Water Quality Program Semi Annual Update

Planning Committee

September 9, 2025

Susan Teefy, Manager of Water Quality

Overview

- This report is for the first six months of calendar year 2025
- Regulations and internal goals
- Other water quality updates

January 2025 – June 2025

Met all state and federal drinking water regulations.

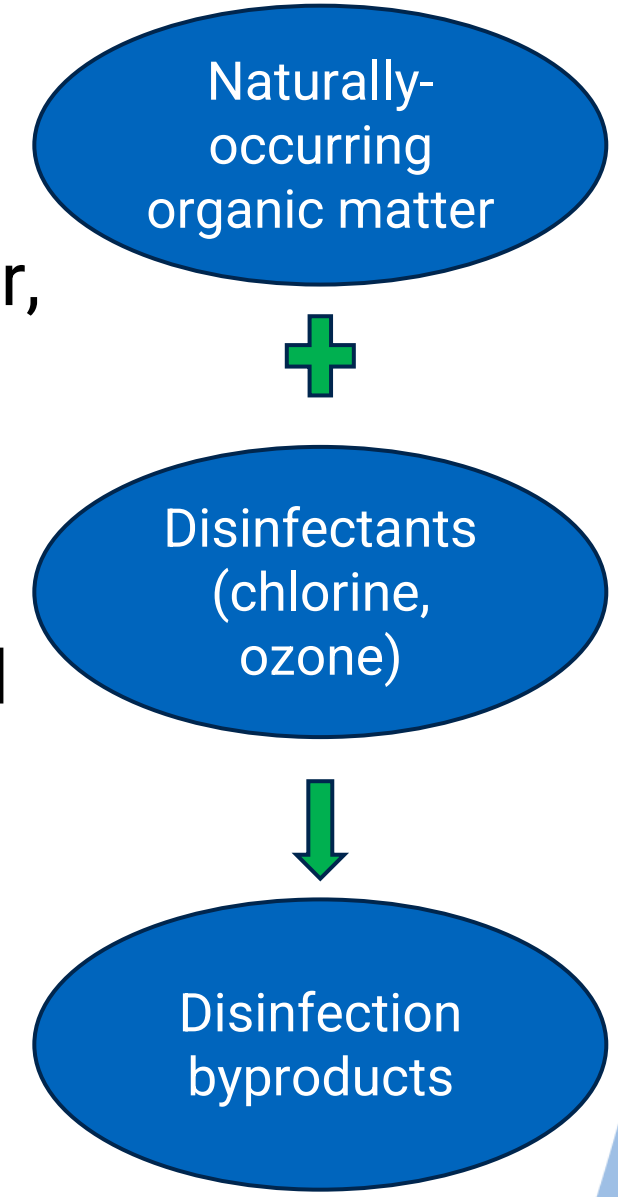
Met 98% of internal water quality goals

- Goals are significantly more stringent than regulatory requirements
- 130 of 133 internal goals were met
- Unmet goals were associated with disinfection byproducts and distribution system operations

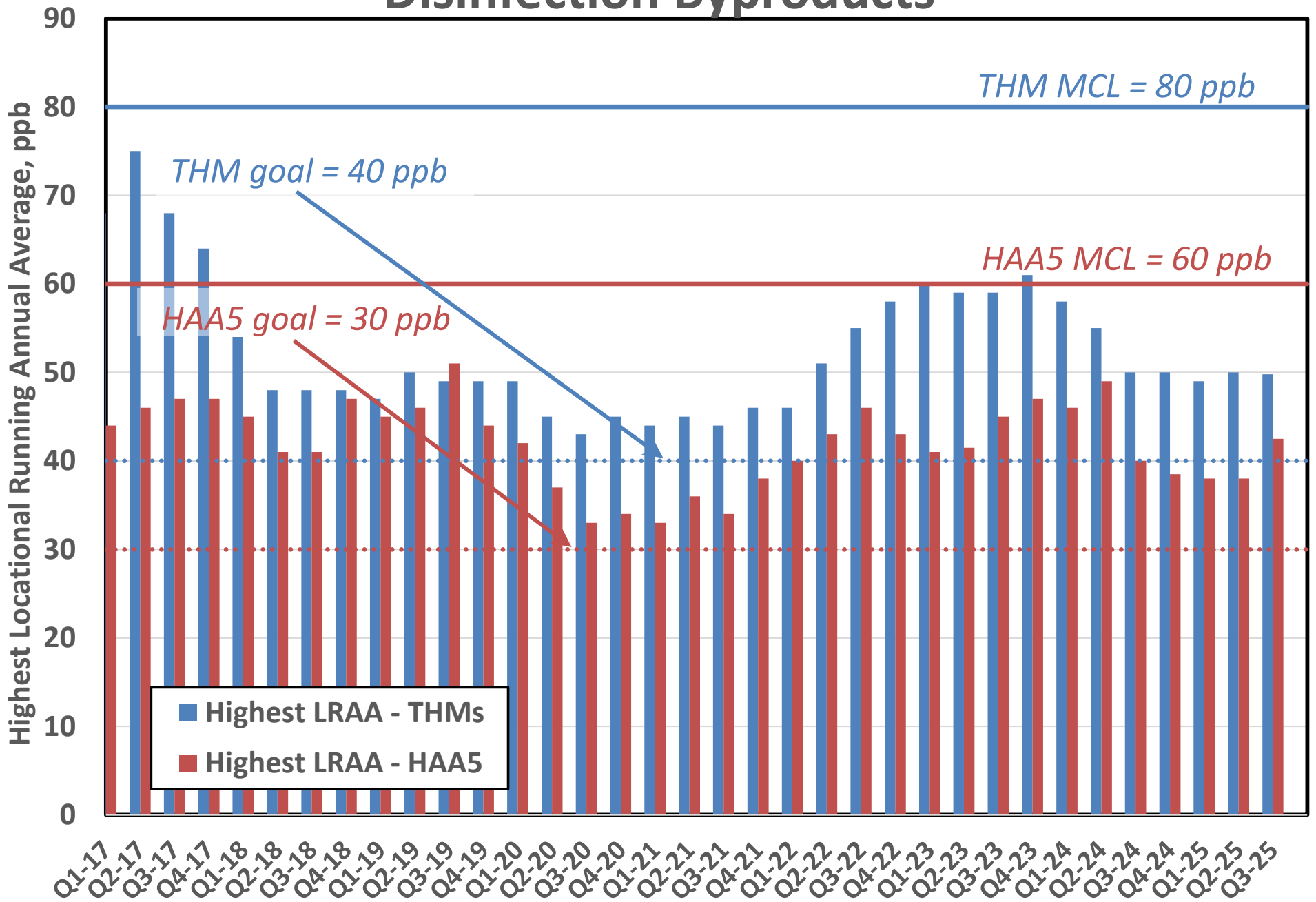
Water System Inspector sampling for chlorine

Disinfection Byproducts

- Samples collected from 16 locations each quarter, compliance is based on running annual average
- Trihalomethanes (THMs)
  - All 32 individual samples met internal goal, however the running annual average exceeded goal
- Haloacetic Acids (HAAs)
  - 13 out of 32 individual samples exceeded internal goal



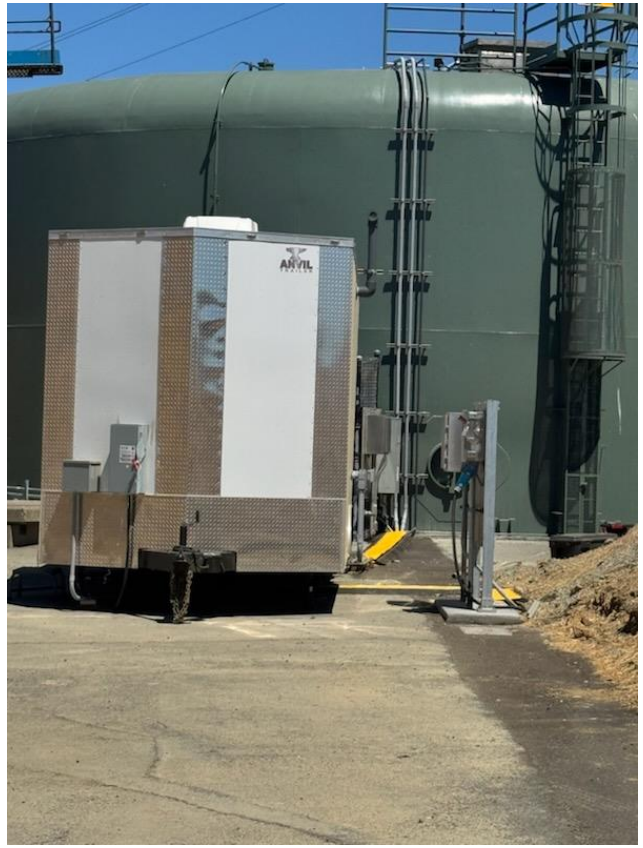
Disinfection Byproducts



LRAA = Locational Running Annual Average

Distribution System Chlorine Residual

- Chlorine decays with time, necessary to maintain a residual to prevent microbial growth
- Goal is to have at least 0.5 milligram per liter chlorine in 95% of distribution reservoirs every month
- Goal was not met in one of six months
  - Ranged from 94% to 99% each month
  - Staff responded to each event to restore the residual
- Installing chloramine boosting station



