Welcome to the Association of State Drinking Water Administrator's Lead Service Line Inventory Symposium

asdwa
Association of State
Drinking Water Administrators

Lead Service Line Inventory Symposium
Session 8 – Tell Me About It: Mapping and Communicating Your LSL Inventory and Replacements

Stephanie Schlea

Senior Water Policy Advisor

asdwa
Association of State
Drinking Water Administrators

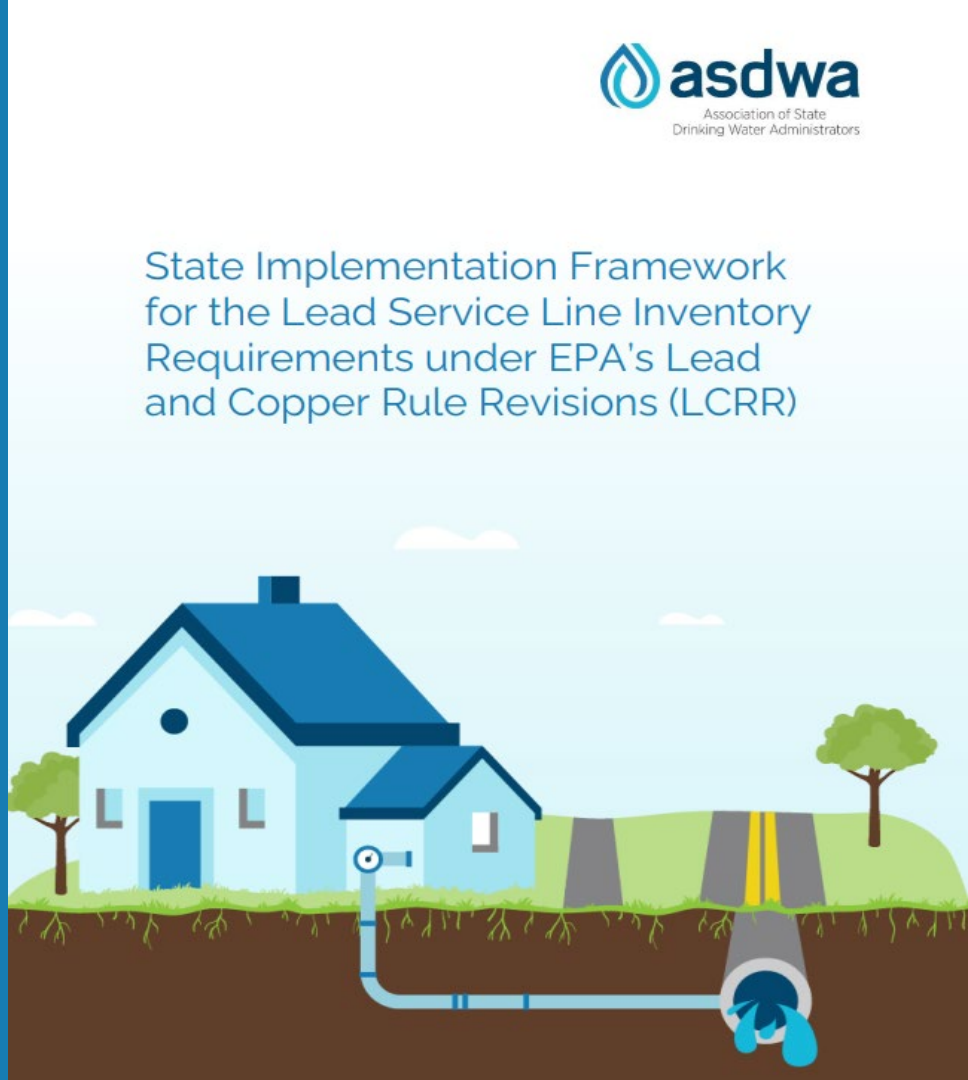
HOUSEKEEPING ITEMS

- Please note that ASDWA is unable to offer CEUs or completion certificates for this symposium.
- ASDWA will not be able to provide technical support for GoToWebinar during the session. If you have issues with a lagging video or sound, please check your broadband connection. We recommend closing all other applications to maximize your bandwidth.
- All sessions will be recorded and will be available later on ASDWA's website should you have connection issues or if you miss a session.
- Each session will include at least 30 minutes for question and answers, so please type your questions into the chat box and we will bring those up in the discussion portion.

Now available for download on our website:

- ASDWA's LSL Inventory Framework
- LSL Inventory Template

www.asdwa.org/lead-and-copper-rule-lcr/



SYMPOSIUM OVERVIEW

Morning Webinars
11:00 AM-12:30 PM EST

Afternoon Webinars
3:00 PM-4:30 PM EST

Recordings and slide decks will be available on the event page:
www.asdwa.org/event/lead-service-line-inventory-symposium/

Wednesday, February 2

- *Session 1: Overview of LCRR*
- *Session 2: Notes from the Field: State and Utility Experiences with Existing LSL Inventory Rules*

Wednesday, February 9

- *Session 3: Capitalizing in Innovations for LSL Inventories*
- *Session 4: Small Systems, Big Challenges: Implementing LSL Inventories and Replacements at Small Systems*

Wednesday, February 16

- *Session 5: Water System Inventory Case Studies*
- *Session 6: Show Me the Money: Funding for LSL Inventories and Replacement*

Wednesday, February 23

- *Session 7: The Other Side of the Meter: Practical Tools for Collecting Private-Side Service Line Material*
- **Session 8: Tell Me About It: Mapping and Communicating your LSL Inventory and Replacements**

Wednesday, March 2

- States-only debrief (3:00-4:30 EST)

WHAT THIS SYMPOSIUM…

IS

- A starting point for the drinking water community to begin developing inventories
- An introduction to adaptive management
- Shared experiences from states and water systems
- Discover opportunities to further the discussion on inventories

IS NOT

- About EPA's inventory guidance
- The final word on inventories or specific inventory requirements
  - Questions will remain for how states should/will implement rule
- A forum for answering every possible question about inventories
  - Not planning to develop a set of FAQS
  - Not planning to answer state-specific questions
- A forum to debate LCRR or LCRI

SESSION 8 SPEAKERS

- Christa Campbell, ESRI
- Tiffaney Hardy, Greater Cincinnati Water Works
- Maureen Schmelling, DC Water
- Mike McGill, Water PIO

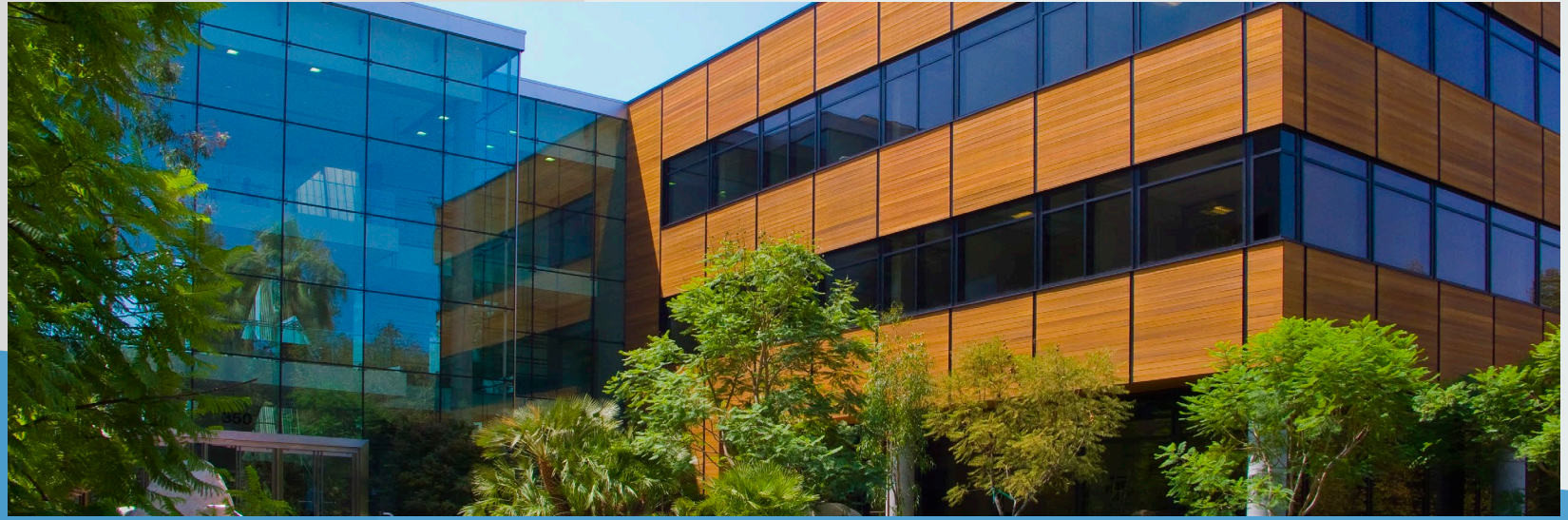
ArcGIS: Helping to meet updated Lead and Copper Rule Requirements

Christa Campbell

esri
THE SCIENCE OF WHERE®

Who is Esri?

Headquartered in Redlands, CA

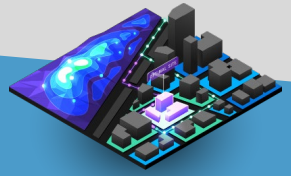


Global market leader in GIS

ArcGIS

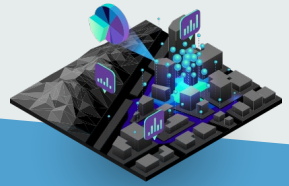
ArcGIS enables organizations to gain greater insights using contextual tools to visualize and analyze data.

ArcGIS provides maps, apps, dashboards, and reports that increase sharing and collaboration.

