



**BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

Notice of Special Meeting

**District Projects Tour
Wednesday, October 22, 2025
8:30 a.m.**

At the call of President Marguerite Young, a Special Meeting of the Board of Directors of the East Bay Municipal Utility District has been set for 8:30 a.m. on Wednesday, October 22, 2025, beginning in the Administration Building Boardroom at 375 11th Street, Oakland, California.

During the meeting opening, District staff will provide the Board with information regarding EBMUD infrastructure priorities and a tour of active and upcoming EBMUD infrastructure projects.


PUBLIC COMMENT: Members of the public may address the Board concerning any item that has been described in this meeting notice. Public comment will be received at the Administration Building Boardroom at 375 11th Street, Oakland, California.

Following the meeting opening, consistent with the attached timeline, the Board will participate in in-person inspection tours of the District facilities/projects below. Members of the public may attend the inspection tours in person. Please see the attached disclaimer notice regarding participating in tours of active constructions sites*.

- Orinda Water Treatment Plant, 190 Camino Pablo, Orinda, CA*
- Pinole Creek Tomato Stand Culvert, Alhambra Valley Rd., between Bear Creek Rd. and Castro Ranch Rd., Pinole, CA
- Pipeline Rebuild Cluster, Intersection of Virginia St. and 6th Street, Berkeley, CA*
- Main Wastewater Treatment Plant, 2020 Wake Avenue, Oakland, CA*

The Board will be taking no action at this meeting.

Dated: October 16, 2025



Rischa S. Cole
Secretary of the District



APPENDIX

**Special Board Meeting
8:30 a.m.**

*EBMUD public Board meetings will be conducted in person and accessible via Zoom.
These meetings are recorded, live-streamed, and posted on the District's website.*

Online*

<https://ebmud.zoom.us/j/97065086667?pwd=eUdZSGh5SG82akZiRDF2UDg2b0IyUT09>

Webinar ID: 970 6508 6667

Passcode: 238500

By Phone*

Telephone: 1 669 900 6833

Webinar ID: 970 6508 6667

Passcode: 238500

International numbers available: <https://ebmud.zoom.us/u/adMXn1VnPp>

*To familiarize yourself with Zoom, please visit <https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting>

Providing public comment - *The EBMUD Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.*

- Each speaker is allotted 3 minutes to speak; the Board President has the discretion to amend this time based on the number of speakers
- The Secretary will track time and inform each speaker when the allotted time has concluded
- Comments on **non-agenda items** will be heard at the beginning of the meeting
- Comments on **agenda items** will be heard when the item is up for consideration
- The Secretary will call each speaker in the order received

In person

- Fill out and submit a blue speaker card which is available in the meeting room

Via Zoom

- Use the raise hand feature in Zoom to indicate you wish to make a public comment
<https://support.zoom.us/hc/en-us/articles/205566129-Raising-your-hand-in-a-webinar>
- If you participate by phone, press *9 to raise your hand
- When prompted by the Secretary, please state your name, affiliation if applicable, and topic

Submitting written comments or materials

- Email written comments or other materials for the Board of Directors to SecOffice@ebmud.com
- Please indicate the meeting date and agenda item number or non-agenda item topic in the subject line of the email. Contact information is optional.
- **Please email by 4 p.m. the day prior to the scheduled regular meeting;** written comments and other materials submitted to the Board of Directors will be filed in the record.

To view the livestream of Board meetings, please visit:
<https://www.ebmud.com/about-us/board-directors/board-meetings/>

**Board Infrastructure Tour
District Projects Tour Timeline
October 22, 2025**

Meeting Opens		
<p>Administration Building – Boardroom <i>(375 11th Street, Oakland, CA)</i></p> <ul style="list-style-type: none"> • Open Meeting • Agenda and Tour Overview • Public Comment 	<p>Marguerite Young President, Board of Directors</p> <p>Clifford Chan General Manager</p>	<p>8:30am - 8:35am</p> <p>8:35 am – 8:45 am</p>
Water System Site Tours		
<p>Drive to Orinda Water Treatment Plant <i>(190 Camino Pablo, Orinda)</i></p>		<p>8:45 am – 9:15 am</p>
<ul style="list-style-type: none"> • Provide project overview; discuss operations during construction, treatment process, and Chemical Systems Safety Improvements Project challenges; and view construction of new ultraviolet/chlorine contact basin. 	<p>Tim Karlstrand Senior Civil Engineer</p> <p>Justin Casey Water Treatment Supervisor</p> <p>Ellen Heile Assistant Engineer</p>	<p>9:15 am – 10:00 am</p>
<p>Drive to Pinole Creek Tomato Stand Culvert <i>(Alhambra Valley Rd., between Bear Creek Rd. and Castro Ranch Rd., Pinole)</i> <i>Park in the turnout on Alhambra Valley Rd.</i> <u>37°58'11.8"N 122°12'57.7"W - Google Maps</u></p>		<p>10:00 am – 10:30 am</p>
<ul style="list-style-type: none"> • View an example of watershed infrastructure important to meeting the District’s stewardship goals and learn about a grant-funded fish passage project for steelhead in Pinole Creek. 	<p>Bert Mulchaey Supervisor, Fisheries and Wildlife</p>	<p>10:30 am – 11:00 am</p>
<p>Drive to Pipeline Rebuild Cluster <i>(Intersection of Virginia St. & 6th St., Berkeley)</i></p>		<p>11:00 am – 11:30 am</p>
<ul style="list-style-type: none"> • Observe a pipeline construction project, learn about innovation and resilient pipeline materials, and discuss the overall objectives and goals of the Pipeline Rebuild Program. 	<p>David Katzev Manager, Pipeline Construction</p>	<p>11:30 am – 12:00 pm</p>

**Board Infrastructure Tour
District Projects Tour Timeline
October 22, 2025**

Wastewater System Site Tour		
Drive to Main Wastewater Treatment Plant (MWWTP) <i>(2020 Wake Ave., Oakland)</i>		12:00 pm – 12:30 pm
<ul style="list-style-type: none"> • A walking tour and overview of the following facilities: Secondary Reactor Deck; Gas Dome; Operations Center; Clarifier; Influent Pump Station; and Sludge Dewatering Building 	Amit Mutsuddy Director, Wastewater Gary Warren Manager, Wastewater Engineering	12:30 pm - 1:15 pm
Meeting Closes at MWWTP Maintenance Center Lunchroom		
<ul style="list-style-type: none"> • Recap of Tour and Next Steps • Board Comments • Adjourn 	Clifford Chan General Manager Board of Directors	1:15 pm – 1:30 pm

EBMUD 10/22/25 Projects Tour



**EAST BAY MUNICIPAL UTILITY DISTRICT
DISCLAIMER NOTICE
District Facilities Tour
October 22, 2025**

Please note the following when participating in the October 22, 2025 Special meeting of the Board of Directors which includes a tour of District facilities.

The Orinda Water Treatment, owned and operated by the East Bay Municipal Utility District (EBMUD) and located at EBMUD property at 190 Camino Pablo, Orinda, CA, is an operating industrial facility.

The Main Wastewater Treatment Plant, owned and operated by EBMUD and located at EBMUD property at 2020 Wake Avenue, Oakland, CA, is an operating industrial facility.

The Pinole Creek Tomato Stand Culvert, located at Alhambra Valley Rd., between Bear Creek Rd. and Castro Ranch Rd., Pinole, CA, contains EBMUD maintained assets.

The Pipeline Rebuild Cluster, located at the intersection of Virginia Street and 6th Street in Berkeley, CA, is an active construction site.

Participation in the tour involves certain inherent risks. These tour locations may have ongoing construction, heavy-duty vehicle traffic, open channels, trip hazards, and toxic chemicals, among other hazards.

By participating in the tour of District facilities, you are voluntarily electing to accept these risks associated with said activity and entry onto EBMUD property or locations to participate in said activity.


Please follow all directions of your tour guide and stay with the group at all times.

This page is intentionally left blank.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 16, 2025

MEMO TO: Board of Directors

FROM: Clifford C. Chan, General Manager 

SUBJECT: Tour of District Projects – October 22, 2025

A Special Meeting is scheduled for Wednesday, October 22, 2025 to provide Board members an opportunity to receive information regarding the District's infrastructure priorities and visit active and upcoming District infrastructure projects.

The meeting will open in the Boardroom and adjourn in the Main Wastewater Treatment Plant Maintenance Center lunchroom in Oakland. The meeting and tour are open to the public. The proposed schedule and tour stops are summarized in the attachment. Board members will receive personal protective equipment required on construction sites and are encouraged to dress in layers and wear close-toed shoes. Staff will drive Board members to each location.

Please contact the Secretary's Office if you have questions about the tour or the schedule.

CCC:SVT:svt

Attachments: Tour Overview, Map, and Project Information Posters

I:\SEC\2025 Board Related Items\10222025 Special Meeting\ECD – Tour of District Projects.docx

This page is intentionally left blank.

Long-Term Infrastructure Investment Tour

Board of Directors

October 22, 2025



Tour Schedule

Wednesday, October 22, 2025

Start Times:

- 8:30 AM – Open at Administration (AB) Building Board Room
- 9:15 AM – Orinda WTP Disinfection Improvements and CSSIP
- 10:30 AM – Pinole Creek Tomato Stand Culvert
- 11:30 AM – Virginia Pipeline Rebuild Cluster in Berkeley
- 12:30 PM – Main Wastewater Treatment Plant (SD-1) Featured Projects
- 1:15 PM – Close at SD-1

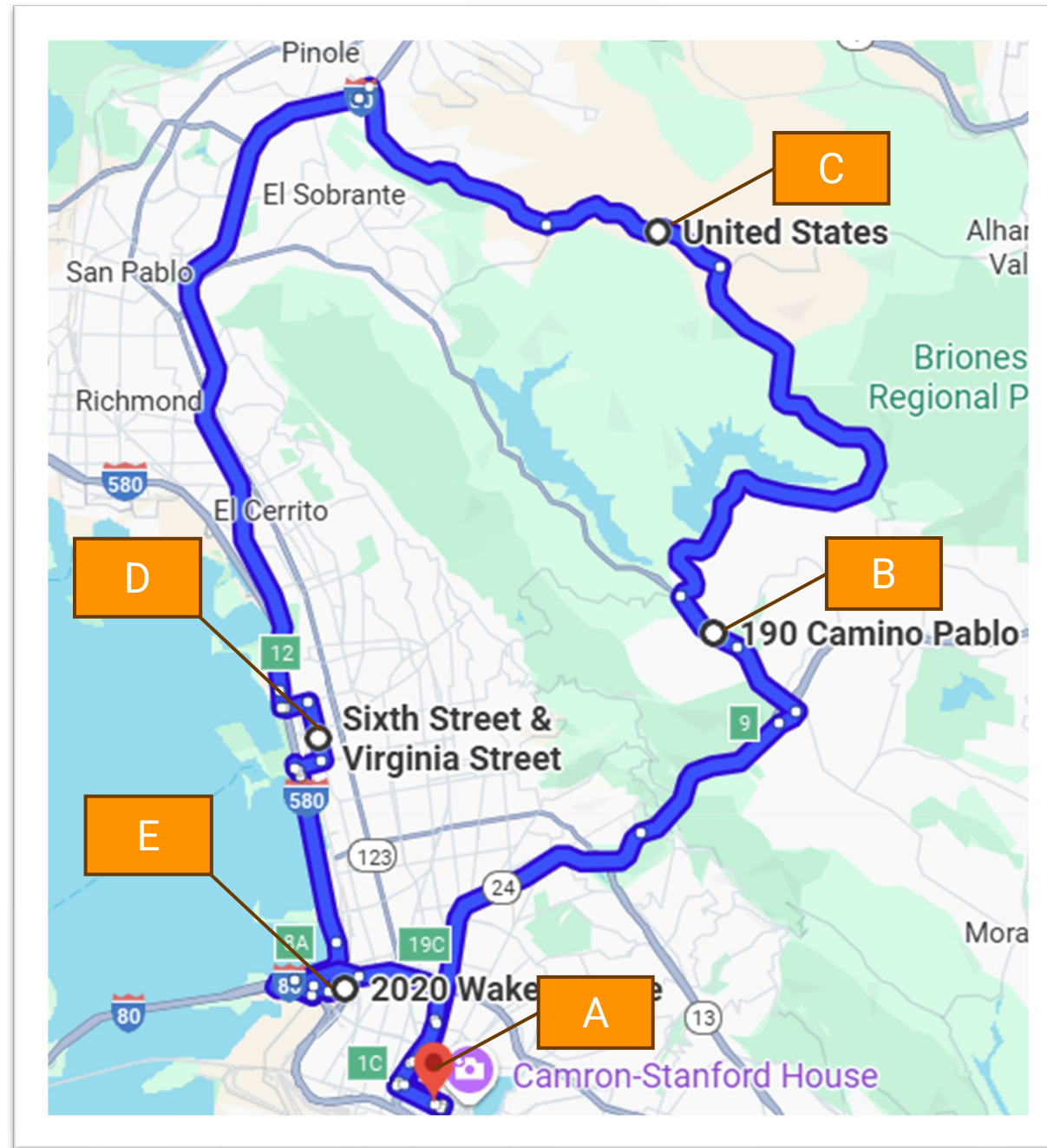
WTP: Water Treatment Plant

CSSIP: Chemical Systems Safety Improvements Project

Overview Map

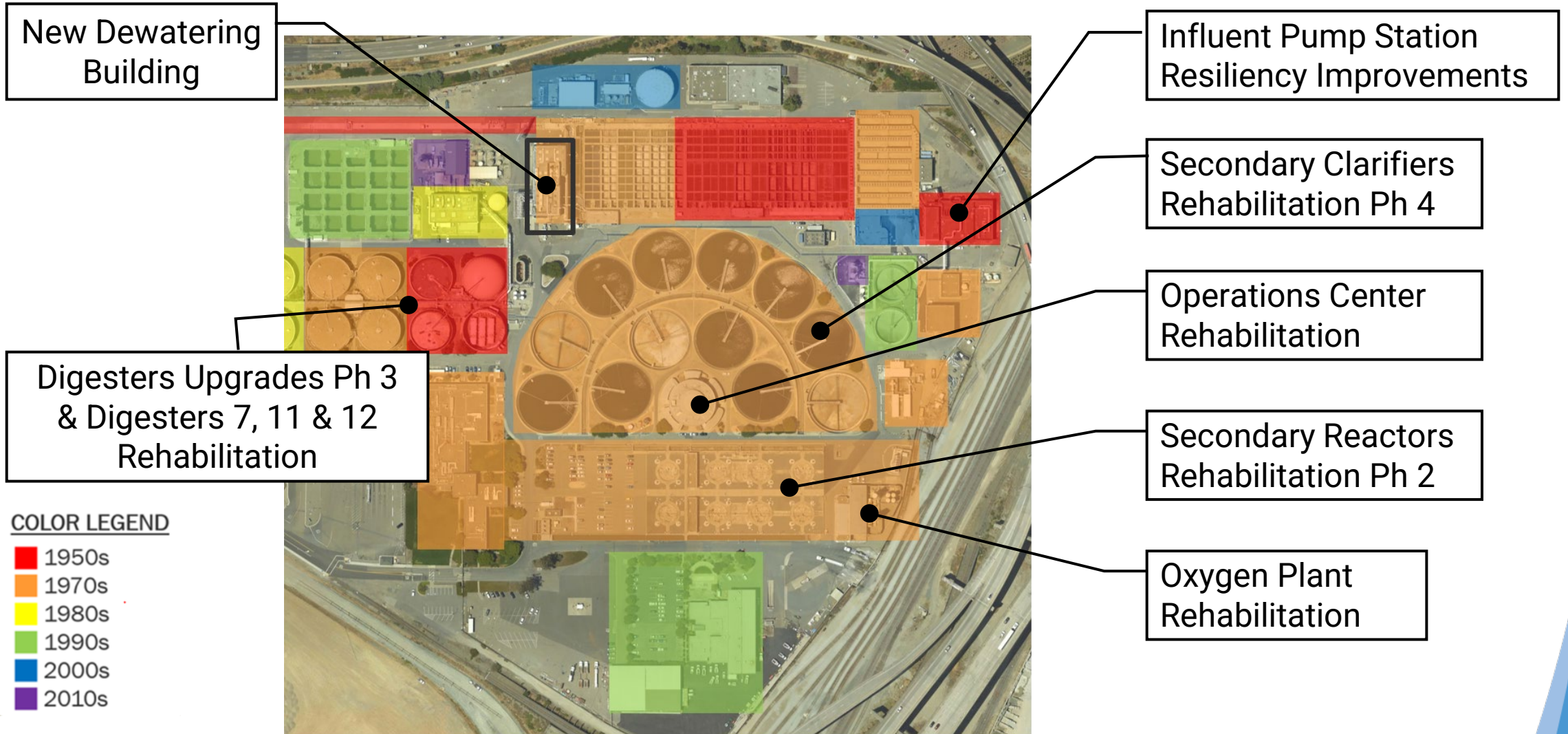
Key

- A AB
- B Orinda WTP
- C Pinole Creek
- D Virginia Cluster
- E SD-1



Map of Tour Route

SD-1 Featured Projects



ORINDA WATER TREATMENT PLANT

Disinfection Improvements Project



The Orinda Water Treatment Plant

The Orinda Water Treatment Plant (WTP) was built in 1935 and is the largest of EBMUD's six water treatment plants. It operates 24/7, year round to provide clean drinking water to more than 800,000 customers. About 90 percent of the water filtered and treated at this water

treatment plant comes from rain and snowmelt gathered in the Mokelumne River watershed in the Sierra Nevada foothills. Aqueducts convey this water 90 miles to the East Bay from Pardee Reservoir. Additional water comes from local storage reservoirs such as Briones Reservoir.

