City of Cincinnati

801 Plum Street
Cincinnati, OH 45202

Agenda - Final-revised

Climate, Environment & Infrastructure

Councilmember Meeka Owens, Chairperson
Councilmember Mark Jeffreys, Vice-Chair
Councilmember Jeff Cramerding, Member
Councilmember Seth Walsh, Member

Tuesday, February 11, 2025 **10:00 AM** **Council Chambers, Room 300**

ROLL CALL

PRESENTATIONS

Greater Cincinnati Water Works Update

Interim Director - Andrea Yang

AGENDA

1. 202500246 **PRESENTATION** submitted by Sheryl M. M. Long, City Manager, dated 2/11/2025, regarding Greater Cincinnati Water Works Project Updates.

Sponsors: City Manager

Attachments: Transmittal
Presentation

ADJOURNMENT

city of CINCINNATI
Interdepartment Correspondence Sheet

February 11, 2025

TO: Climate, Environment and Infrastructure Committee

202500246

FROM: Sheryl M. M. Long, City Manager

SUBJECT: Presentation-Greater Cincinnati Water Works Project Updates

---

Attached is the presentation prepared for the Climate, Environment and Infrastructure committee.

cc: Andrea Yang, Interim Executive Director

Greater Cincinnati Water Works Project Updates

Climate, Environment, & Infrastructure Committee
February 11, 2025

A Service of The City of Cincinnati

GREATER CINCINNATI
WATER WORKS

Today's Agenda:

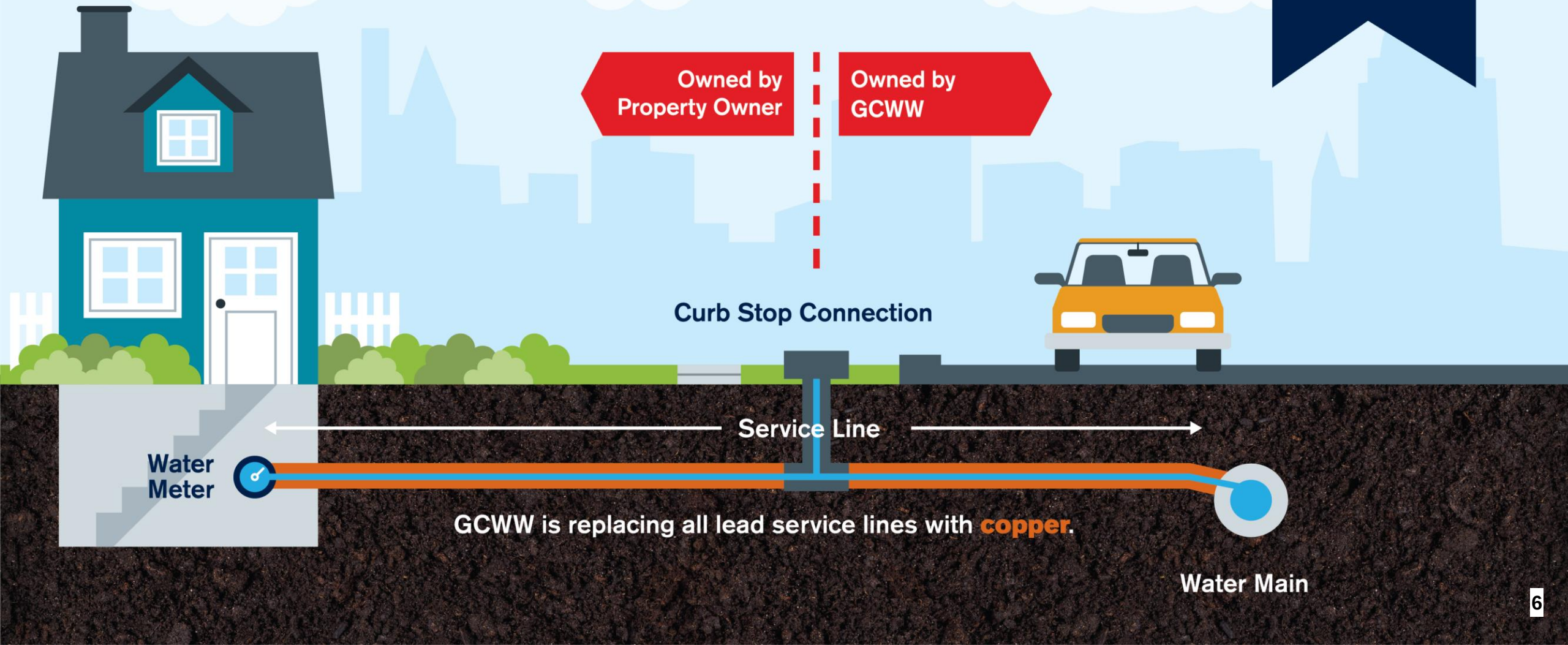
- Lead Replacement Program
- Mount Airy Tanks Rehabilitation
- Greater Cincinnati Water University
- Q&A

Lead Replacement Program

Greater Cincinnati Water Works (GCWW)

Lead Service Line Replacement Program

GCWW is committed to providing **clean, safe drinking water** to all customers.



Use of Lead for Service Lines

- Lead was commonly used for plumbing throughout the nation in pipes and fixtures
- Potential to enter drinking water as plumbing material corrodes
- Primary risk of lead exposure in drinking water is from the service line if made of lead

Dangers of Lead Exposure

Symptoms in Newborns

- Born prematurely
- Low birth weight
- Slowed growth
- Lead exposure via breastmilk

Symptoms in Children

- Development delays
- Irritability
- Loss of appetite
- Weight loss
- Fatigue
- Nausea
- Hearing loss
- Seizures

Symptoms in Adults

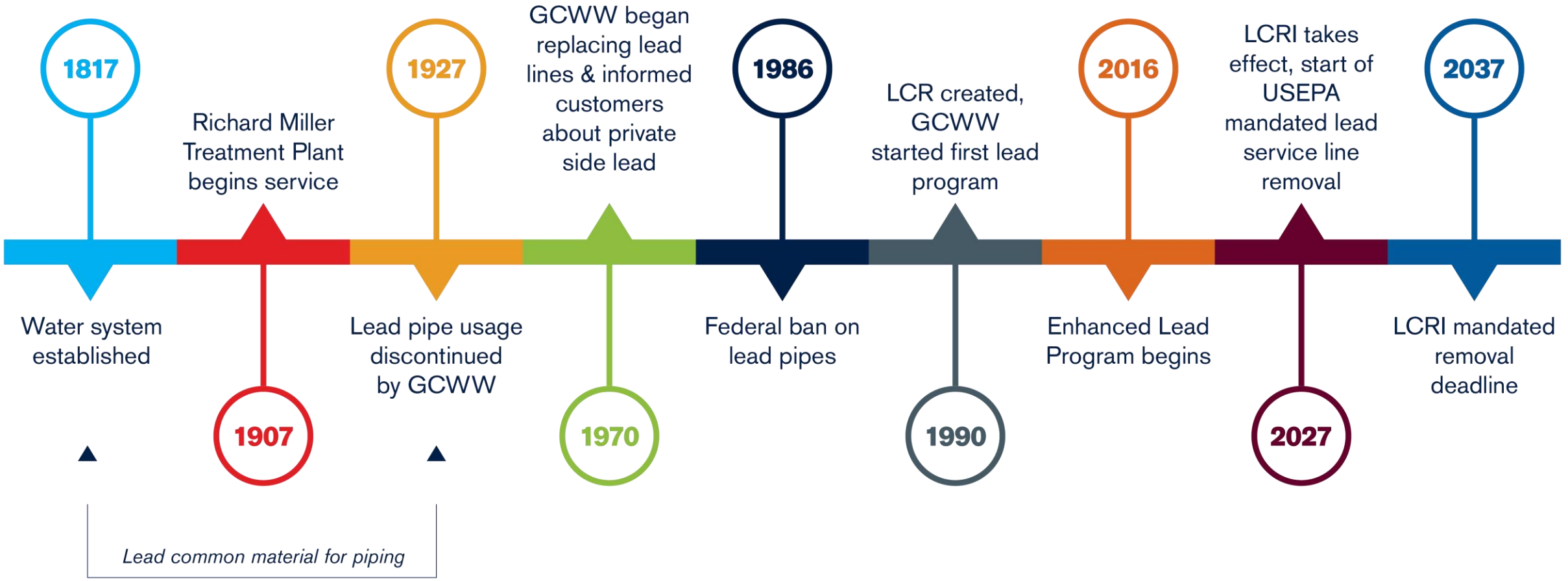
- High blood pressure
- Joint and muscle pain
- Headaches
- Abdominal pain
- Mood disorder
- Reduced sperm count