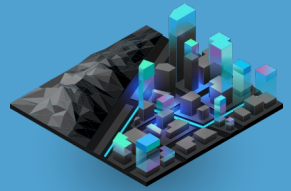


Spatial Analysis & Data Science

Field Operations

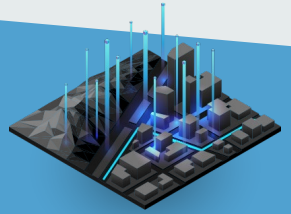


Mappin g



3DGIS

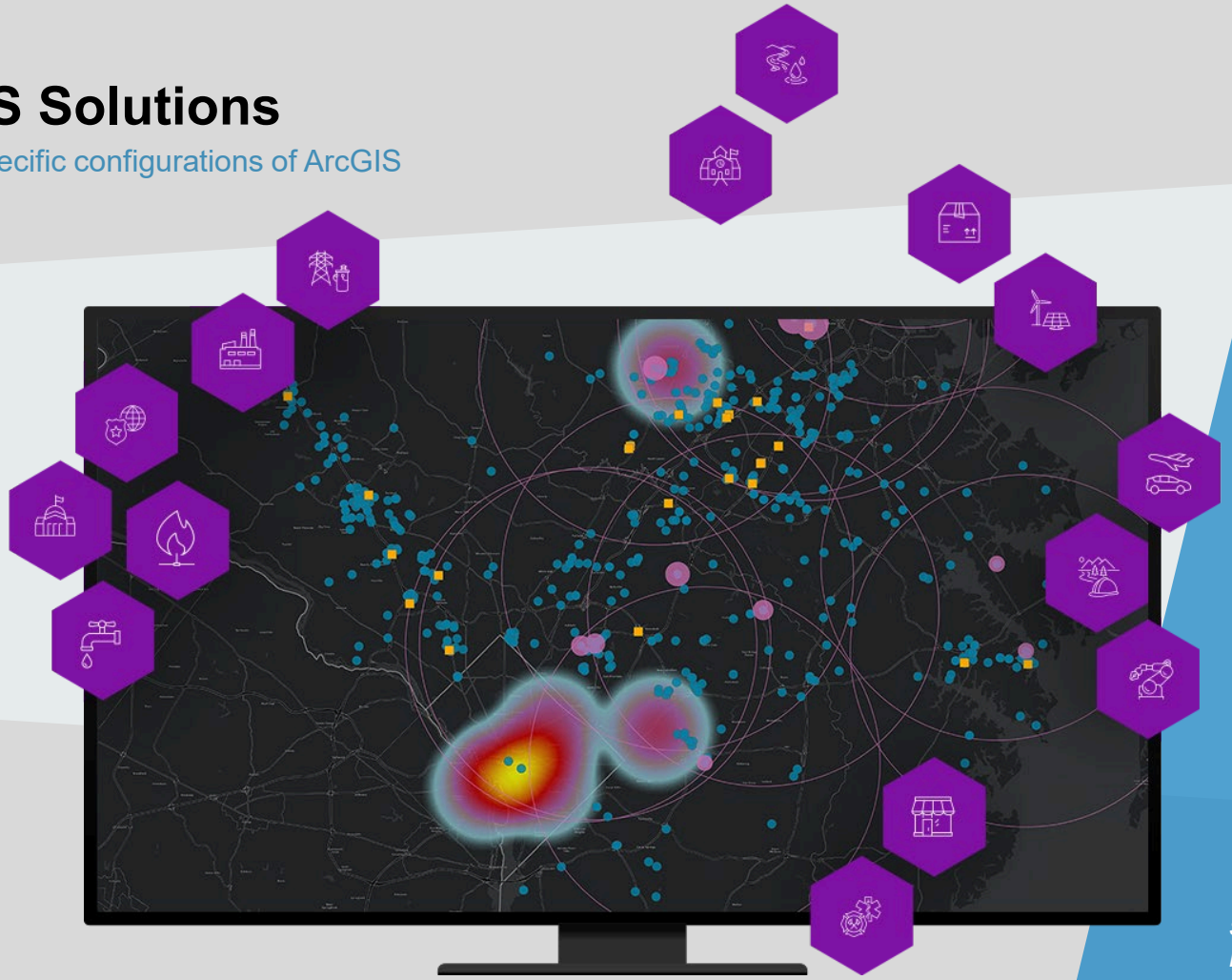
Imagery & Remote Sensing



Data Collection & Management

ArcGIS Solutions

Industry-specific configurations of ArcGIS

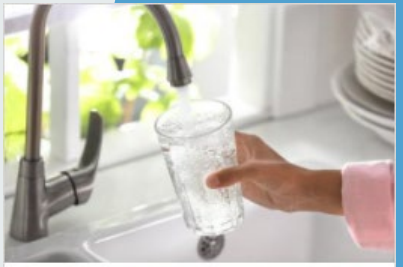


solutions.arcgis.com

Lead Service Line Inventory Solution

Created to help utilities comply with the lead and copper rule revisions

- Inventory service lines
- Manage a lead service line replacement program
- Monitor compliance
- Share service line inventory with stakeholders and the public
- Inform the community



Lead Service Line Inventory

Lead Service Line Inventory can be used to develop a lead service line inventory and monitor the replacement of service lines required to comply with the Environmental Protection Agency's (EPA) Lead and Copper Rule Revisions.

solutions.arcgis.com

Lead Service Line Inventory Solution

A system of applications

- High volume data edits and analytics in desktop GIS
- map service locations and Identify service line material
- Edit and verify data from the field
- Manage service line replacement
- View service line information and status
- Monitor compliance
- Lead service line replacement program web site

Service Line Inventory
ArcGIS Pro

Web Apps

Web AppBuilder

Service Line Viewer

Service Line Replacement Manager

Service Line Editor

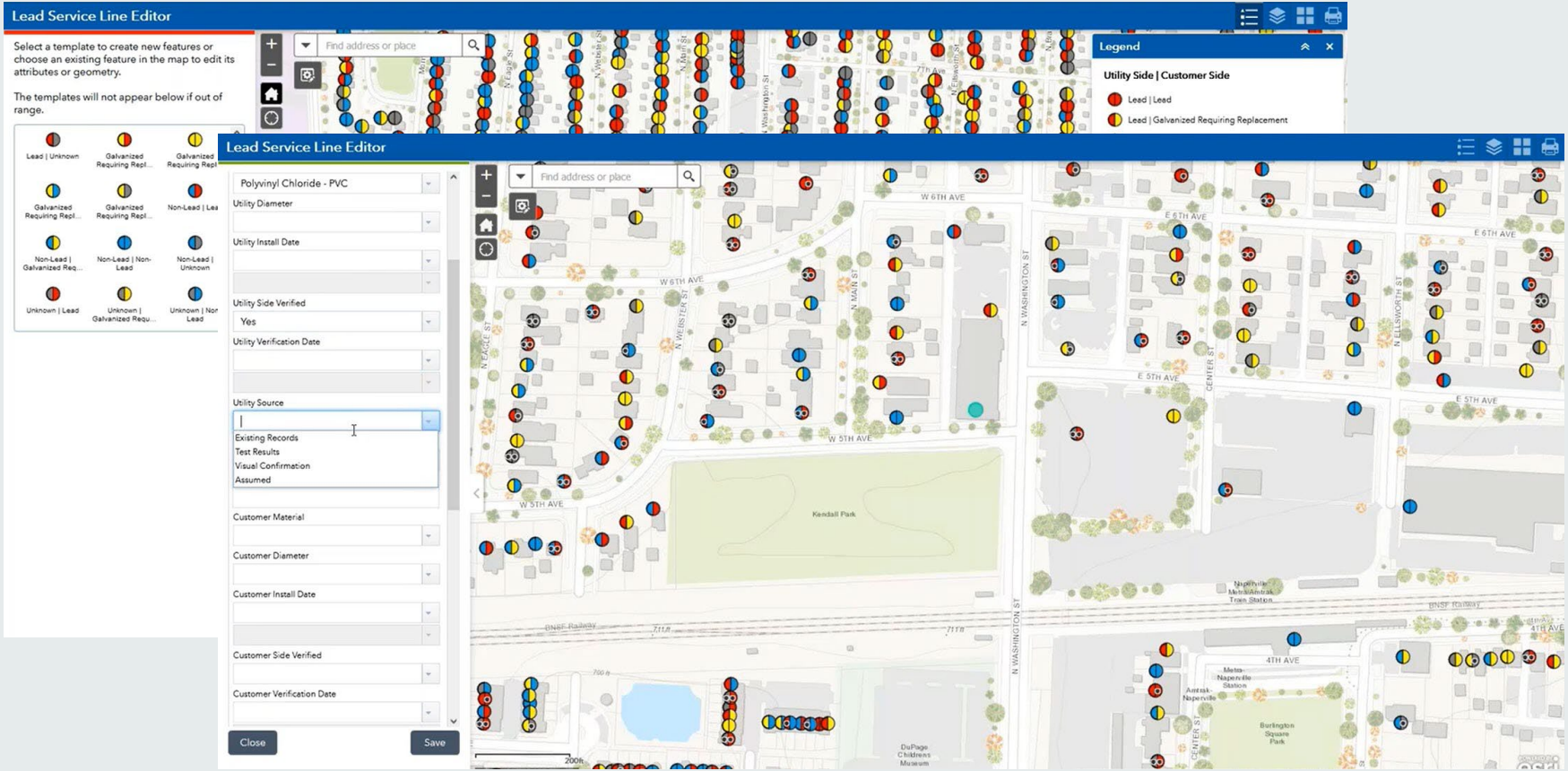
Service Line Public Viewer

Service Line Mobile Editor
Field Maps

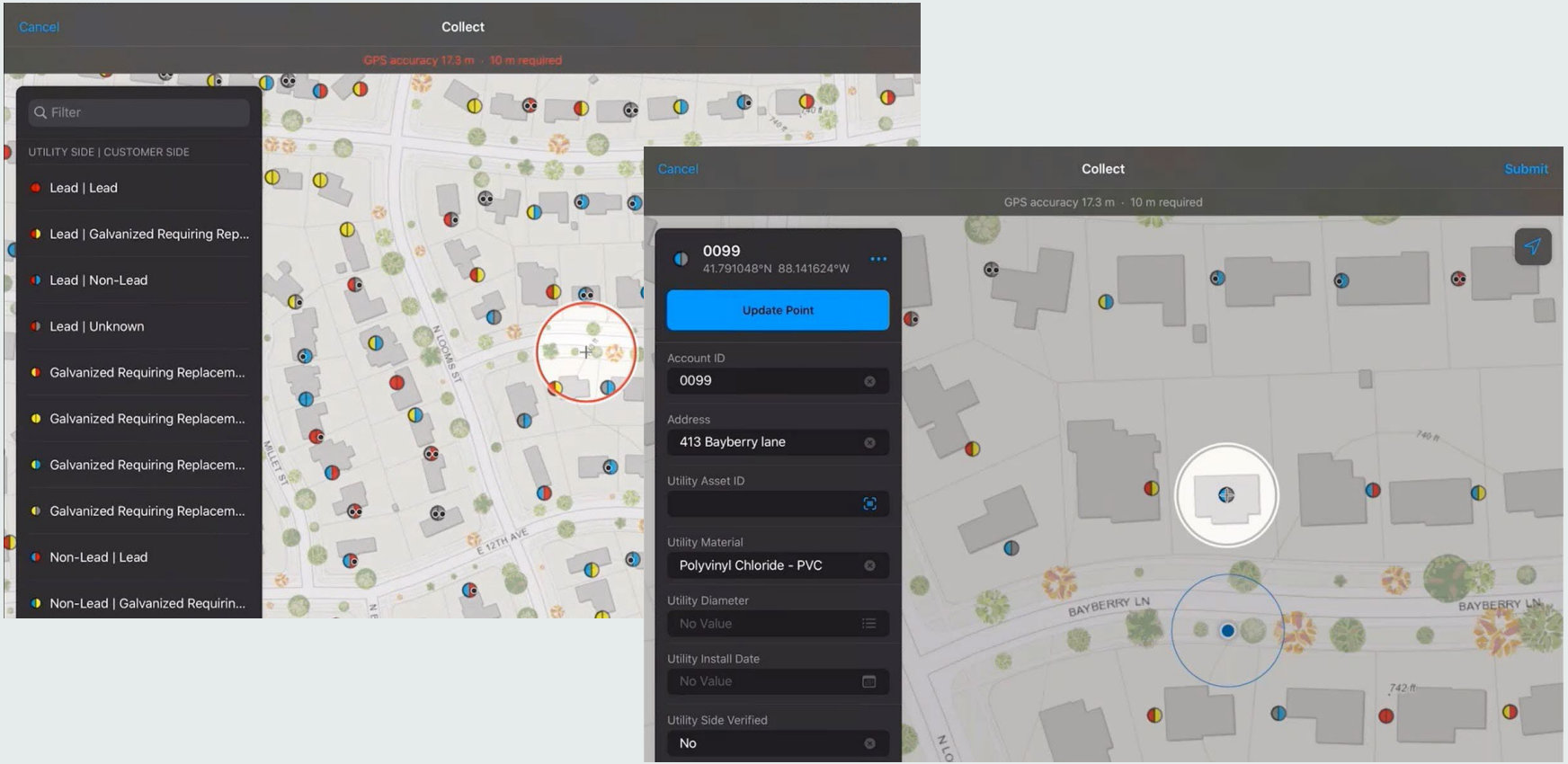
Service Line Dashboard
ArcGIS Dashboards