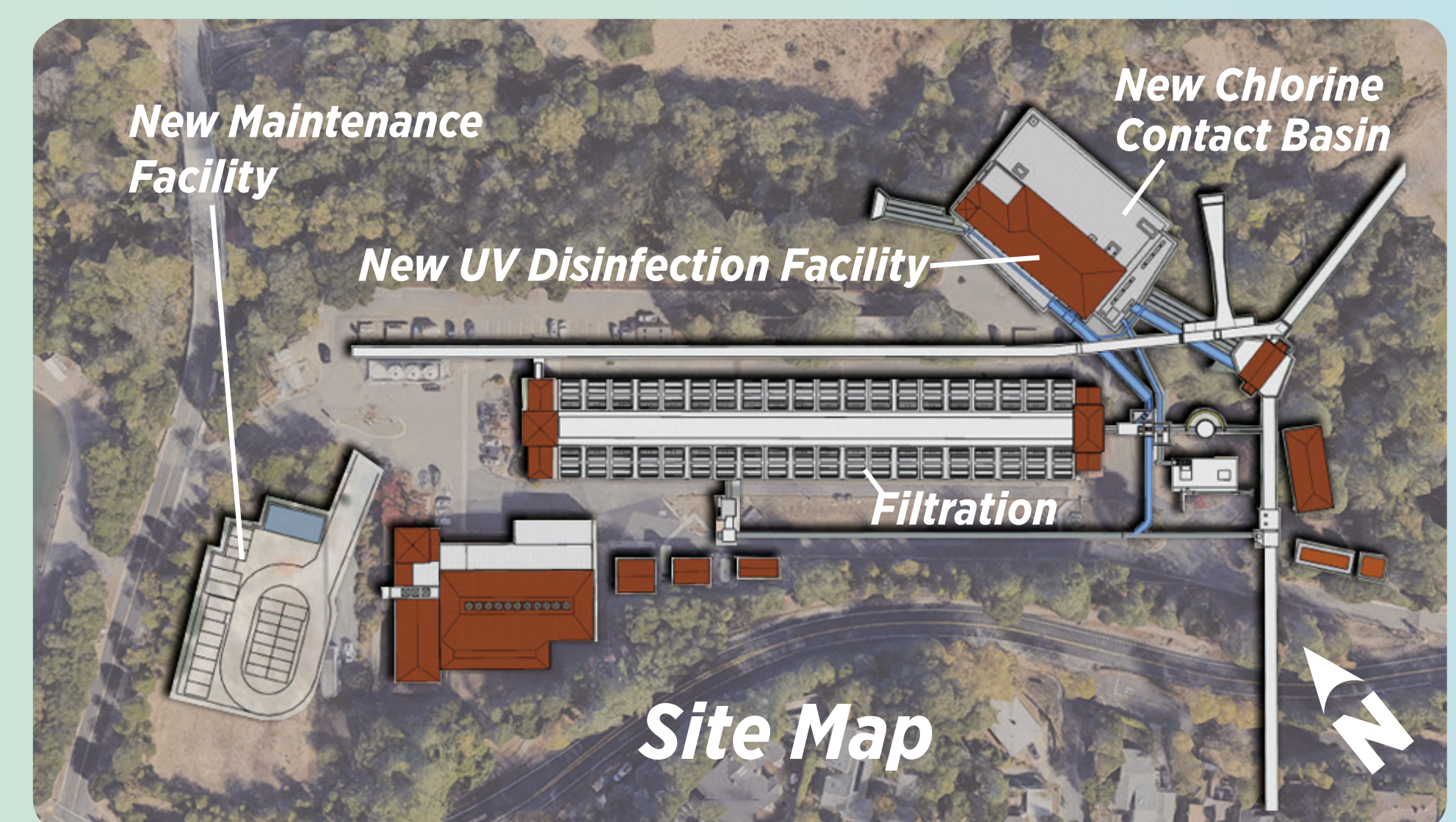
What is EBMUD upgrading?

EBMUD is planning critical improvements at the Orinda Water Treatment Plant to:

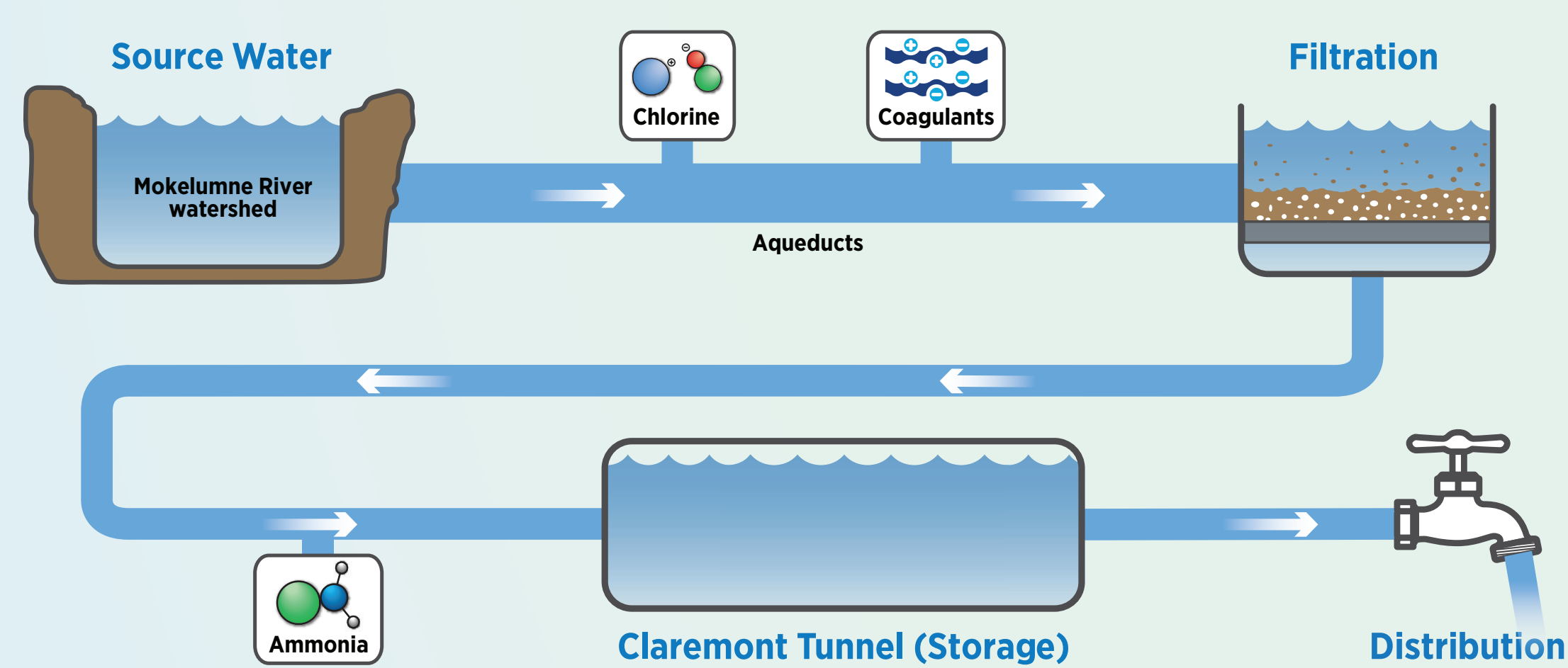
- Improve disinfection reliability.
- Continue to meet or surpass water quality regulations.
- Better protect public health by adding a multi-barrier treatment process.
- Increase resilience against changes in source water caused by climate change.

To do this, we are adding:

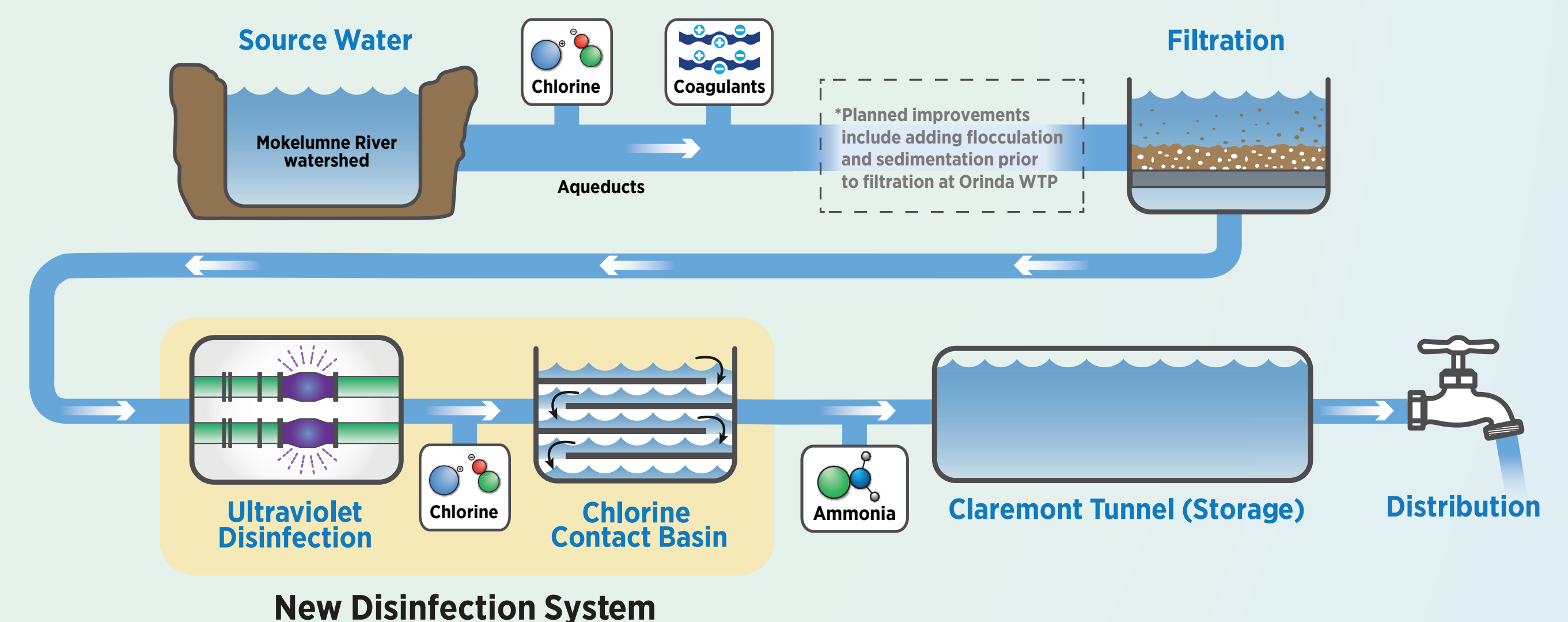
- A new ultraviolet (UV) disinfection facility to better treat viruses and pathogens.
- A new chlorine contact basin to better control the formation of disinfection byproducts, potentially harmful compounds produced when organic material interacts with the chlorine used to disinfect the water.
- Improvements to our chemical systems to enhance their safety and reliability.



Current Orinda WTP Process

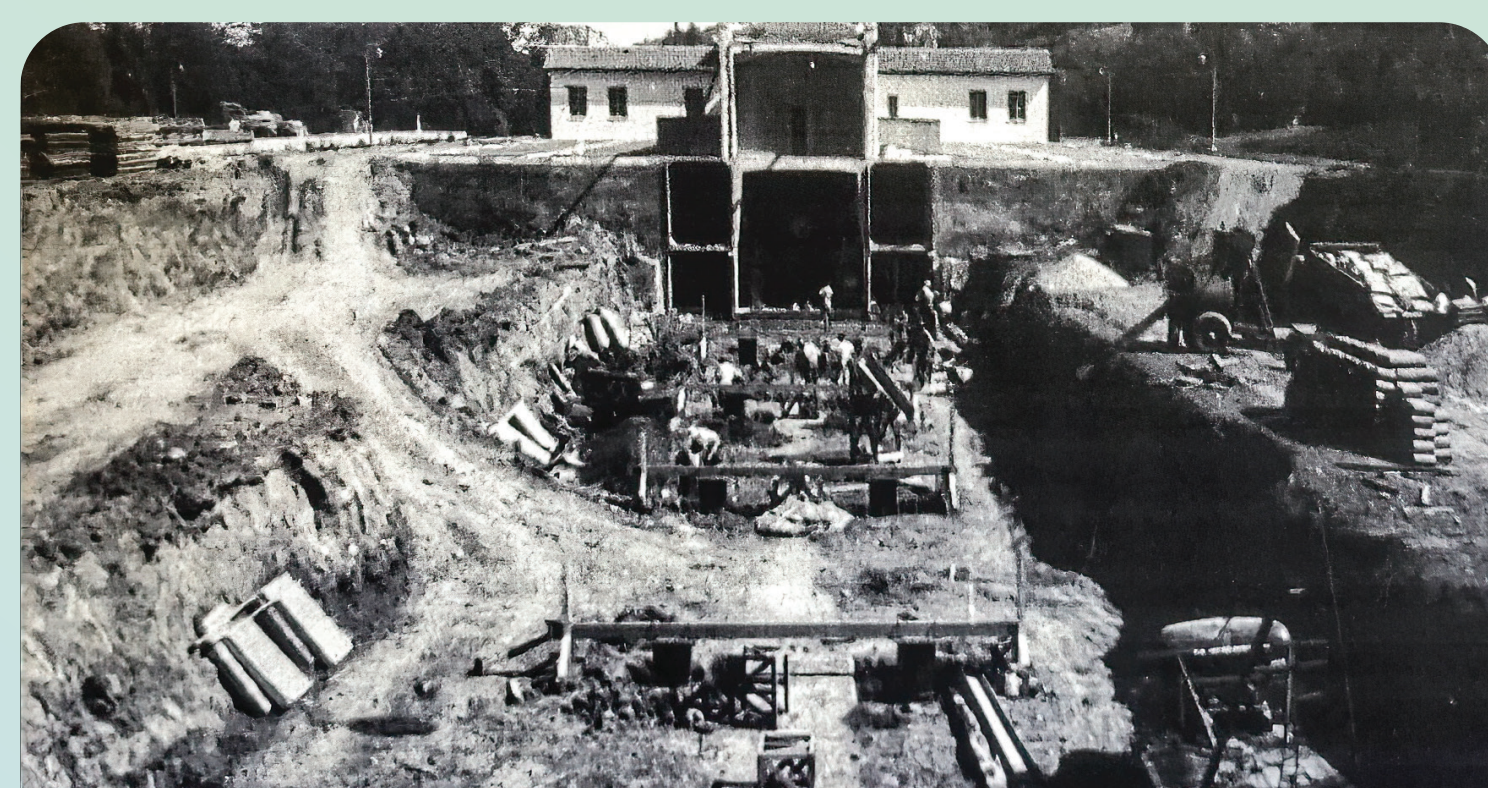


Orinda WTP Process After Project Completion



A Look Back

In 1923, the growing population of Alameda and Contra Costa counties voted to form the East Bay Municipal Utility District (EBMUD) to ensure a safe, reliable drinking water supply. This paved the way for the infrastructure we rely on today. For a century, EBMUD has remained a lifeline for East Bay residents and businesses, delivering high-quality water to more than 1.4 million customers every day.

