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Preparing for LCRI Compliance in 2025 and Beyond:
Key Requirements, Funding Strategies and Proactive Approaches

In the kNOW Webinar

March 4, 2025

Agenda

- Lead and Copper Rule Improvements Overview – Tugba Akgun
- City of Wilmington: Early Implementation of LCRI – Kelly Slabicki
- LCRI Funding and Financing Strategies – Mike Matichich
- Salt Lake City's Proactive Planning Yields Important Early Program Funding – Mike Matichich
- Key Takeaways – Lauren Wasserstrom
- Q&A

Poll Question

Lead and Copper Rule Improvements (LCRI) Overview

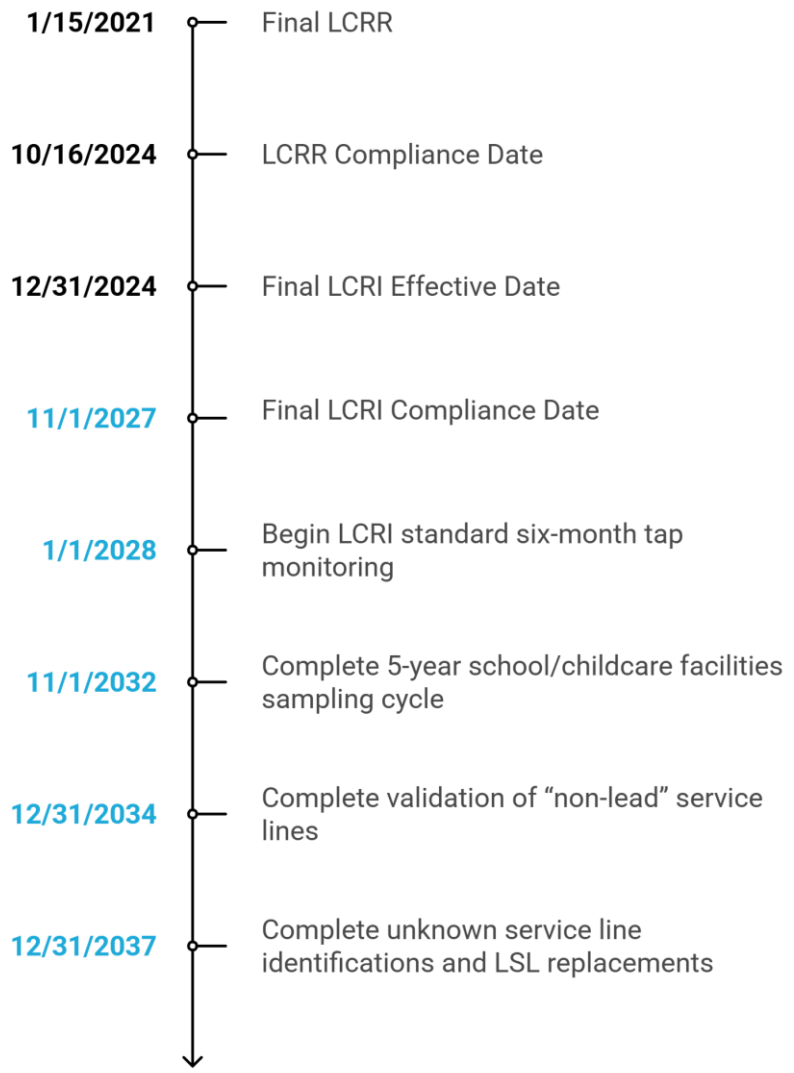
Key LCRR and LCRI Compliance Deadlines

LCRR (2021) Requirements Retained in the LCRI:

- Initial lead service line (LSL) inventory due
- Begin service line customer notifications and associated reporting
- Tier 1 Public Notification effective & maintain lead action level of 15 µg/L (ppb)

LCRI (2024) regulatory requirements focus on:

- Locating and replacing all Lead Service Lines (LSLs) within 10 years
- Strengthening compliance tap sampling requirements
- Lowering lead action level to 10 µg/L (ppb)
- Communicating with the public transparently and frequently



LCRI Regulatory Landscape

- The LCRI was finalized on October 8, 2024 and was made effective as of December 30, 2024.
  - The EPA requested a 60-day abeyance on the rule to allow time for further review
- On December 13, 2024, AWWA filed a petition for review of the LCRI arguing that the legislation, in its current form, “is not feasible.”
- LCRR (2021) remains in effect until replaced by a legally adopted new rule
  - Due to the anti-backsliding provisions under Safe Drinking Water Act, if the EPA modifies or delays LCRI, water systems must continue meeting the LCRR requirements

Source: https://www.instagram.com/epagov/p/DA3HG0CJjCa/

Key Aspects of the LCRI

Service Line Inventory

Service Line Replacements

Compliance Sampling

Schools & Childcare Facilities Sampling

Communications

Corrosion Control Evaluation Studies

LCRI Key Updates – Service Line Inventory

November 1, 2027

Submission of Baseline Inventory (with lead connectors)