New chloramine boosting station at Welle Reservoir

Per and poly Fluoroalkyl Substances (PFAS)

- U.S. Environmental Protection Agency (USEPA) finalized regulations in 2024
  - Announced in 2025 they will rescind some of these
- Initial monitoring must be done by 2027
- Compliance with new MCLs by 2029
  - May be postponed to 2031
- All EBMUD results to date indicate compliance with new regulations
  - Additional operational samples collected in local East Bay watersheds
  - Some PFAS compounds are present, particularly in creeks running through developed areas
  - Initial analysis indicates that blending will be effective to meet MCLs

PFAS chemical structure representation from United States Environmental Protection Agency

Lead – Current Activities

- USEPA announced that regulation will mostly remain as published, but will have case-by-case flexibility
- EBMUD continues complying with rules as published
  - Initial and annual notifications to approximately 3,900 customers with galvanized service lines formerly connected to lead service lines
  - Approximately 125 customers with galvanized service lines with short lead connectors
- Pre-Compliance study completed to assess new sample locations
- Customer sample voucher program continues to be popular
  - Over 5,400 customers have requested free lead test
  - Success rate (returned sample kits) has increased to 53%
  - 90 percent of all results continue to be 1 part per billion or less
- Provided peer review of Oakland Unified School District program

Lead – Future Activities

- Additional new requirements will begin in 2027
  - Sampling from schools and childcare centers
  - Public education campaigns
  - Annual notification of customers with galvanized service lines formerly connected to lead service lines
  - Action Level reduced from 15 ppb to 10 ppb
  - New sample locations and sampling protocols

Additional Updates

- Microplastics
  - State is still revising sampling and analysis protocols
  - EBMUD is participating in initial sampling
- Fluoride
  - Fluoride added since 1976 following vote of customers
  - Added at lowest possible level, closely monitored and controlled
  - EBMUD is following the recent scientific publications and case studies

Questions?

Mokelumne Aqueduct Improvements and Failure Response

Planning Committee

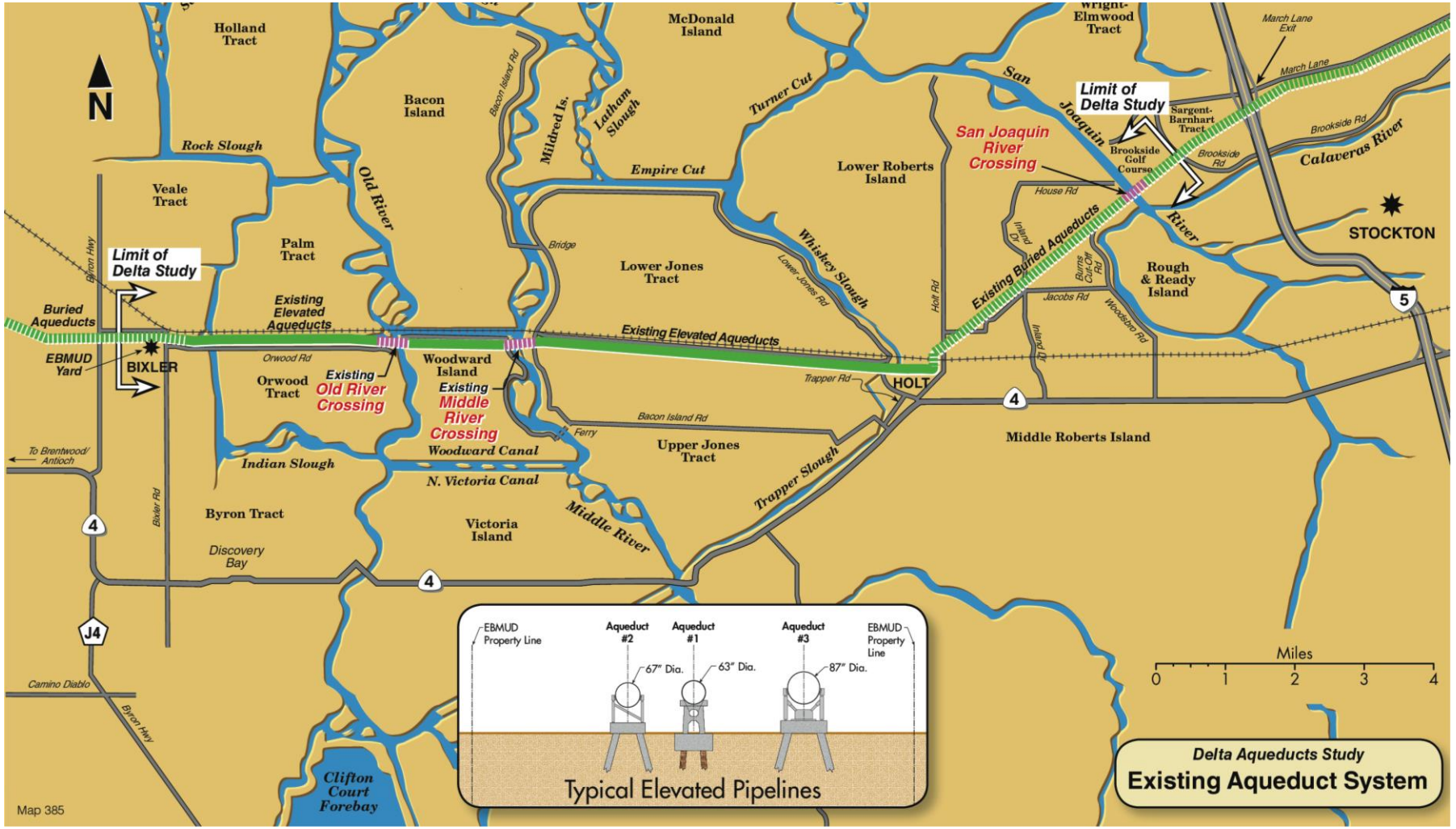
September 9, 2025

Roberto Cortez, Manager of Water Operations

Agenda

- Improvements to the Mokelumne Aqueducts
- Operational Response to Mokelumne Aqueduct Failures

Mokelumne Aqueducts in the Delta



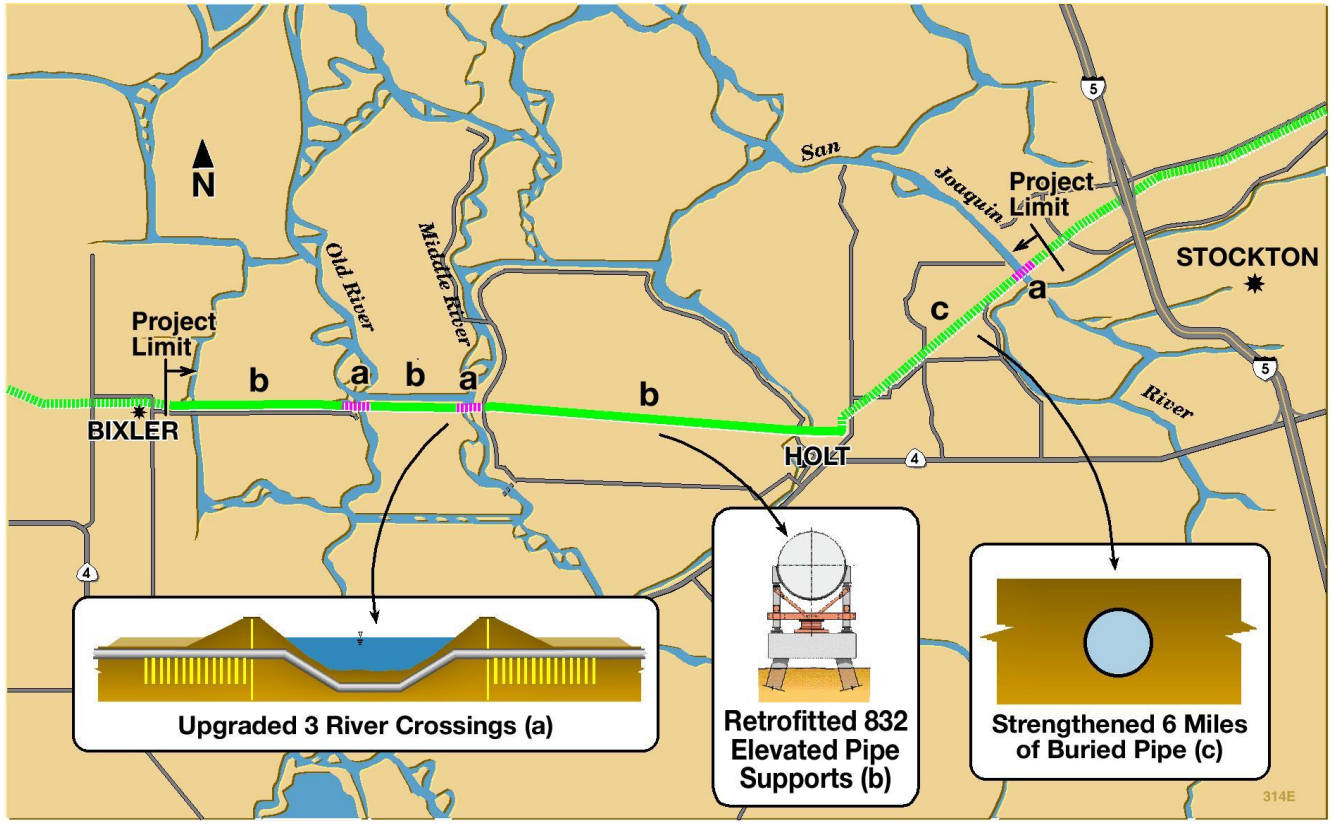
- 16.5 miles through the Delta
- 10 miles are above-ground, supported by piles and anchors
- Crosses four Reclamation Districts (RD's)
  - Lower Roberts Island
  - Jones Tract
  - Woodward Island
  - Orwood-Palm Tract