Lead-Safe Community
ArcGIS Hub site

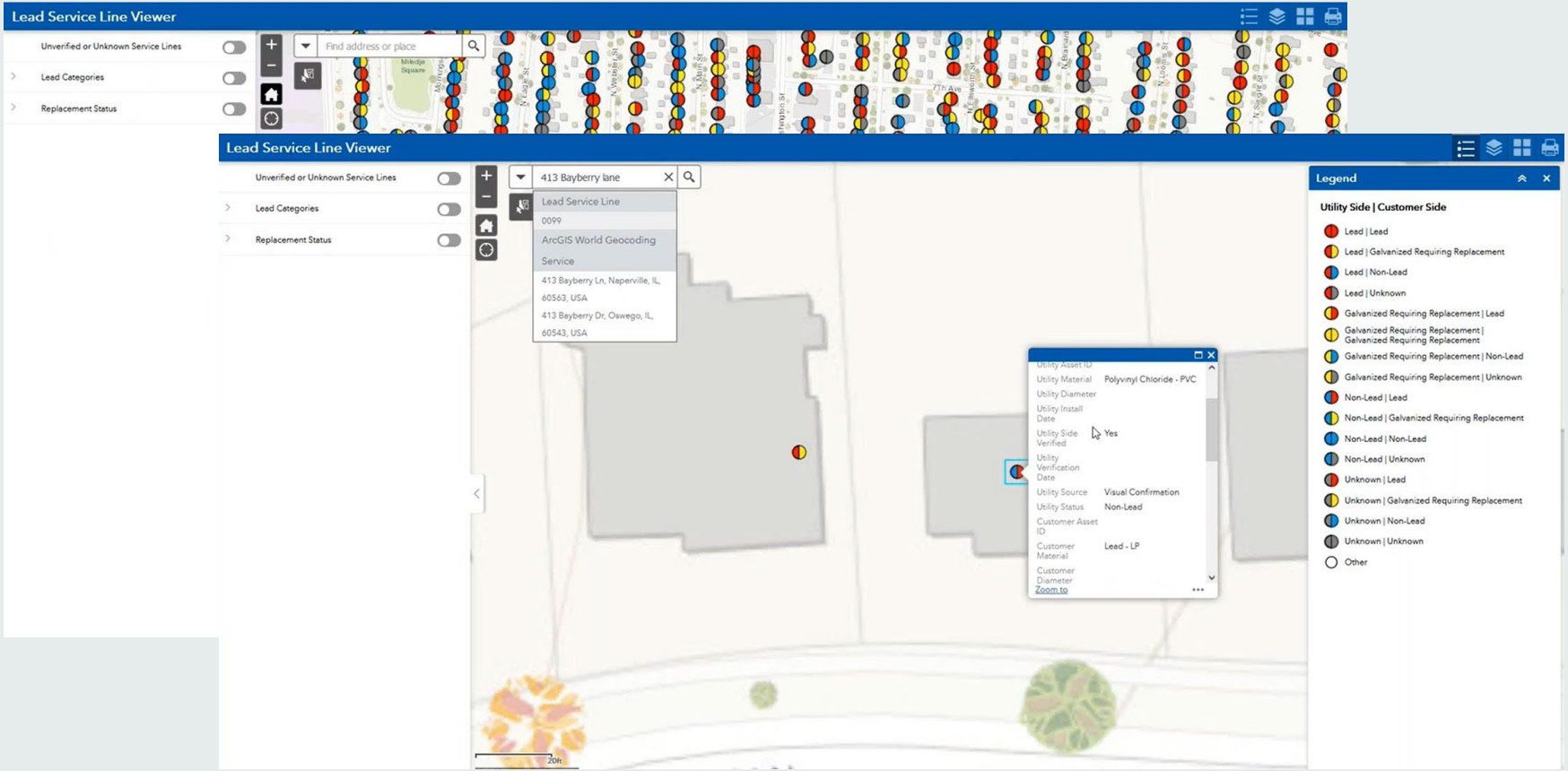
Service Line Editor



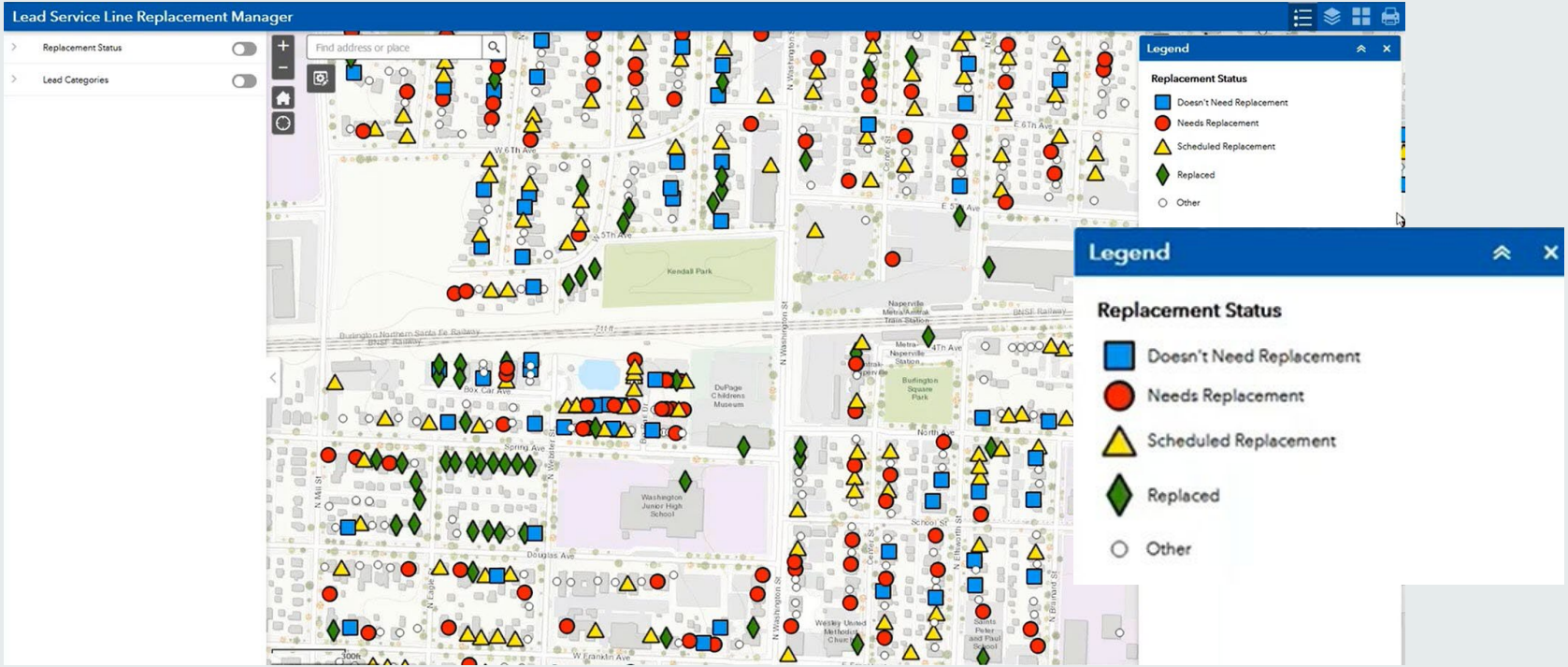
Service Line Mobile Editor



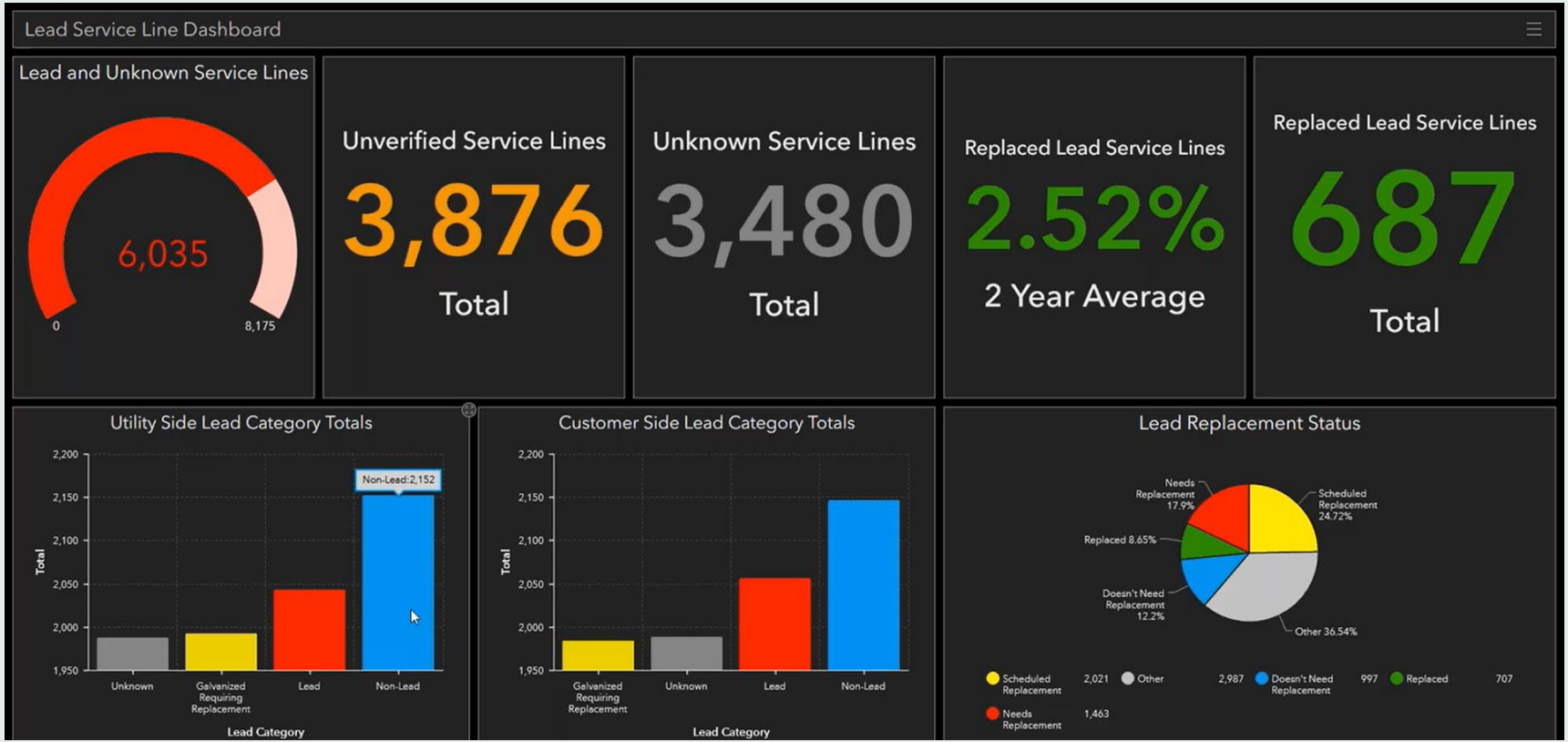
Service Line Viewer



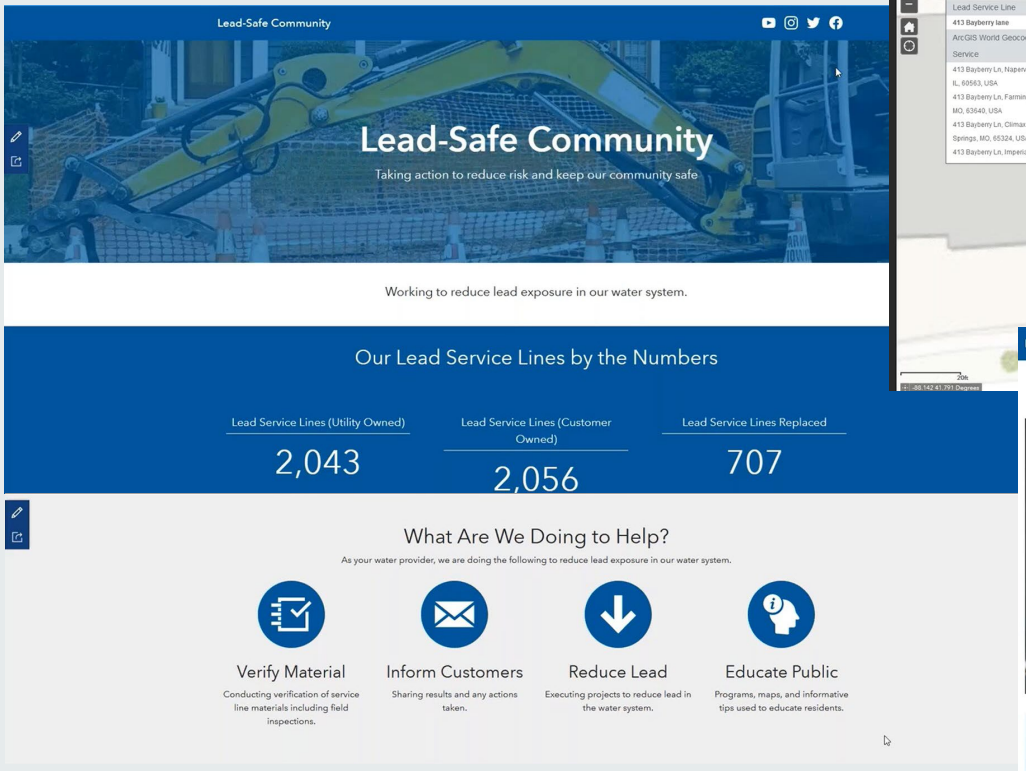
Service Line Replacement Manager

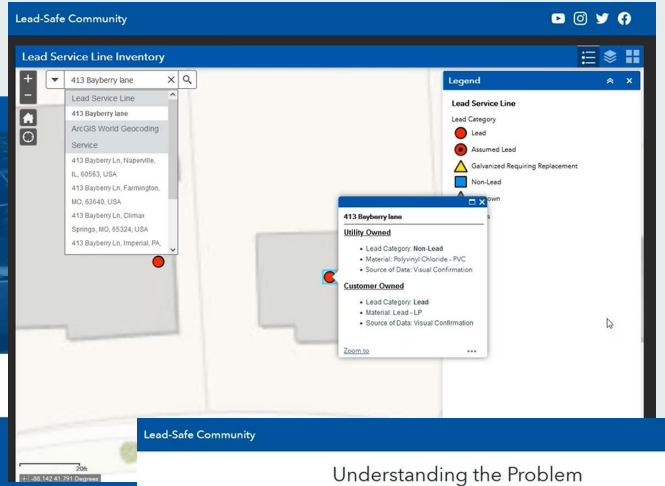


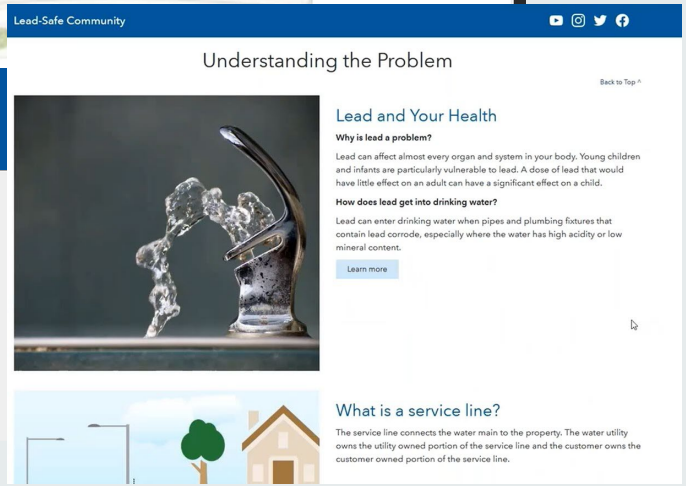