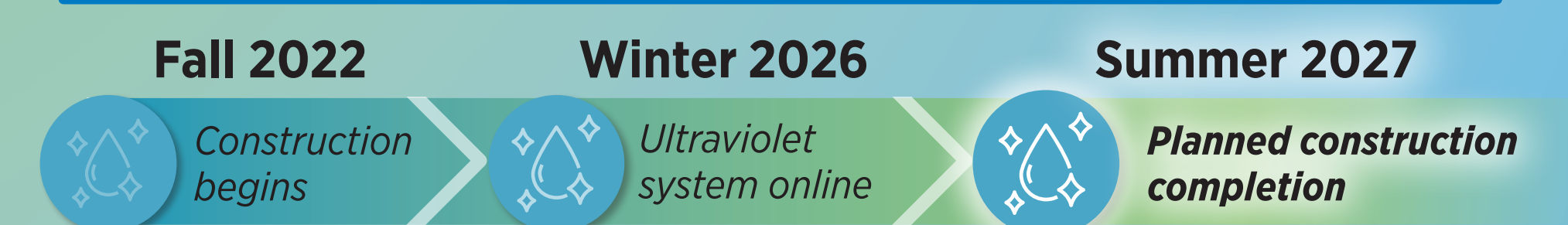


Looking Ahead

For almost a century, the Orinda Water Treatment Plant has treated Mokelumne River water through simple, proven filtration and disinfection steps. However, in the coming years, our source water quality will be affected by the impacts of

climate change, including more severe and frequent droughts, rising temperatures, algal blooms and wildfires. To adapt to these challenges, EBMUD is embarking on critical treatment process improvements to ensure clean, reliable water into the future.

Timeline



For more info

ebmud.com/ORWTPimprovements

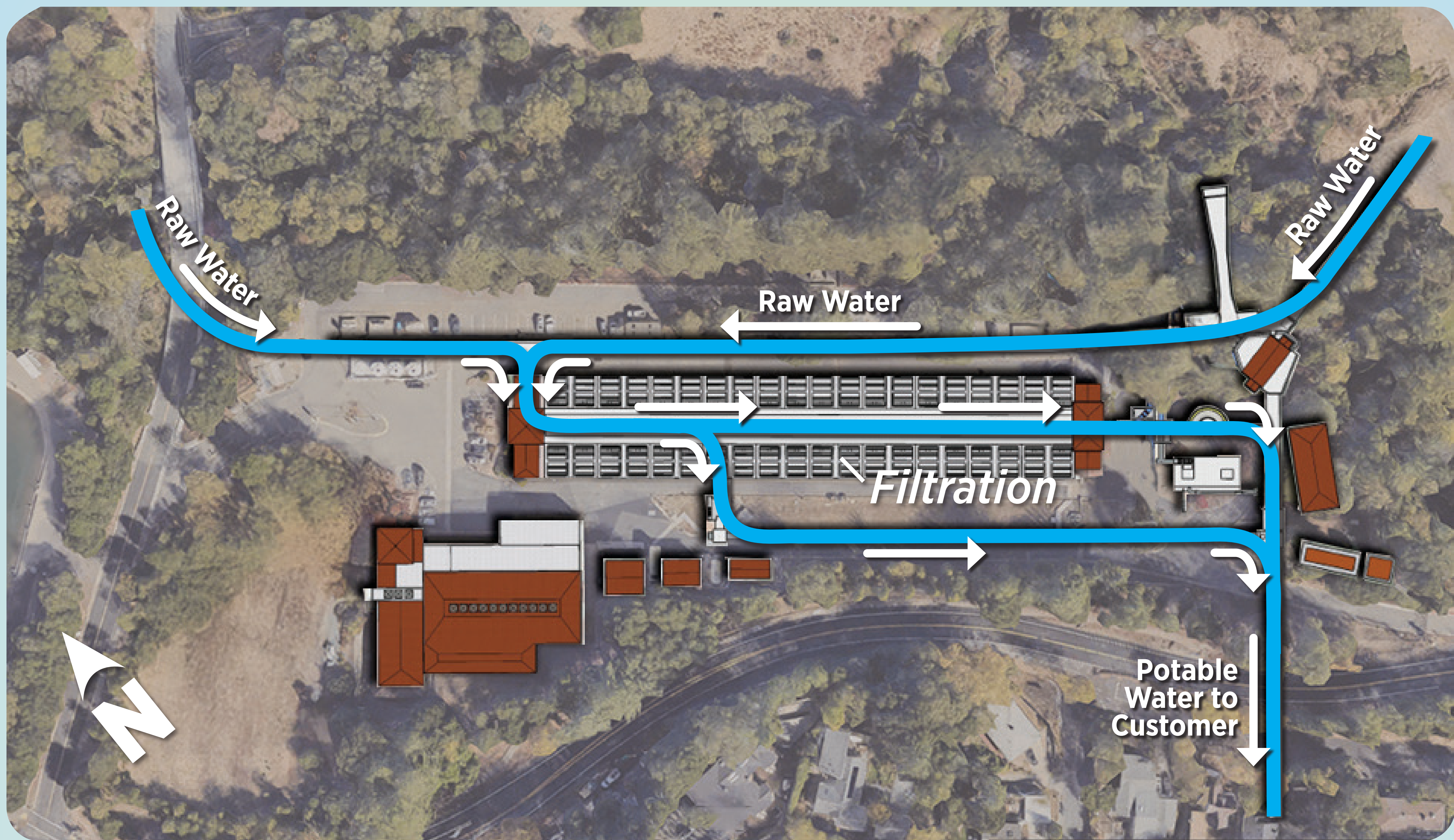


YOUR RATE DOLLARS AT WORK

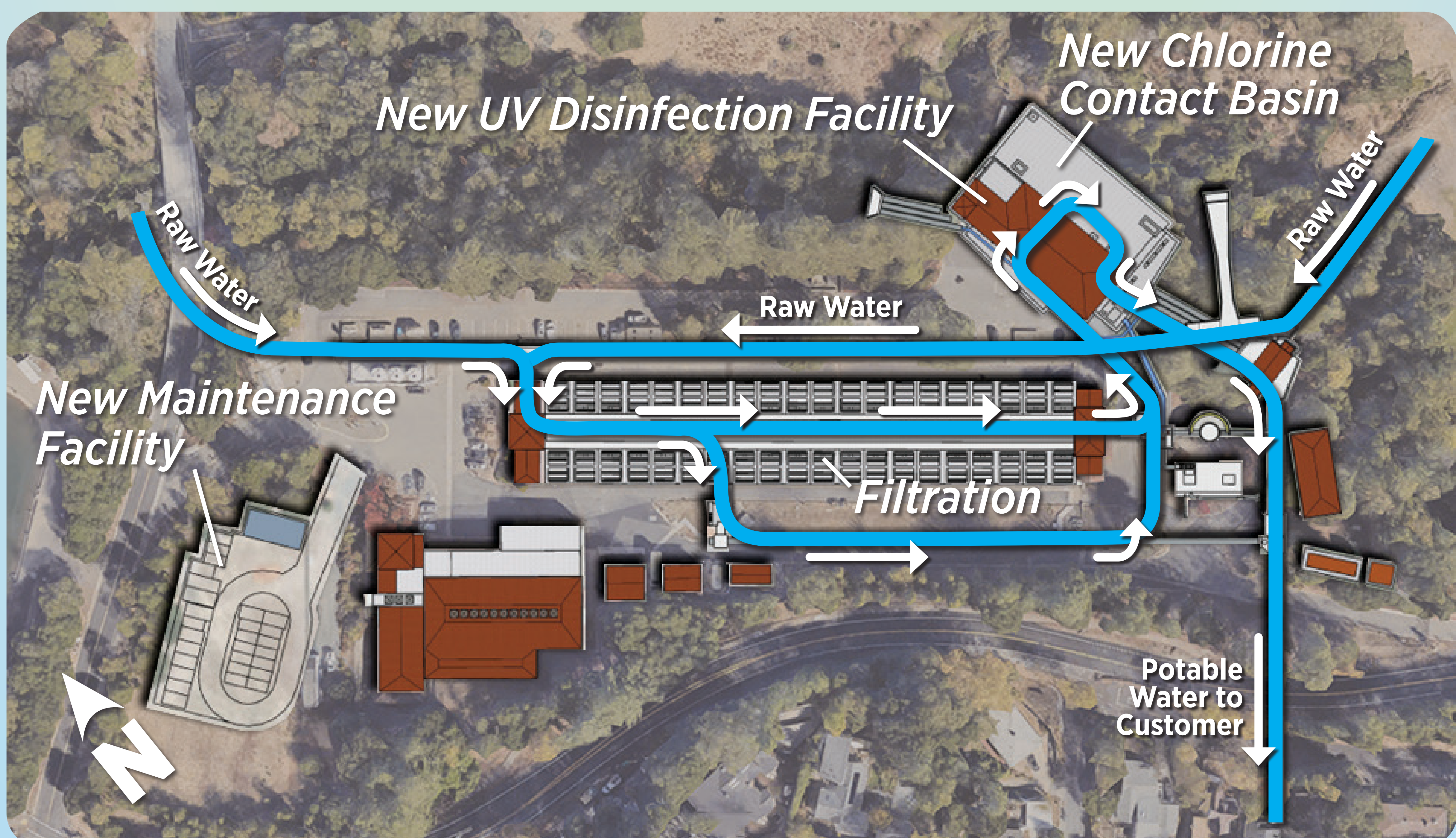
ORINDA WATER TREATMENT PLANT

Water Flow Changes

Current Water Flow Path



Water Flow Path After Project Completion



UV/CCB, January 2024



Secant Pile Wall

Excavation of the UV and CCB Facilities

UV/CCB, April 2025

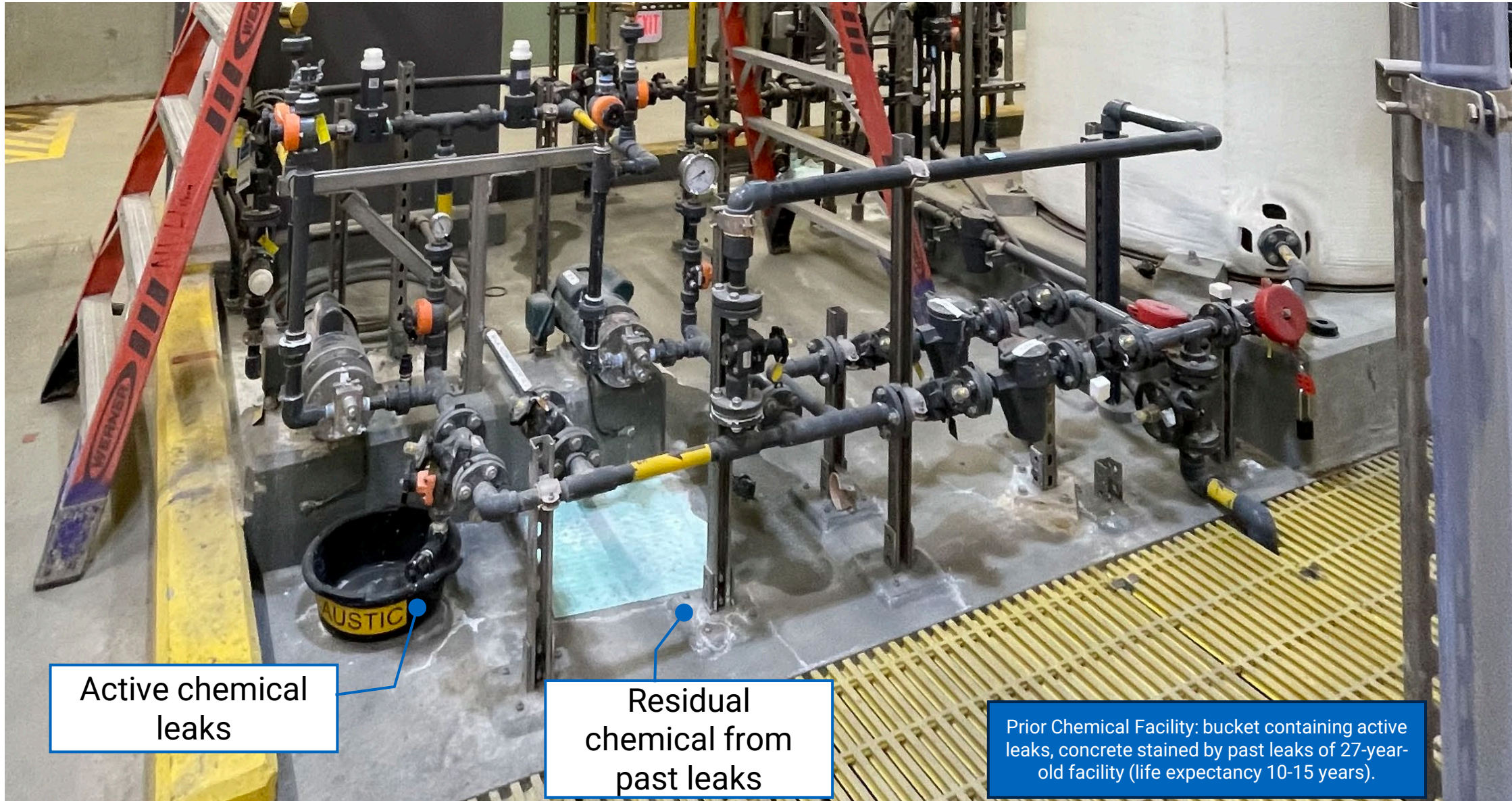


Chlorine Contact Basin

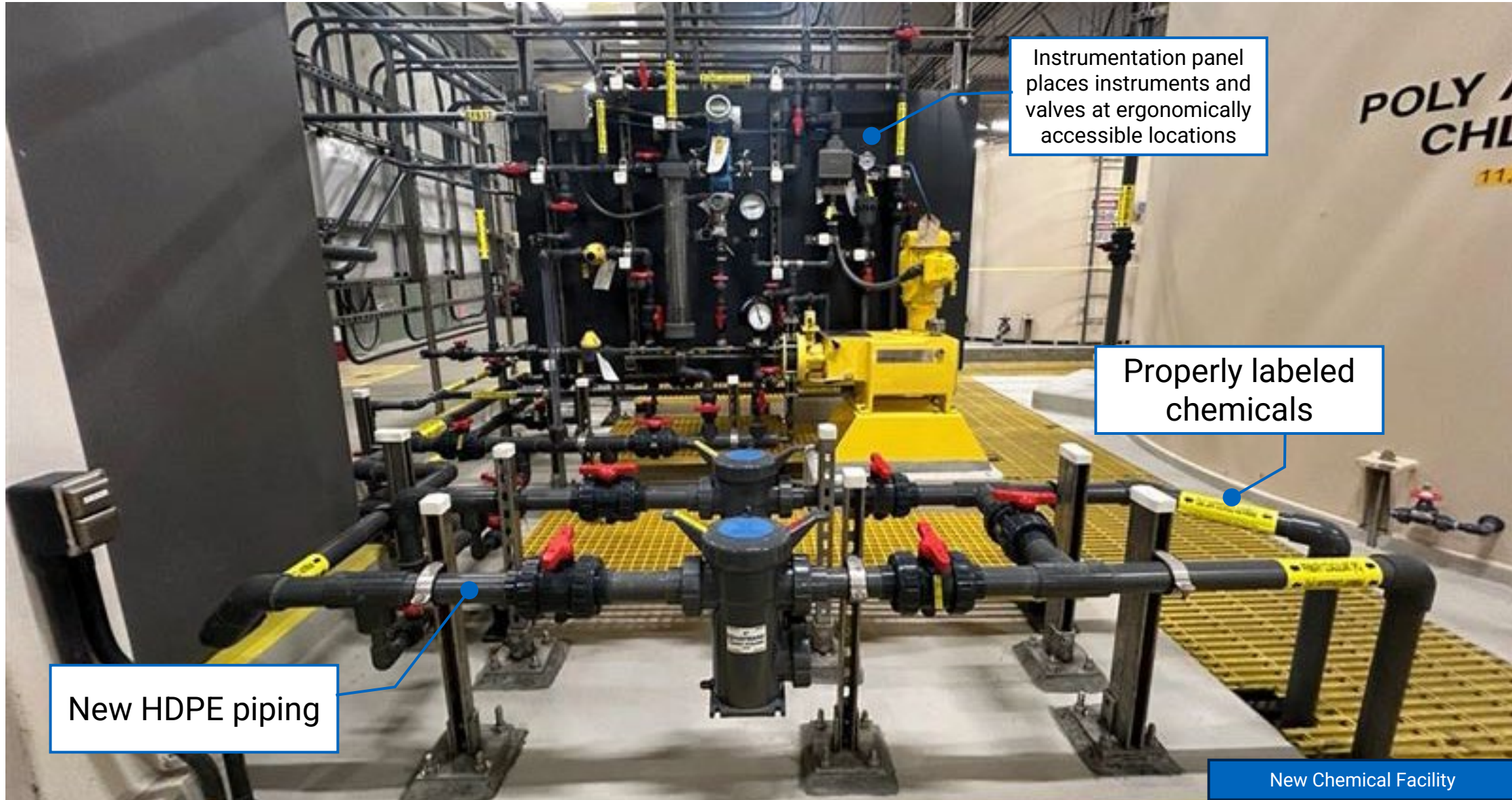
Ultraviolet Disinfection Facility

Construction of the UV and CCB Facilities

Chemical Building, pre-CSSIP



Chemical Building, CSSIP Phase 1



Instrumentation panel places instruments and valves at ergonomically accessible locations