Sacramento-San Joaquin Delta Levee Improvements

Palm Tract

- 55-miles of levees owned and maintained by four Reclamation Districts
- Monitoring and Preventive Maintenance and Repairs
- Improvements to maintain appropriate crown width and slopes

Seismic Improvement Project (SIP)



- Mokelumne Aqueduct No. 3 support structure improvements
- Strengthened levee and pipe foundations at river crossings
- Reinforced buried pipe joints

Mokelumne Aqueduct No. 3 at Orwood Tract

Mokelumne Aqueduct Recoating

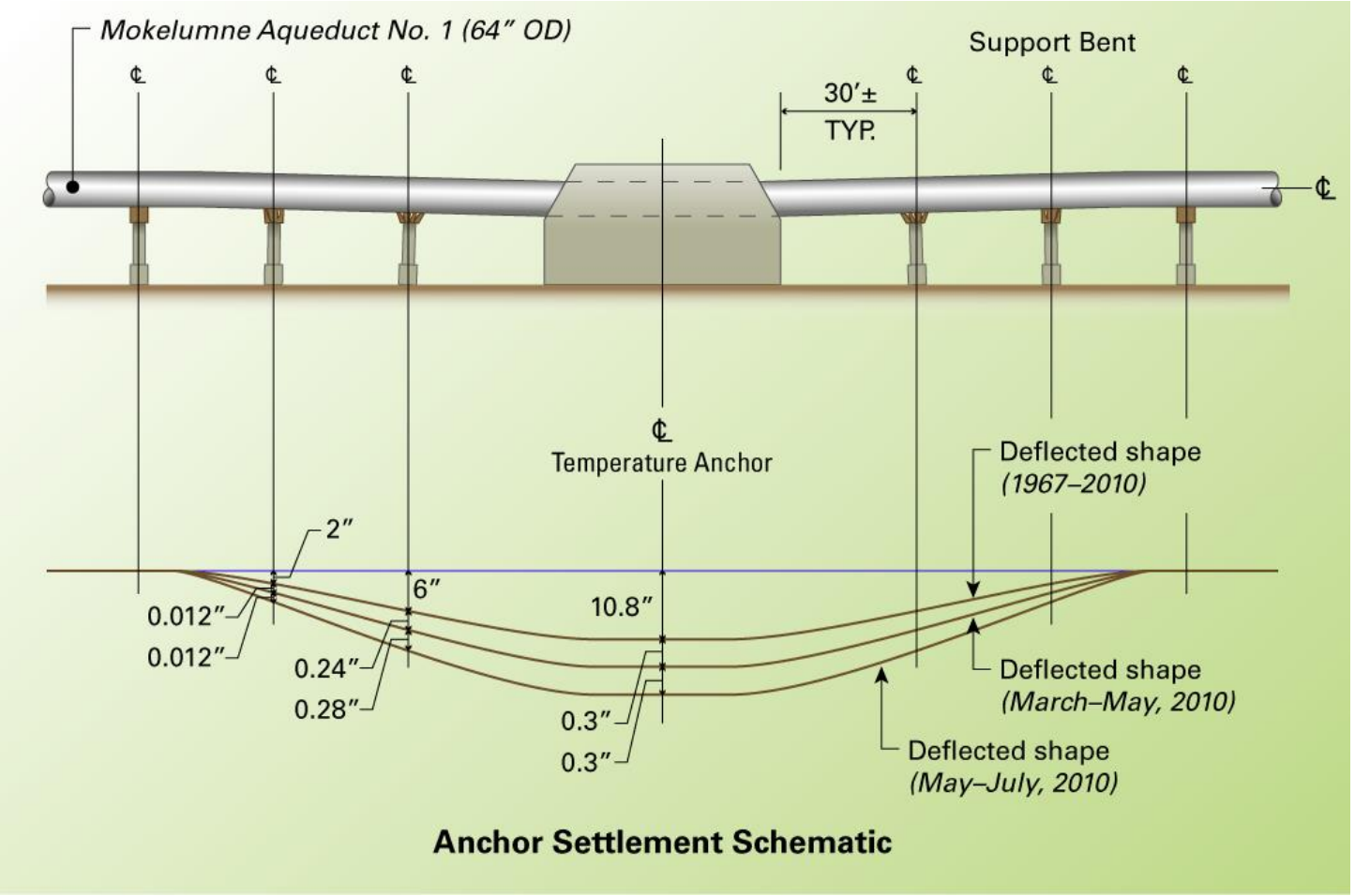

Elevated Mokelumne Aqueducts

Flooded Mokelumne Aqueducts at Jones Tract

- Replaced lead-based paint and damaged coating due to 2004 Upper Jones Tract levee failure with an inorganic zinc-based paint.


Elevated Mokelumne Aqueducts

Aqueduct No.1 Temperature Anchor Upgrades



Anchor Settlement Schematic

Mokelumne Aqueduct No. 1 at Sta. 2480 (old wood piles)

Mokelumne Aqueduct No. 1 at Sta. 2480 (new piles)

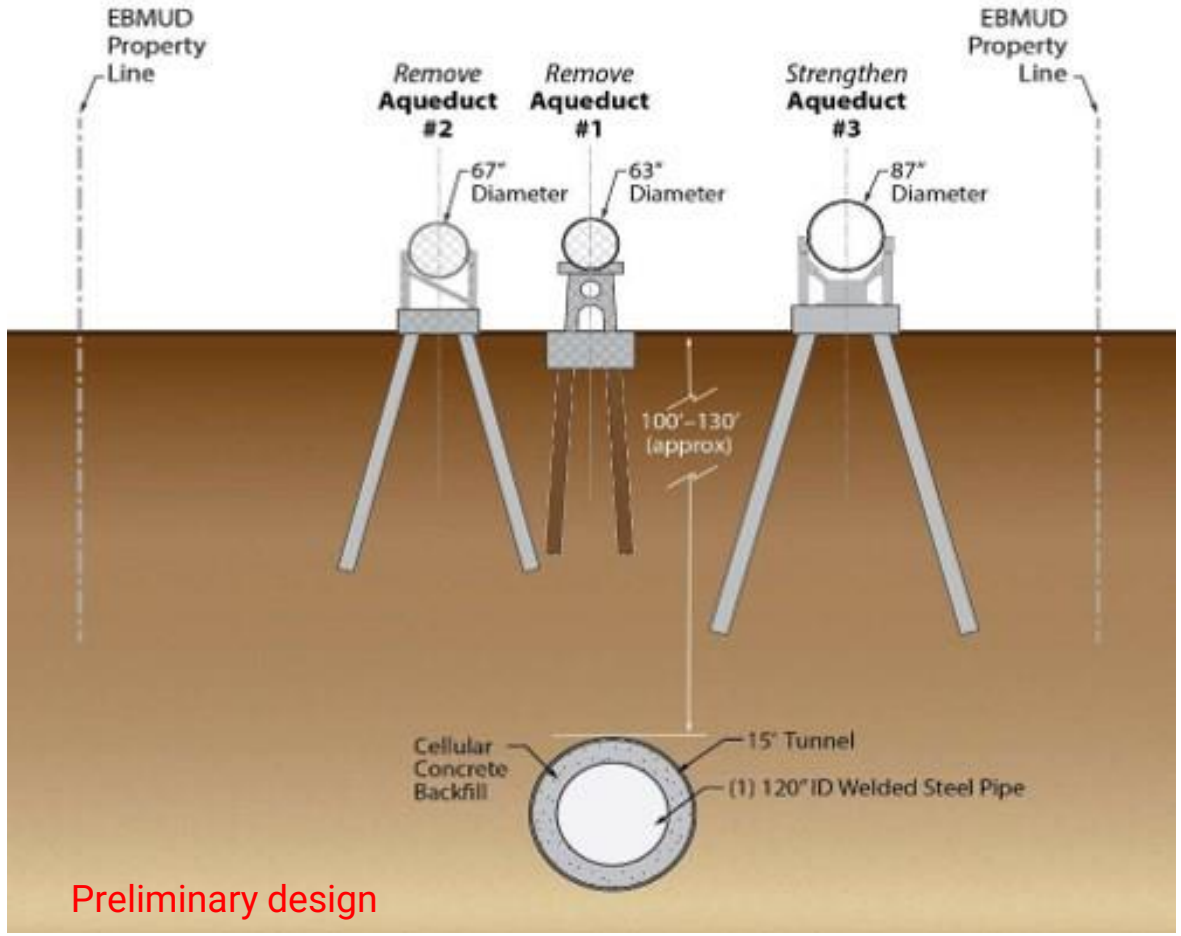
Mokelumne Aqueduct Corrosion Optimization Study and Relining