Service Line Dashboard



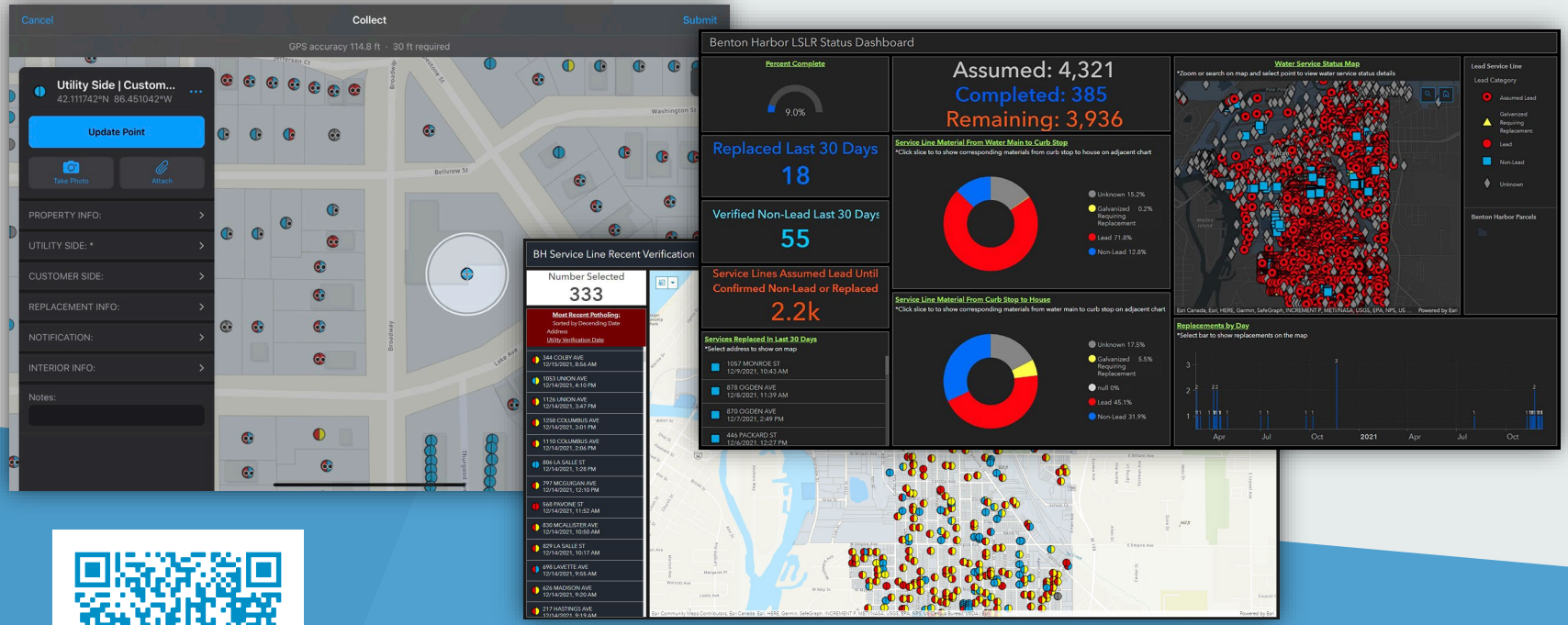
Service Line Community Hub







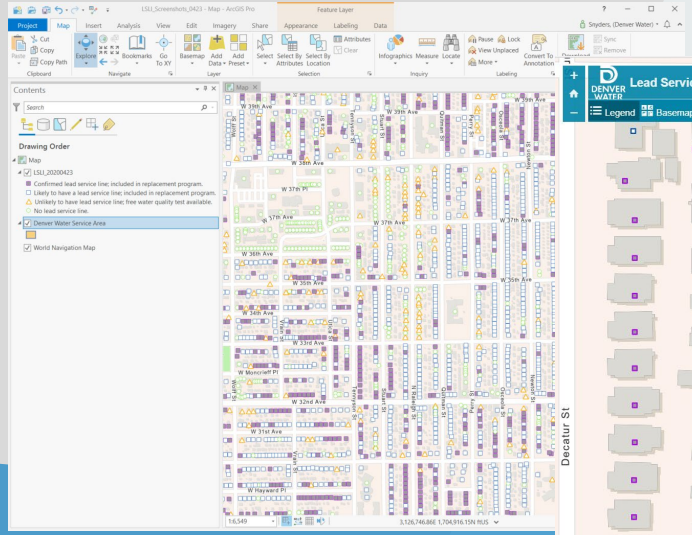
Lead Service Lines: Data Transparency for a Community in Action

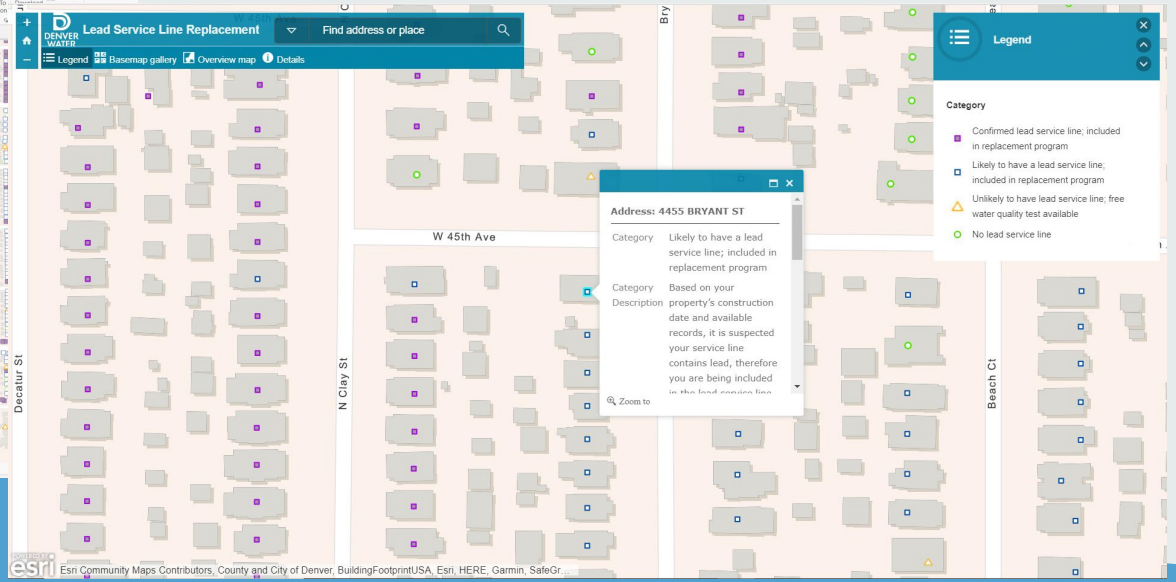


The Lead Service Line Inventory solution has saved hundreds of valuable hours that can now be spent in other ways.