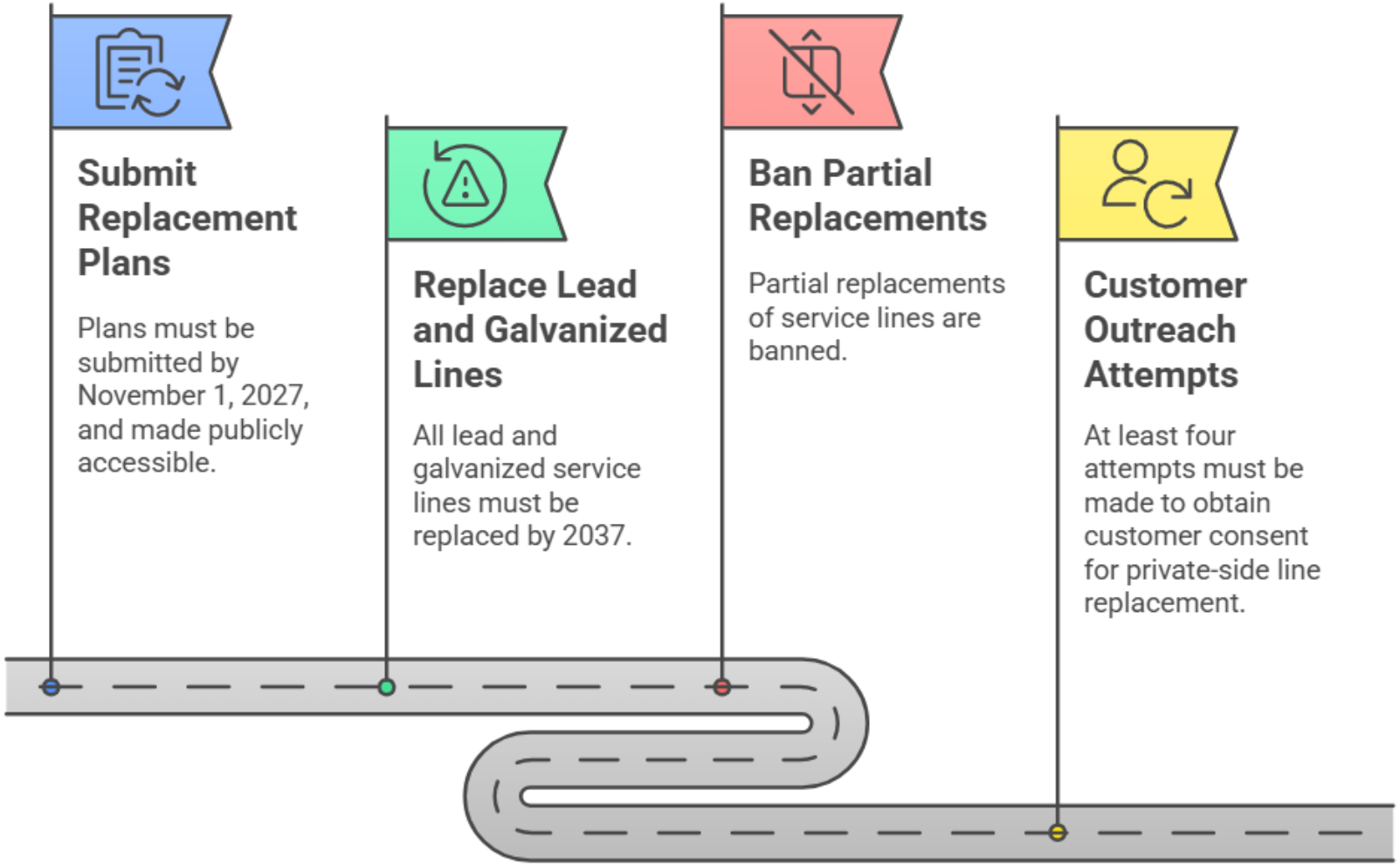
December 31, 2034

Completion of Validating Non-Lead Service Lines

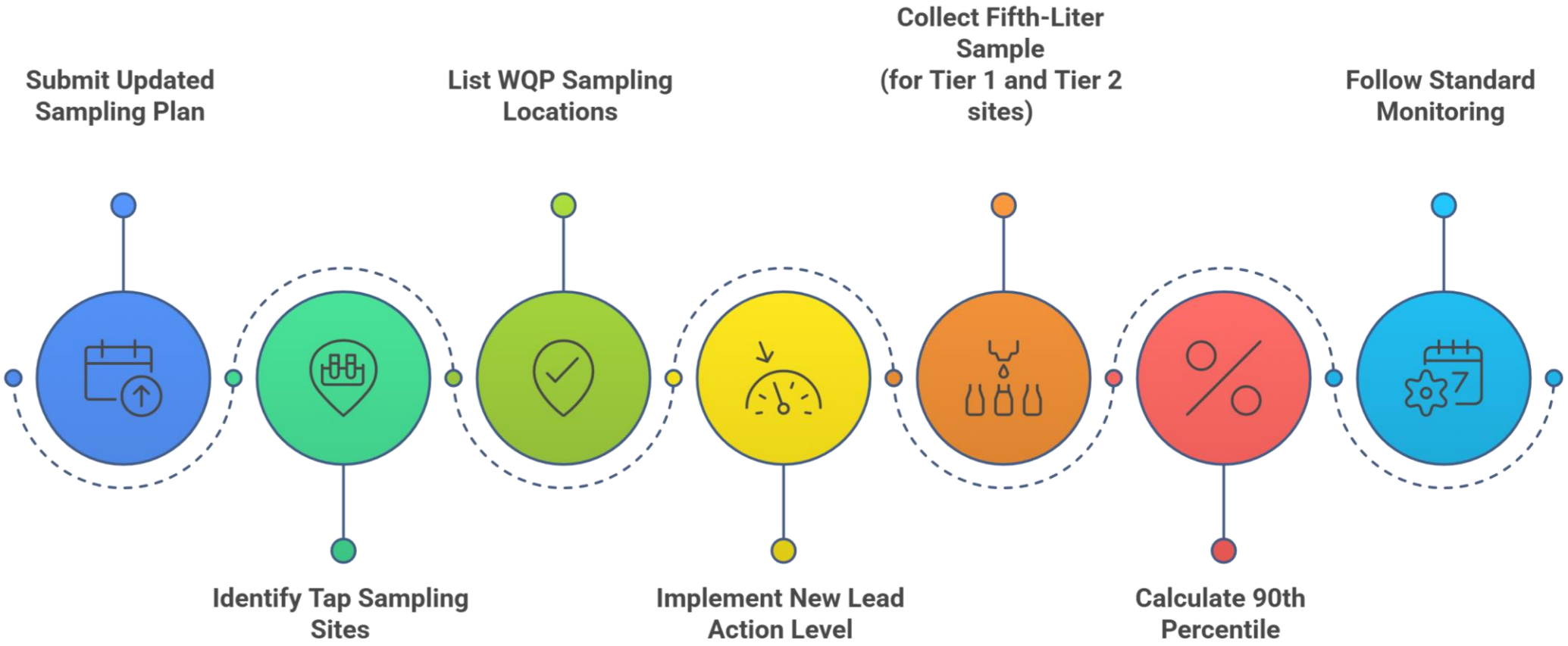
December 31, 2037

Identification of Unknown Service Lines

LCRI Key Updates – Service Line Replacements



LCRI Key Updates – Compliance Tap Sampling



LCRI Key Updates – Schools and Licensed Childcare Facilities Sampling

Determine Applicability

Exemptions include:
Constructed or plumbing replaced after 2014
or
Not served by a LSL, GRR, or unknown service line

Submit List by Deadline

Develop and maintain a list of applicable schools and licensed childcare facilities (CCFs) by November 1, 2027

Conduct Annual Education and Monitoring

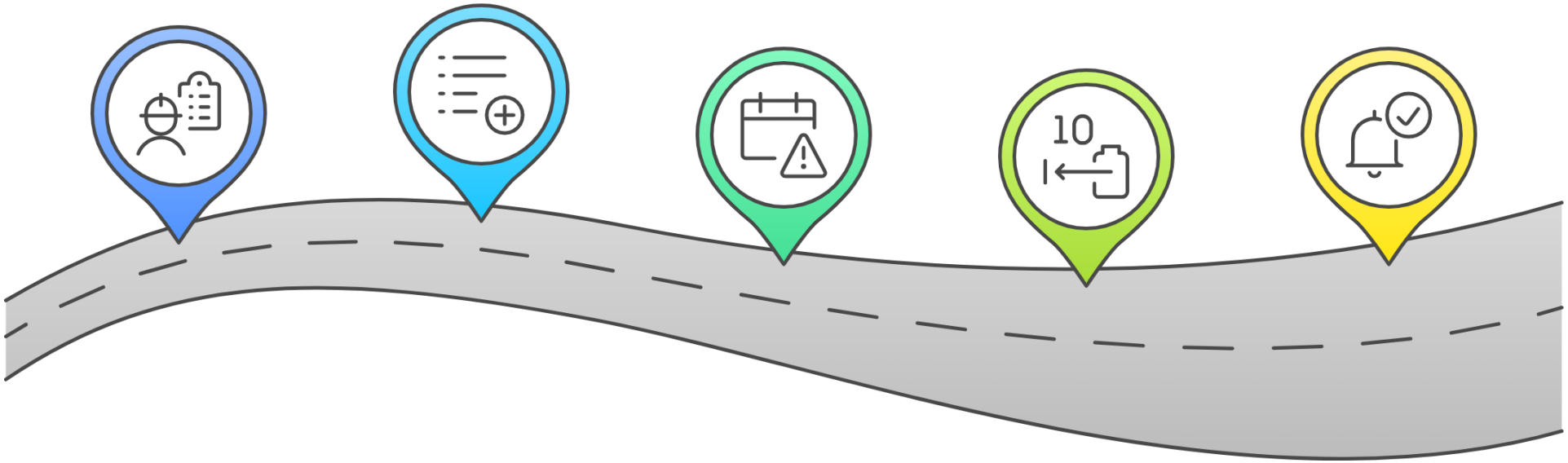
Perform annual public education and lead monitoring to inform schools and CCFs about their eligibility for lead sampling

Sample 20% Minimum Each Year

Ensure a minimum of 20% sampling each year for the first five years based on EPA's 3Ts protocol

Notify Schools and CCFs of Sampling Results

Inform schools and facilities about their lead sampling results and remediation strategies



Poll Question

City of Wilmington:
Early Implementation of LCRI

City of Wilmington Water System

- Wilmington Water Department serves a population of ~107,000
- Largest public-operated water system in the State of Delaware
- Two water treatment facilities with zinc orthophosphate as a post-filter chemical to maintain effective corrosion control
- Distribution system consists of ~447 miles of collection and distribution piping and 42,521 service connections
- Actively increasing the rate of small main replacements, replacing 2- and 4-inch diameter pipes with 6-inch or larger to support fire flows

City of Wilmington's Proactive Strategies for an Early Start

Identification of Unknowns

Replacement of LSL/GRRs

5th Liter Pilot and CCT Studies

BIL Funding Success

Identification of Unknown Service Lines

Customer Self-Reporting

Customers use online survey form to report their private service line materials.