Mokelumne Aqueduct No. 2

- Sections of cement mortar lining in Mok. 2 and Mok. 3 have failed
- Age, water chemistry and installation techniques affect lining
- Relining project includes replacing
  - Mok. 2 – 65 miles
  - Mok. 3 – 10 miles

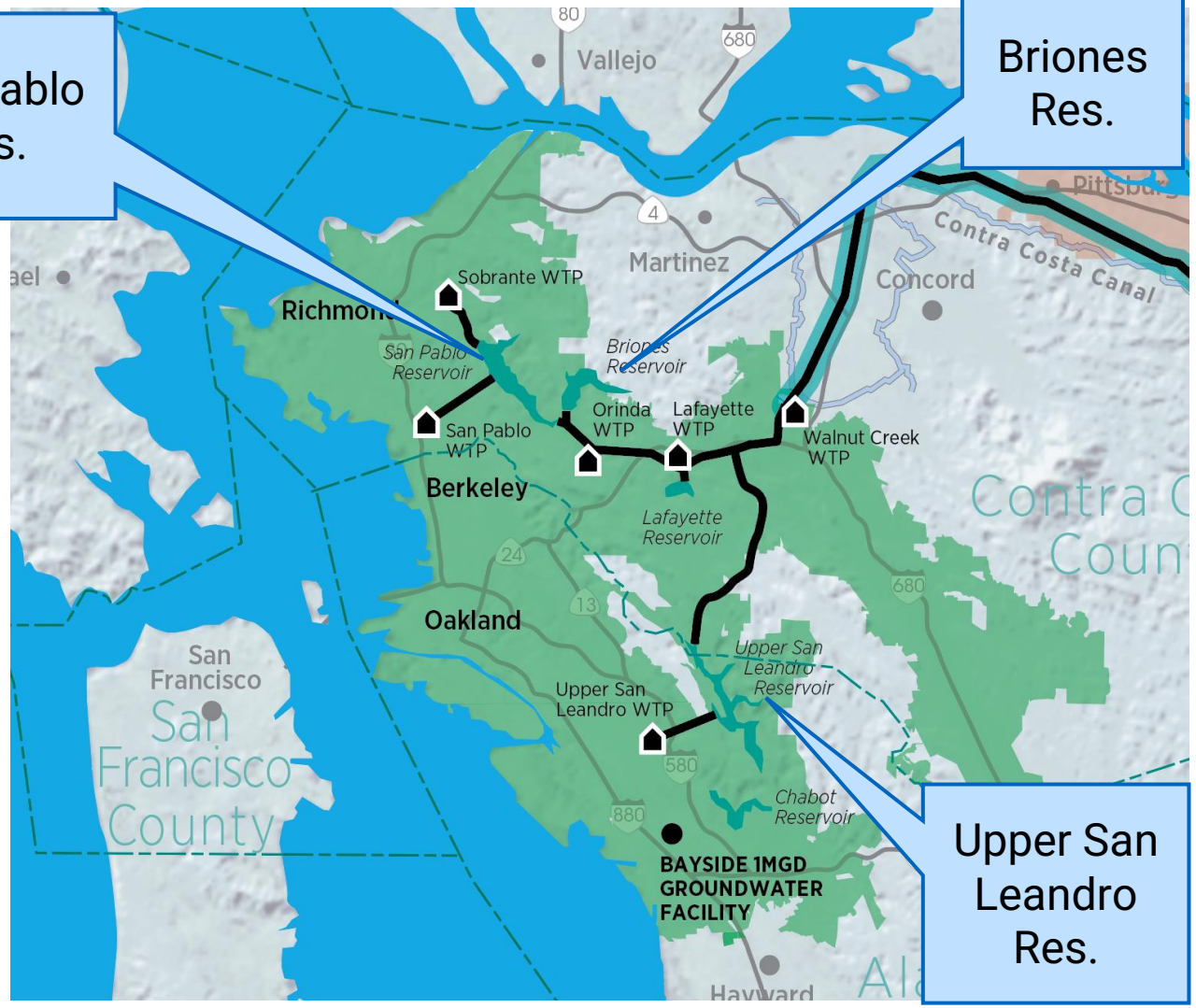
Mokelumne Aqueduct No. 3

Mokelumne Aqueduct Resiliency Project (MARP)



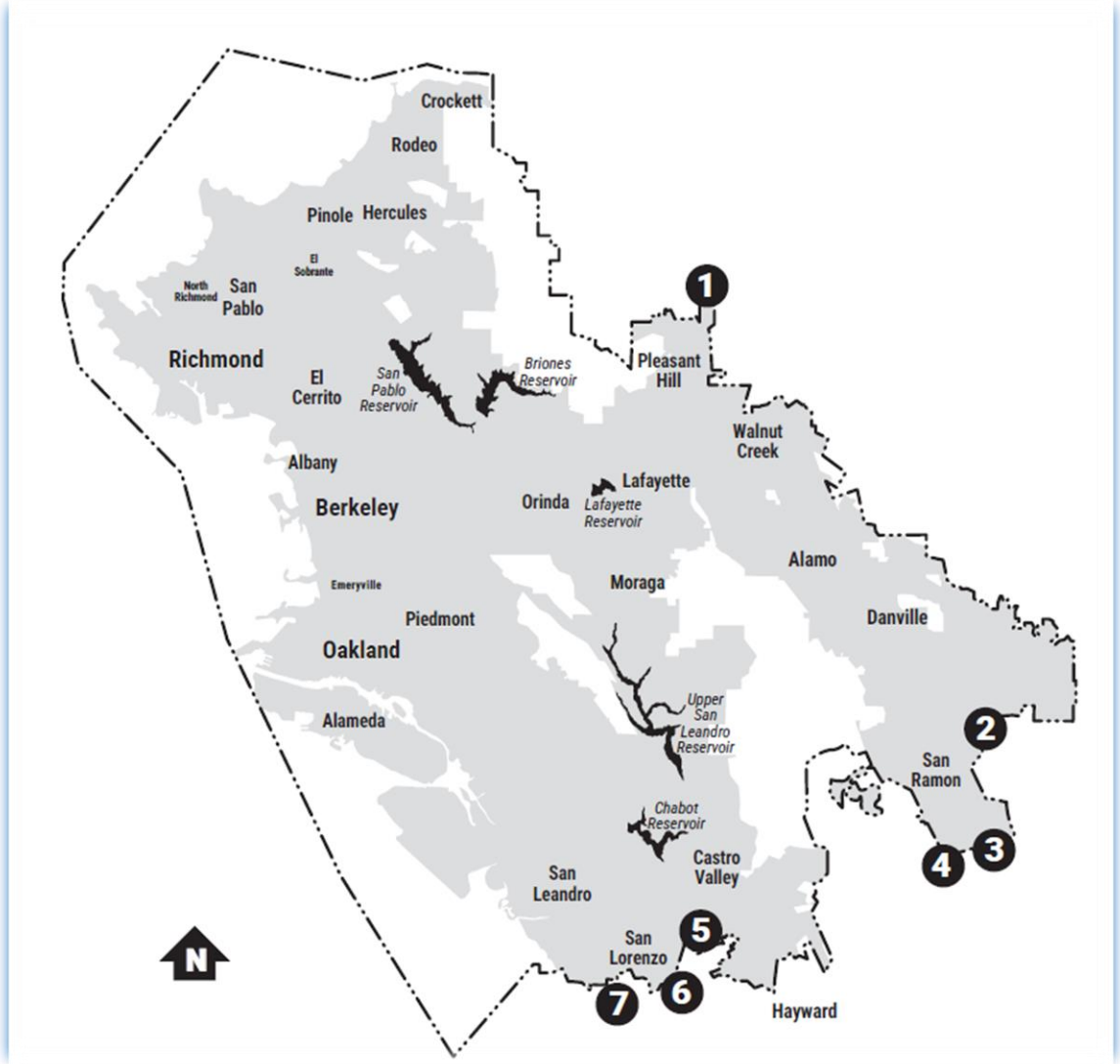
- Identified in the *Strategy for the Protection the Mokelumne Aqueducts in the Delta* study as a long-term recommendation to mitigate risks in Delta
- 16.5-mile long tunnel from Stockton to Bixler