Symptoms in Pregnant Women

- Miscarriage or premature birth
- Mood swings
- Anemia

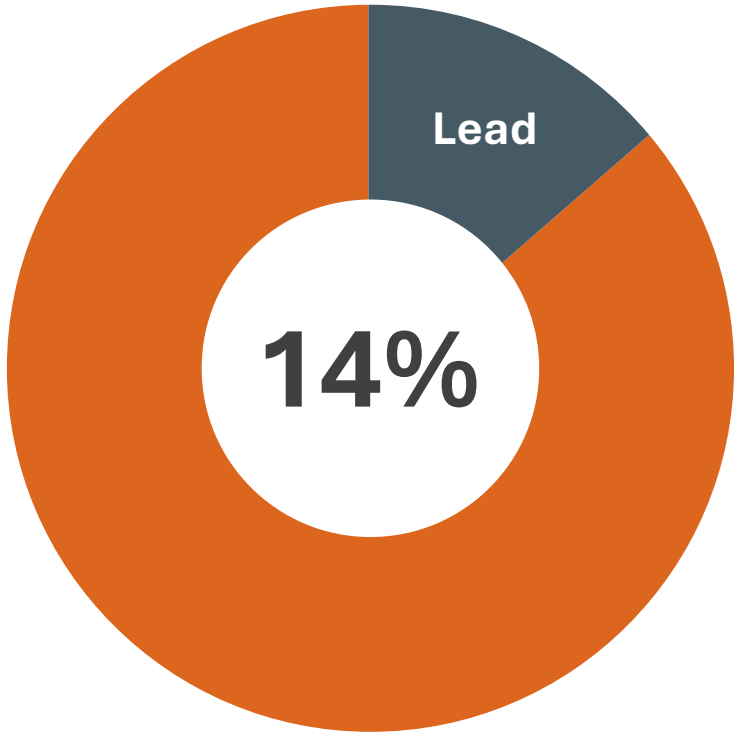
History of Lead in Cincinnati

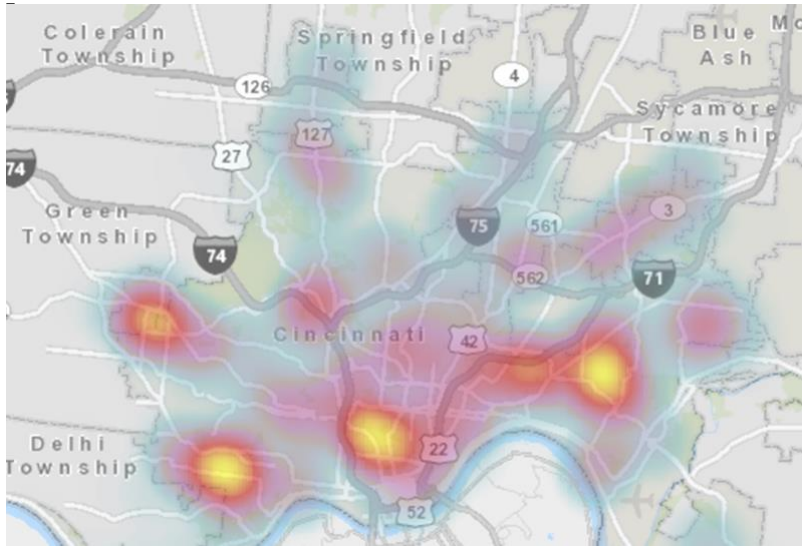
A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

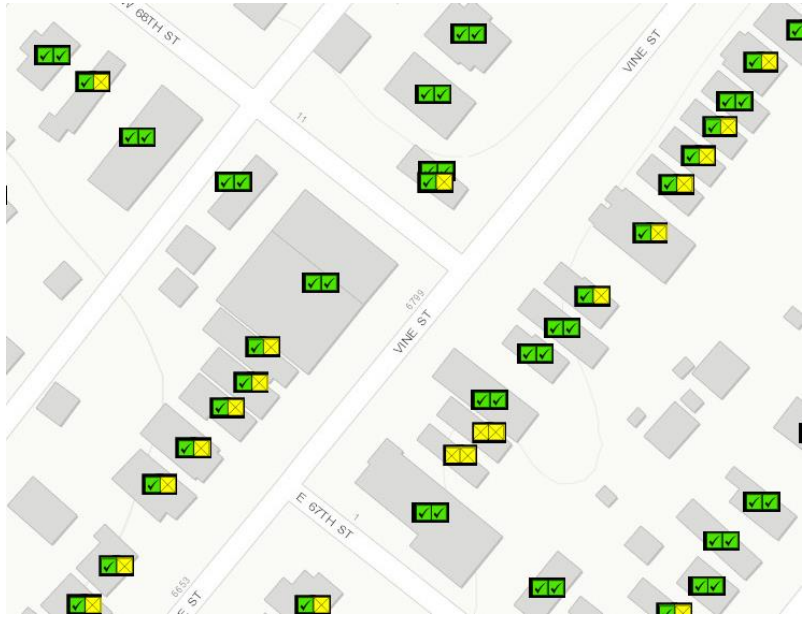


Lead Inventory

- **34,500** lead service lines
- **14%** of total service lines







Customer Online Look-up Map:
Lead.myGCWW.org

Lead Service Line Replacements

- Replacing the lead pipe is the only way to totally remove risk
- GCWW has been replacing customer-owned lead service lines since 2018
- **No additional cost to customer**, just requires signature of an agreement

Lead Line Replacement Process

A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

Water Main Replacement Projects

- Proactive replacement
- Includes all lead service lines in project area

One-Offs

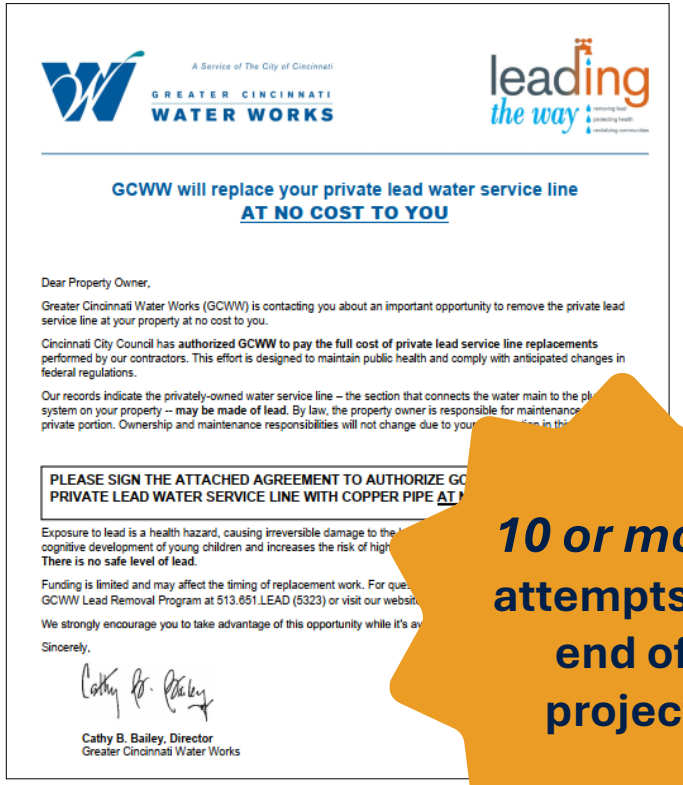
- Individual or small bundle of reactive replacements
- Reasons include leaks and high lead tests

Service Line-Only Projects

- Large bundle of service line replacement work in a geographic area
- Scheduled based on prioritization scoring, including equity

Communications/Customer Contracts

- Water main replacements
- One-offs
  - ✓ Send contract via Docusign, mail, or email *(minimal outreach needed)*
- Targeted areas for service line-only work


A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

leading the way

GCWW will replace your private lead water service line AT NO COST TO YOU

Dear Property Owner,

Greater Cincinnati Water Works (GCWW) is contacting you about an important opportunity to remove the private lead service line at your property at no cost to you.