Verifications

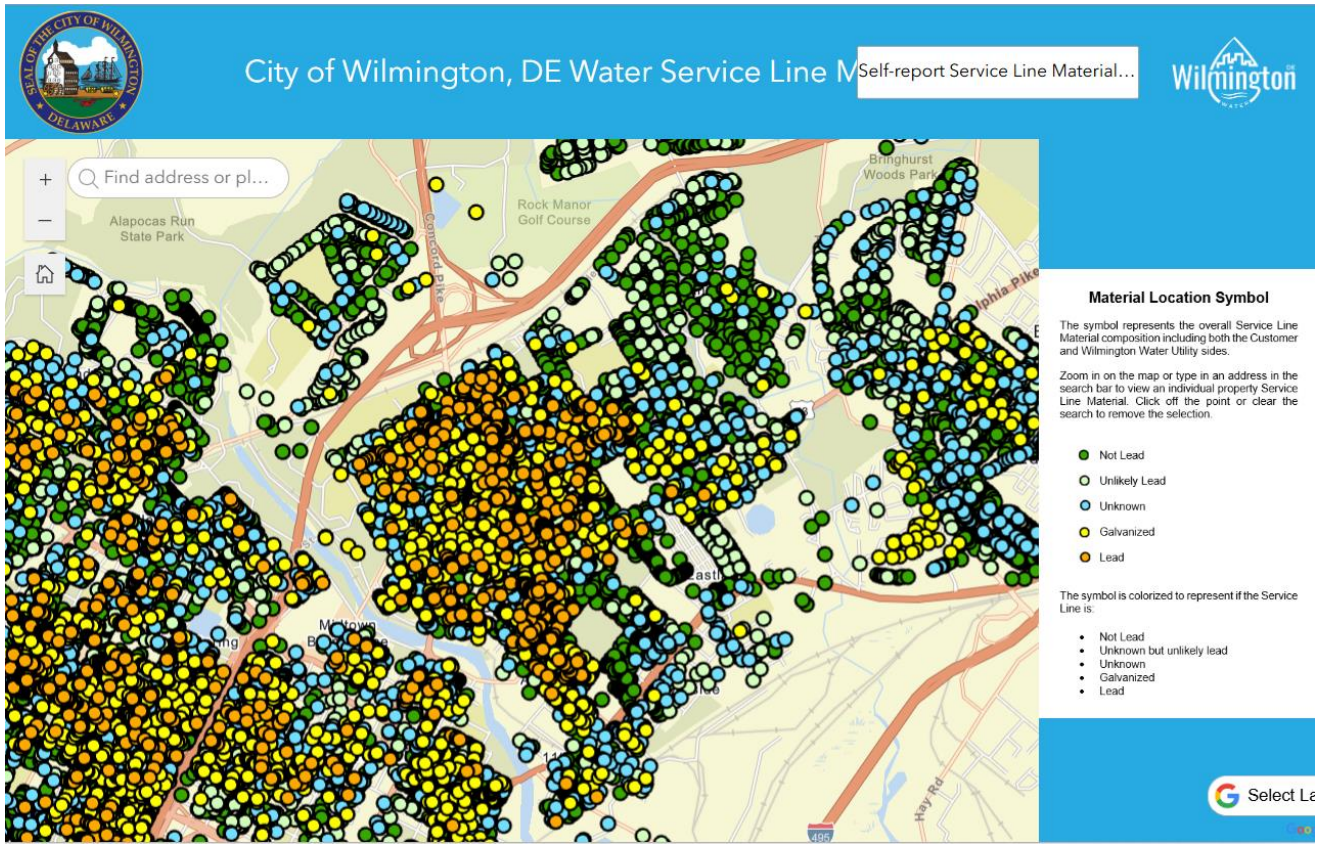
City crews can verify the accuracy of customer-reported materials.

Field Inspections

Inspections are conducted during routine maintenance operations and during planned water main replacements.

Field Reconnaissance

Conducted to remove inactive or redundant service laterals.



Source: https://www.wilmingtondewater.gov/245/Service-Line-Inventory-Map

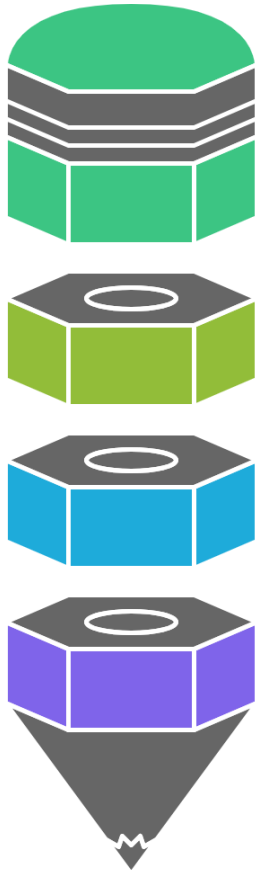
Replacements of LSL/GRR and Risk Mitigation Measures