Operational Response to Aqueduct Failures - Use of Local Storage



- Operate system to maintain up to 6-month water supply in local reservoirs
- 25 percent rationing
- Allows time to address aqueduct failure

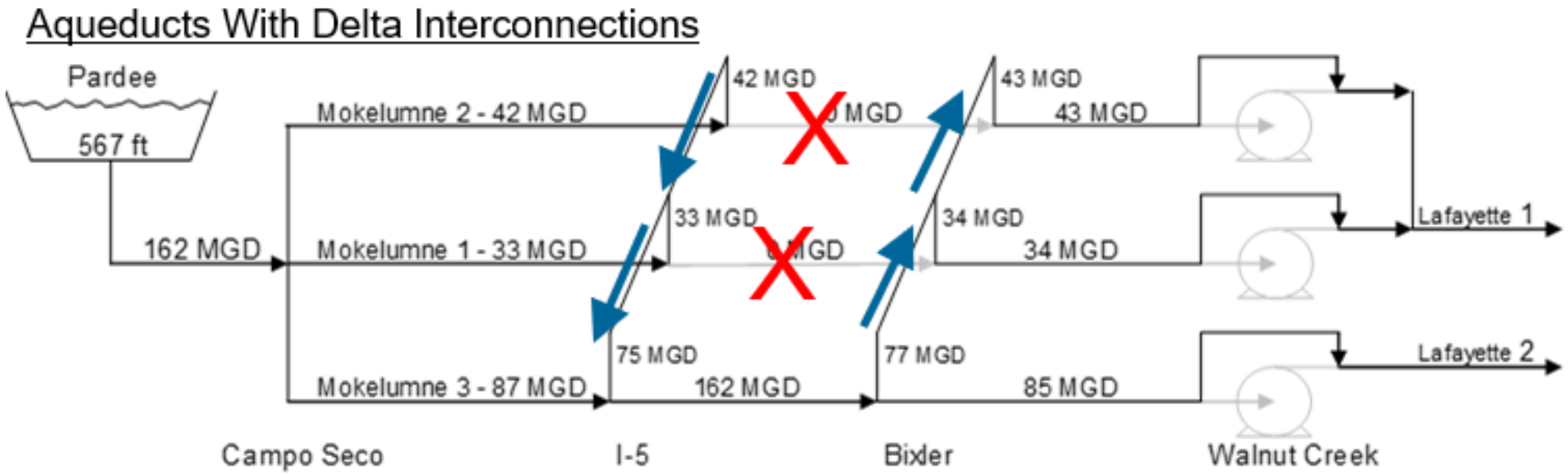
Treated Water Interties



- Agreements with CCWD, SFPUC and DSRSD
- Up to 50 million gallons per day (mgd) to EBMUD

CCWD – Contra Costa Water District
SFPUC – San Francisco Public Utility Commission
DSRSD – Dublin San Ramon Services District

Mokelumne Aqueduct Interconnection Project



Without Interconnection

Mokelumne Aqueduct No. 1 and No. 2 (Failure) Gravity Flow Capacity

= 100 MGD

With Interconnection

Mokelumne Aqueduct No. 1 and No. 2 (Failure) Gravity Flow Capacity

= 162 MGD

MGD – million gallons per day

Questions?

EBMUD

Flowing into the Future

Update on Phased Approach for Design Consultant Management

Planning Committee

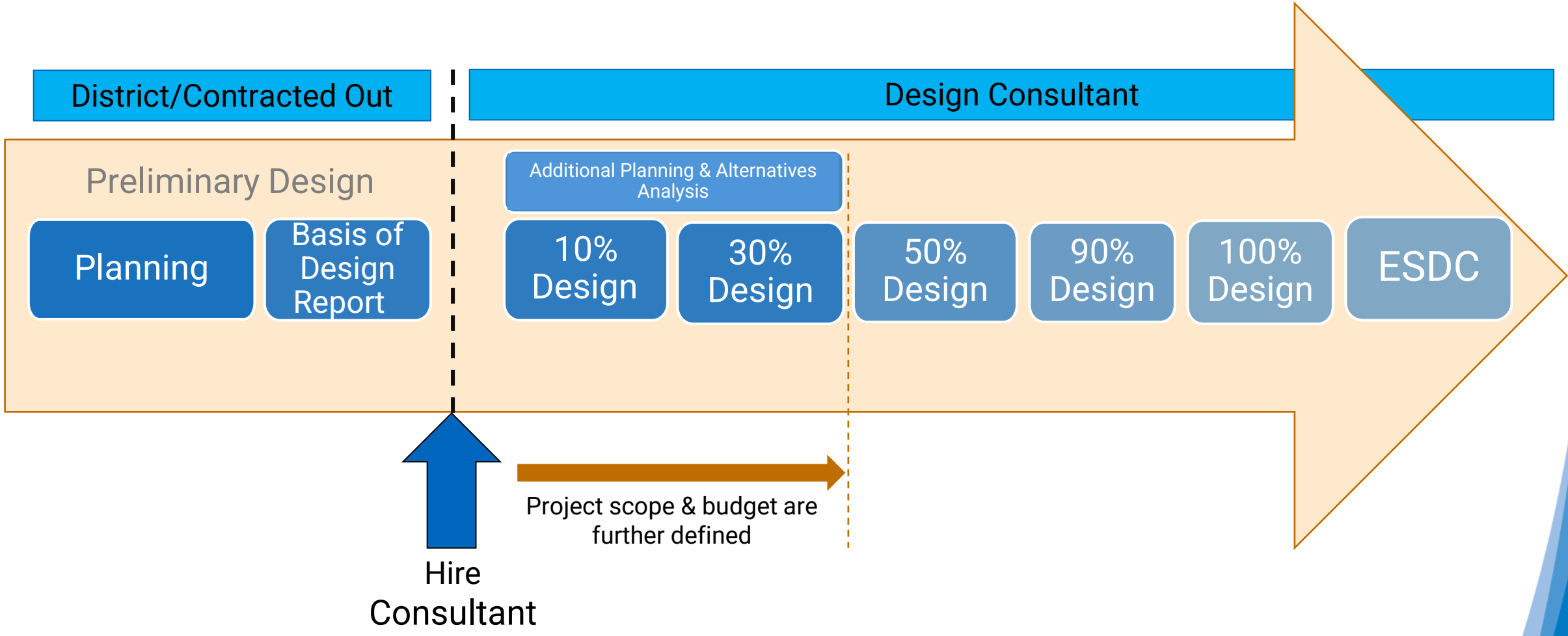
September 9, 2025

Sarah Plummer, Senior Civil Engineer

Agenda

- Traditional approach to design consultant management
- Phased approach to design consultant management
- Phased design implementation
- Upcoming projects and next steps

Traditional Approach to Design Consultant Management



ESDC = Engineering Services During Construction

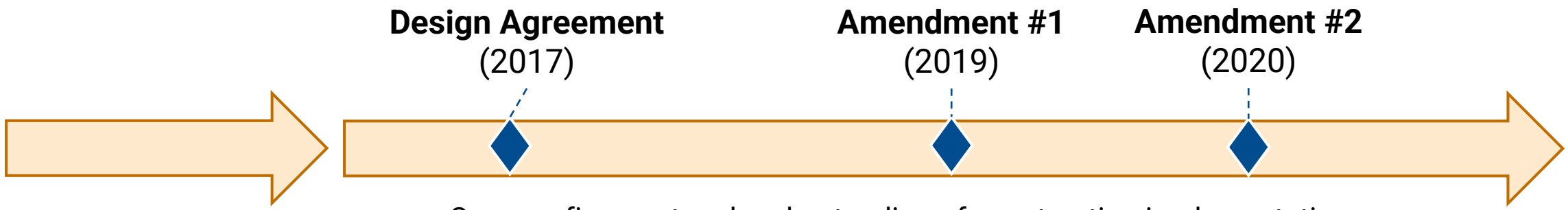
Traditional Approach to Design Consultant Management

- Challenges:
  - Scope and cost uncertainty during contracting
  - Large and complex projects typically require contract amendments
  - Lack of flexibility with project sequencing, phasing, and contracting
- Lessons Learned from Chemical System Safety Improvements Project

Key Takeaway

- A phased approach to consultant management is needed for large and complex projects to reduce uncertainty in project scope and control project costs

Chemical Systems Safety Improvements Project (CSSIP)