Cincinnati City Council has **authorized GCWW to pay the full cost of private lead service line replacements** performed by our contractors. This effort is designed to maintain public health and comply with anticipated changes in federal regulations.

Our records indicate the privately-owned water service line – the section that connects the water main to the pl… system on your property – **may be made of lead.** By law, the property owner is responsible for maintenance… private portion. Ownership and maintenance responsibilities will not change due to your…

PLEASE SIGN THE ATTACHED AGREEMENT TO AUTHORIZE GC… PRIVATE LEAD WATER SERVICE LINE WITH COPPER PIPE AT N…

Exposure to lead is a health hazard, causing irreversible damage to the … cognitive development of young children and increases the risk of high… **There is no safe level of lead.**

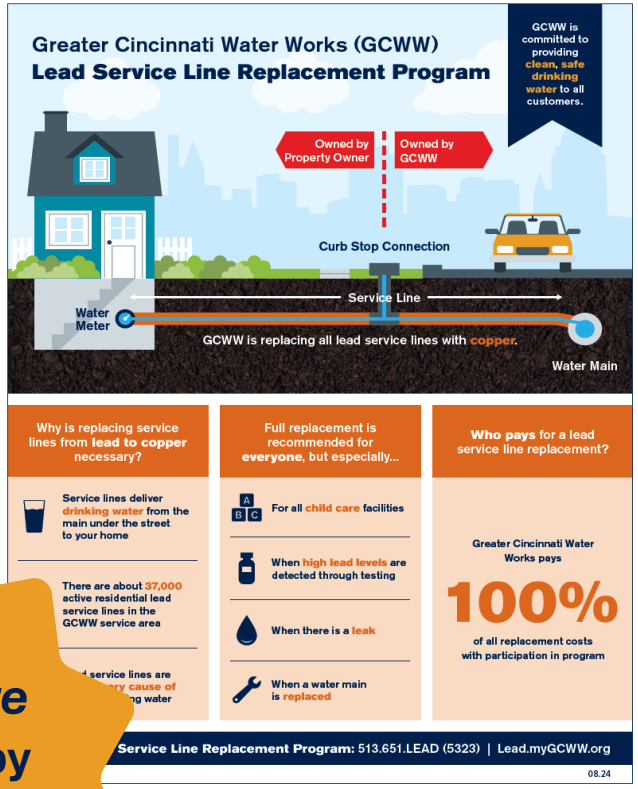
Funding is limited and may affect the timing of replacement work. For que… GCWW Lead Removal Program at 513.651.LEAD (5323) or visit our websit…

We strongly encourage you to take advantage of this opportunity while it's a…

Sincerely,

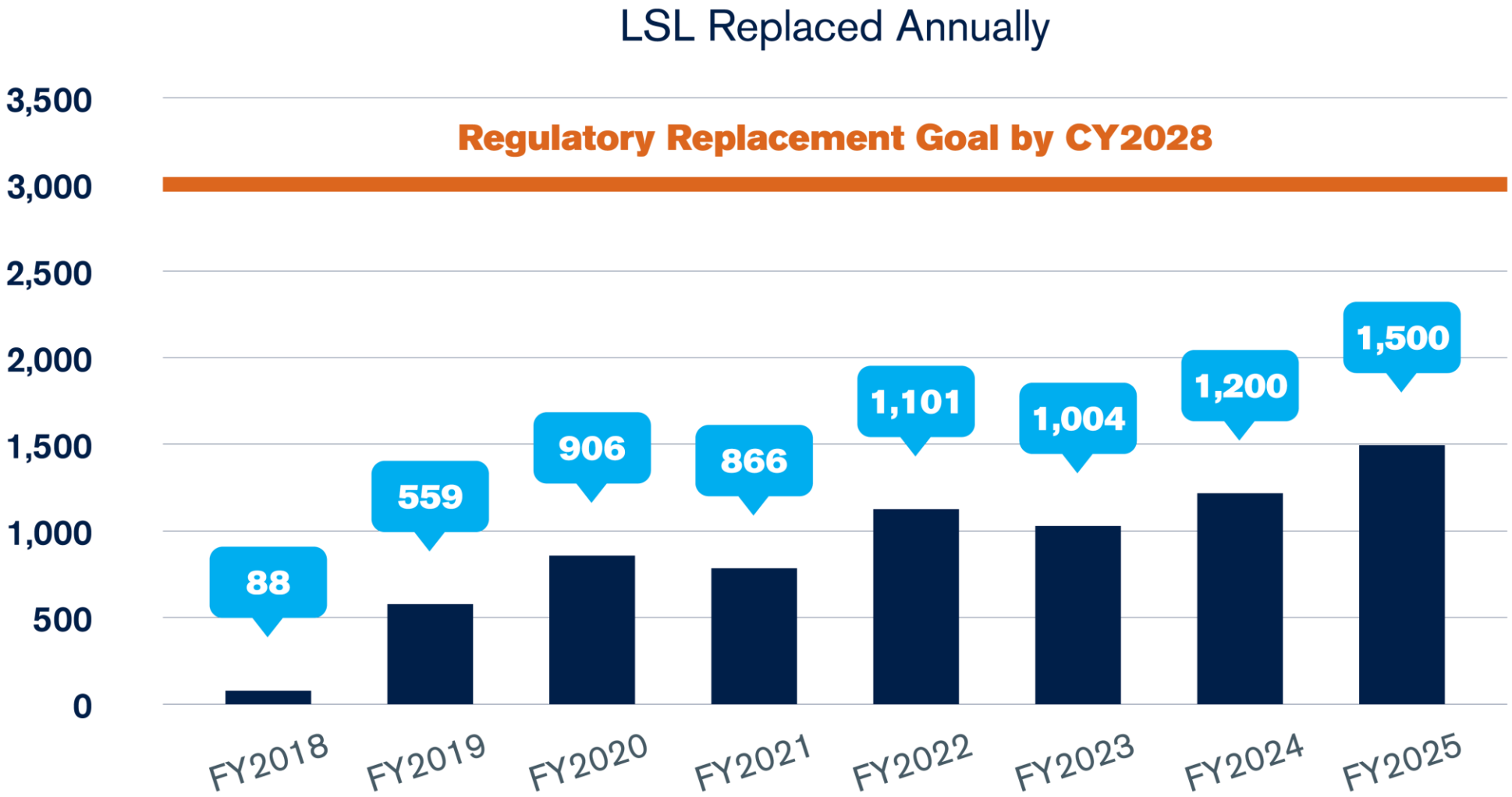
Cathy B. Bailey, Director
Greater Cincinnati Water Works

***10 or more* attempts by end of project**



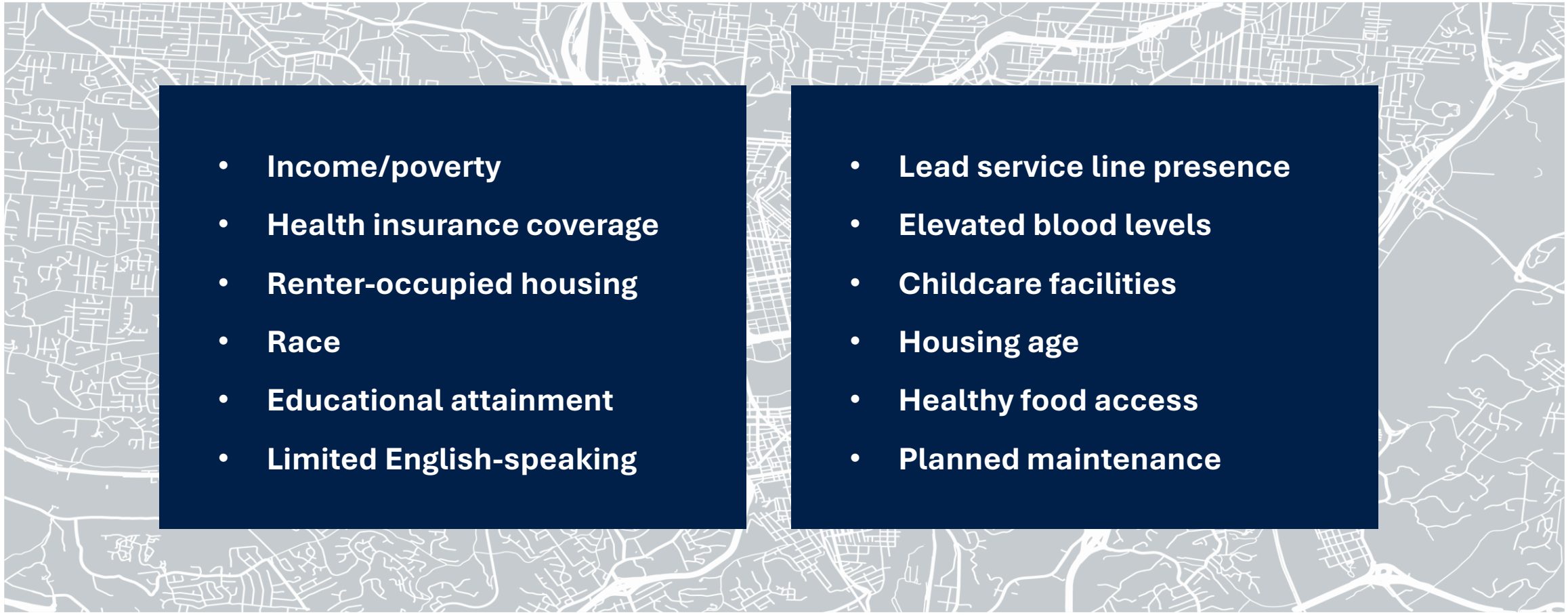
A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