Replacement of LSLs and GRRs

During planned water main and gas line replacement projects

Pitcher Filter Distribution

After the replacement of LSL/GRR to reduce lead exposure

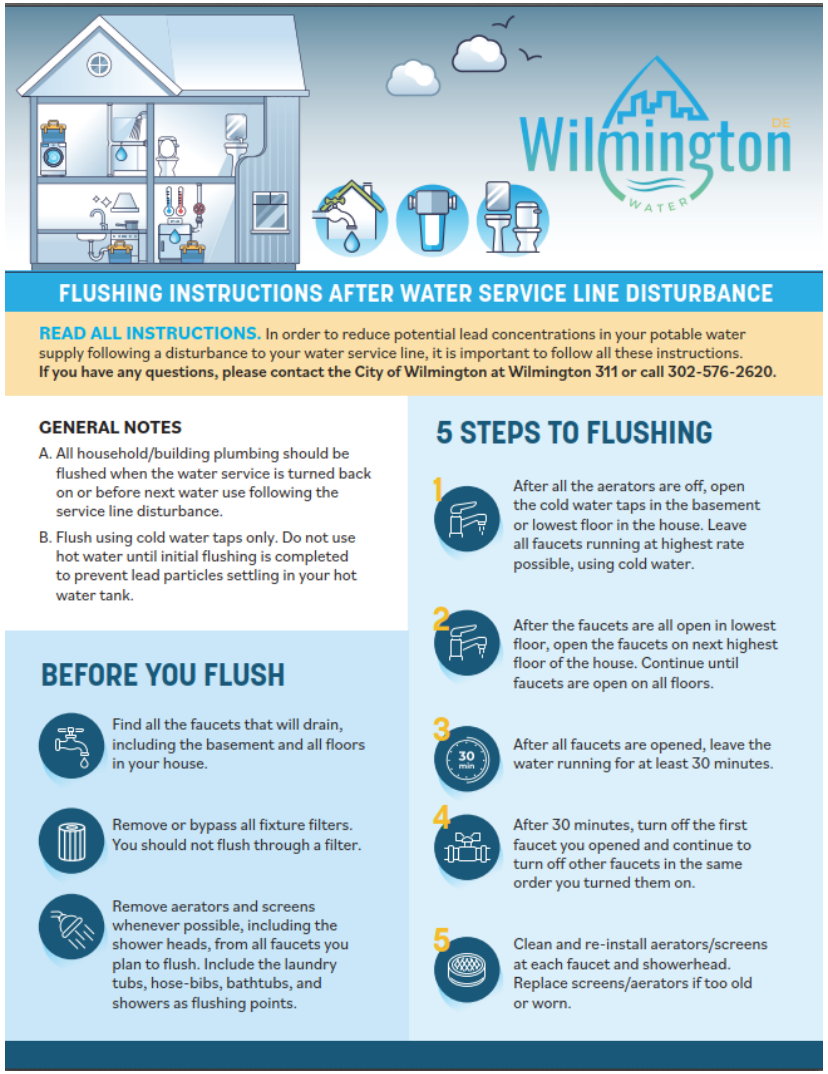


Incentives and Subsidies

Financial assistance for homeowners for private service line replacements

GIS System Utilization

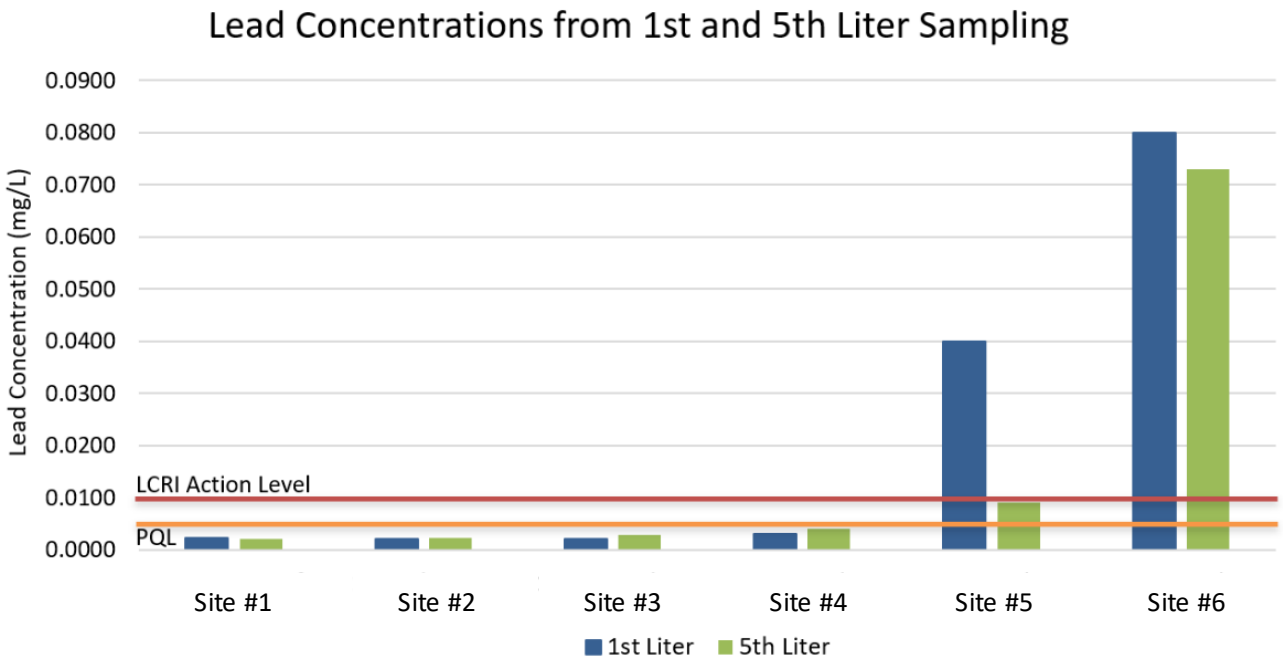
Tracking, monitoring, and prioritization of lead services using GIS technology



Source: https://www.wilmingtondewater.gov/212/Pitcher-Filter-Program

5th Liter Tap Sampling Pilot and Corrosion Control Treatment Studies

- City of Wilmington conducted a voluntary pilot 5th liter sampling program from August to September 2024
- 33 sites with confirmed LSLs (Tier 1) signed up; only 6 sites had lead levels detected above the PQL
- 90th percentile for lead analysis was <0.02 ppb
- City also conducted a desktop Corrosion Control Treatment study for its orthophosphate effectiveness
- Improved customer sampling instructions and chain of custody forms
- Additional 5th liter sampling planned during the next compliance monitoring period



Funding Success through Advocacy

- Under the State of Delaware's previous definition of disadvantaged communities, Wilmington just missed the mark of qualifying for principal forgiveness loans (grants)
- Successful advocacy support made the case of why Wilmington should qualify based on significant low-income neighborhoods and secured support from City and National leadership
- Prior to the passage of the BIL, the City only received an aggregate of $500,000 in principal forgiveness over the last 10 years out of more than $200M (one half of 1%)

Infrastructure Investments Fuel the Region's Engine for Economic Prosperity and Community Vibrancy

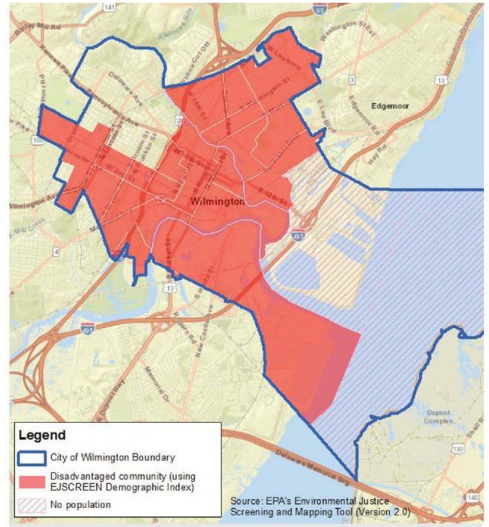
As the owner and operator of the largest public works department in Delaware, the City of Wilmington has the largest impact on the public health and economic security in the state. Being a responsible steward of the environment and minimizing impacts to disadvantaged communities that make up most of its service area are imperatives for the City. That's why Wilmington needs a partner to help it replace its aging infrastructure as well as develop a new, more resilient one.

Wilmington's disadvantaged communities are disproportionately high relative to Delaware and the nation.

- **70% of the City** is identified as a disadvantaged community.
- **47% of the City's population** is considered low income (based on EPA definition).

Despite the City's large infrastructure investments, demand outpaces the financial abilities of the community.

- The City has invested over **$200 million** in infrastructure in the last 10 years from various funding sources while maintaining reasonable rate increases to customers.
- Less than **0.5%** of State Revolving Fund loans included principal forgiveness.
- Vital infrastructure projects of over **$300 million** in the next 10 years requires a new commitment from the state and federal government (earmarks, grants, and principal forgiveness on loans).



21 out of 27 Census tracts in Wilmington (shown in red) meet EPA's definition of a disadvantaged community.

Funding Advocacy: Results

- State of Delaware revised drinking water program criteria for definition of disadvantaged communities in a manner in which City of Wilmington now qualifies

Old Definition: Disadvantaged communities defined by state based on water charges as percent of community-level Median Household Income