Properly labeled chemicals

New HDPE piping

New Chemical Facility

Los Altos Pumping Plant, July 2023



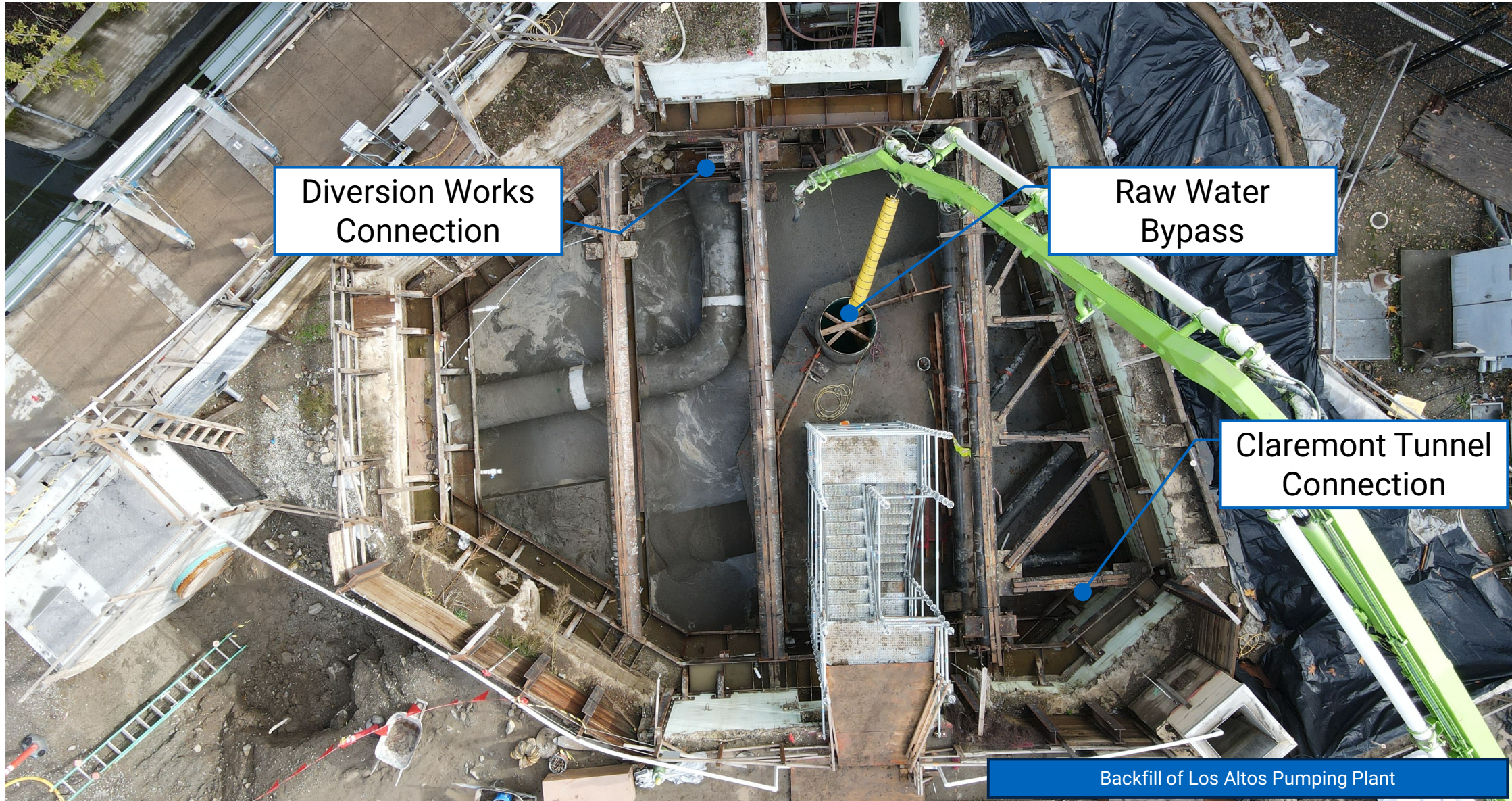
Demolition of Abandoned Los Altos Pumping Plant