Original Scope
Design contract: $4.4M*
Construction cost estimate: $23M

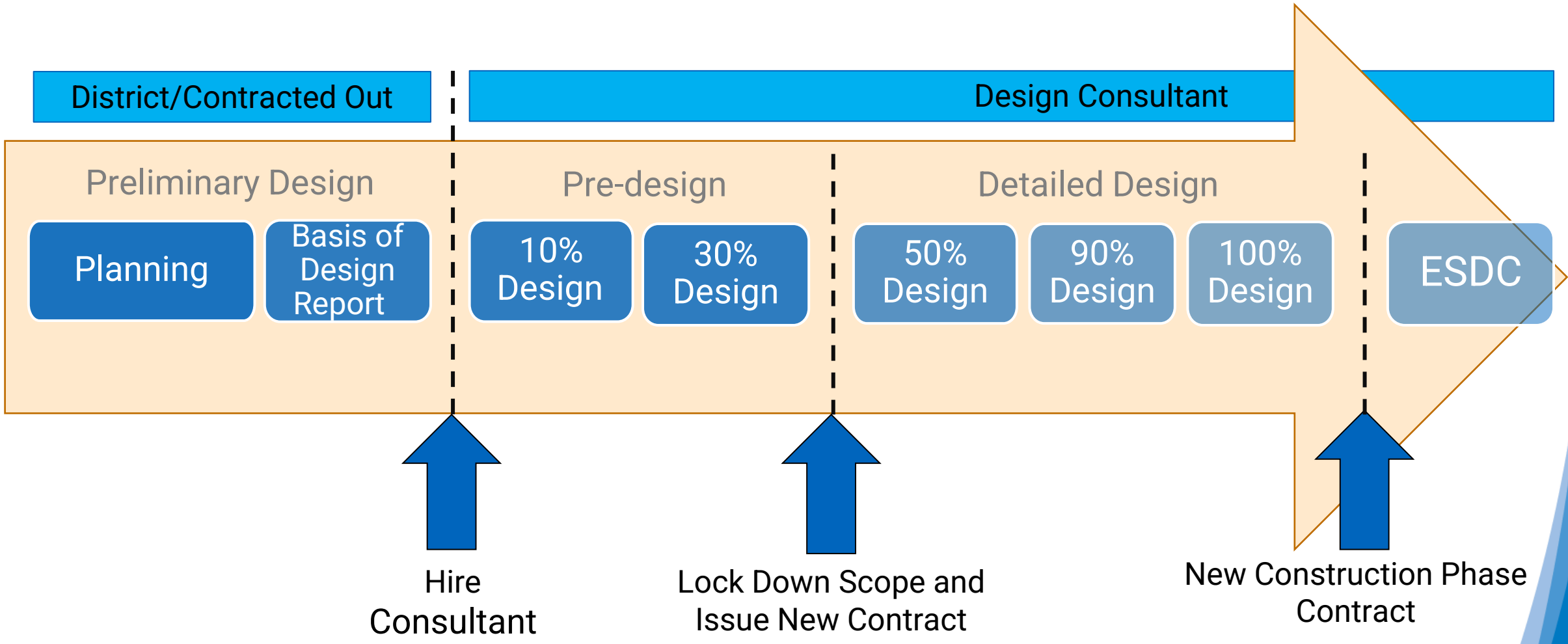
Amended Scope
Design contract: $9.5M
Construction cost estimate: $58M

End Result: project phased and separated into multiple projects by facility

- Orinda WTP (2022)
- Upper San Leandro & Sobrante WTPs (2023)
- Lafayette & Walnut Creek WTPs (2025)

*M = million

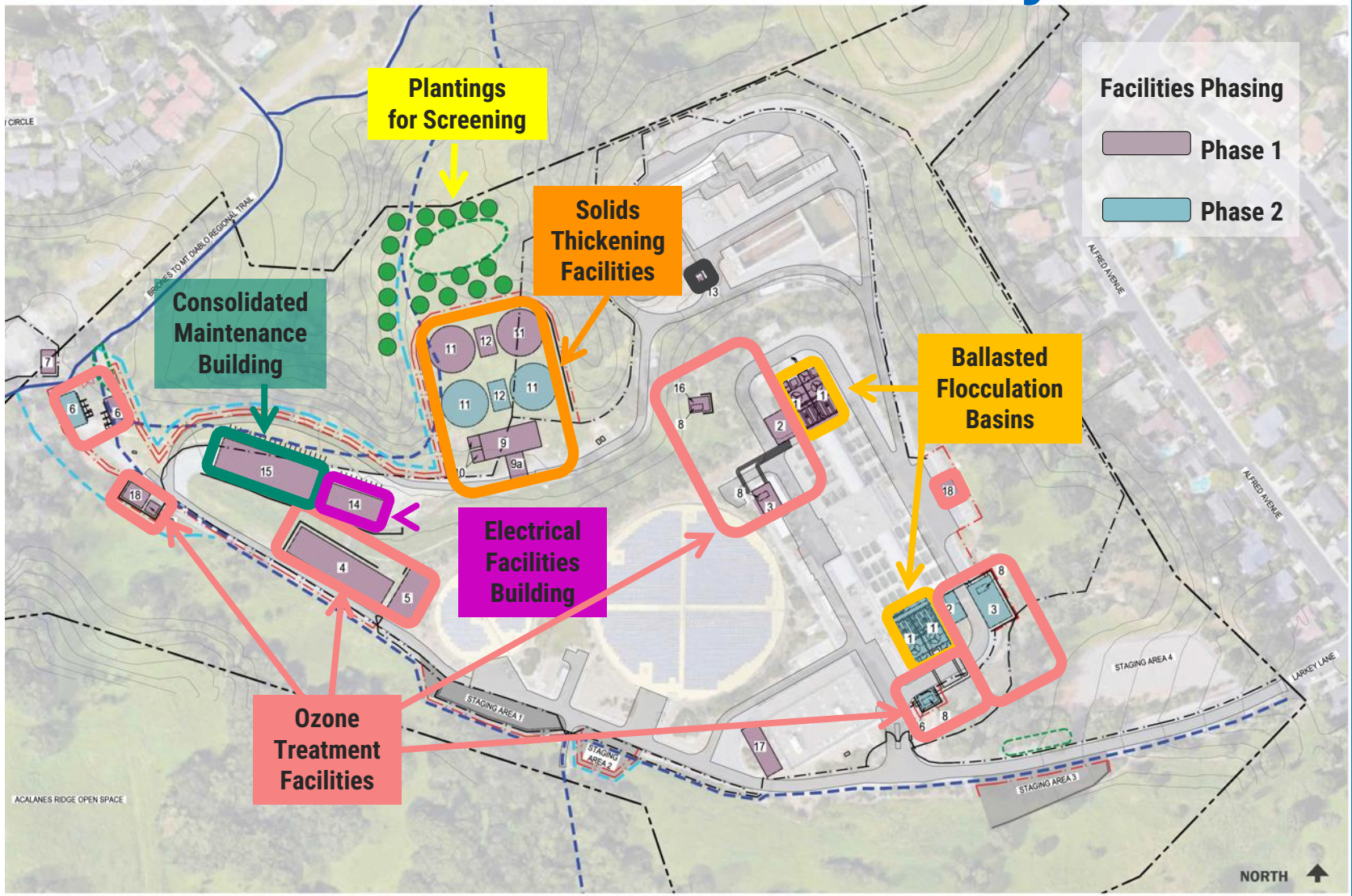
Phased Approach to Design Consultant Management



ESDC = Engineering Services During Construction

Implementation: Walnut Creek WTP Pretreatment Project

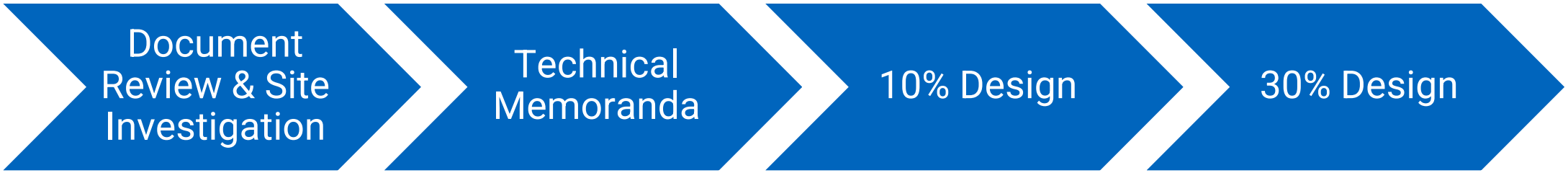
- Large and complex multi-phase project
- Project goals:
  1. Treat broader range of water quality
  2. Improve water quality, including taste and odor
  3. Increase WTP capacity to meet planned future demands



Site Plan from Final Environmental Impact Report

Walnut Creek WTP Pretreatment Project – Consultant Management Update

- Consultant agreement for pre-design services authorized by the Board on January 23, 2024
- Pre-design services scope:



Document Review & Site Investigation	Technical Memoranda	10% Design	30% Design
February 2024 - current	Completed October 2024	Completed March 2025	30% Design review scheduled October – November 2025

Walnut Creek WTP Pretreatment Project – Key Highlights

1. Pre-design contract is under budget and on schedule
2. Scope refinement and value engineering performed
3. Ability to sequence and phase the project based on District needs

Geotechnical Investigation at Walnut Creek WTP

Key Takeaway

- Refined scope and cost estimate from 30% design milestone will be used to negotiate next contract for Phase 1 detailed design

Future Projects and Next Steps

District staff will continue to evaluate opportunities to utilize the phased approach for consultant management

Questions?