Garrick Garcia, GIS Technician

Denver Water Protects Customers with Data-Driven Lead Reduction Program





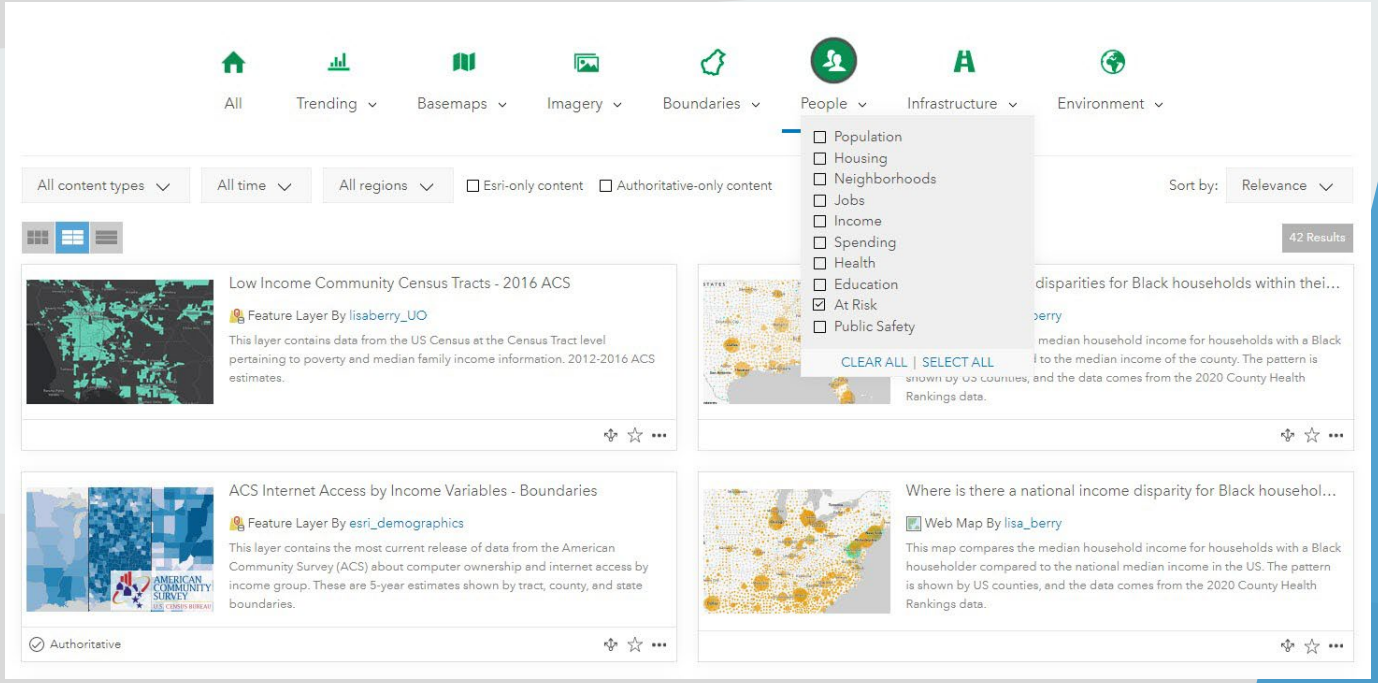
Delivering safe drinking water is Denver Water's most important responsibility…

Jim Lochhead, CEO / Manager

Water User Group Meeting | Presenters
Esri
Demo: Managing your
Lead Service Line Inventory
Ben Segal
Solutions Engineer

ArcGIS Living Atlas of the World

A collection of geographic information from around the world



Livingatlas.arcgis.com

Thank you!

Christa Campbell
Director Industry Solutions, Water
ccampbell@esri.com

Esri Water Meetup

@EsriWater

Esri Water Utilities

esri
THE SCIENCE OF WHERE®

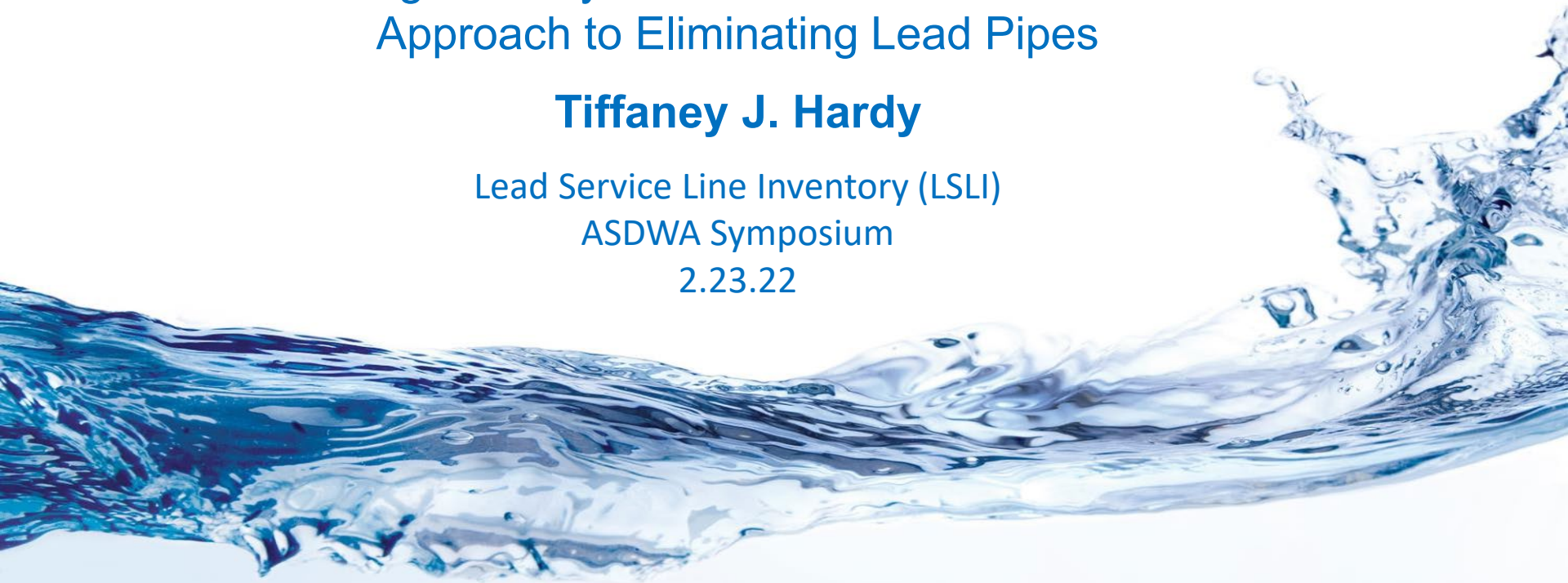
esri
THE
SCIENCE
OF
WHERE

A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS
leading the way

Leading the Way: Cincinnati's Communications Approach to Eliminating Lead Pipes

Tiffaney J. Hardy

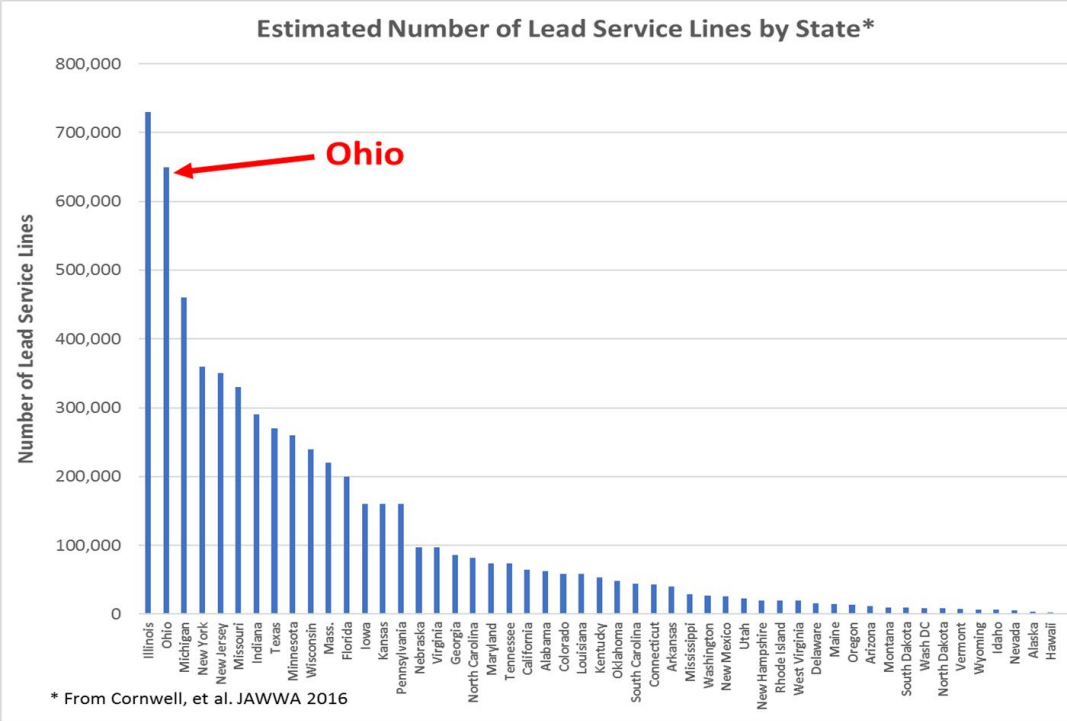
Lead Service Line Inventory (LSLI)
ASDWA Symposium
2.23.22



The Lead Problem

A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

US Lead Service Line (LSL) Estimate: 6.1M*



A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

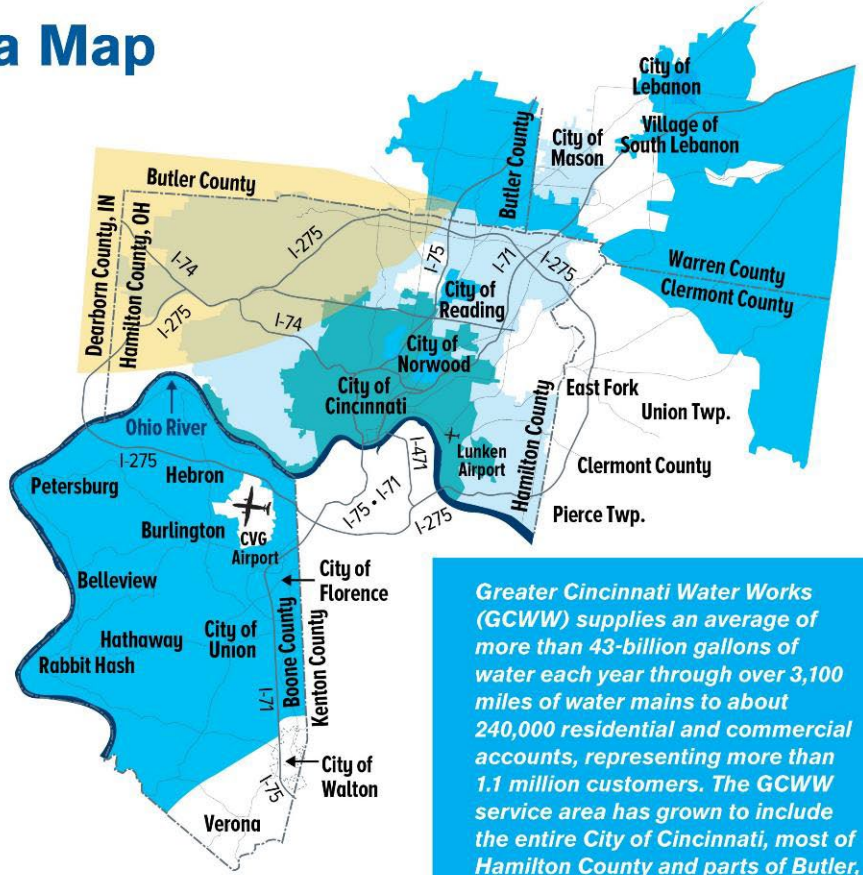
GCWW Background

- Early 1900's - Cincinnati's New Works
- 1927 - Lead pipe usage discontinued in public ROW
- 1950's – rapid expansion of water system outside of municipal boundaries
- 1990's – LCR, GCWW enacted lead program and successful corrosion control treatment
- 2017 – Enhanced Lead Program Approved (40% cost sharing program up to $1500;Funded by water rates)
- Customer Assistance HELP Program – (Low-income eligibility; 80% AMI; Funded thru donations)
- 2022 - Revised LSL Program (100% funding for LSL Replacements)

Service Area Map

Most customers receive water from Richard Miller Treatment Plant (RMTP), however, the area highlighted in yellow generally receives water from Charles M. Bolton Plant (CMBP). Areas near the arc may receive water from either and/or both plants.

- *City of Cincinnati (Retail Service Area)*
- *GCWW Retail Service Areas*
- *Wholesale Areas*
- *County Boundaries*
- *Receives Water* from CMBP



Greater Cincinnati Water Works (GCWW) supplies an average of more than 43-billion gallons of water each year through over 3,100 miles of water mains to about 240,000 residential and commercial accounts, representing more than 1.1 million customers. The GCWW service area has grown to include the entire City of Cincinnati, most of Hamilton County and parts of Butler, Warren and Clermont Counties in Ohio, and Boone County in Kentucky.