Replacement Progress



Replacing with Equity

- UC-DAAP School of Planning Urban Planning Program
- Consider disadvantaged consumers and population most sensitive to lead

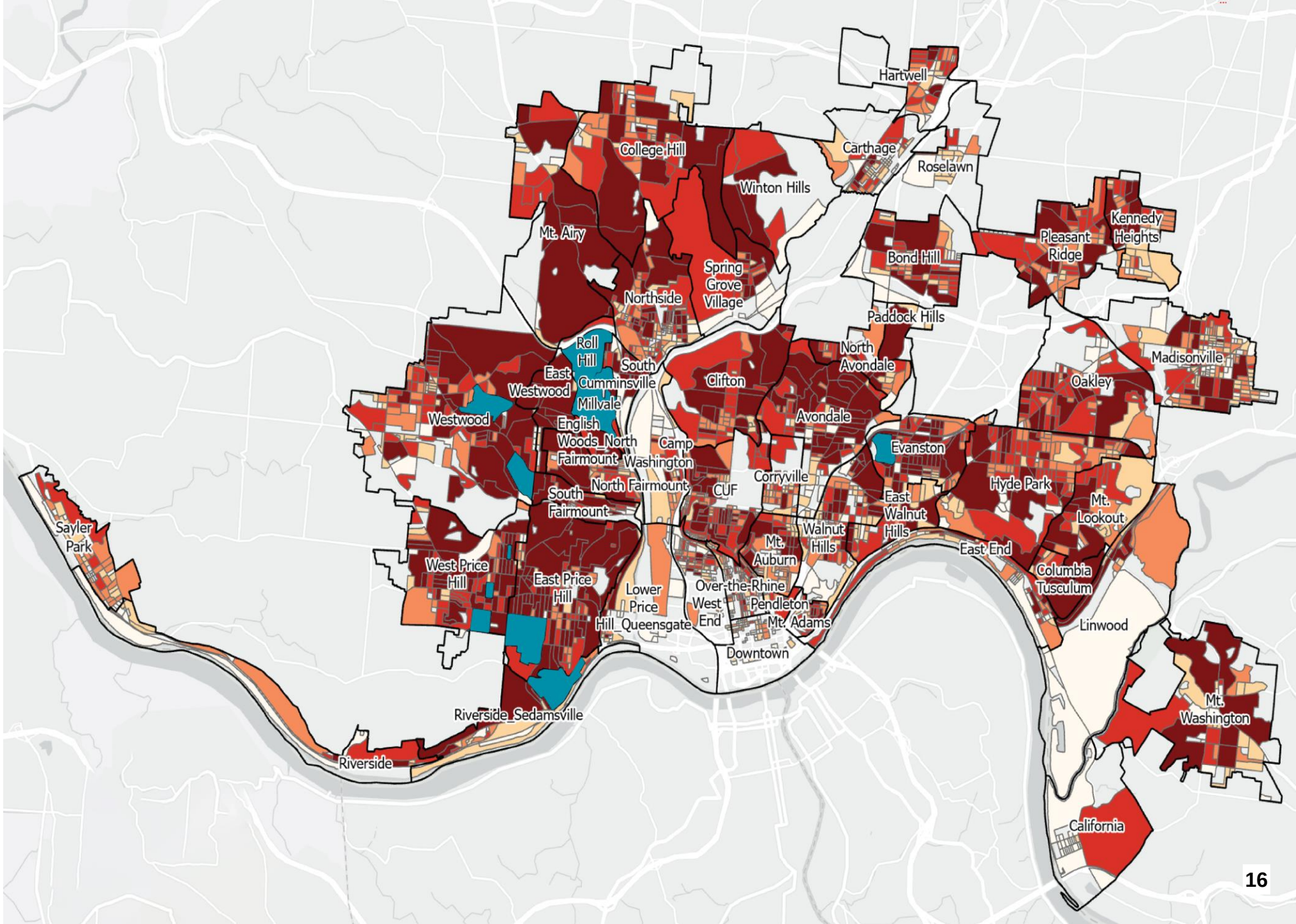


- Income/poverty
- Health insurance coverage
- Renter-occupied housing
- Race
- Educational attainment
- Limited English-speaking

- Lead service line presence
- Elevated blood levels
- Childcare facilities
- Housing age
- Healthy food access
- Planned maintenance

Overall Scoring of Areas

- 2,740 blocks with LSLs
- Regulatory goal: All lead removed by 2037



What Customers Can Do Now

Test, Filter, Flush…
…and Replace When We're in Your Area!

- Learn if you have a lead service line
- Sign up for FREE testing
- Flush your tap if it has been unused for 6 or more hours
- As an extra precaution for children or pregnant persons, may use NSF 53 certified filter
- Use cold water for cooking and drinking
- Sign up for lead service line replacement when offered