Los Altos Pumping Plant, August 2023



Demolition of Abandoned Los Altos Pumping Plant

Los Altos Pumping Plant, December 2024





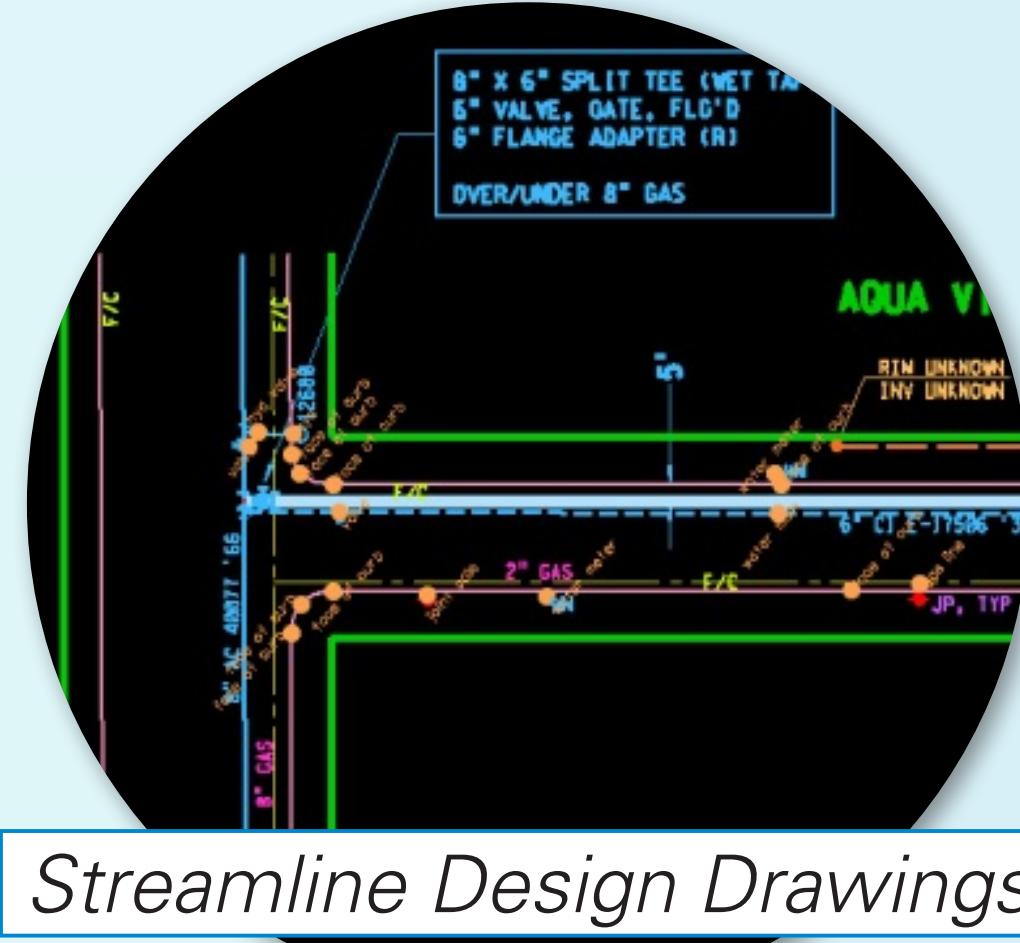
Reduce Main Breaks



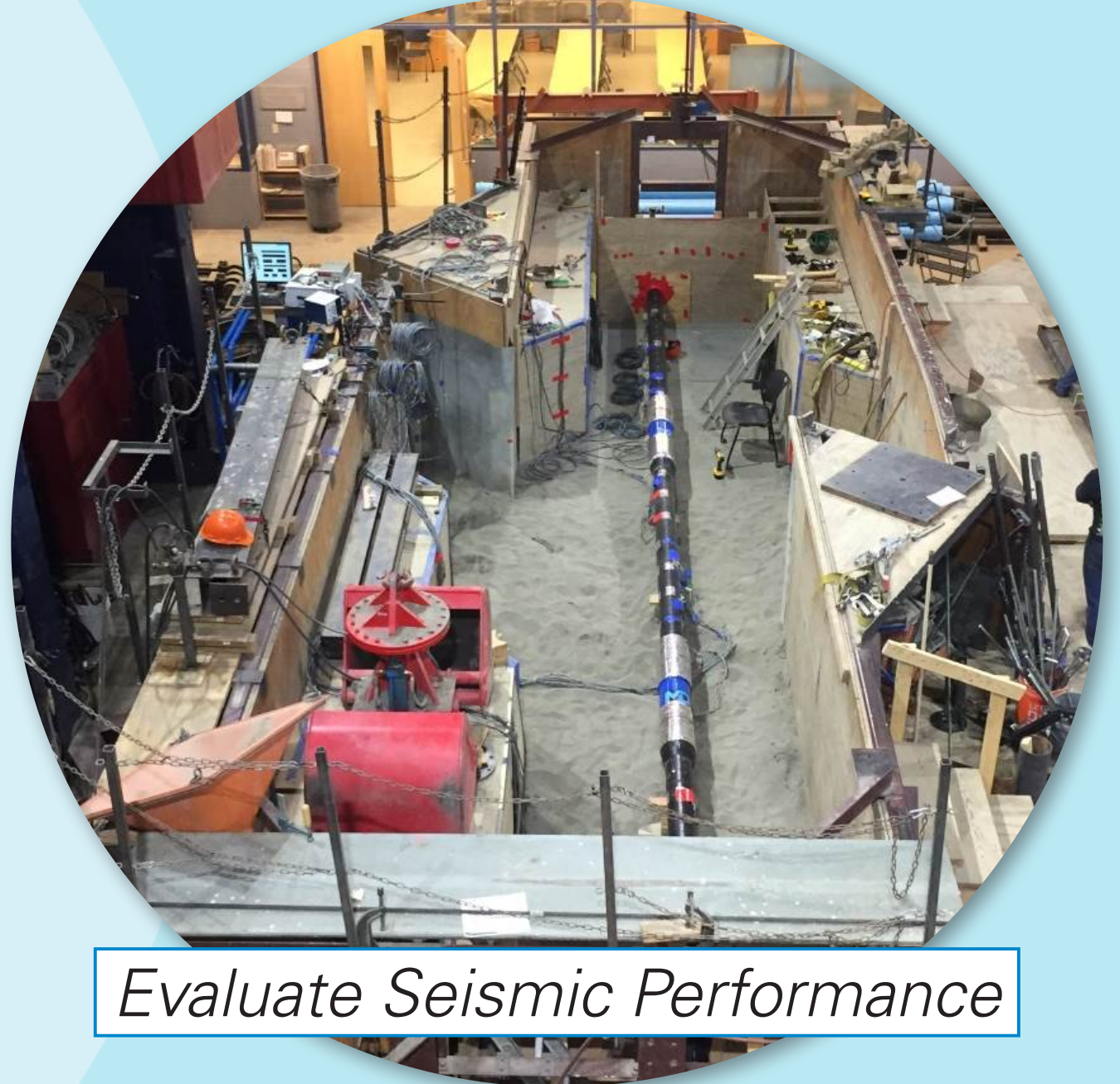
Perform Risk Analysis



Collaborate Across Divisions



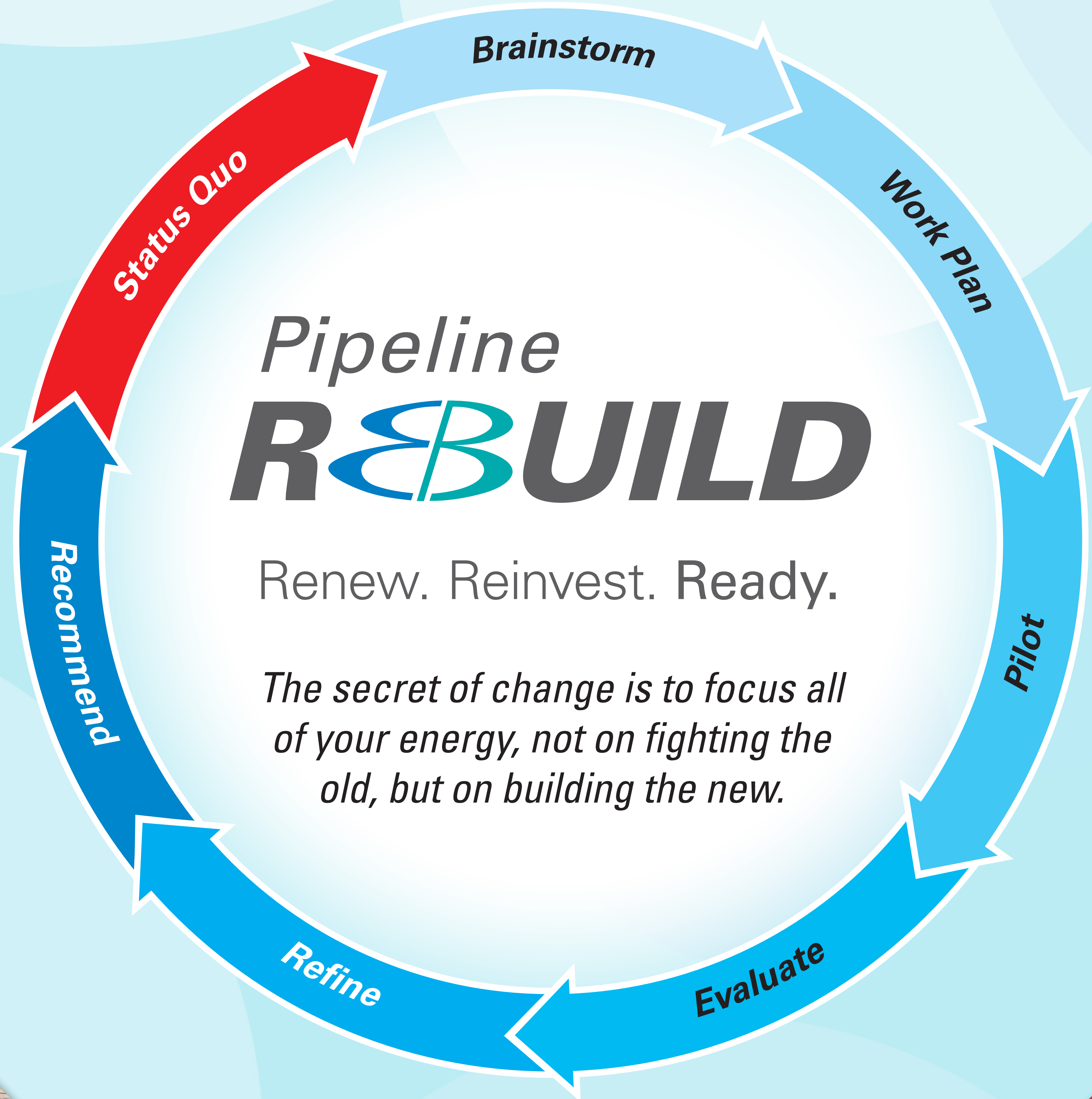
Streamline Design Drawings



Evaluate Seismic Performance



Assess Key Performance Indicators



Locate Utility Conflicts



Implement Sustainable Solutions



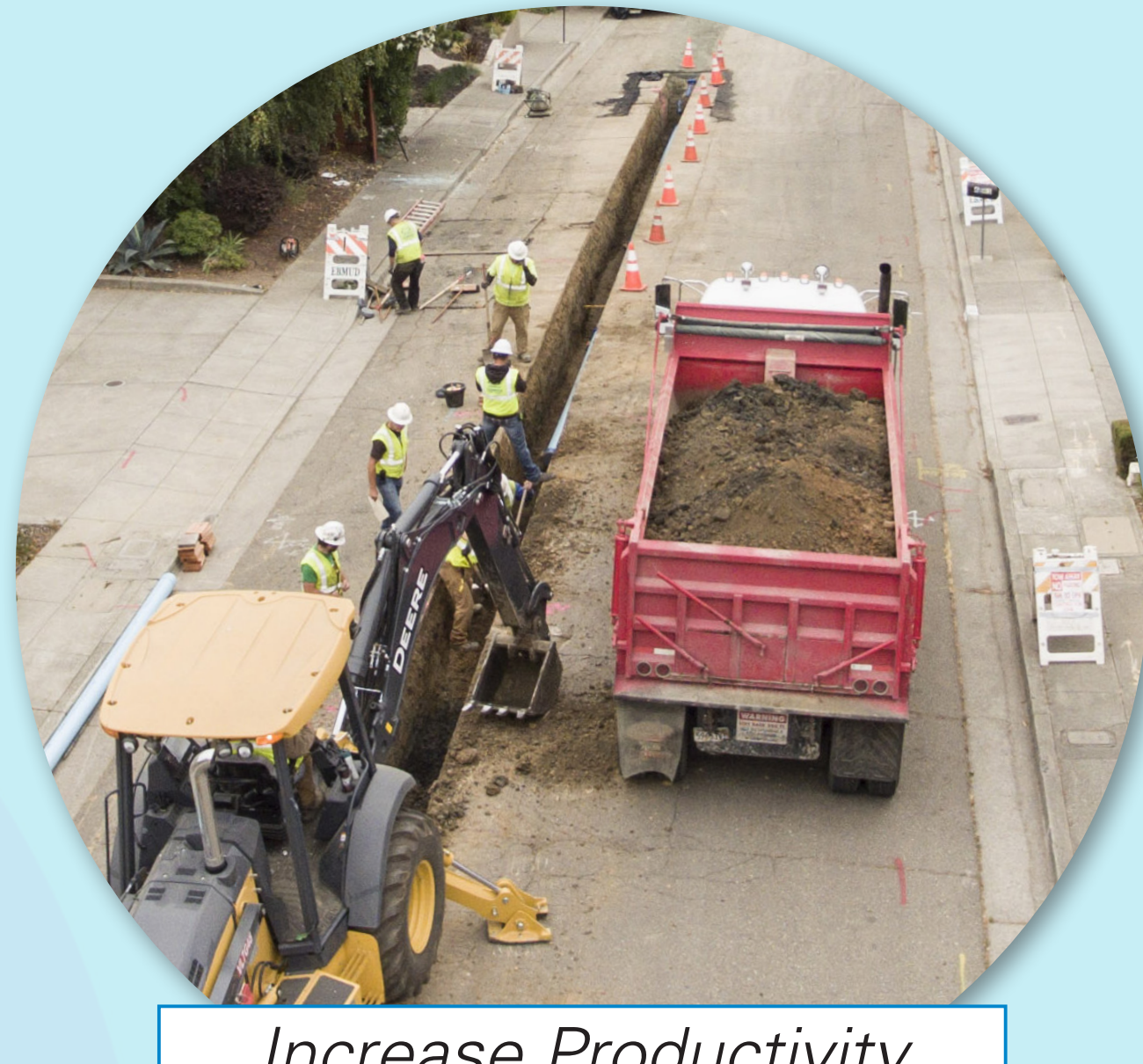
Pilot Trenchless Methods



Determine Construction Efficiencies



Map Assets Accurately



Increase Productivity



Renew with Cured-In-Place Pipe

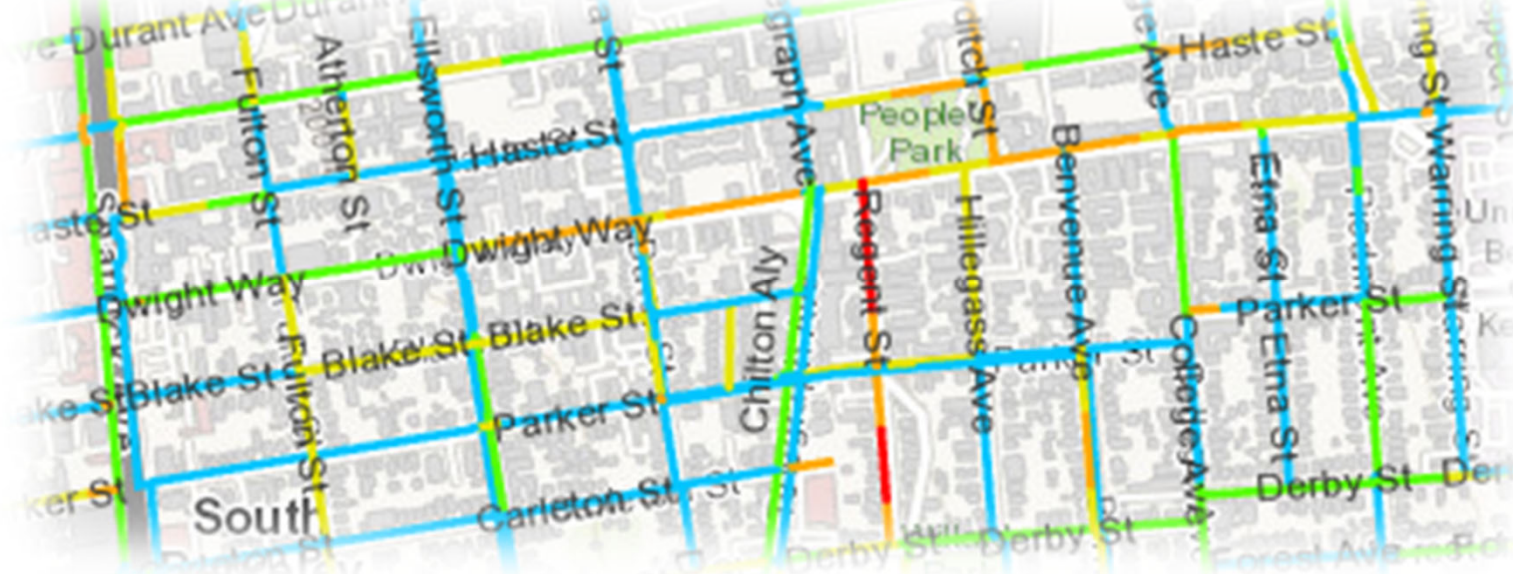
Condition Assessment of Water Distribution Pipelines Using Non-Linear Vibroacoustic Technology

Kingsley Kuang, P.E., East Bay Municipal Utility District

Background & Project Overview

East Bay Municipal Utility District (EBMUD) maintains approximately **4,000 miles of water distribution pipelines**, primarily from the **1930s to 1960s**, made of:

- Cast iron, cement-lined
- Mortar-lined and coated steel
- Asbestos cement



- EBMUD uses a **risk-based prioritization model** to select pipeline replacement projects, which uses leak history and pipe age to determine the Likelihood of Failure (LOF) for individual pipeline segments.
- Need to find ways to improve risk model to:
 - Further decrease leak rates in distribution system
 - Confirm pipeline replacement selections
 - Increase overall reliability of service
- Researched **non-invasive and non-destructive pipeline condition assessment** technologies and conducted a pilot project to verify their accuracy and scalability.

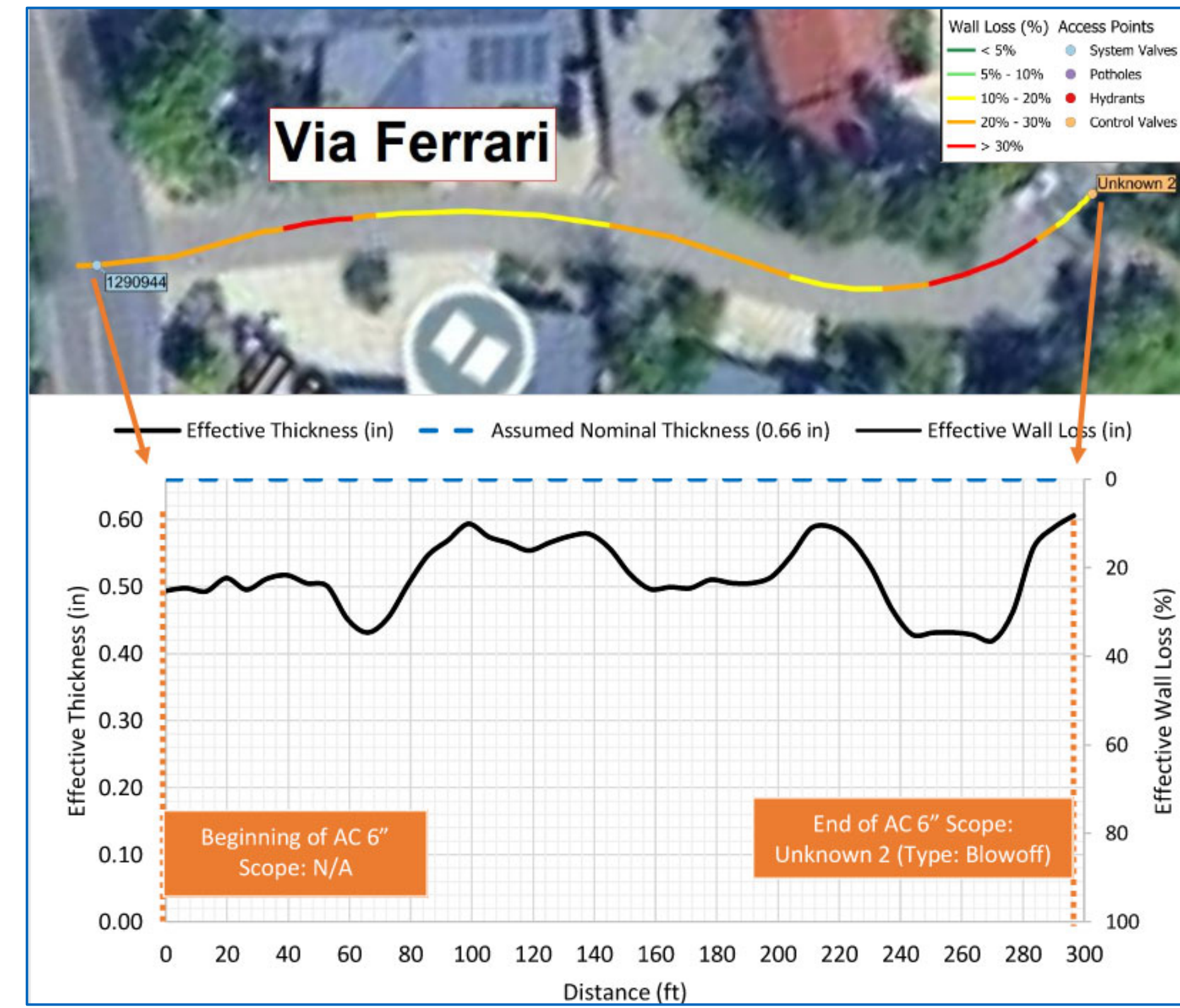


EBMUD contracted with KenWave Solutions, Inc. to provide leak detection and condition assessment services on ~7,000 feet of water distribution pipes with their non-invasive, non-destructive Dynamic Response Imaging technology.

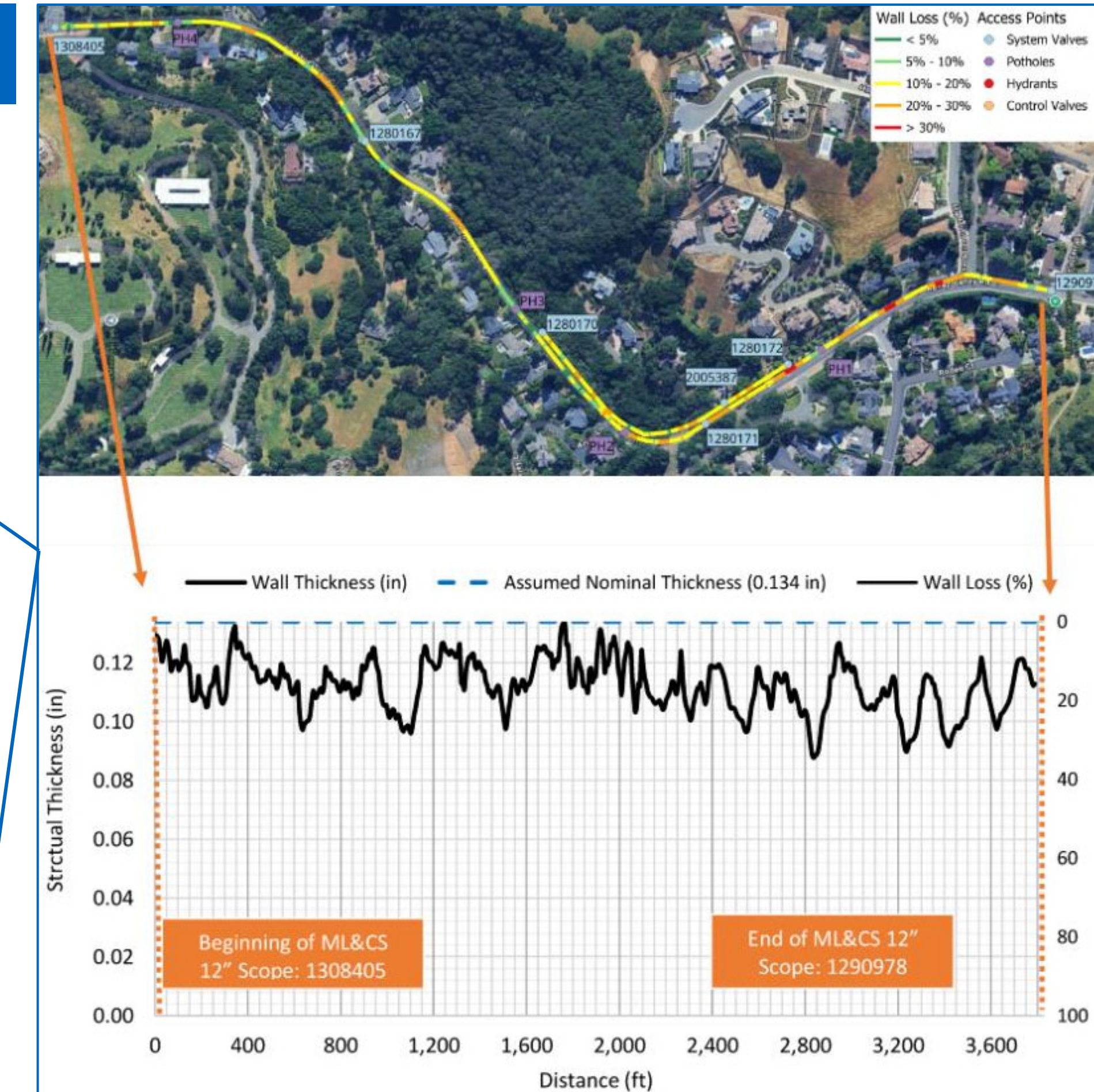
Condition Assessment Results

- Field work conducted in 5 working days.
- Preliminary results available 6 weeks after field work.
- Final report ready 3 months after field work.