GCWW's Enhanced Lead Program Approach

Two-tiered approach:

- Communication, Mapping, and Outreach Strategies
- Lead Service Line Replacement Strategies

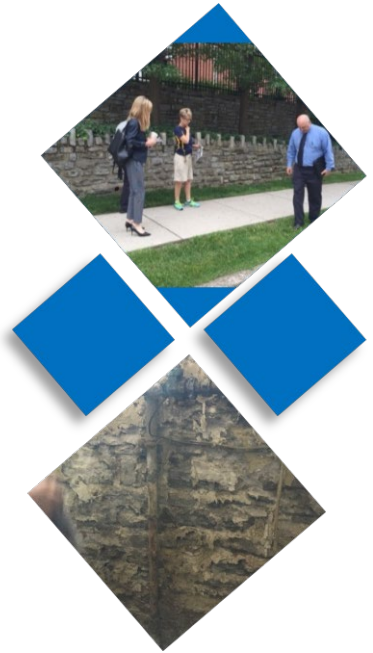
Ultimate Goal: To become a lead-safe water city

leading the way
removing lead
protecting health
revitalizing communities

GCWW's Enhanced Lead Program

Communication & Outreach Strategies

- ❑ Relevant
- ❑ Responsive
- ❑ Reaching Out
- ❑ Rewarding



Relevant

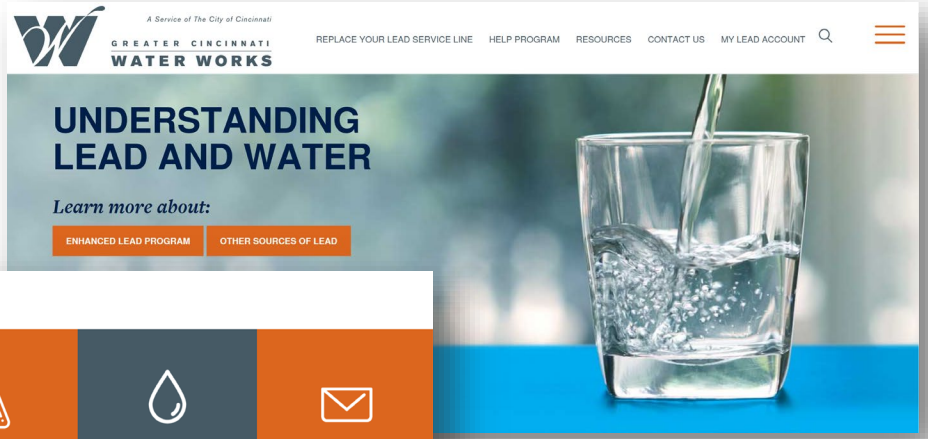
- ❑ Reflecting the communities we serve
- ❑ Investing in the community
- ❑ Being Authentic

Relevant

- ❑ Utilizing Social Media
- ❑ Community Engagement Activities
- ❑ Special Events

Responsive

- ❑ Speakers Bureau
- ❑ lead.mygcww.org website
- ❑ 513-651-LEAD Hotline

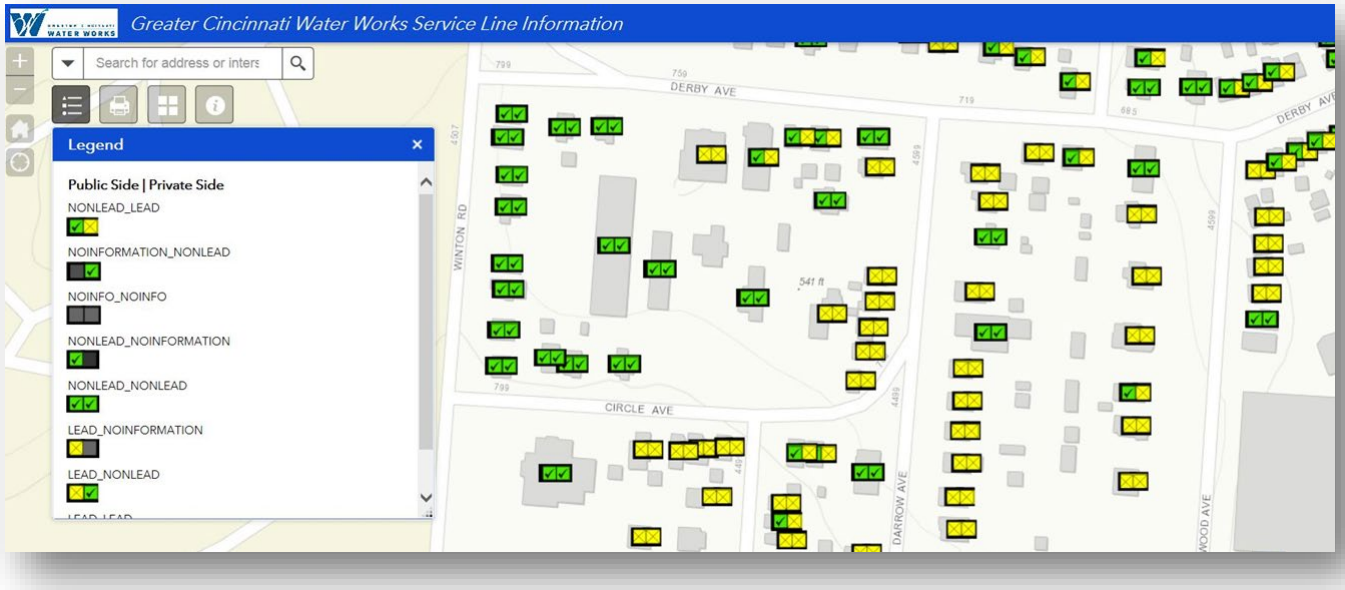


Reaching Out

- ❑ Letter Campaigns/Door Knockers
- ❑ Community Forums
- ❑ Neighborhood Meetings
- ❑ Stakeholder Strategy Sessions

Rewarding

- ❑ FREE Customer Lead Testing & School Testing Program
- ❑ Water Filter Pitchers
- ❑ Customer Assistance Programs
- ❑ LSL Lookup Map



A Service of The City of Cincinnati
GREATER CINCINNATI WATER WORKS

Strong communication and outreach principles that positively impact the community.

Community Outreach

Speaker's Bureau at Community Council Meetings

Affordability & Assistance Programs

Reduction in shutoffs (before pandemic)

Increased communications and alerts via social media

Community engagement & resource partners

Improved communications to employees

Questions???

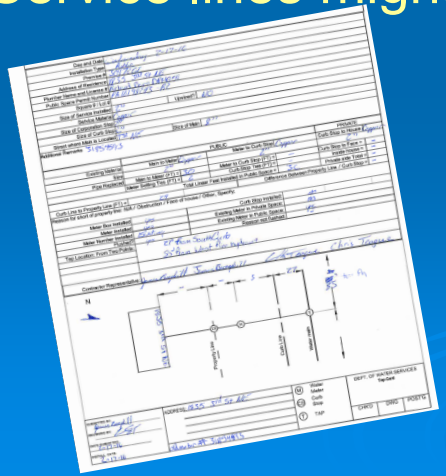
Specially Cleaned
Sample Container
LOT NO:
TIME:
COLLECTED BY:

DC Water's Service Line Map and Methods to Improve Service Line Inventory

Maureen Schmelling
Director of Water Quality and Technology
DC Water

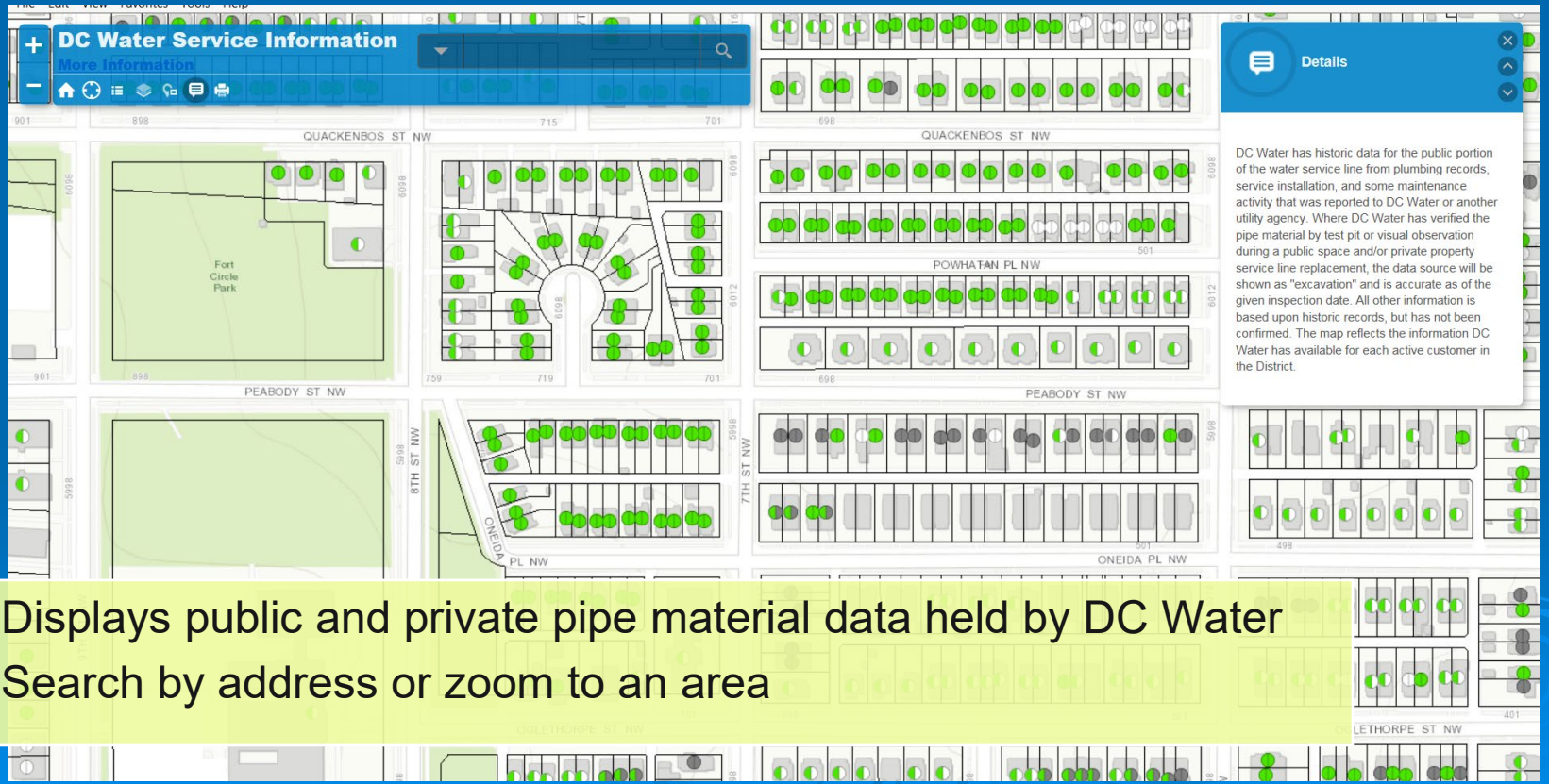
Sources of Data

- Construction
  - Service line replacements—water main replacements and leak repairs
- Meter pits
  - Service lines might be visible (DC's are not)