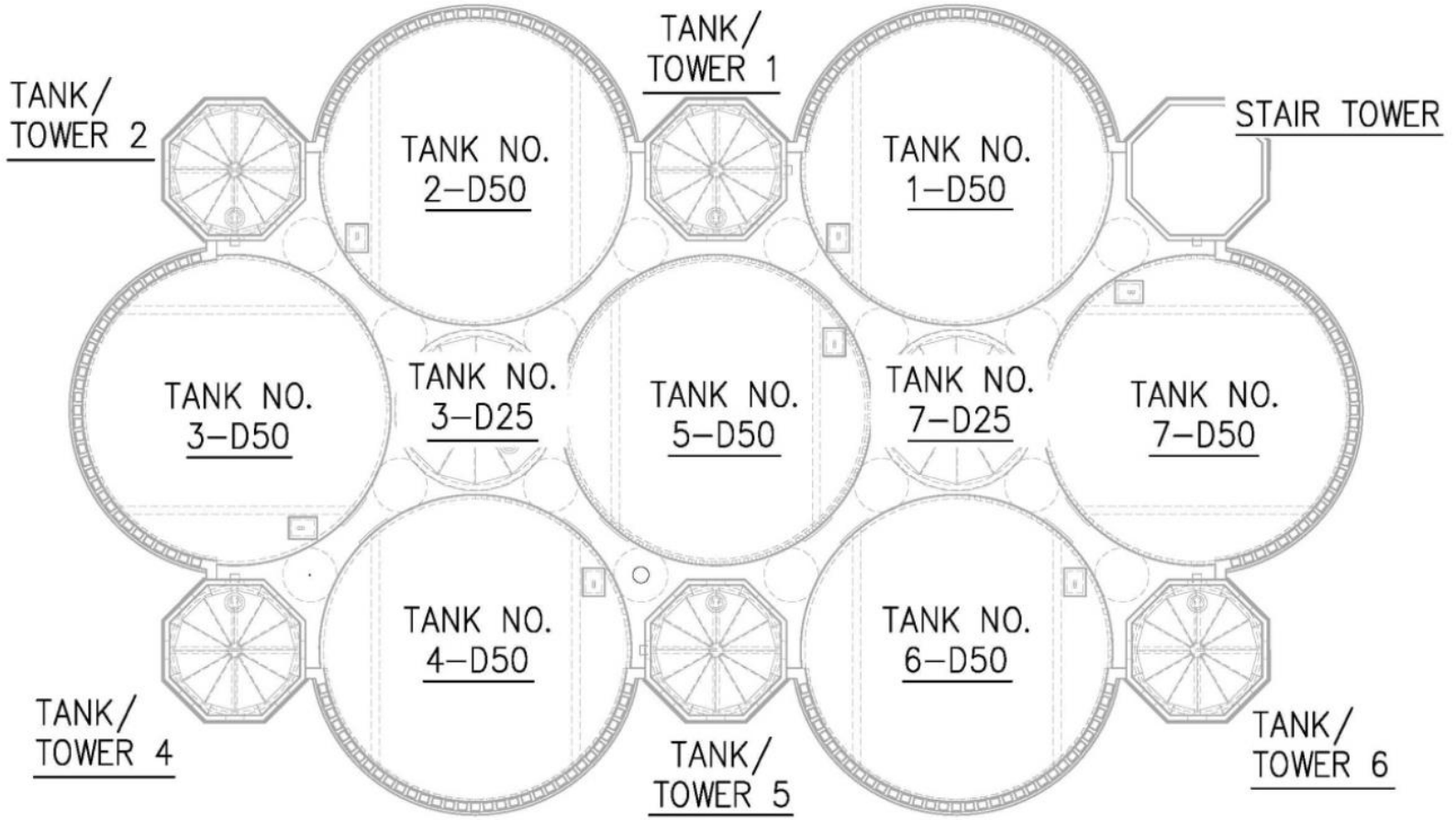
Mount Airy Tanks Rehabilitation

Background

- Constructed 1926-1927
- Historic landmark
- Community icon

Tanks

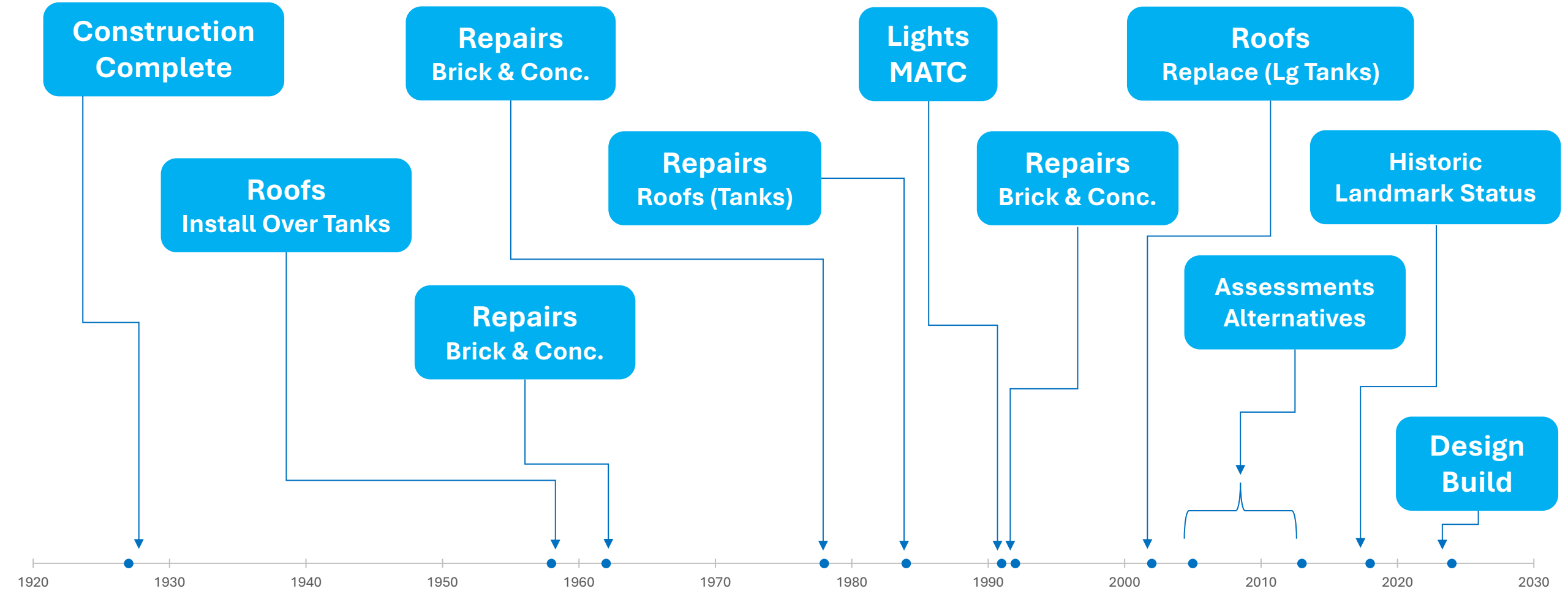
- 7 large
- 7 small
- 8.4 MG



Concerns

- Physical condition
- Water quality/operations
- Historic landmark
  new to GCWW
- Neighborhood interest

Timeline


Construction Complete
Roofs Install Over Tanks
Repairs Brick & Conc.
Repairs Brick & Conc.
Repairs Roofs (Tanks)
Lights MATC
Repairs Brick & Conc.
Roofs Replace (Lg Tanks)
Assessments Alternatives
Historic Landmark Status
Design Build
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
2030

Recent History

- Preliminary Engineering study (2013)
  - *Several possible solutions*
- Decision for design-build approach
- Community engagement
- Historical landmark status (City 2018; AWWA 2020)
  - *Preserve the architecture*
- Decision to rehabilitate entire footprint of facility

Design-Build

- Progressive design-build
  - Phase 1. Design
  - Phase 2. Build
- Contract executed (Phase 1)
- Kick-off: July 2024

Design Team

Hazen and Sawyer
(EOR, sub to D&M)
Cincinnati, OH

- Design Team Management
- Structural
- Electrical
- Permitting
- BIM Modeling
- Design QA/QC
- Instrumentation
- Modeling

Elevar Design Group
(sub to EOR)
Cincinnati, OH

- Architectural
- Historic Restoration
- Public Relations
- BIM Modeling

Shrewsberry and Associates
(sub to EOR/MBE)
Cincinnati, OH

- Civil
- Landscaping

Resource International, Inc.
(sub to EOR/WBE)
Cincinnati, OH

- Geotech
- Survey
- 3D Scanning
- Materials Testing

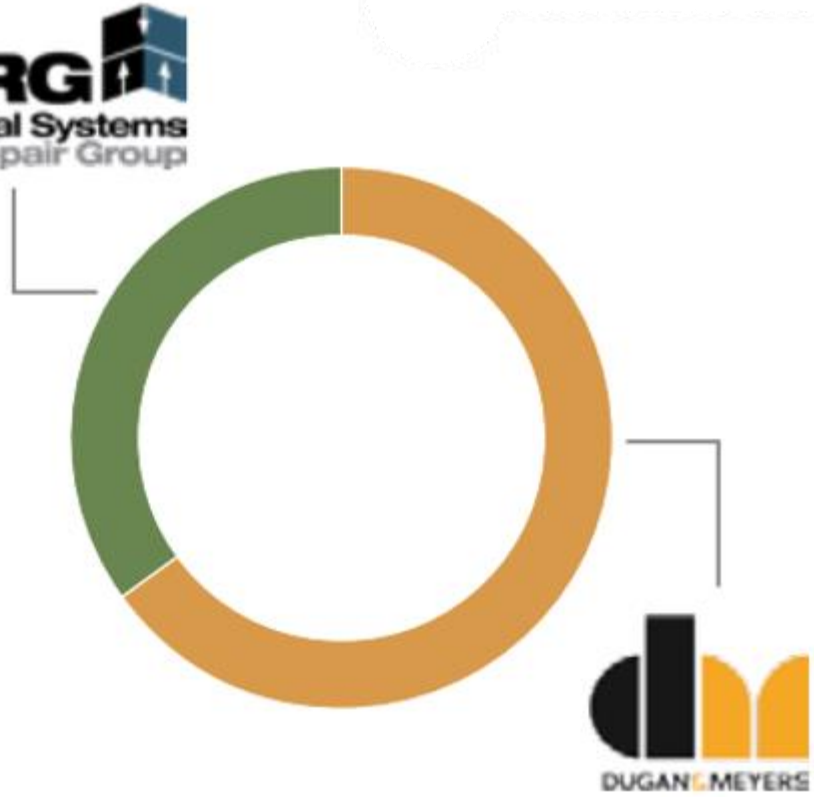
Clear Consulting, Inc.
(sub to EOR/WBE)
Cincinnati, OH