EBMUD

Flowing into the Future

Miller Road Trench Soil Management Update and Final MND

Planning Committee

September 9, 2025

Gus Cicala, Senior Civil Engineer

MND = Mitigated Negative Declaration

Overview

- Purpose and Background
- Draft MND Analysis and Impacts
- Public Outreach and Comments
- Final MND and Mitigation Measures
- Next Steps

Miller Road Stockpile Site, Nearmap Imagery, July 8, 2023

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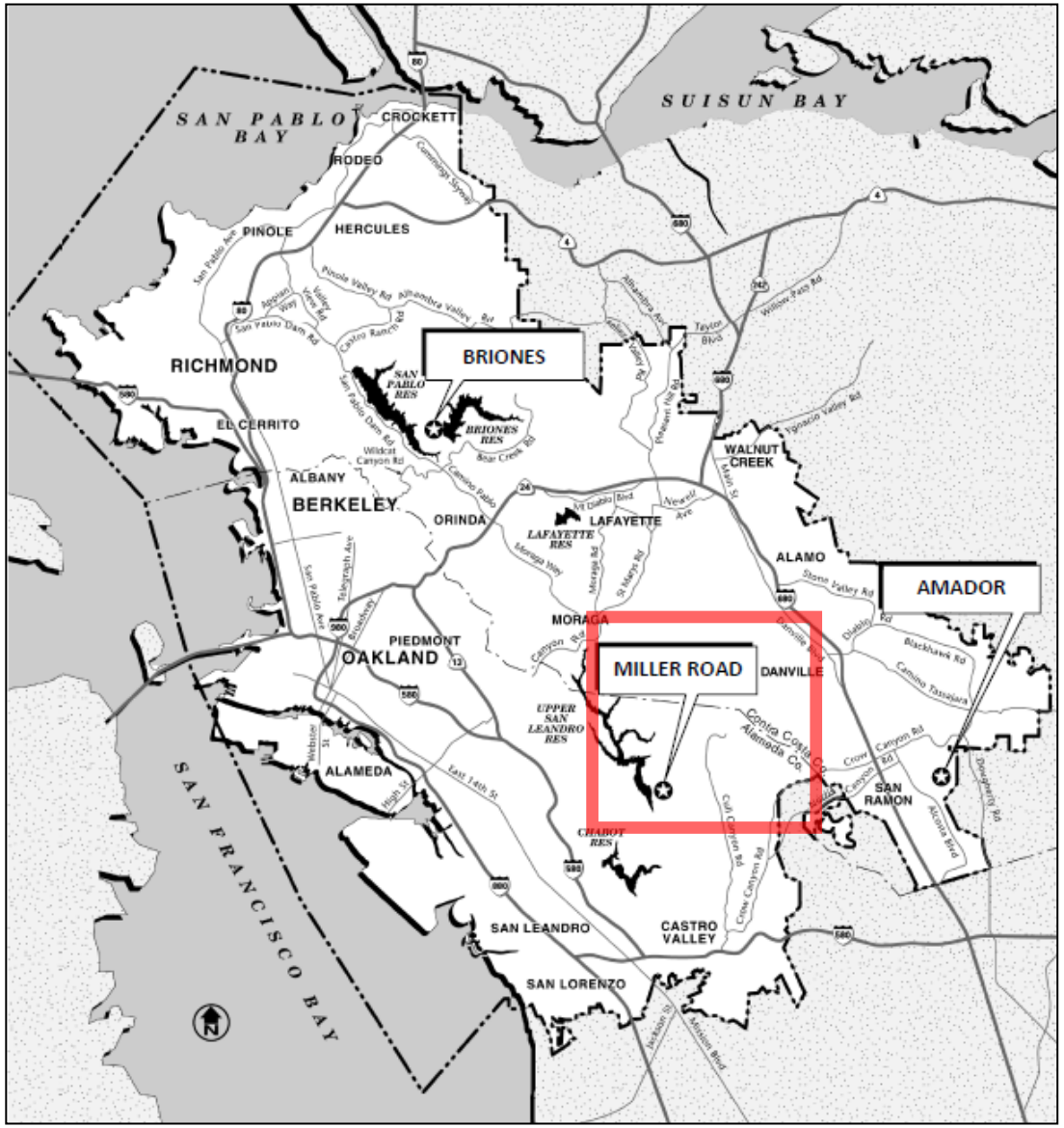
District Owned Stockpile Sites

Approximately 55,000 cubic yards (CY) of trench soils are generated annually

- Briones (primary)
- Miller Road
- Amador (limited)



District Stockpile Locations

Historical Trench Soil Management Practices

1.

Pipeline replacement

2.

Hauling to temporary stockpile site

3.

Loading truck with engineered backfill for return trip to job site

4.

Second hauling to permanent disposal

5.

Beneficial reuse

- Process used since 1960s
- For permanent disposal, soil is off hauled periodically from District stockpile sites
- District is expanding use of direct haul to beneficial end use sites which avoids use of temporary stockpiles

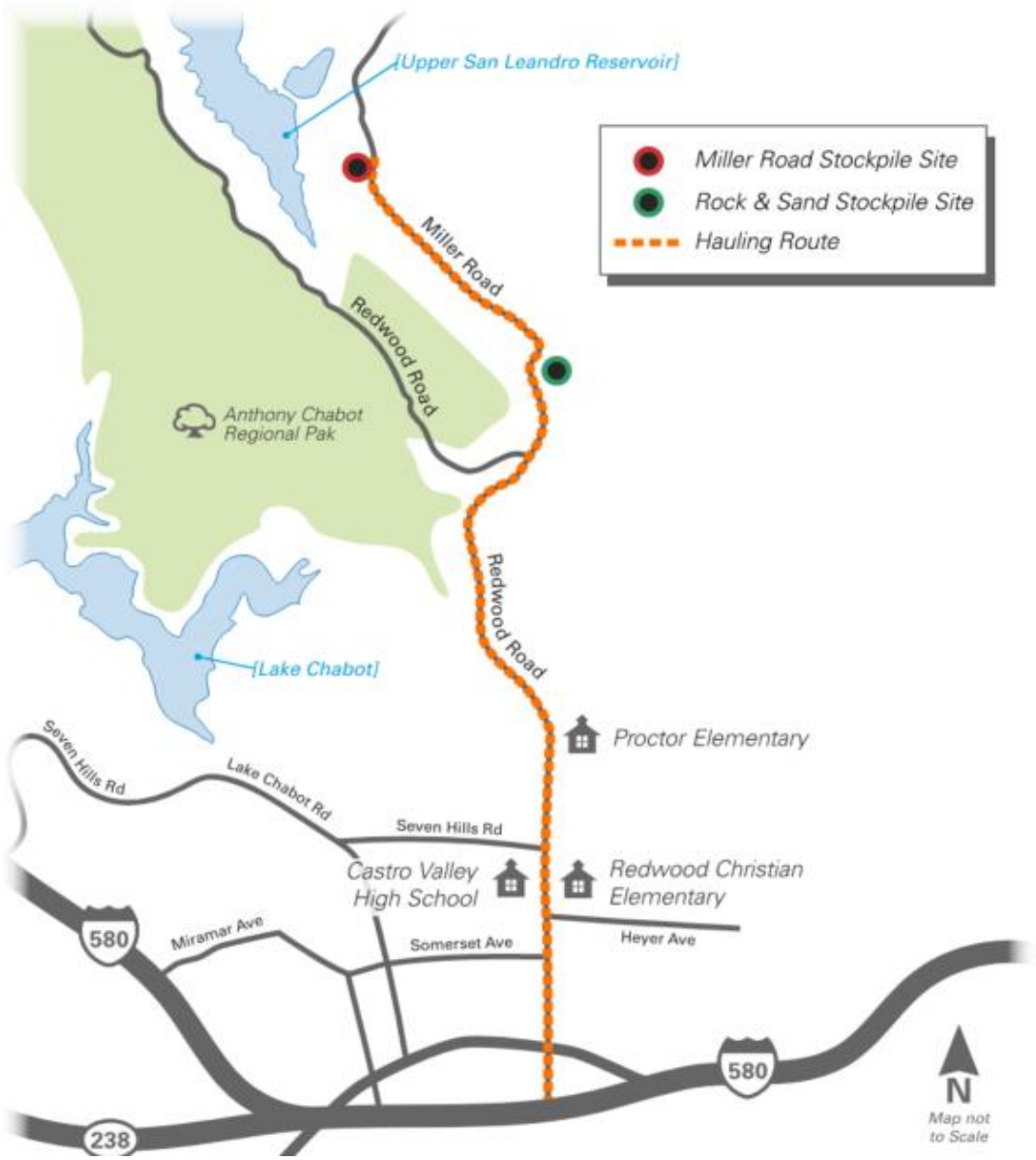
Beneficial Reuse of Soil

- 2,000 CY transferred to Alameda County for Redwood Road landslide repair
- Direct haul to Dumbarton Quarry (Fremont) from pipeline replacement
  - Utilized on portions of 16 replacement projects, plus repairs in South Area
  - Direct hauled over 17,000 CY since 2024
- Pleasanton Lakes, Pleasanton
  - Board Authorized Agreement in July
- Potential direct haul end use sites
  - Supply Bank at Oakport, Oakland
  - Eden Landing, Hayward
  - North Bay Logistics, Livermore
  - Cullinan Ranch, Vallejo
- Continue exploring native soil reuse, where feasible