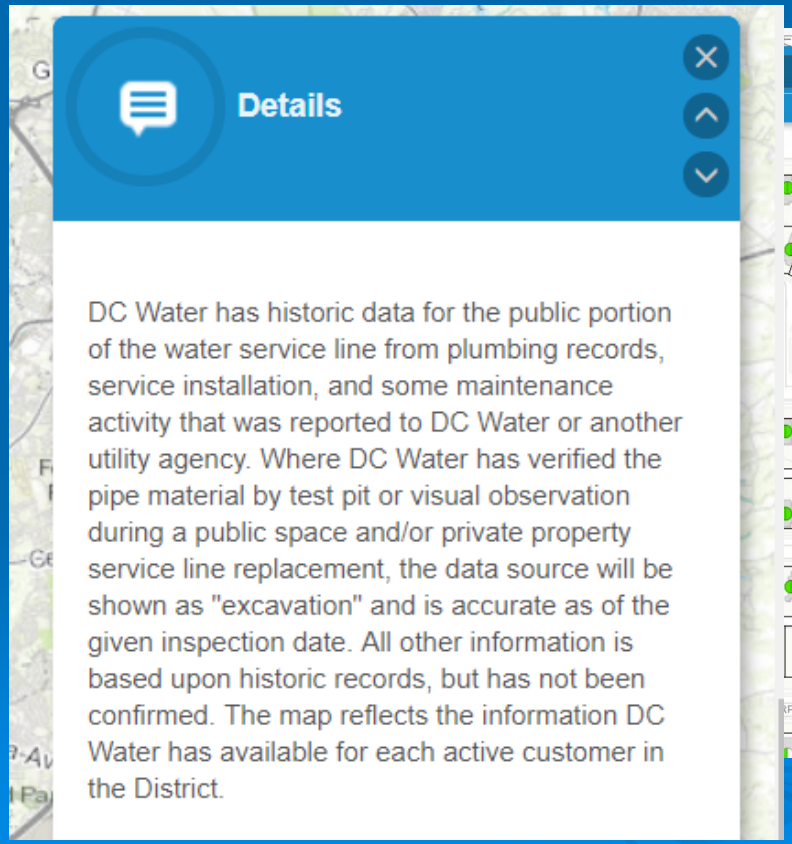
- Historical
  - Tap cards
- EPA 1991 LCR Study
  - Researched beyond tap cards

DC Water's Interactive Map of Service Lines

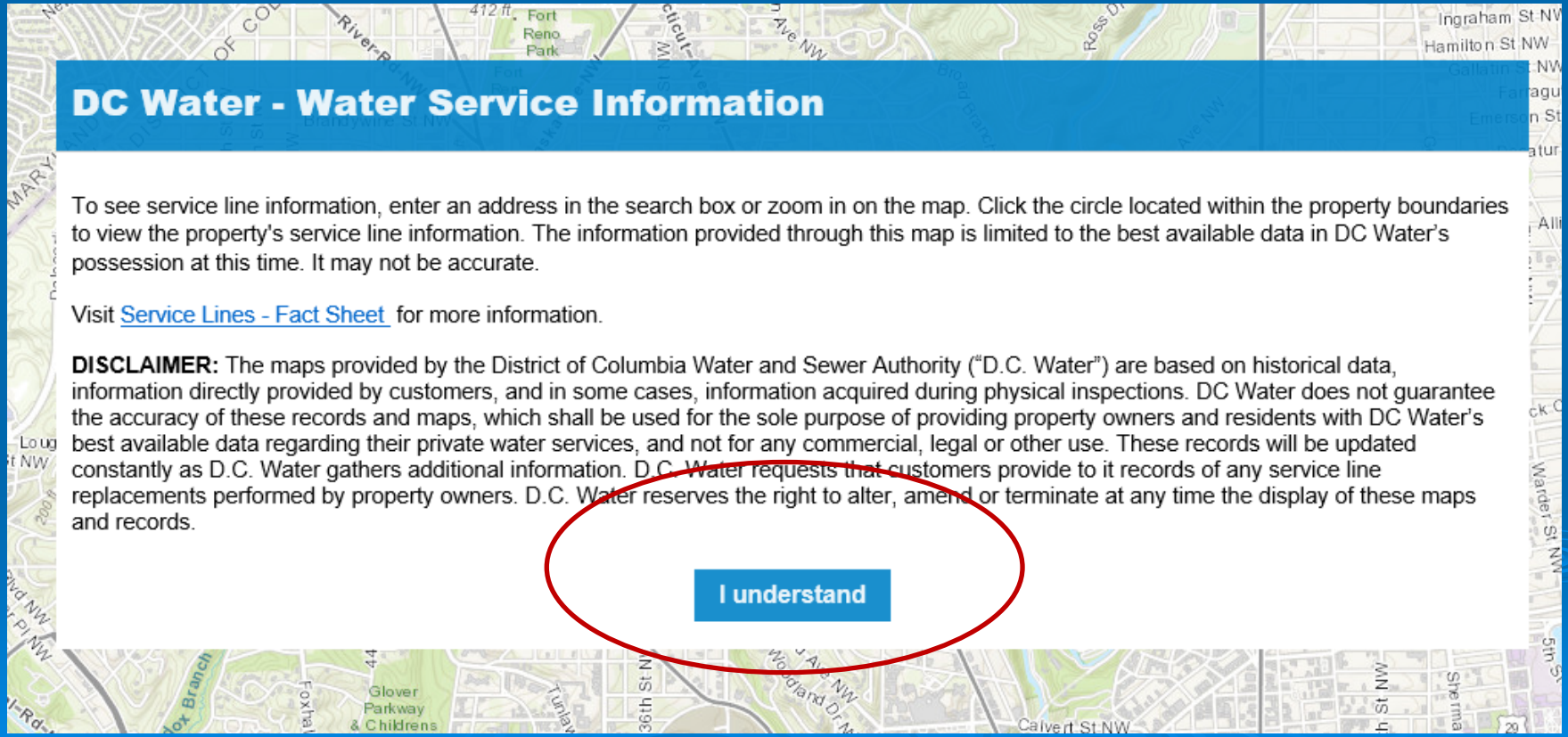


- Displays public and private pipe material data held by DC Water
- Search by address or zoom to an area

Detailed description of DC Water's data



Disclaimer for Data



Translating Data to Public Information

Public Origin Source Description	Public Service Type	Website Description Displayed
Automated Meter Reader Installation	Brass, Copper, or Galv Iron	Assess further for confirmation
Engineering as-built drawings	Copper, Ductile	Based on Engineering drawings
Engineering as-built drawings	Nonlead by Date	Based on water service connection year
DC Water Customer Information System	Brass, Copper	Assess further for confirmation
DC Water Customer Information System	Lead	Lead likely based on historic documentation
DC Water Customer Information System	Nonlead by Size	Service line is greather than 2-inch diameter, therefore not lead
1991 Weston Report developed for EPA LCR	Lead	Lead likely based on historic documentation
Water main installation date in DC Water GIS	Nonlead by Date	Based on water service connection year
Service Line Inspection	Brass, Copper, Galv Iron, o	[insert date field] excavation revealed [material] pipe
Service Line Inspection	Mix: Lead/Cu	[insert date field] excavation revealed lead and copper pipe
Meter data	Nonlead by Size	Service line has 2" or greater diameter, therefore not lead
Pipe viewed at point-of-entry into building	Lead	Pipe at point-of-entry inside home is lead, therefore service line is assumed to be lead.
Permit applications submitted to DC Water	NLD	Water service connection made after 1983
Service Line Replacement	Copper	Service pipe replaced [insert date field]
Service Line Replacement	Mix: Brass/Cu	Replaced portion of public side with copper pipe
Service Line Replacement	Mix: Galv/Cu	Replaced portion of public side with copper pipe
Service Line Replacement	Mix: Galv_lead/Cu	Iron pipe with lead deposits; replaced lead pipe on [insert date field] with copper pipe and connected to iron pipe
New water service installed	Copper, Ductile, Nonlead	New service installed
Water qualilty testing	Lead	Lead likely based on water test results
Year building was built	Nonlead	Home was built after 1983, therefore not lead

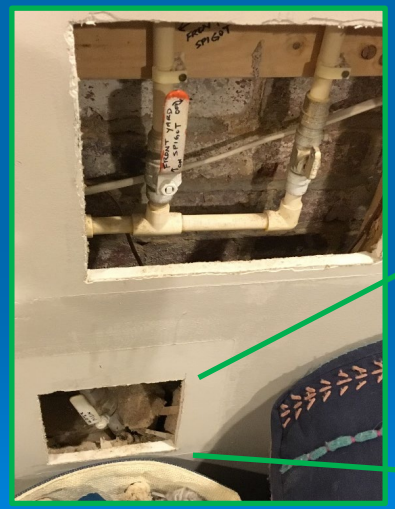
Translating Data – Private Side

Origin Source Description	Private Service Type	Website Description Displayed
Customer-provided	COPPER	Customer reported copper on private side or entering home
Based on by pipe at point-of-entry into the building	Brass	Estimated from POE
Based on pipe material replaced on public side and pipe at point-of-entry into the building	Lead	Estimated from POE and Public side
Based pipe at point-of-entry into the building and private side data	Mix: Brass/Cu	Past inspection found brass on private side
Based pipe at point-of-entry into the building and public side data	Mix: Lead/Brass	Estimated from POE and Public side
Based on pipe material replaced on public side and pipe at point-of-entry into the building	Mix: Lead/Cu	Past information of pipe replacement on private side
Based on pipe material inspected on public side	all other types	Assumed to be same as public side. Assess further for confirmation.
Based on pipe material inspected on public side	Lead	Assumed to be lead since public portion is lead.
Based on pipe material replaced on public side	Copper, Brass	Estimated from previous service line replacement field reports
Based on pipe material replaced on public side	Galvanized	Connected copper pipe to galvanized iron pipe at the property line. Iron pipe can accumulate lead if downstream of lead pipe.
Based on pipe material replaced on public side	GI_lead	Iron pipes contain lead; connected new copper pipe to galvanized iron pipe at the property line.

*Customer reported data is only reported when pictures or plumber documentation is provided

Pictures at Point-of-Entry

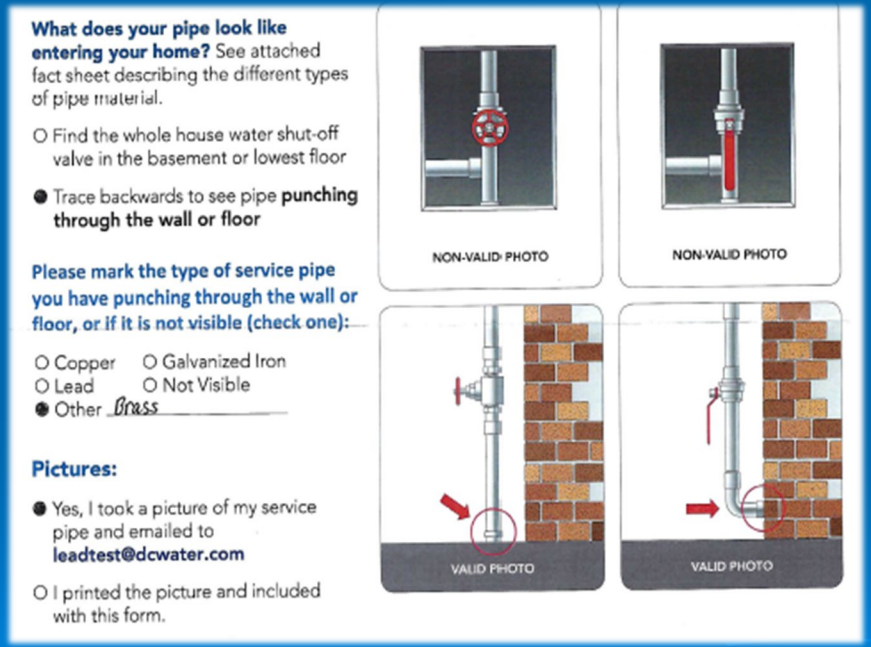
- Must see pipe *breaking through the wall or floor*



Copper pipe behind panel
-POE not visible
-Lead still possible

Drywall cut for LSR
-Lead bulb visible

Resident Provides Picture of Point-of-Entry



What does your pipe look like entering your home? See attached fact sheet describing the different types of pipe material.

- ○ Find the whole house water shut-off valve in the basement or lowest floor
- ● Trace backwards to see pipe **punching through the wall or floor**

Please mark the type of service pipe you have punching through the wall or floor, or if it is not visible (check one):

- ○ Copper ○ Galvanized Iron
- ○ Lead ○ Not Visible
- ● Other Brass

Pictures:

- ● Yes, I took a picture of my service pipe and emailed to **leadtest@dcwater.com**
- ○ I printed the picture and included with this form.