- Water Supply

Dmytryka Jacobs Engineers
(sub to EOR/SBE)
Toledo, OH

- SCADA System Integration

Construction Team



Dugan & Meyers
(Design-Builder)
Cincinnati, OH

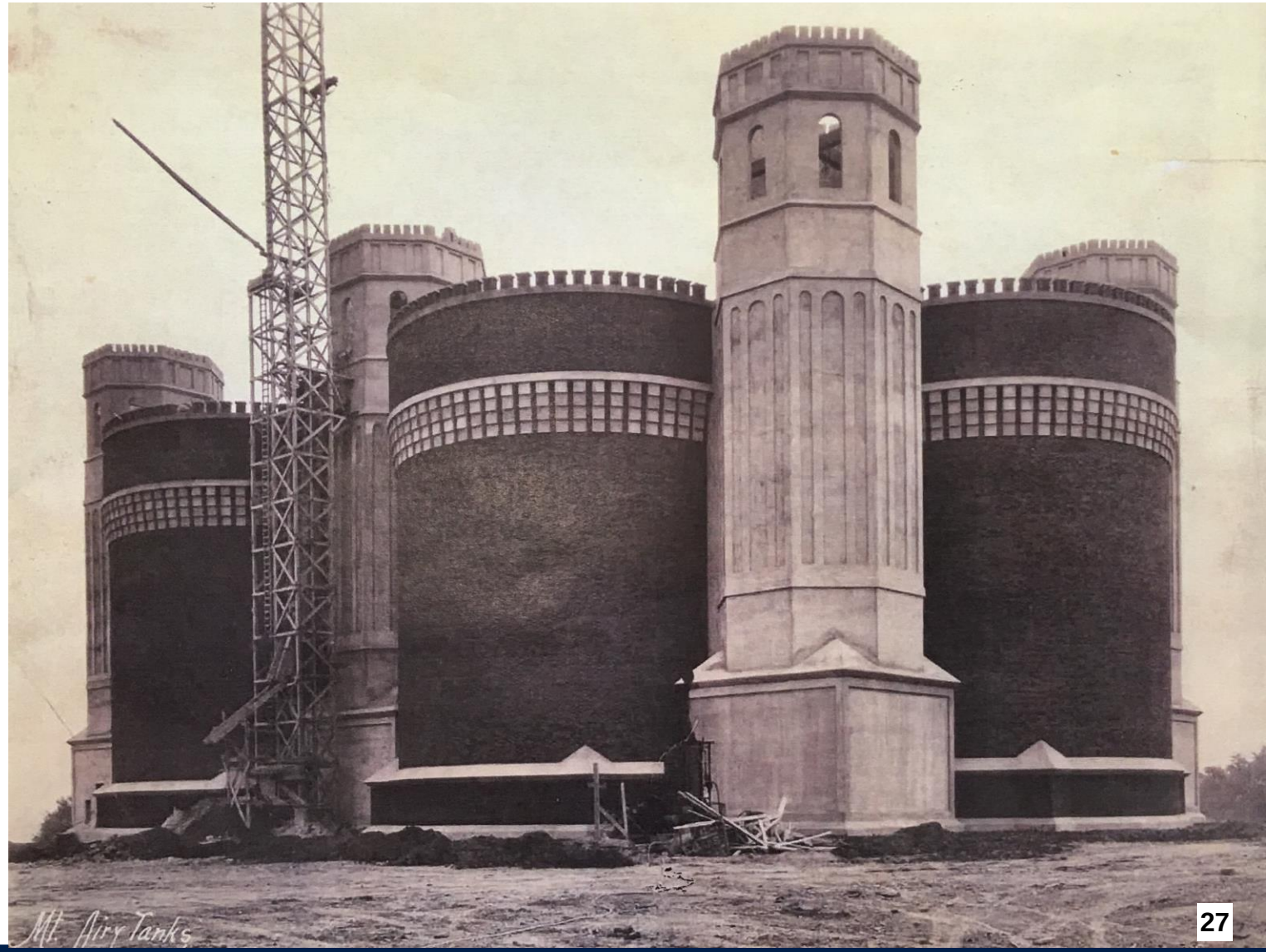
- Design-Build Management
- Cost Estimating
- Scheduling
- Safety
- Superintendent - General
- Construction QA/QC
- SBE/MBE/WBE Management
- Project Administration

Structural Systems Repair Group (SSRG)
(sub to D&M)
Cincinnati, OH

- Historic Restoration
- Cost Estimating
- Superintendent - Restoration
- Field Investigation

Historic Conservation

- Maintain existing footprint and architectural features
- Coordinate with the Historic Conservation Board



Preliminary Design

- Repairs
- Replacements
- Reconfigure/optimize
- Preserve historical architecture