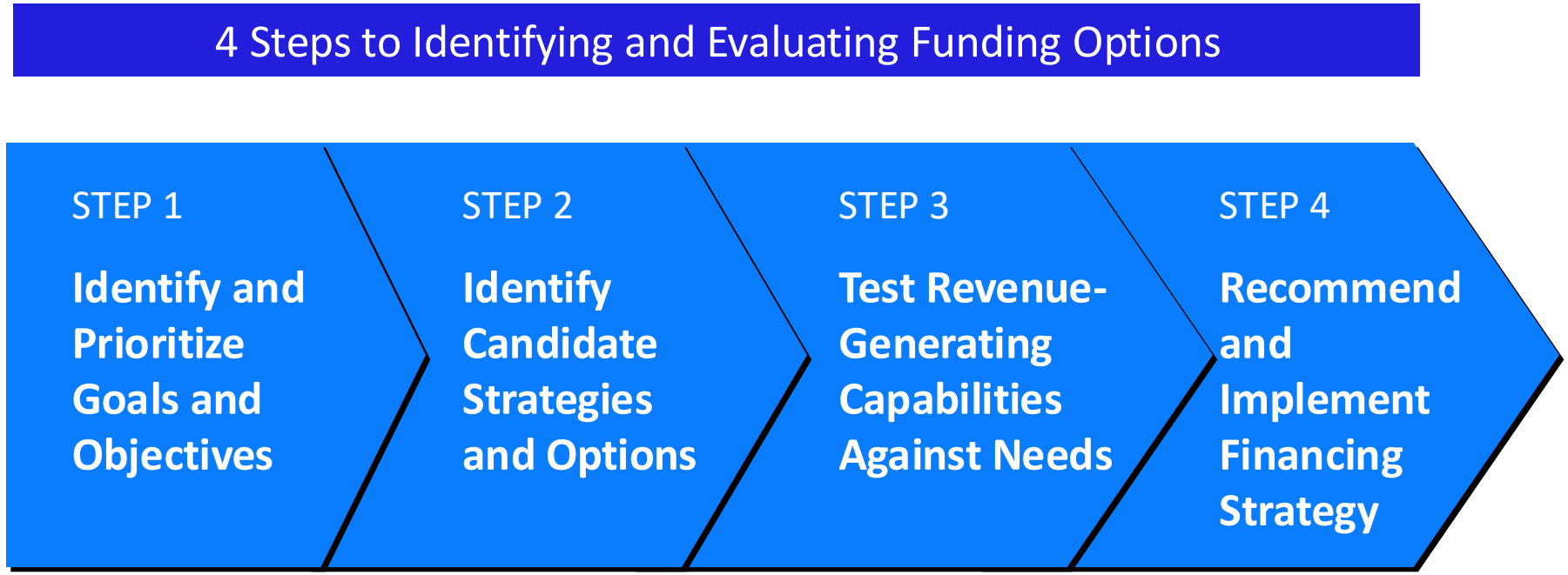
New Definition: A Disadvantaged community is one that:

- Meets the Affordability Criteria; or
- Is Identified by EPA EJSCREEN tool at 90% USA percentile or higher for Environmental Justice Indexes; or
- Is identified as disadvantaged by the White House Climate and Economic Screening Tool

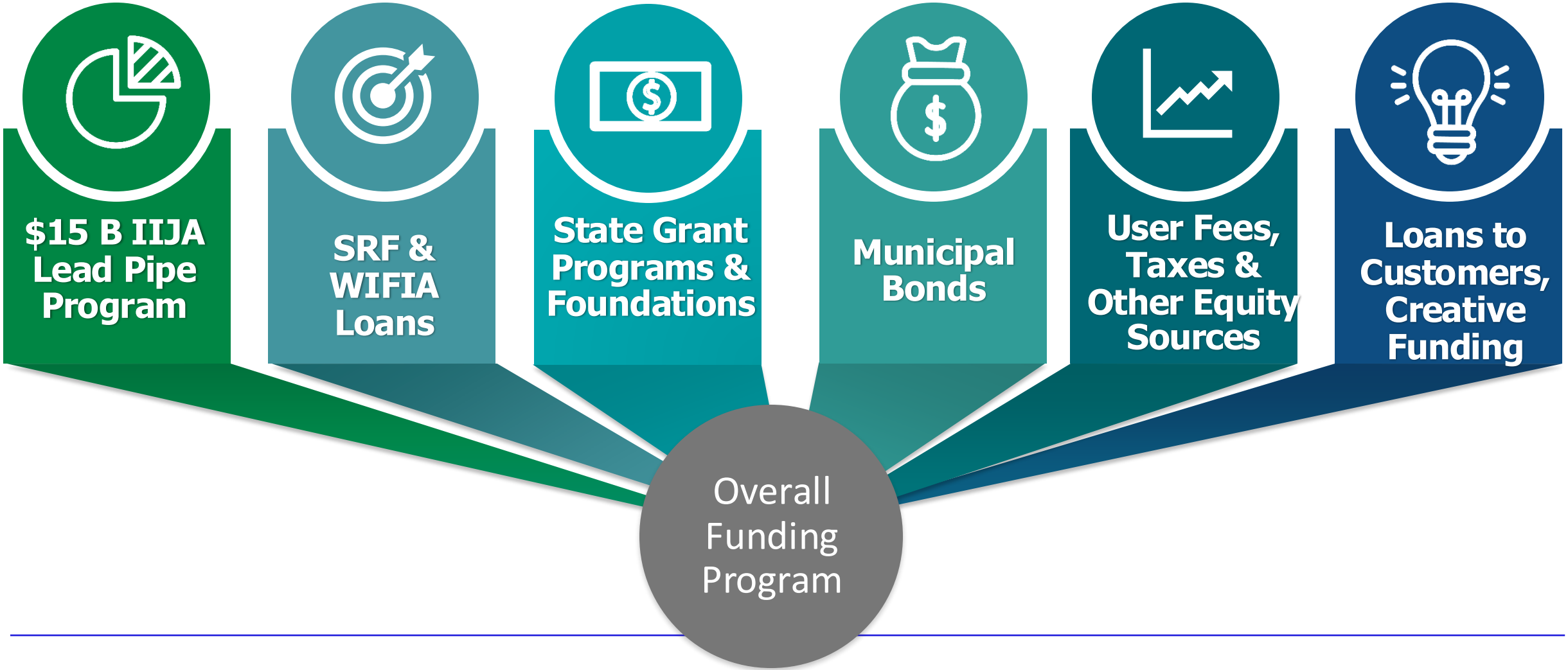
- Result: Wilmington received over $70M in principal forgiveness across its utility
  - **$22.8 M Lead Service funding**
  - $18.5 M in supplemental disadvantaged community funding for Transmission/Distribution improvements to support main and service replacements

LCRI Funding and Financing Strategies

Having a systematic financial planning process is more important than ever given financial uncertainties and changing access to outside funding



It is important to explore all viable funding sources given your community and state legislative and regulatory context.