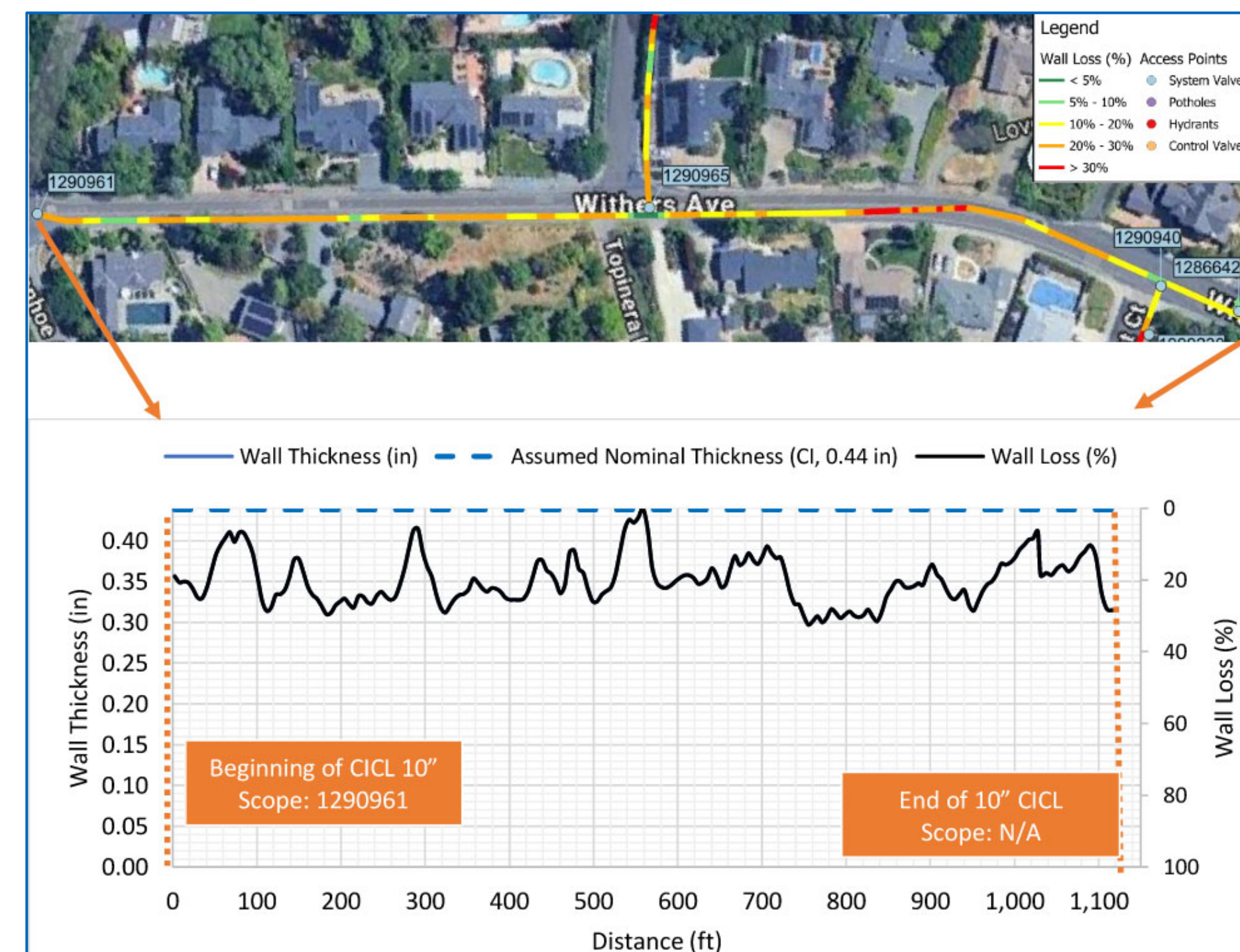
- Via Ferrari**
- 300 feet of 6-inch **asbestos cement**, installed in 1978
- Nominal thickness when new = 0.66"
- No active leaks detected.
- 8% to 36% wall loss.



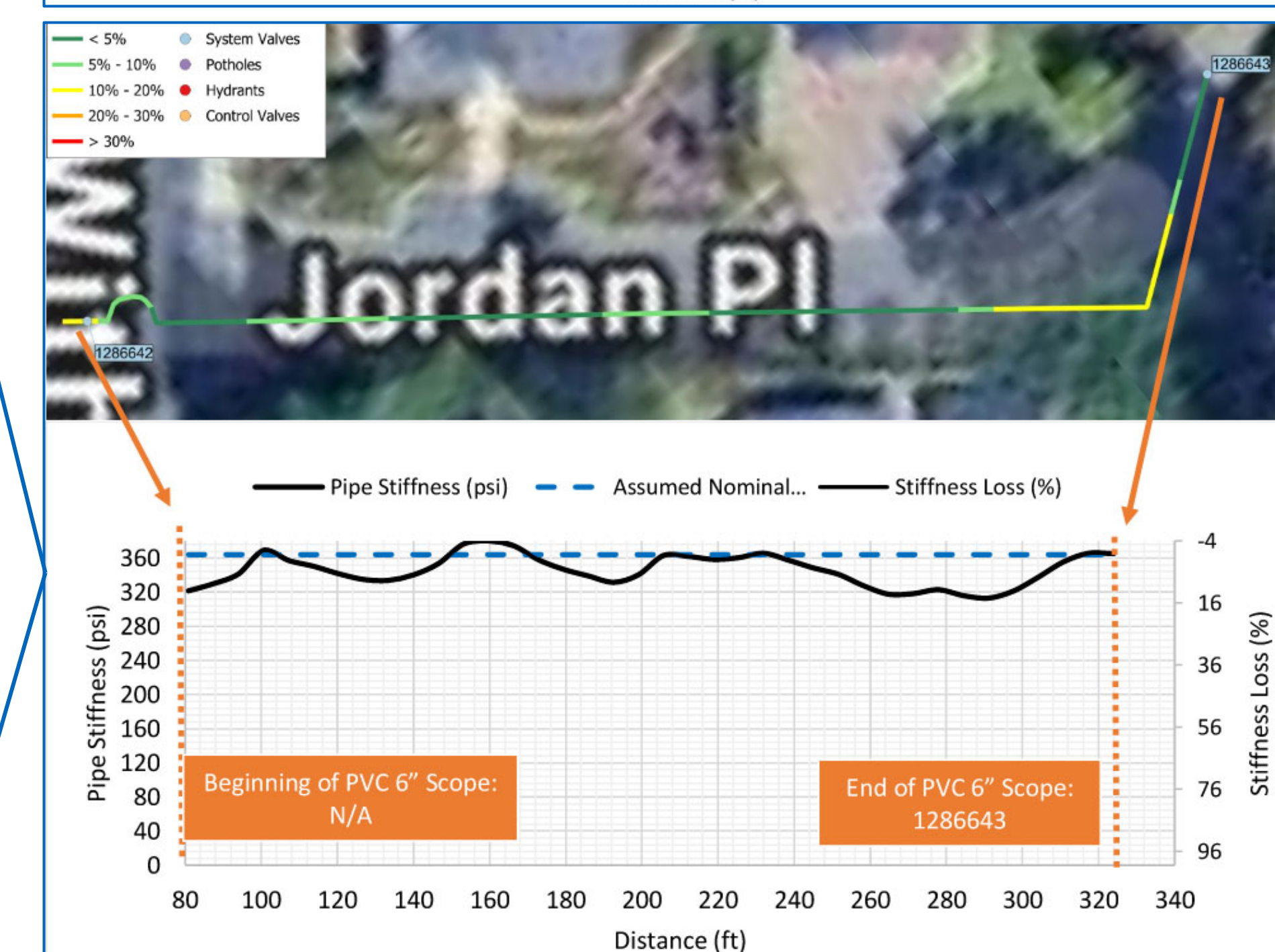
- Reliez Valley Road**
- 3,800 feet of 12-inch mortar-lined & coated **steel**, installed in 1957
- Nominal thickness when new = 0.134"
- No active leaks detected.
- 0% to 35% wall loss.



- Withers Avenue**
- 1,145 feet of 10-inch cement-lined **cast iron**, installed in 1951
- Nominal thickness when new = 0.44"
- No active leaks detected.
- 0% to 32% wall loss.



- Jordan Place**
- 220 feet of 6-inch polyvinyl chloride (**PVC**), installed in 2004
- Nominal stiffness when new = 364 psi
- No active leaks detected.
- 0% to 14% stiffness loss.

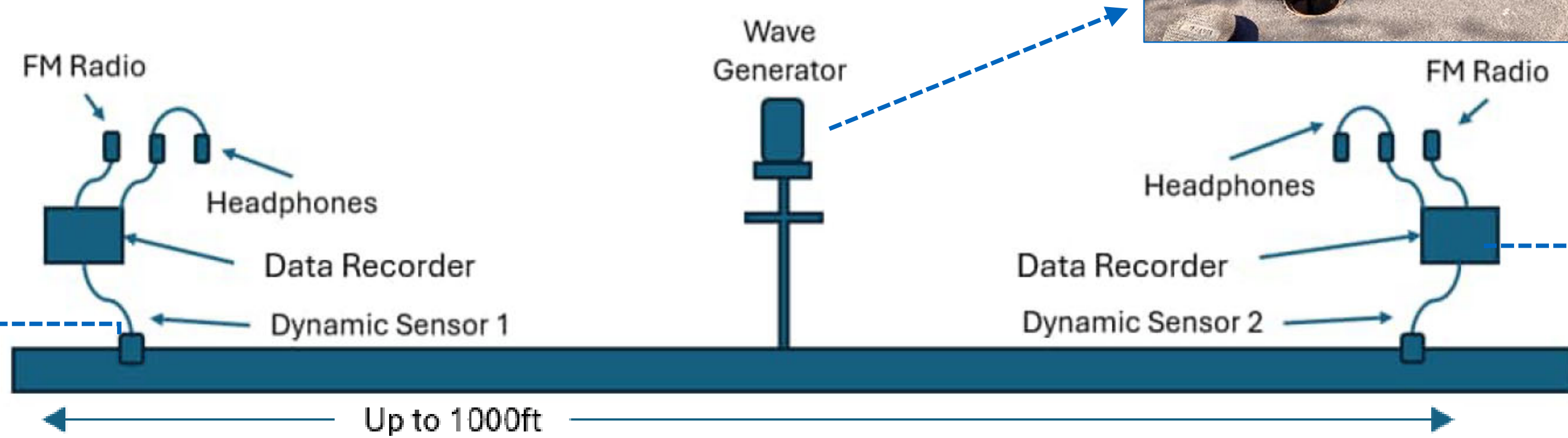


Methodology & Scope

KenWave's **Dynamic Response Imaging technology (DRI)** uses vibro-acoustics to excite the pipe at external access points such as hydrant valves, inline valves, and temporary potholes.



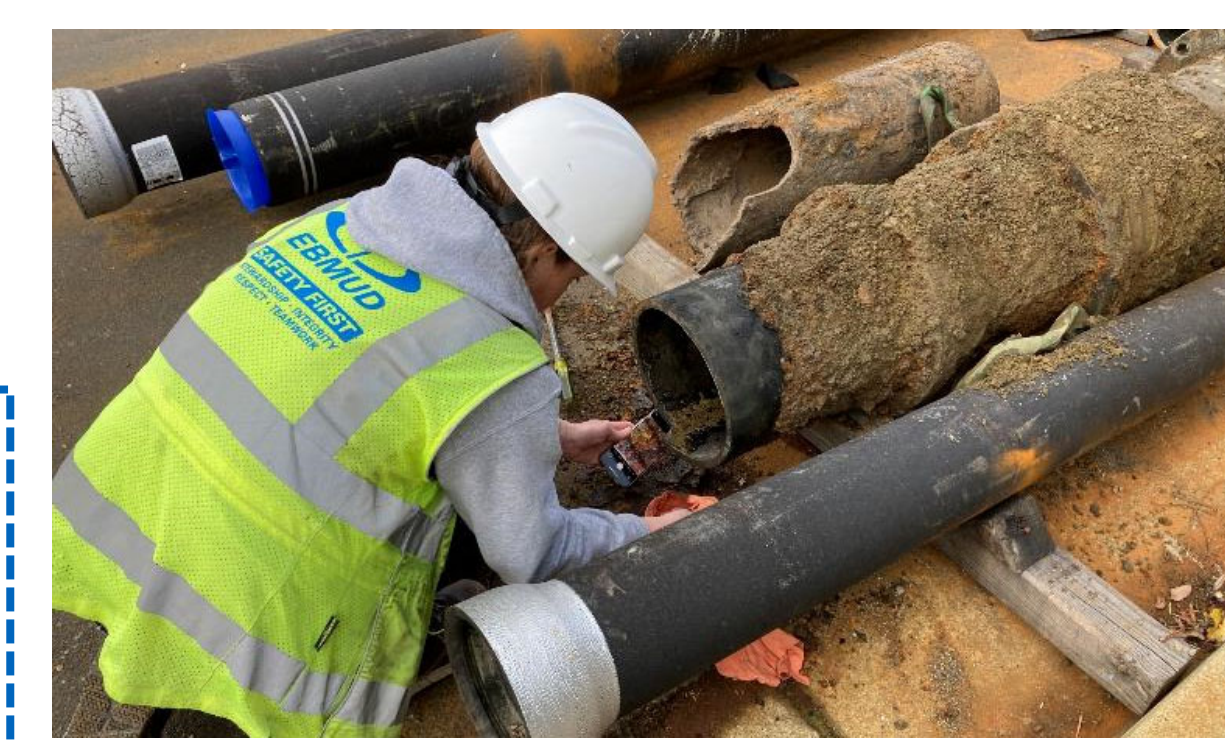
- Multiple resonance frequencies are introduced **into** the water column.
- Frequencies are then recorded at adjacent access points.
- Post-inspection analysis examines data to **determine leak locations and residual wall thickness at 6 to 12-foot resolution.**



Pipes Inspected

Street Name	Reliez Valley Rd	Reliez Valley Rd	Withers Avenue	Hannibal Dr	Beaumont Cr	Jordan Pl	Via Ferrari
Pipe Material	Steel	Cast Iron	Cast Iron	Asbestos Cement	Asbestos Cement	PVC	Asbestos Cement
Pipe Diameter	12"/6"	6"	10"	6"	6"	6"	6"
Installation Date	1941/1957	1941	1960	1964	1962	2004	1978
Inspection Length	3,800 ft	937 ft	1,145 ft	365 ft	280 ft	220 ft	300 ft

Evaluation & Conclusion



EBMUD collected physical thickness measurements of the inspected pipes and compared them to the condition assessment results.

- Potentially useful in quickly finding leaks over long segments of pipe.
- No disruptions to service** and equipment is simple to operate.
- Can be used as a **supplementary tool to existing risk model**, but difficult to implement across entire pipe system.
- Would benefit from greater data resolution** so weak points can be pinpointed and spot-repaired before a leak occurs.
- Required field support from EBMUD's in-house crews** for installing temporary access potholes, providing traffic control, and permitting.
- Difficult to validate results** because:
 - Results are presented as composite structural thickness of pipe, not the physical thickness that can be verified.
 - Validating would require owner to excavate and expose the existing main.