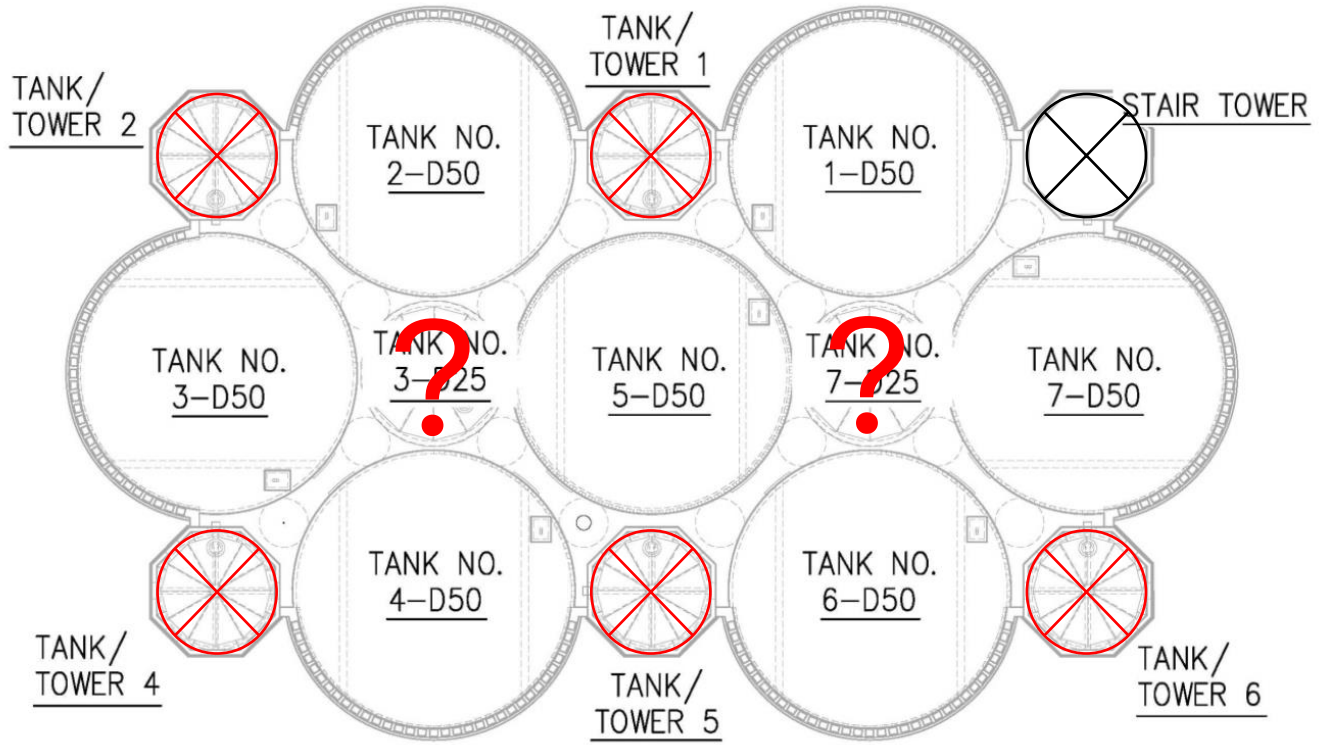
Repairs

- Foundation
- Brick masonry

Replace Towers

Decommission Tanks

- Remove/abandon small tanks and towers

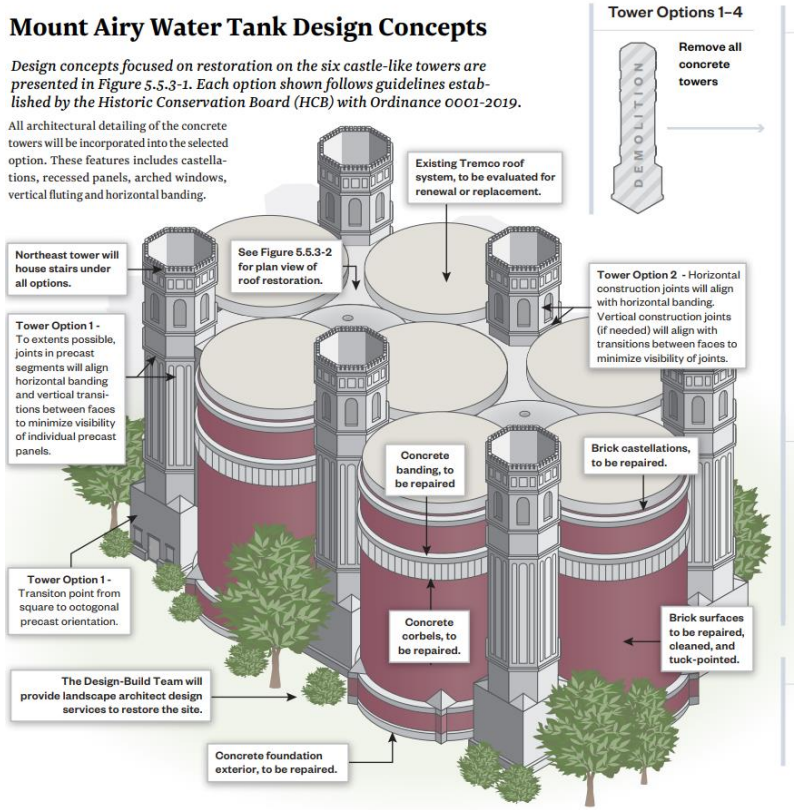


Tower Replacement Options

Mount Airy Water Tank Design Concepts

Design concepts focused on restoration on the six castle-like towers are presented in Figure 5.5.3-1. Each option shown follows guidelines established by the Historic Conservation Board (HCB) with Ordinance 0001-2019.

All architectural detailing of the concrete towers will be incorporated into the selected option. These features includes castellations, recessed panels, arched windows, vertical fluting and horizontal banding.



Tower Option 1

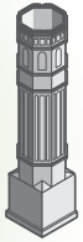
Remove all concrete towers and restore with precast concrete panels supported from steel frames

Upper Segment – at the main roof elevation and above, 8 identical precast concrete panels will be installed to rebuild each tower.

Middle Segment – towers will be restored with 5 identical precast concrete panels at each corner location (middle interior towers will be 3 panels).

Bottom Segment – upper portion will be restored with 5 identical precast concrete panels at each corner location (middle interior towers will be 3 panels). Lower portion will be panels in a square orientation.

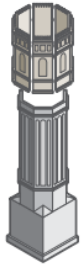
Tower Option 2



Rebuild towers with cast-in-place concrete, replicating all architectural features.

Tower Option 3

Rebuild towers with a hybrid approach.

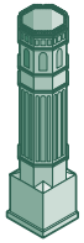


Upper Segment – At roof level the towers would transition to precast concrete panels.

Lower Segment – the towers from grade to the roof would be cast-in-place concrete.

Under this option, precast panels can be directly supported by the structure without a steel frame.

Tower Option 4



Rebuild towers with architectural fiberglass.

Fiberglass reinforced polymer (FRP) can be molded to mimic the profiles and finish of the towers. It is anticipated RFP panels would be supported from steel framing similar to precast concrete.

It is anticipated that lightweight FRP panels will require less structural steel for support than precast concrete.

Tower Option - 5

Repair existing concrete towers in place with traditional surface spall materials. There are significant concerns with this approach as outlined in Section 4.2.3.1 of the 2013 Preliminary Engineering Report, but the field investigation will allow GCWW and the D-B Team to fully vet this option.

Cost

- **Phase 1 – Design**
  - $3.8 million (not to exceed)
- **Phase 2 – Construction**
  - Based on design/GMP
  - Preliminary 2020 opinion of cost was $13 million

Schedule

- **Phase 1 – Design**
  - 16 months
  - Kick-off: July 2024
  - 90% design: December 2025
  - Guaranteed Maximum Price: Early 2026
  - Finalize design and permits
- **Phase 2 – Construction**
  - Contract amendment
  - Construction est. 24 months (2026-2028)

Communications

- Open communication
- Community notice of site activities
- Meetings and progress updates

More?

Given the time, effort, and funding to rehabilitate the facility…

- Consider additional uses
- Additional uses being explored
  Feasibility study begins soon by DCED

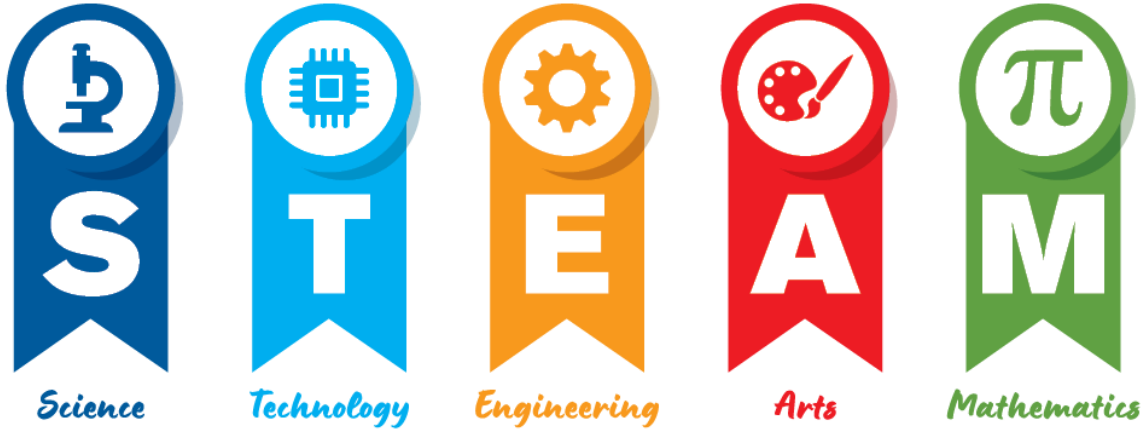
Greater Cincinnati Water University

Greater Cincinnati Water University

Inaugural event this spring; will be held annually

- **Thursday, March 20, 2025**
- **9 a.m. to 1 p.m.**
- **Tangeman University Center at UC**

- **Who:** 300 fourth-grade students from CPS
- **What:** Presentations and activities about water resources, conservation, and sustainability



Greater Cincinnati Water University

- GCWW partnering with Cincinnati Public Schools and the University of Cincinnati
- Presenters include Millcreek Alliance, Procter & Gamble, Ohio EPA, ORSANCO, The STEM Lab, and others
- Scheduled to appear are Mayor Aftab Pureval, Vice Mayor Jan-Michele Lemon Kearney, City Manager Sheryl Long, Interim Assistant City Manager Cathy Bailey

Any Questions?

Thank you for allowing us to present!

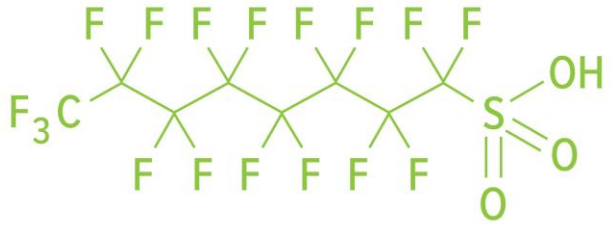
A Service of The City of Cincinnati

GREATER CINCINNATI WATER WORKS

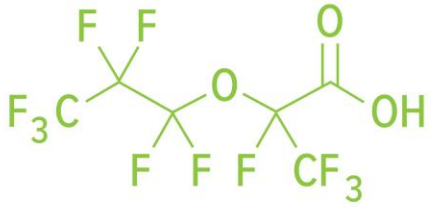
PFAS Treatment

PFAS

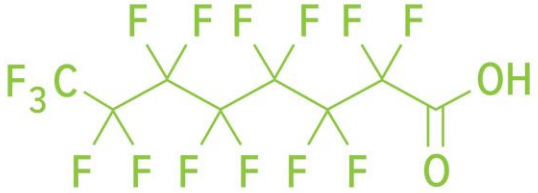
- Man-made group of compounds with carbon and fluorine
- Uses include non-stick/stain repellent coatings, water repellents, fire retardant coatings, fire fighting foam, electroplating and others
- Does not break down in natural environment – very widespread
- Thousands of different types (14,000+)
- Some common and best known – PFOA, PFOS, GenX, PFBS
- Potential health issues not fully known
- Now regulated in drinking water