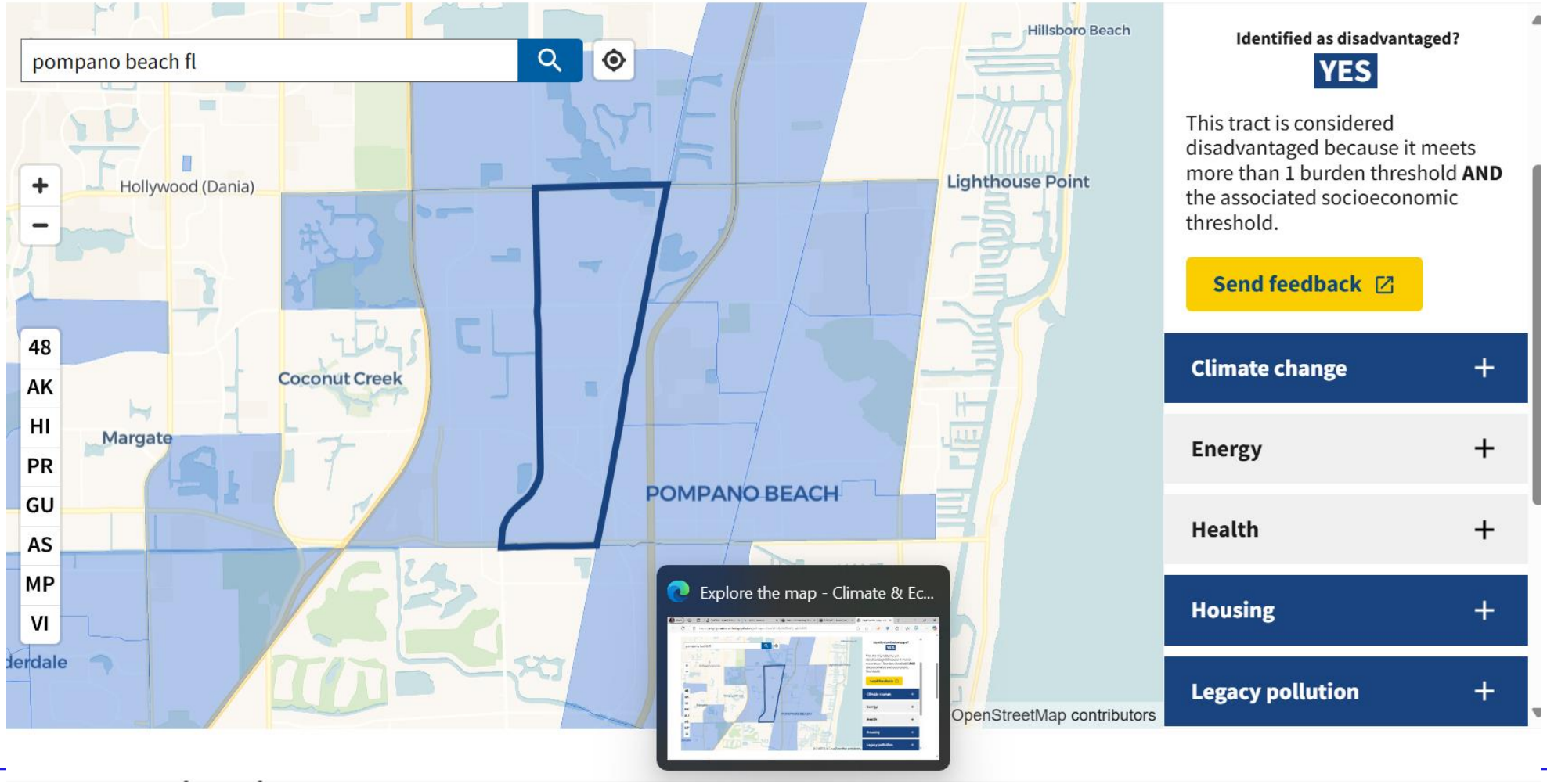


Development of a Funding Strategy

Factors that will influence the selection of a funding strategy for your community's LSLR program include:

- Characteristics of the LSLR program
  - Scope of work
  - Cost
  - Final timeline established for implementing of the program
- Availability of outside funding and extent to which your community qualifies for a portion of the principal forgiveness funding through BIL
  - Small (service population 10,000 or less?)
  - Low income or other indicators of Disadvantaged Communities?
- Community goals for funding program including input from stakeholders
- Have contingency plans given the current evolving situation in Washington, state agencies, and in the municipal bond markets

An unofficial version of the Climate & Economic Justice Screening Tool (CEJST), hosted by Harvard University, can be used to get a preliminary idea of whether your service area can qualify as disadvantaged to receive principal forgiveness funding. [Climate and Economic Justice Screening Tool]



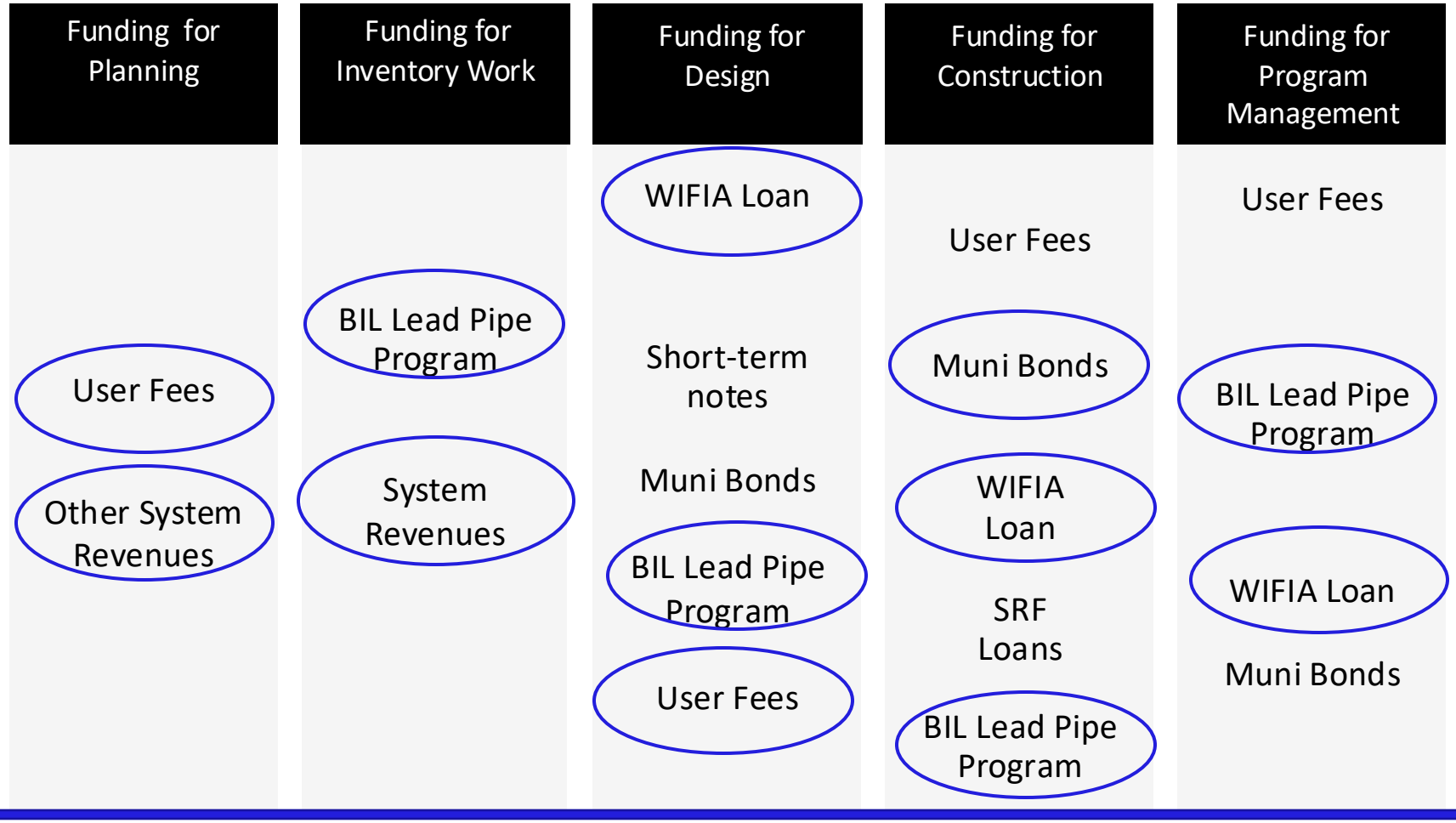
Water Infrastructure Programs

Funded by the EPA, administered by states

	FY22	FY23	FY24	FY25	FY26	TOTAL
Drinking Water SRF Appropriation	1.9B	2.2B	2.4B	2.6B	2.6B	**11.7B**
Clean Water SRF Appropriation	1.9B	2.2B	2.4B	2.6B	2.6B	**11.7B**
Emerging Contaminants ($ through DWSRF)	800M	800M	800M	800M	800M	**4B**
Emerging Contaminants ($ through Small and Disadvantaged Program)	1B	1B	1B	1B	1B	**5B**
Emerging Contaminants ($ through CWSRF)	100M	225M	225M	225M	225M	**1B**
Lead Pipe ($ through DWSRF)	3B	3B	3B	3B	3B	**15B**

Financing Strategy Example

- Some combination of funding/financing sources will likely be needed by most utilities given the magnitude of the lead service line programs and funding program restrictions