Correlation was **highest** with cement-lined cast iron and mortar-lined and coated steel pipe (i.e. **metallic pipe**)



Correlation was **inconclusive** with asbestos cement and PVC (i.e. **non-metallic pipe**)

Next Steps

- Continue **enhancing pipeline risk model** by using latest technologies, such as AI predictive modeling.
- Continue **replacing aging and leaky water distribution pipelines** and exploring technologies to improve construction efficiencies.
- Participate as a utility partner in **Water Research Foundation's RFP 5289: "Thinking Outside the Pipe: Comparison of Non-invasive, Non-destructive Condition Assessment Technologies for Distribution Pipe"**
- Conduct similar pilot projects** with other non-invasive, non-destructive condition assessment technologies to assess their accuracy and cost-effectiveness.

Acknowledgements



Featured Projects

New Dewatering Building

Influent Pump Station Resiliency Improvements

Secondary Clarifiers Rehabilitation Ph 4

Operations Center Rehabilitation

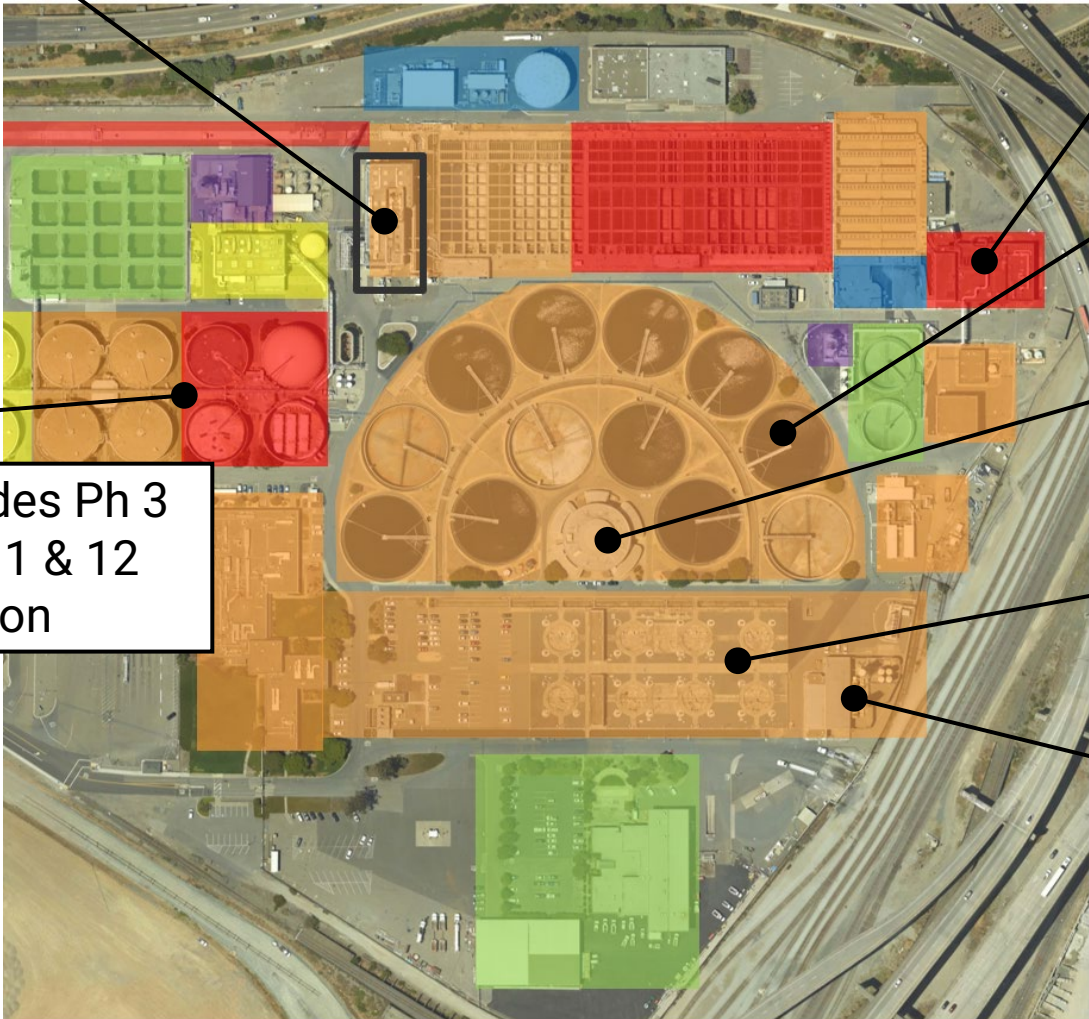
Secondary Reactors Rehabilitation Ph 2

Oxygen Plant Rehabilitation

Digesters Upgrades Ph 3 & Digesters 7, 11 & 12 Rehabilitation

COLOR LEGEND

- 1950s
- 1970s
- 1980s
- 1990s
- 2000s
- 2010s



Secondary Reactors Rehabilitation Ph 3

Project Objectives

- Rehabilitation of aging concrete, piping, and electrical equipment
- Upgrades for future nutrient removal requirements

Background

- Originally constructed in 1974
- Biological treatment of wastewater, mixed with pure oxygen
- 8 Reactors are each ~46 ft. wide, 184 ft. long, and 28 ft. deep
- Phase 1: Reactors 7 and 8 completed
- Phase 2: Reactors 5 and 6 in design

Challenges

- Construction limited to dry weather season with low flows
- Numerous shutdowns and operational coordination needed
- Rehabilitation of RAS pipe will require a temporary bypass
- Long valve procurement times

Schedule

- Design complete July 2026
- Construction complete December 2028



Inside Reactor. Concrete to be resurfaced & coated.



42" ø RAS pipe. Pipe will be repaired and relined.



Replace 18" ø Valve.



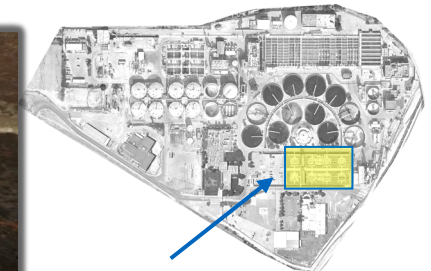
Corroded Concrete. Concrete aggregate exposed.



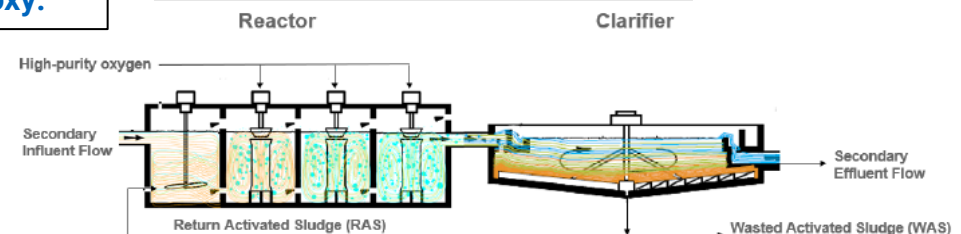
Cracks in the Reactor Deck. Cracks to be sealed with epoxy.



Corrosion on Welded Steel RAS Pipe Seams.



Project Area



Oxygen (O2) Plant Rehabilitation

Project Objectives

- Replace obsolete analog equipment with modern digital controls & automation
- Rehabilitate corroded piping and equipment
- Fire & safety protection upgrades

Background

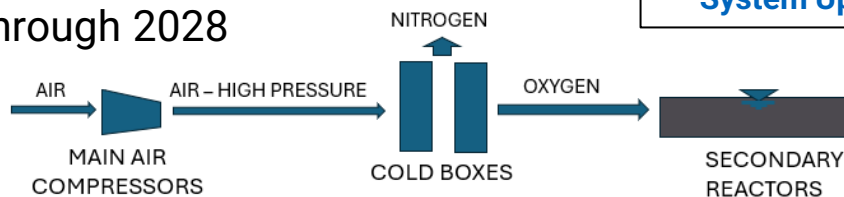
- O2 Plant constructed 1970s
- Cryogenic gas separation plant, with two equipment trains, producing pure O2
- O2 fed to reactors for secondary biological treatment.

Cost

- \$16 million construction

Schedule

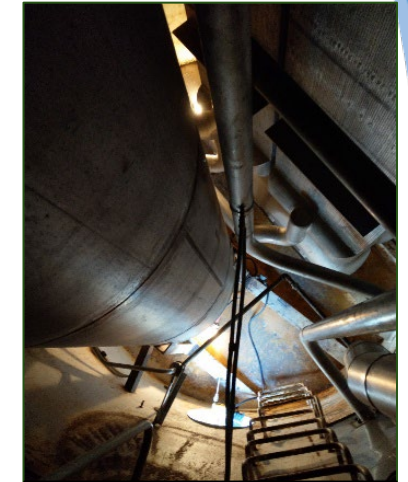
- Construction through 2028



O2 Plant with Cold Boxes (Towers) in Background



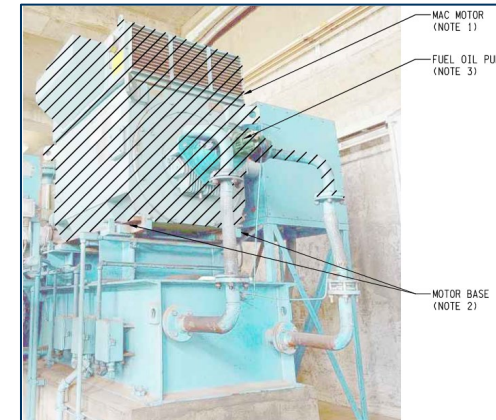
Cold Box Instrumentation Upgrades & Recoating



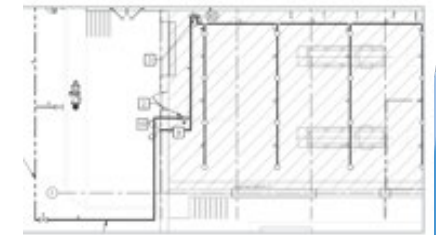
Cold Box Interior Insulation Replacement



Electrical & Control System Upgrades



Air Compressors' Motor Replacement



Fire Protection & Safety Systems Upgrades

Secondary Clarifiers Rehabilitation Ph 4

Project Objectives

- Rehab 2 of 12 clarifiers
- Replace clarifier equipment and rehabilitate bridge
- Resurface concrete surfaces
- Reline buried and deteriorated Return Activated Sludge (RAS) pipe
- Install new sump pits to improve drainage

Challenges

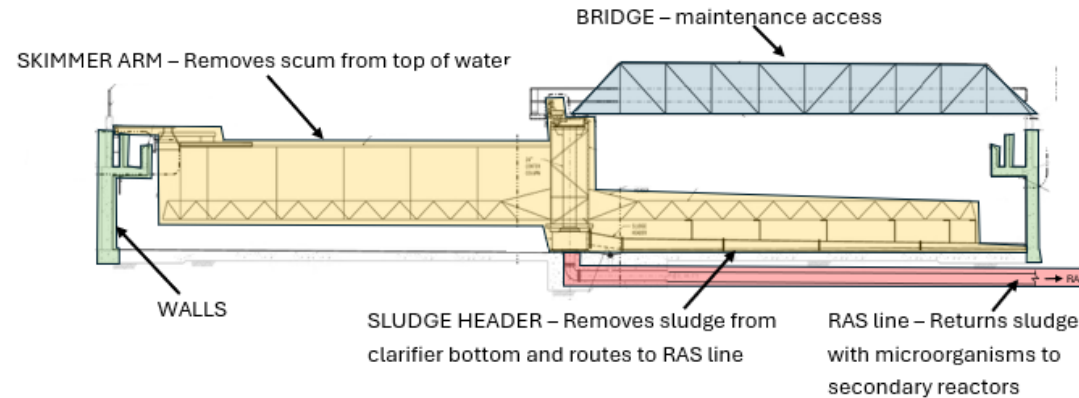
- Work limited to dry weather season, April to October
- Long lead time for clarifier equipment & subject to delays – District prepurchase

Cost

- \$6.8 million construction

Schedule

- Operational completion by Nov. 2025



Project Area



Clarifier in Operation



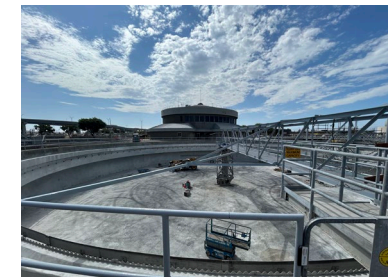
Concrete Wall Resurfacing



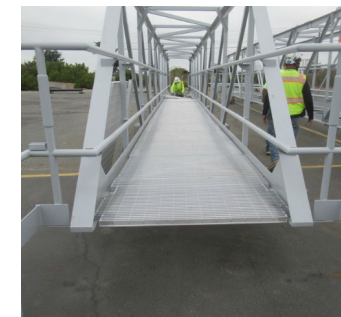
Original Bridge



Drained Clarifier Before Rehabilitation



Installing New Clarifier Equipment



Rehabilitated Bridge

Operations Center Improvements

Project Objectives

- Asbestos abatement
- Roofing & insulation
- Lunchroom expansion
- Plumbing, HVAC, lighting, electrical and fire suppression upgrades
- Interior architectural renovations, carpets, floors and furniture
- Elevator modernization

Background

- Originally constructed 1973
- Primary control room and emergency operations center for plant
- 24/7 operations

Cost

- \$7 million construction

Schedule

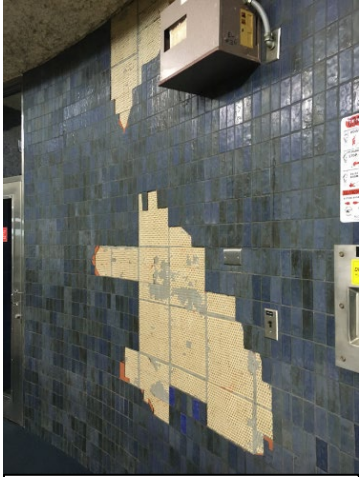
- Completion by Dec. 2025



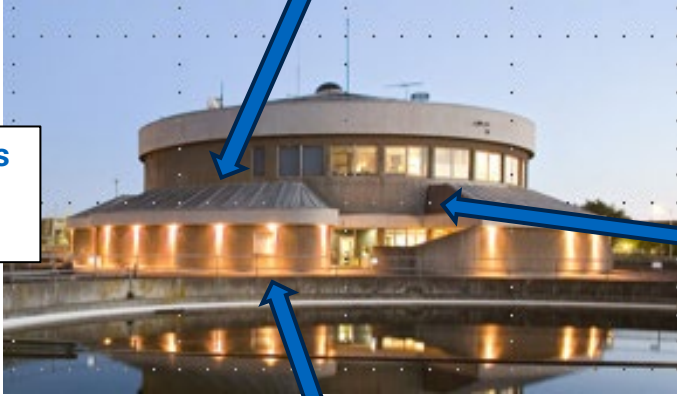
Demo Existing Roof



Install New Membrane Roofing



Interior Failing Ceramic Tile



Operations Center Building



Exterior Framing for Expanded Lunchroom

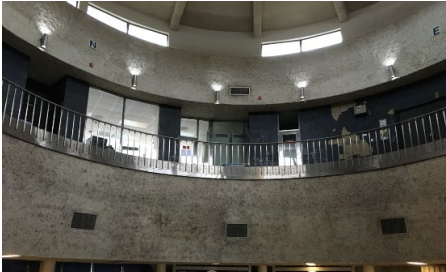


Exterior Expanded Lunchroom



Interior 2nd Floor Tile Replacement

Operations Center Improvements



Interior Mezzanine – Original



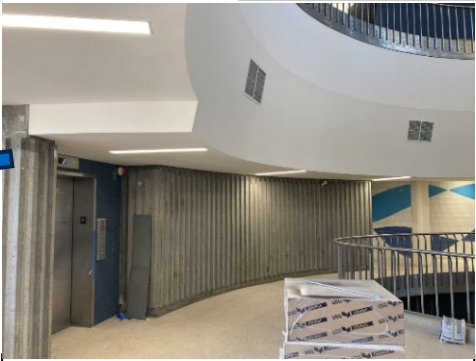
Interior Lobby – Original



Operations Center Building



Interior Mezzanine - Upgraded



Interior Lobby – Upgraded



Interior 1st Floor – Original Lunchroom



Interior 1st Floor – Expanded Lunchroom

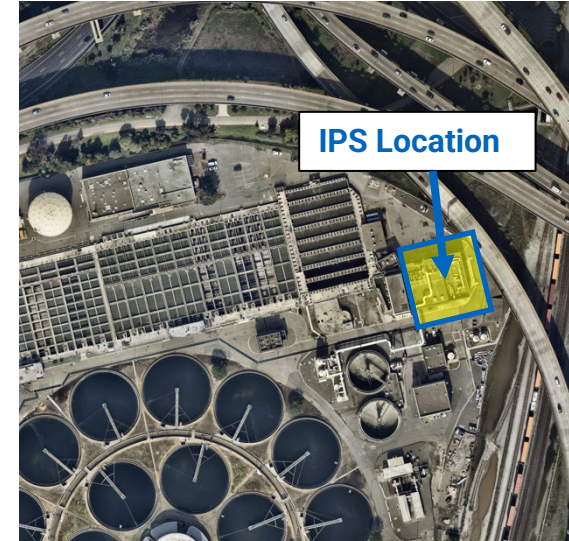


Interior 2nd Floor – Original Control Room



Interior 2nd Floor – Upgraded Control Room

Influent Pump Station (IPS) Resiliency Project



Project Objectives

- Resiliency improvements to quickly recover service after a seismic or power outage event
- FEMA grant funding up to \$28M