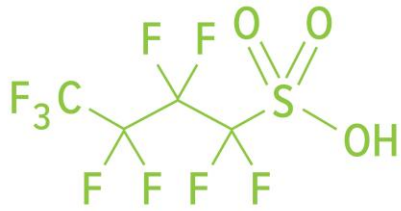
PFOS



HFPO-DA



PFOA

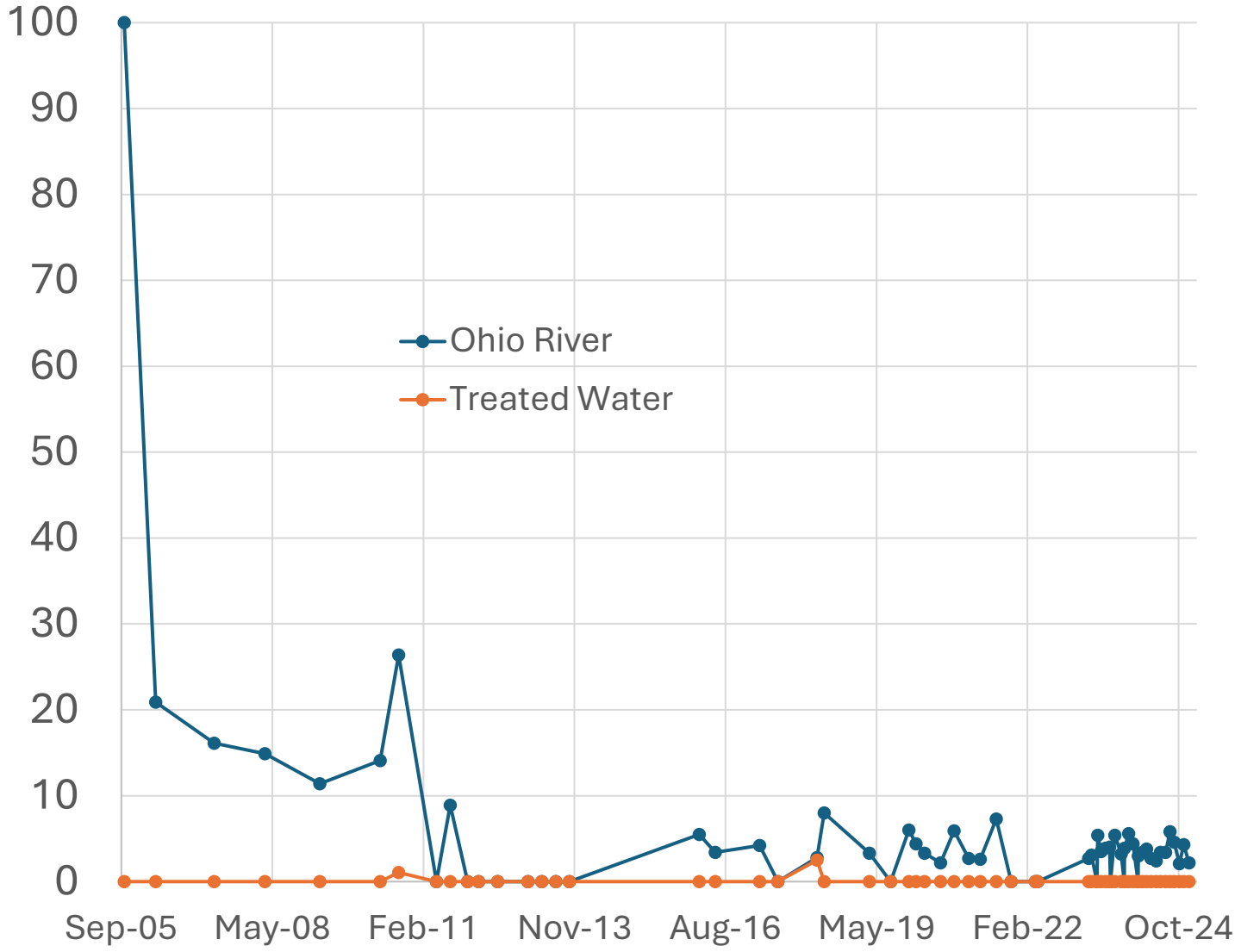


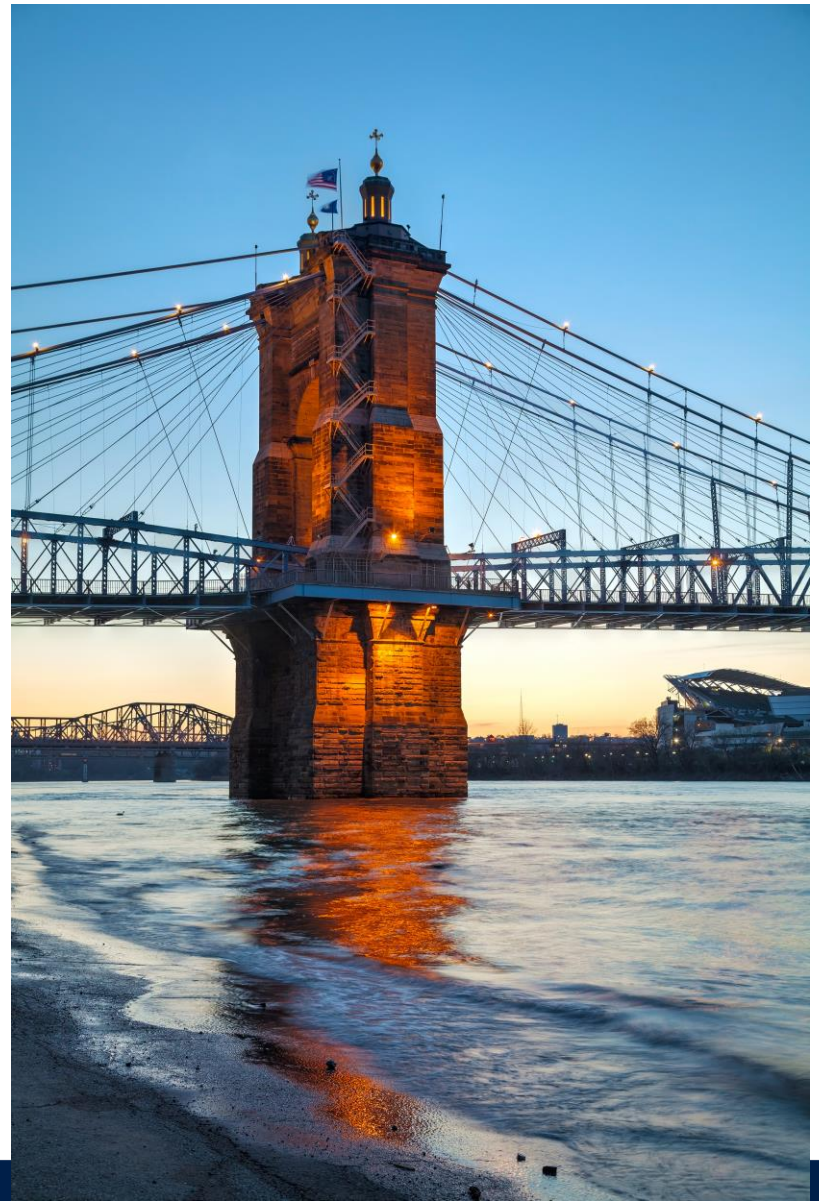
PFBS

Drinking Water Regulation

- US EPA finalized drinking water regulation in April 2024
- Maximum contaminant level set for 9 compounds
- If found in water, systems have until 2029 to implement solutions that reduce PFAS levels
- Richard Miller Treatment Plant has GAC which is a “Best Available Technology”

Ohio River and Miller Plant PFOA





Charles M. Bolton Plant

- Very low levels found in groundwater
- Treatment will be needed
- Obtained grants from OEPA to examine treatment options and begin design
- GAC at Bolton Plant, similar to Miller Plant, is best treatment option
- Cost: About $100M
- Also examining other non-treatment options
- Need to have solution in place by 2029