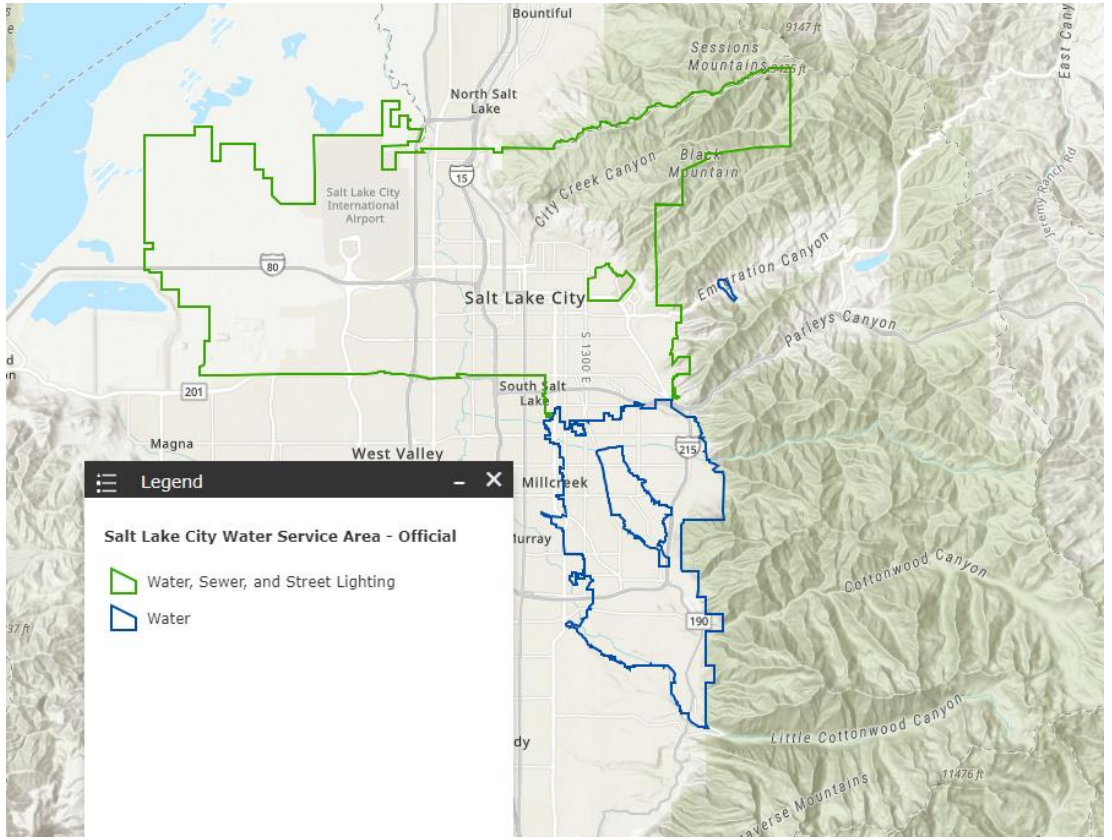


Salt Lake City's Proactive Planning Yields Important Early Program Funding

Salt Lake City's Water System

- Age of Salt Lake City: 177 years
- Age of water system: 148 years (Established in 1876 and is the oldest retail water provider in the West)
- Total Mileage of Pipe: 1,326 miles
- Number of Customers: 376,000
- Number of Service Connections: 88,000
- Communities Served: 7 different cities

Map of SLC's system



Salt Lake City's Lead Service Line Program

Program need of approximately $150 M, including $40 M during the first five years of implementation

A comprehensive financial capability assessment (FCA) study indicated a number of core neighborhoods with significant low income and other disadvantaged customers

Based on coordination and discussions with the State of Utah, the application proposed a programmatic approach for the first five years of the program

A Programmatic Approach

Unknown nature of the City's replacement needs make this project a good fit for a programmatic approach

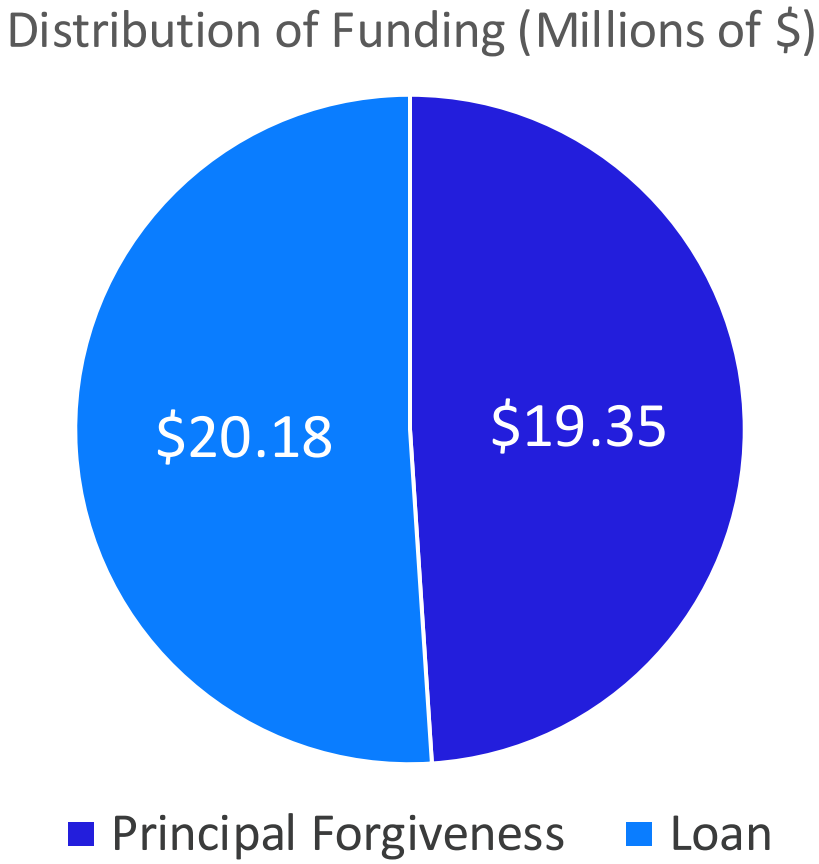
The Programmatic Approach provides the City with flexibility in how much funding is spent each year on planning and construction activities

Salt Lake City's Application requested funding for:

- Ongoing updates to the City's Inventory
- Lead Service Line Investigations (including potholing)
- Lead Service Line Replacement and Associated Activities
- Replacement of aging water mains to facilitate LSLRs
- Program planning and coordination

State Program Award

- City Received a Funding Package equivalent to the requested $39.920
  - 49% of the funding provided as Principal Forgiveness
  - 51% of funding provided as low interest loan at 1.5% interest for 39 years.
- ***First time Salt Lake City has qualified for SRF Money***



Funding Recap

- Start today if you haven't already developed a funding plan for your lead service line program
- Conduct FCA studies and other service area evaluations that will help you make the case for principal forgiveness funding
- Consider a wide range of funding and financing sources: you are going to need to stack multiple sources to fully fund your program
- Seek the maximum amount of outside funding, but be prepared to be supplement` with local resources
- Explore flexibilities in funding programs, such as programmatic approaches to SRF funding and master agreements through the WIFIA loan program
- Have back up plans given the evolving changing context!

Key Takeaways

- Prepare for LCRI Compliance Deadlines & Required Submissions
- Stay Informed on Potential Regulatory Changes

Comply with LCRR Requirements

Prepare for LCRI Compliance Deadlines & Required Submissions

2025, 2026, 2027

Comply with LCRR requirements below; otherwise, follow LCR provisions:

- ❑ Maintain and update inventory
- ❑ Include inventory instructions in annual Consumer Confidence Report
- ❑ Send annual consumer notices for lead, GRR, or unknown service lines & submit certification to state
- ❑ Issue Tier 1 Public Notification within 24 hours for lead action level exceedance
- ❑ Use updated lead health effects language

11/1/2027

LCRI compliance date; submit the following:

- ❑ Baseline inventory
- ❑ Service line replacement plan for systems with lead, GRR, or unknowns
- ❑ List of schools and licensed childcare facilities

1/1/2028

Begin compliance tap monitoring, submit the following prior to sampling:

