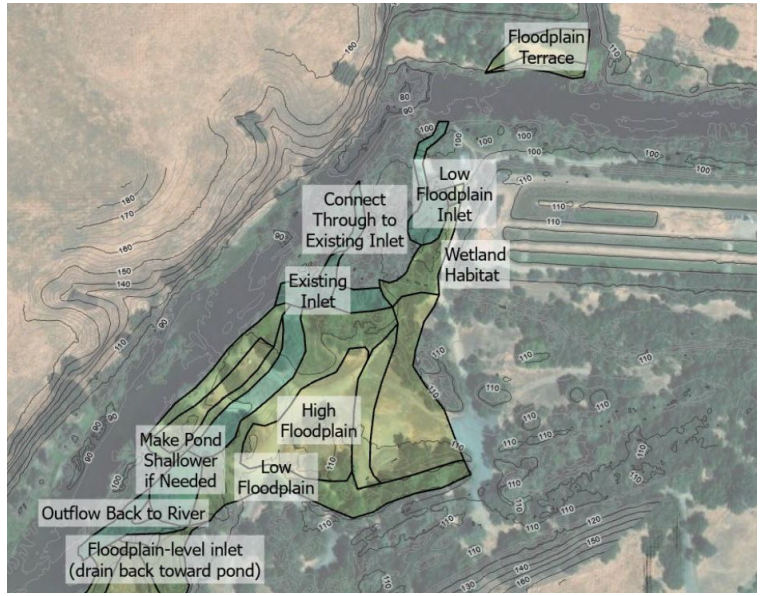
- State Water Board is updating the WQCP for the Bay Delta with the goal of improving outcomes for salmon and other native fish

Healthy Rivers and Landscape Program:

- Proposal from public water agencies, DWR, CDFW, USBR:
  - Combination of increased flows and habitat restoration
  - Adaptive management and improved science
  - Collaborative decision making, transparency
- **Balances** ecosystem needs with other beneficial uses of the watershed

Mokelumne River HRL Proposal

- Builds on successful JSA partnership
- Increased releases in most year types
- 25 acres of new floodplain habitat
- 1 acre of new in-stream rearing habitat
- Financial contribution to systemwide water purchases, science program



Emerging Technologies

- Water agencies tend to be risk averse
  - We provide an essential service
  - Need to keep our service affordable
  - Infrastructure with long life spans
- Many questions about AI
  - Can it help us be more efficient?
  - Do we have enough/the right data for predictive models?
  - Example of a practical application: fish identification and counting

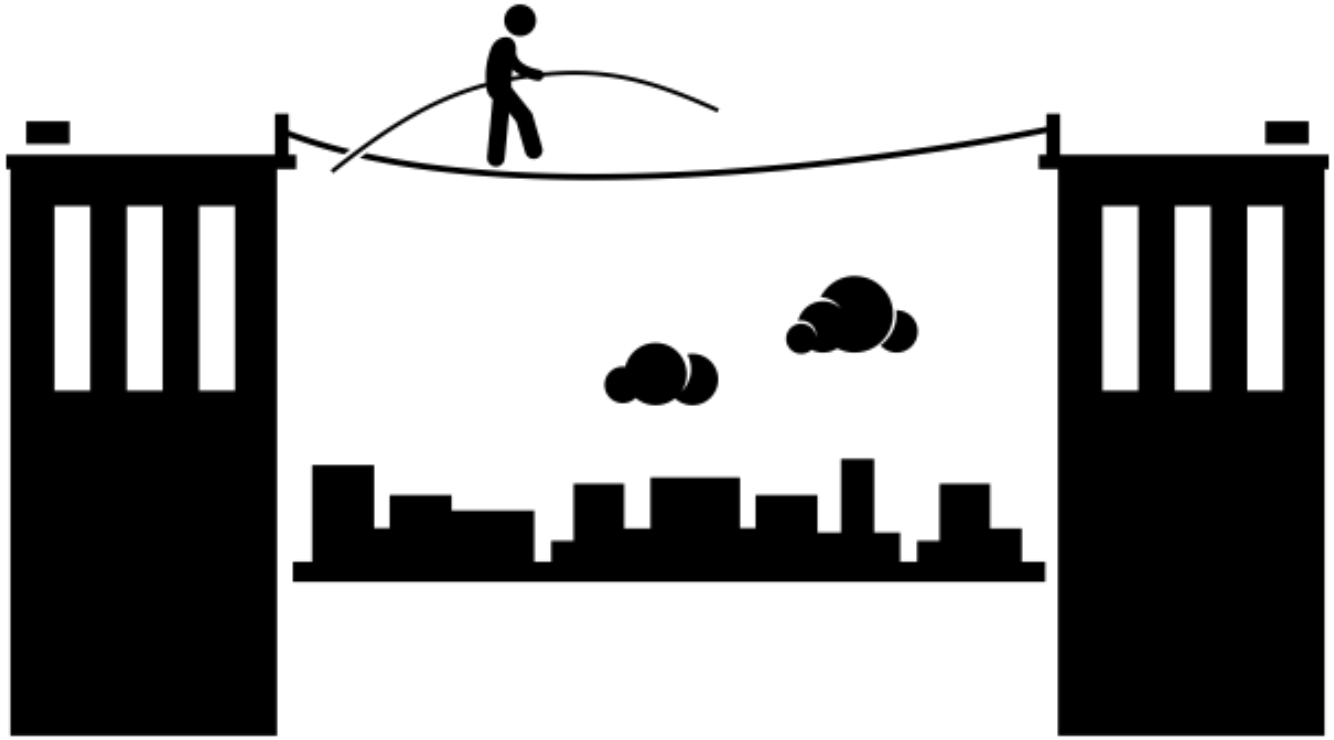
The Center for Smart Infrastructure

- Collaboration with UC Berkeley, other water agencies, manufacturers
- Research projects focused on improving the resilience of water and wastewater systems
  - Materials and infrastructure performance
  - Remote sensing and monitoring
  - Predictive modeling and risk assessment
- CE-112 undergraduate course

Looking Ahead to 2026…

- Continued, significant investments in Water Treatment Plant upgrades to prepare us for the future
- Begin construction of floodplain restoration projects on Lower Mokelumne River
- UC Berkeley research on pipeline material performance and monitoring
- Development of an AI Policy
- Monitor/respond to federal and state regulatory changes
- Innovation, partnerships, and adaptability can help us keep our **balance** in an uncertain future

Questions?



Us, well balanced, walking confidently into the future

Image by Gan Khoon Lay, the Noun Project