Dumbarton Quarry, Nearmap Imagery, June 16, 2024

EBMUD

Miller Road Stockpile Site



Periodic Off-haul Events

Previous Trench Soil Off-haul Events from Miller Road

Year	Approx. CY (~Truck Roundtrips)
2003	22,000 (1,800)
2005	78,000 (6,500)
2012	10,000 (800)
2019	116,000 (9,100)

- Lessons learned from 2019 off-haul event
- Zoned Agricultural: Conditional Use Permit (CUP) required for continued operation
- California Environmental Quality Act (CEQA) review prior to CUP application

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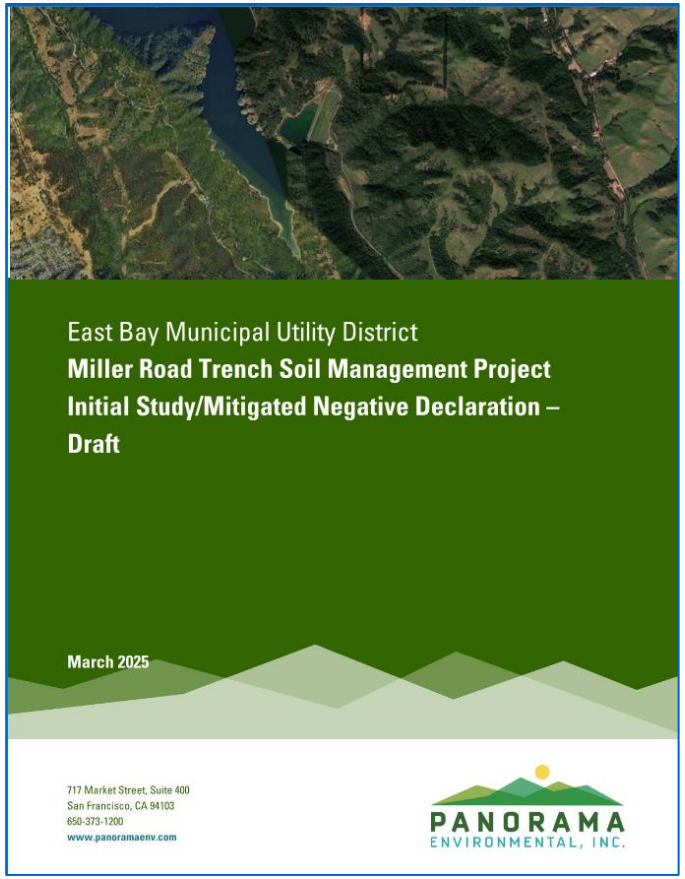
Initial Study/MND

- MND requires any potentially significant impacts to be mitigated to “less than significant”
- Analysis assumed:
  - Continued operation of the site
  - Increased use as pipeline replacement increases
    - Up to 30 miles per year in 2030 (now 25)
  - Various scenarios for off-haul intensity and frequency
- Actual usage in the future expected to decrease as direct haul is expanded



Environmental Factors	Less than Significant	Less than Significant with Mitigation	Significant and Unavoidable with Mitigation
Aesthetics	√		
Agriculture & Forestry	√		
Air Quality	√		
Biological	√		
Cultural	√		
Energy	√		
Geology & Soils	√		
Greenhouse Gas Emissions	√		
Hazards & Hazardous Materials	√		
Hydrology & Water Quality	√		
Land Use & Planning	√		
Noise	√		
Transportation		√	
Tribal Cultural	√		
Utilities & Service Systems	√		
Wildfire (Emergency Response)		√	

Public Outreach

- Presentations:
  - March 11, 2025 – Planning Committee
  - March 24, 2025 – Castro Valley Municipal Advisory Council – Land Use meeting
  - April 3, 2025 – Virtual Public Meeting
- 1,500 postcards announcing the community meeting were sent to residents near the Project site
- 12,300 emails sent to Castro Valley residents signed up for email alerts
- Information posted on NextDoor to 28 neighborhoods, totaling 13,500 users
- Updates on the District's website at www.ebmud.com/MillerRoad
- Feedback was accepted at the community meetings and via written correspondence

Comments Received

Topic Area	Comments
Soil Management	Concerns about soil testing, reuse of excavated soil, and potential contamination
Water Quality	Potential impacts to water resources, including soil/water interaction and stormwater runoff
Traffic and Safety	Comments related to truck traffic, road damage and repair, proximity to schools, and general public safety
Wildlife and Habitat	Potential impacts on special-status species (Alameda whipsnake and Crotch's bumble bee); broader concerns regarding habitat connectivity
Air Quality and Dust	Dust control measures and concerns about public health impacts from construction-related emissions
Land Use	Comments related to the need for a Conditional Use Permit to comply with Alameda County zoning requirements
CEQA Process	Concerns about the public review process, timing, and overall adequacy of the environmental analysis

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Final MND

Revisions to Draft MND

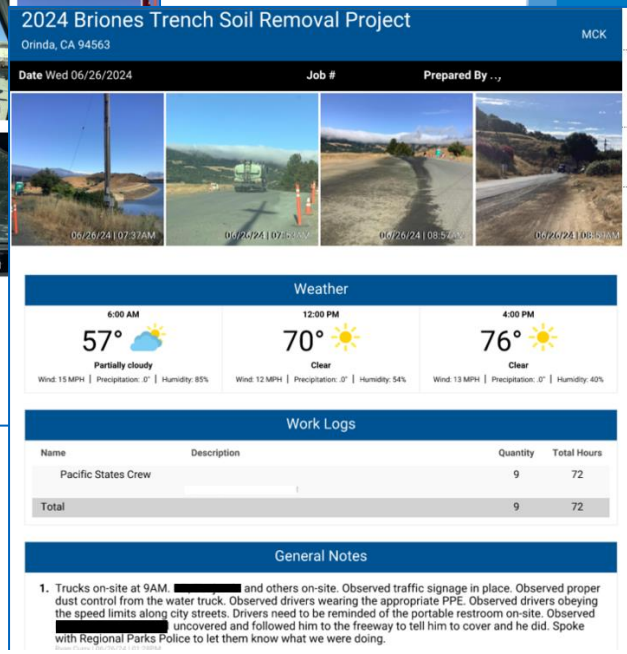
- Added description of alternative trench soil management strategies now being implemented by EBMUD to reduce reliance on temporary sites
- Clarified standard practices implemented during off hauls to strengthen safety and oversight
- Expanded discussion of existing measures that protect biological resources and surrounding habitat
- Enhanced Mitigation Measures to ensure proactive coordination with nearby schools and Alameda County before off-haul events

Updated Standard Practices

- Extensive community outreach before an off-haul event
- Reducing off-haul hours, as previously described
- Dust control measures
  - Covering loads (and inspecting for compliance)
  - Water trucks
  - Regular street sweeping (at least weekly)
- Adherence to updated Stormwater Pollution Prevention Plan

Sweeping Adjacent Roadway

Tarping Reminder Sign



Inspector Reports (above and right)

Sample Reports and Photos from Briones Off-haul in 2024

New Mitigation Measures
Transportation Safety

- Ensure truck drivers review and sign project requirements covering road safety, defensive driving, school zones, blind spot monitoring, and consequences for non-compliance
- Prohibit truck parking or queuing on Redwood Road; use temporary traffic controls during wide turns at Redwood/Miller Road
- Restrict trucks to designated haul routes
- Install radar speed feedback signs and advance warning signs along Redwood Road to deter speeding and alert motorists to truck traffic
- Conduct frequent truck safety inspections (brakes, tires, lights, etc.)

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New Mitigation Measures
Transportation Safety (Continued)

- Provide public information about truck traffic and safety measures via media, social media, and community meetings
- Coordinate with Alameda County Transportation Department, schools, and emergency services before and during off-haul events; fund crossing guards as needed
- Conduct pre- and post-event roadway surveys to document conditions and repair any project-related pavement damage
- Ensure qualified District inspectors are present onsite and along haul routes during off-haul events to monitor safety and compliance

EBMUD

Next Steps

Release Draft MND for public comment	March 20 – May 19, 2025
Prepare Response to Comments/Final MND	May – August 2025
Release Final MND	August 28, 2025
Board to Consider Adoption of Final MND	September 9, 2025
Application for CUP through Alameda County	October 2025

Completed

Next Steps

EBMUD

Questions?