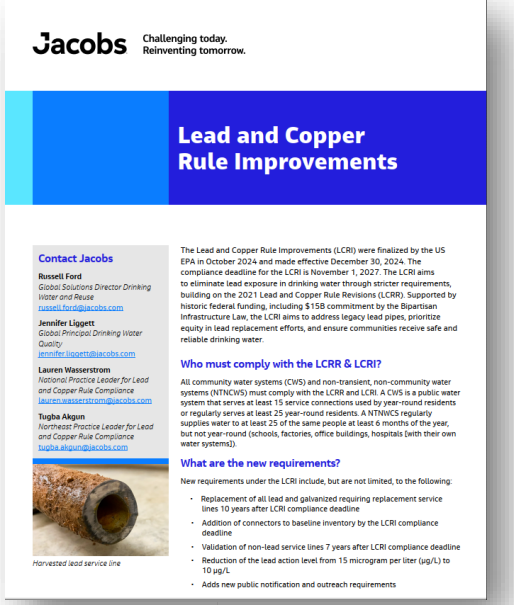
- ❑ Site Sample Plan (including list of tap sample site locations & water quality parameter monitoring)
- ❑ Tap Sampling Protocol

Stay updated on compliance deadlines and requirements & engage with primacy agency

Resources

Resources

- Jacobs – Lead in Drinking Water Website
- EPA
  - LCRI Website
  - Lead and Copper Rule Implementation Tools
  - 3Ts for Reducing Lead in Drinking Water
- Federal Register
- AWWA Website
- LSL Replacement Collaborative Website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Lead and Copper Rule Improvements

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Harvested lead service line

The Lead and Copper Rule Improvements (LCRI) were finalized by the US EPA in October 2024 and made effective December 30, 2024. The compliance deadline for the LCRI is November 1, 2027. The LCRI aims to eliminate lead exposure in drinking water through stricter requirements, building on the 2021 Lead and Copper Rule Revisions (LCRR). Supported by historic federal funding, including $15B commitment by the Bipartisan Infrastructure Law, the LCRI aims to address legacy lead pipes, prioritize equity in lead replacement efforts, and ensure communities receive safe and reliable drinking water.

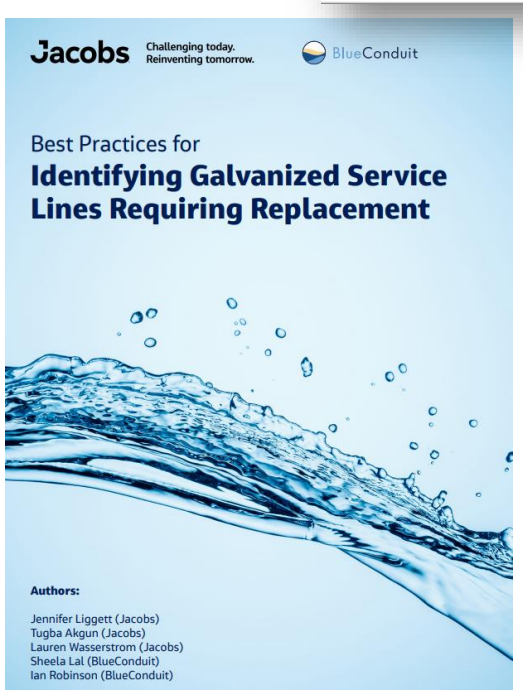
Who must comply with the LCRR & LCRI?

All community water systems (CWS) and non-transient, non-community water systems (NTNCWS) must comply with the LCRR and LCRI. A CWS is a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. A NTNWCS regularly supplies water to at least 25 of the same people at least 6 months of the year, but not year-round (schools, factories, office buildings, hospitals [with their own water systems]).

What are the new requirements?

New requirements under the LCRI include, but are not limited, to the following:

- Replacement of all lead and galvanized requiring replacement service lines 10 years after LCRI compliance deadline
- Addition of connectors to baseline inventory by the LCRI compliance deadline
- Validation of non-lead service lines 7 years after LCRI compliance deadline
- Reduction of the lead action level from 15 microgram per liter (µg/L) to 10 µg/L
- Adds new public notification and outreach requirements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Best Practices for

Identifying Galvanized Service Lines Requiring Replacement

Authors:

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Corrosion Control

Jacobs

The Issue

Treated drinking water leaving a water treatment plant rarely contains appreciable concentrations of metals such as lead or copper. Water chemistry, however, can contribute to the corrosion of distribution system and household plumbing materials, causing the release of iron, lead, copper, and manganese into drinking water as it travels to the customer's tap.

The corrosion of pipe materials can impact the microbiological quality of water and can cause a variety of aesthetic issues, such as taste, odor, and discoloration. Of particular concern, lead release poses a serious health hazard for infants and children as it is known to have long-lasting impacts on cognitive development. Corrosion can also impact distribution system operations; for example, tuberculation can increase headloss and decrease hydraulic capacity of watermains and service lines.

Many municipalities have implemented strategies to manage corrosion in their distribution system. This is usually in response to multiple objectives, including achieving compliance with regulations, the protection of public health, maintaining an acceptable level of service for customers, and protecting the investment made in the infrastructure. Changes in water quality brought about by water source changes or treatment process modifications at the water treatment plant usually require an evaluation to identify and manage potential impacts on corrosion in the distribution system.

Further, the recent Lead and Copper Rule Revisions have new corrosion control treatment (CCT) requirements for all public water systems in the United States. These requirements include optimization or re-optimization of CCT with review of pH/alkalinity adjustment and/or corrosion control inhibitors (orthophosphate or silica). Additional CCT related requirements include pipe-loop studies for water systems with lead service lines.

Harvested lead service line

Pipe loop testing rig

Jacobs has a long history of helping municipalities manage corrosion in their distribution systems. Our experience precedes the Lead and Copper Rule in the United States and the Federal guidance and Provincial regulations for corrosion control in Canada.

Our team has partnered with municipalities, utilities, and public health agencies to earn regulatory approval for various treatment-based and non-treatment-based corrosion control strategies. We have been instrumental in helping several large cities assess their risk for corrosion, select a preferred control approach, conduct pilot testing, develop monitoring plans, plan public outreach, and implement their corrosion control strategy – and as a result introduced corrosion control protection to more than 8.2 million people in the United States and Canada. In several cases, we have provided follow-on support for corrosion control performance optimization and for achieving compliance with corrosion regulations as they evolve.

Jacobs has advised governments in support of regulatory development related to corrosion control in the United States and Canada, AWWA committees and divisions, and have been contributors and technical editors for corrosion control guidance documents, including AWWA's *MS8 Internal Corrosion Control in Water Distribution Systems*.

Thank You

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https://floridadep.gov/wra/srf/content/bipartisan-infrastructure-law-and-srf#DWSRF-LSL

DWSRF Lead Service Line Inventory and Replacement Funding

This additional fund is specifically for the replacement of lead service lines.

- Lead Service Line (LSL) inventory work is eligible as a planning loan project.
- Design and bidding for Lead Service Line replacement projects is an eligible project as a design loan project.
- With exemption to 62-554.300(4)(j) F.A.C., projects funded under this supplemental funding must replace entire lead service line (EPA definition and figure depicting service line), not just a portion, unless a portion has already been replaced.
- Galvanized pipe and goosenecks are only eligible if they are or have previously been downstream of known lead service lines.
- Internal (aka premise) plumbing and apparatuses are NOT currently eligible for this supplemental funding as it is not DWSRF eligible. This includes plumbing and water coolers in schools and day cares, as well as plumbing inside homes and multifamily residential buildings.
- 49% of the funding will be given in the form of Principal Forgiveness to disadvantaged communities. For the purpose of the LSL funding, disadvantaged communities includes utilities that qualify as disadvantaged per Chapter 62-552, F.A.C., as well as utilities serving areas identified as disadvantaged in accordance with the Climate and Economic Justice Screening Tool.
- This funding will be provided at zero percent financing rate with a ten-year, semi-annual repayment period.
- For more information on all types of Federal funding for LSL replacement go to EPA's website at www.epa.gov/ground-water-and-drinking-water/funding-lead-service-line-replacement.
- Example Lead Service Line Project Request for Inclusion (RFI) Submittal

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