Background

- Constructed in 1951
- Average daily flow: 50 MGD
- Peak flow: 390 MGD

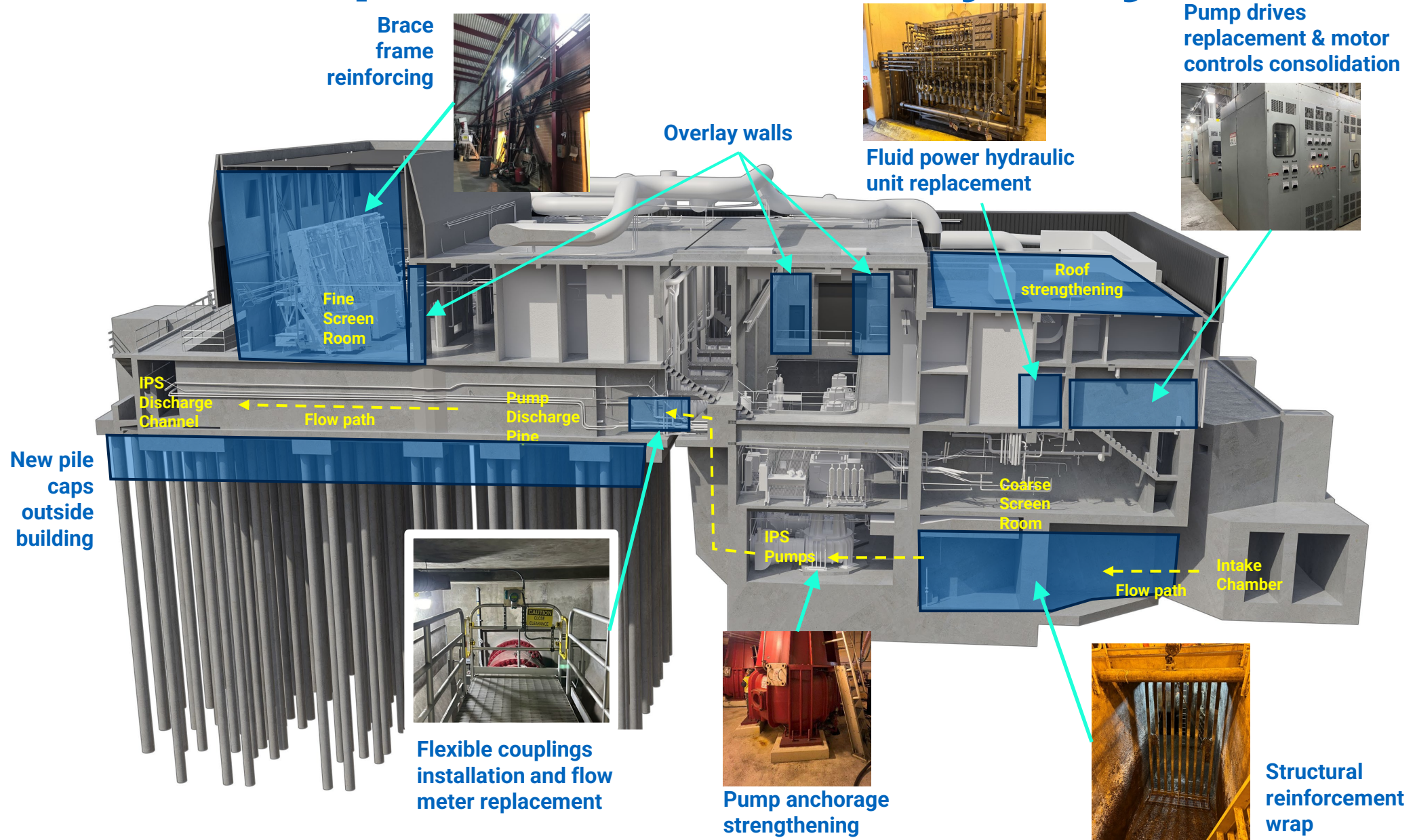
Challenges

- Facility must stay in service during construction
- Coordination between seismic and electrical work
- Tight spaces and limited shutdowns allowed
- Grant funding reviews may impact schedule

Schedule

- Design completion – Nov 2026
- Construction – 2028 to 2032

Influent Pump Station Resiliency Project



MCC =

Digester Upgrades Phase 3

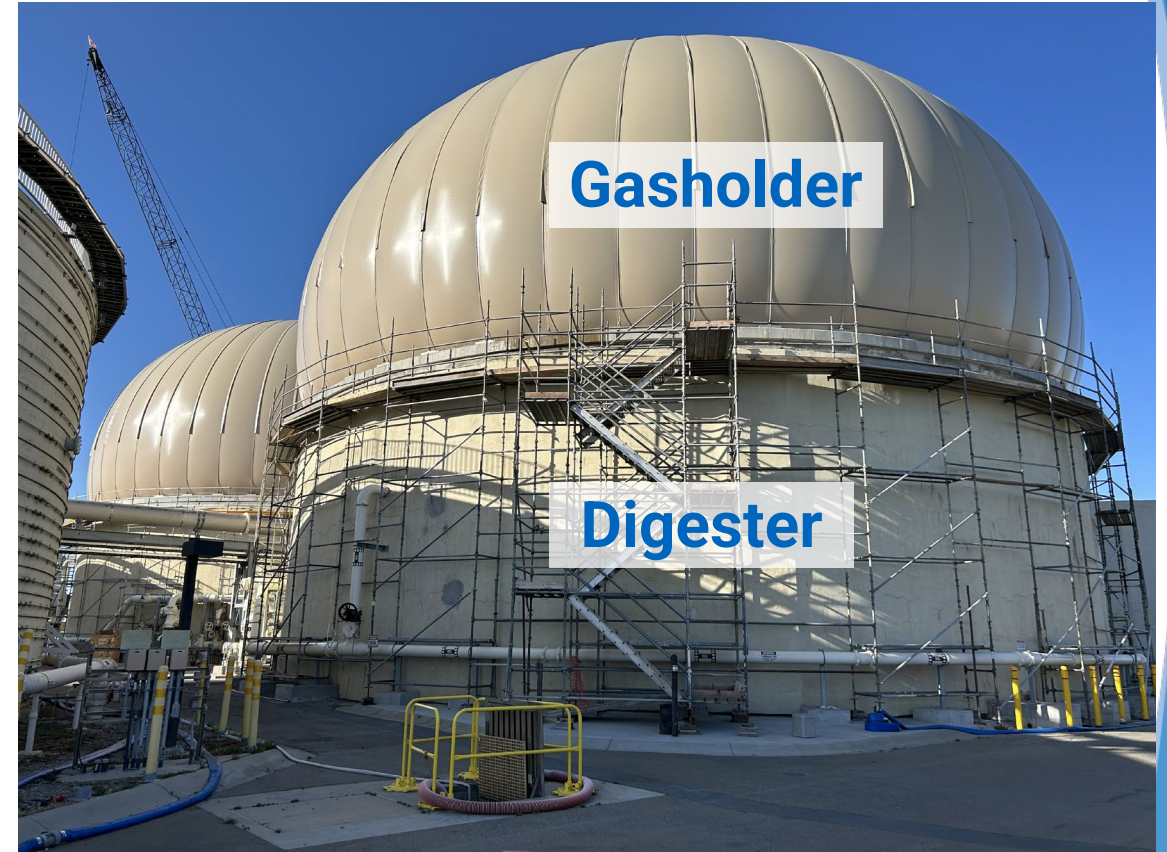
Project Objectives

- Gasholders to store biogas
 - Dampens peaks in gas production – less flaring and more energy production and income
 - Store gas for weekends when less trucked waste delivered
- Sludge pumped mixing system
 - Less accumulation of sand/grit in digester
 - Less wear on dewatering centrifuges
- Seismic upgrades for digester structure

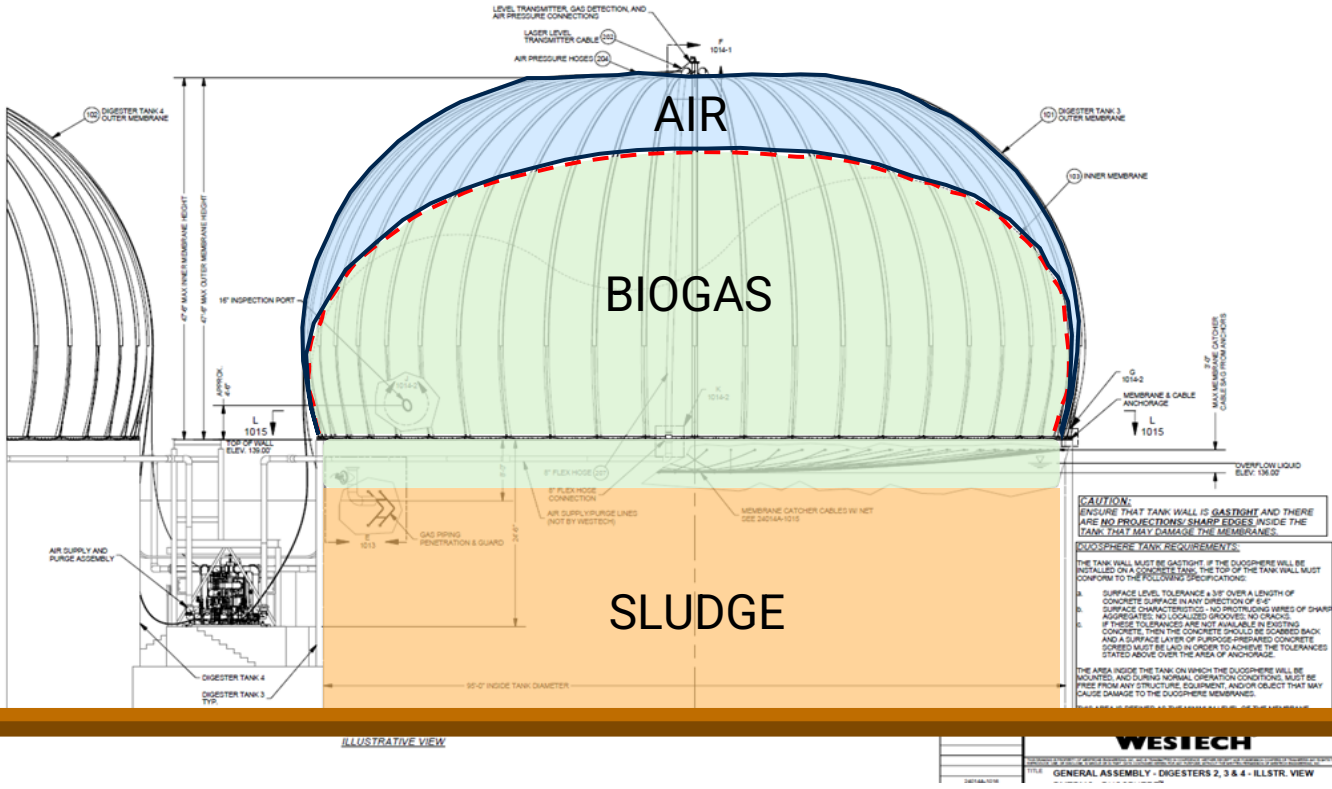
Cost ~\$35M

Schedule

- Construction completion Dec. 2025
- Phases 1 and 2 – Improved sludge mixing, new fixed roofs, overhead gasholder
- Future Phase 4 (in 4 to 5 years) – Gasholder for 3rd digester, sludge mixing, seismic upgrades (\$15-20M)



Digester Upgrades Phase 3



Digester with Gasholder



Digester 7, 11 & 12 Rehabilitation

Project Objectives

- Remove and replace coatings on interior walls and ceiling
- Roof repairs
- New overflow temperature sensors
- New wiring and control equipment for Digester flares
- New gas monitors
- New chlorine feed system

Background

- Digesters between 50 and 75 years old and highly corrosive conditions
- Major part of Resource Recovery Program

Cost

- \$10M construction cost

Schedule

- Construction through early 2029



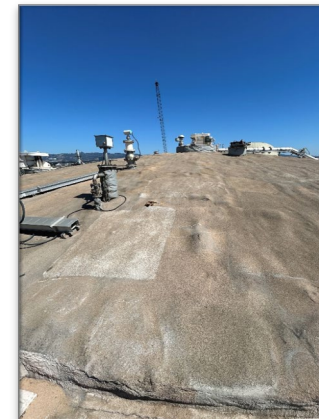
Typical Primary Digester



New Overflow Temperature Sensors



Remove and Replace Existing Interior Coatings



Repair Roof Insulation



New Wiring and Controls for Flares

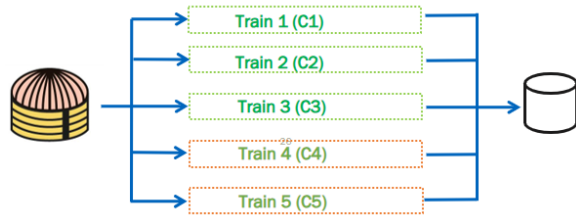
Dewatering Improvements Project

Existing Building



Obsolete Equipment

Frequent Equipment Breakdown
7,000 hours of corrective maintenance annually

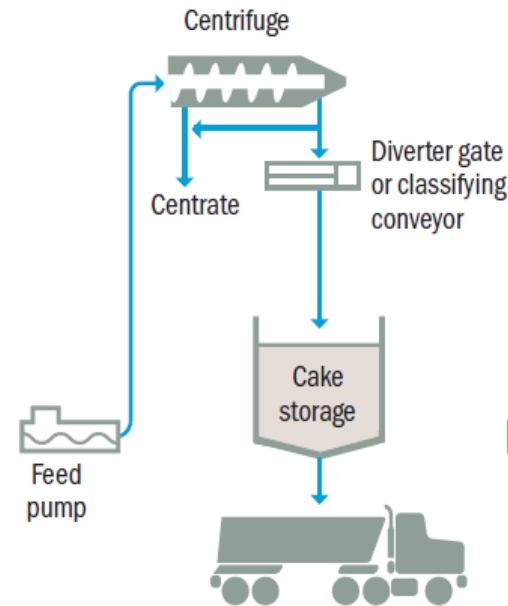


Lack of Process Train Interconnections

**Inefficient design,
 prone to more failures**

New Building

- Simplified process configuration
- Fewer components, less chance for failures
- Process trains interconnectivity
- Increased cake storage volume



**Simpler design, fewer components,
 more reliable**