- Questionnaire sent with lead test kits
- Solicited POE pics from residential Unknowns
  - 10% responded
- Roughly 40-50% of all POE respondents provided valid pictures

Remarks

- We often do not know the complete answer
  - Encourage open communication

- What does 1 ppb in a stagnated water sample mean?

Thank You!

Maureen Schmelling
Director of Water Quality and Technology
DC Water
Maureen.Schmelling@dcwater.com

WaterPIO
ALWAYS ON CALL

LeadCopperRule.com
Get Ready to Preserve Public Trust

Best Practices for Lead Service Line Inventory Public Communications

Mike McGill, President & Principal

MY #1 TAKEAWAY…

Become & stay THE GO-TO source for information about your LCR efforts.

LSLI COMMS are a great – and necessary - place to start.

COMMS ready? Can take advantage funding positives!

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

Get Prepared for LCR COMMS

Regular info & outreach sets the table for success

Build your bank of trust. Essential ahead of & during LCR compliance.

We have proof proactive COMMS work. Documented proof.

WaterPIO
ALWAYS ON CALL

LeadCopperRule.com
Get Ready to Preserve Public Trust

Get Prepared for LCR COMMS

Regular info & outreach sets the table for success

Build your bank of trust. Essential ahead of & during LCR compliance.

We have proof proactive COMMS work. Documented proof.

Annual surveys. 40k people.

Not Rocket Science.
Communicate? WIN.

Customers remembering proactive COMMS gave their providers higher scores.

More COMMS? Higher scores.

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

Get Prepared for LCR COMMS

Regular info & outreach sets the table for success

Build your bank of trust. Essential ahead of & during LCR compliance.

We have proof proactive COMMS work. Documented proof.

Annual surveys. 40k people.

Not Rocket Science.
Communicate? WIN.

Customers remembering proactive COMMS gave their providers higher scores.

More COMMS? Higher scores.

Has the news media lost its punch?

Maybe, but not with water.

2015: 27% got water news from press.

2017: 43%. Today? 49%

Why? FLINT.

Flint changed everything.

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

Carlos Osorio / AP

Flint Continues to Drive Lead Reactions

Before Flint? Public trusted us.
Believed we always protected public health.

Trust remains shaken. Benton Harbor, MI.
Typical exceedances draw Flint comparisons.
“Google experts” can cause overreactions
Impacts EVERY reporter & customer interaction

Flint Continues to Drive Lead Reactions

Before Flint? Public trusted us.
Believed we always protected public health.

Trust remains shaken. Benton Harbor, MI.
Typical exceedances draw Flint comparisons.
"Google experts" can cause overreactions
Impacts EVERY reporter & customer interaction

Can't repeat past mistakes under the new LCR

Nearly impossible to fly under the radar

"If I hear from you first, I trust you first."
"If I hear from you last, I trust you last."

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

LCR COMMS Challenge: Explaining LSLI Work

Primary way to get the lead out. Work must begin NOW.

LSLI COMMS can set the tone for ALL your LCR work Success or failure could depend on COMMS approach

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

LCR COMMS Challenge: Explaining LSLI Work

Primary way to get the lead out. Work must begin NOW.

LSLI COMMS can set the tone for ALL your LCR work Success or failure could depend on COMMS approach

Must explain “Why now?” & “You don’t know your system?” Status of utility records likely won’t be helpful.

Must set expectations right away. The word is out.

Process will take time. Press & public lack patience.

Constant pressure from possible discoveries

Public findings & replacement work. Pitcher programs.

Private property issues. Need right-of-entry approval.

WaterPIO ALWAYS ON CALL

LeadCopperRule Get Ready to Preserve Public Trust

LCR COMMS Challenge: Explaining LSLI Work

LSLI Ops plan must include COMMS. Protects field crews.

GO FIRST. "Planned transparency" = Path to success.
Address positives AND negatives at the start

All matter of timing. Same words. Different times. Different results.
Proactive COMMS? Opens door to understanding.
Reactive COMMS? Door is already shut.

LCR COMMS Challenge: Explaining LSLI Work

LSLI Ops plan must include COMMS. Protects field crews.

GO FIRST. "Planned transparency" = Path to success.
Address positives AND negatives at the start

All matter of timing. Same words. Different times. Different results.
Proactive COMMS? Opens door to understanding. Reactive COMMS? Door is already shut.

Explanation of actions & benefits to public. MILESTONES. Third-party LSLI experts help with public confidence

COMMS covering all ages/socio-economic/info consumption
Enlist press & social media! Demonstrations = wins!

120Water™

BlueConduit

WaterPIO ALWAYS ON CALL

LeadCopperRule Get Ready to Preserve Public Trust

LCR COMMS Approach: Getting the Word Out

TO START… Launch a "One-Stop Shop" for LCR Efforts

Create a dedicated webpage or sub-site

Basic step/investment with long-term, positive implications

Home for all public information given to all audiences

Reference point for all internal use & public outreach. Customer Service.

LCR COMMS Approach: Getting the Word Out

TO START… Launch a "One-Stop Shop" for LCR Efforts

Create a dedicated webpage or sub-site

Basic step/investment with long-term, positive implications

Home for all public information given to all audiences

Reference point for all internal use & public outreach. Customer Service.

Newark: A TERRIFIC example. Covers everything. WELL.

https://www.newarkleadserviceline.com/home.

Do NOT fall into "check the box" trap. Use traditional & social media.

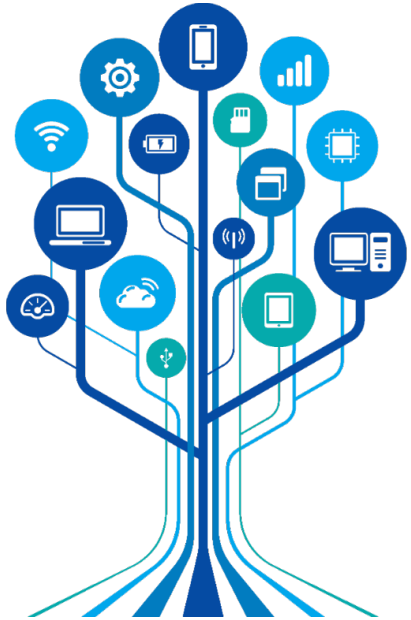
MUST use grassroots outreach. Community meetings. Door-to-door.

LCR COMMS: Getting the Word Out

Standard approach: Proactive information.

Press releases. Customer letters. Inserts. Brochures.

Social media: One-way use. “Announcements.”



WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

LCR COMMS: Getting the Word Out

Standard approach: Proactive information.

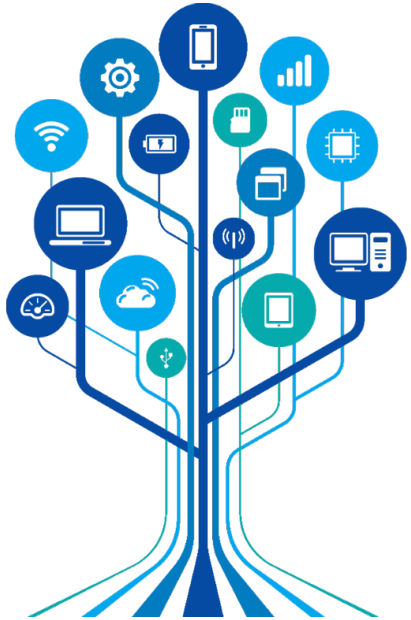
Press releases. Customer letters. Inserts. Brochures.

Social media: One-way use. "Announcements."

Intermediate approach: Use of engagement.

Media & stakeholder briefings. Community outreach.

Social media: Two-way use. Information & interaction.



WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

LCR COMMS: Getting the Word Out

Standard approach: Proactive information.

Press releases. Customer letters. Inserts. Brochures.

Social media: One-way use. "Announcements."

Intermediate approach: Use of engagement.

Media & stakeholder briefings. Community outreach.

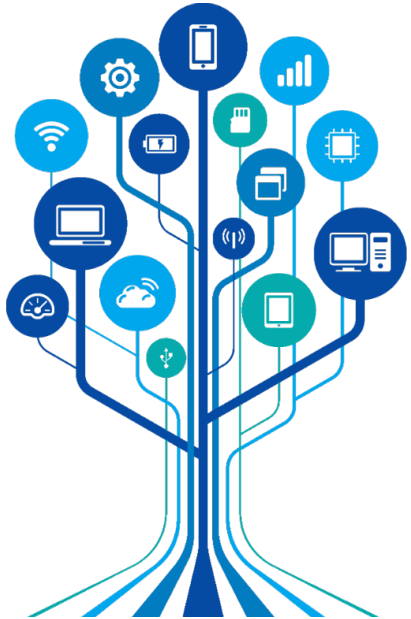
Social media: Two-way use. Information & interaction.

Advanced approach: Overall use & BIG needs.

Op-eds. Editorial push. Bring press "behind curtains."

Social media: Treat social media influencers like media.

Post content with the goal of creating an active dialogue.



WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

SUMMARY

“New” LCR: Multiple COMMS challenges

All LCR work will draw attention. PR pitfalls all over. Starts with LSLIs…

Need to prepare NOW. Have an COMMS plan integrated with LSLI Ops plan.

WaterPIO
ALWAYS ON CALL

LeadCopperRule.com
Get Ready to Preserve Public Trust

SUMMARY

“New” LCR: Multiple COMMS challenges

All LCR work will draw attention. PR pitfalls all over. Starts with LSLIs…

Need to prepare NOW. Have an COMMS plan integrated with LSLI Ops plan.

Discoveries more likely. FLINT!!! reactions more likely. GET READY.

Proactive COMMS builds trust from the start. Avoid “Flint” mistakes.

Respect the customer. Use “planned transparency.” Early. Often.

“Hear from you first? Trust you first.” “Hear from you last? Trust you last.”

Create a “One-Stop Shop” online for all LCR actions. But don’t ”check the box.”

LSLIs are great & NECESSARY places to get started for your entire LCR effort.

WaterPIO ALWAYS ON CALL

LeadCopperRule.com Get Ready to Preserve Public Trust

LeadCopperRule.com

Get Ready to Preserve Public Trust

Launched December 2021

Provides water utilities of all sizes with public communication plans & materials for ALL parts of the new Lead & Copper Rule.

WaterPIO
ALWAYS ON CALL

LeadCopperRule.com
Get Ready to Preserve Public Trust

WaterPIO.com

LeadCopperRule.com

@WaterPIO

@LeadCopperRule

24/7 Call/Text: (910) 622-8472

mike@waterpio.com

QUESTIONS?
asdwa
Association of State
Drinking Water Administrators

Review all sessions and recordings on our website!

Recordings and slide decks will be available on the event page:
www.asdwa.org/event/lead-service-line-inventory-symposium/

Wednesday, February 2

- *Session 1: Overview of LCRR **(1,872 attendees)***
- *Session 2: Notes from the Field: State and Utility Experiences with Existing LSL Inventory Rules **(1,494 attendees)***

Wednesday, February 9

- *Session 3: Capitalizing in Innovations for LSL Inventories **(1,547 attendees)***
- *Session 4: Small Systems, Big Challenges: Implementing LSL Inventories and Replacements at Small Systems **(1,304 attendees)***

Wednesday, February 16

- *Session 5: Water System Inventory Case Studies **(1,245 attendees)***
- *Session 6: Show Me the Money: Funding for LSL Inventories and Replacement **(1,013 attendees)***

Wednesday, February 23

- *Session 7: The Other Side of the Meter: Practical Tools for Collecting Private-Side Service Line Material*
- *Session 8: Tell Me About It: Mapping and Communicating your LSL Inventory and Replacements*

JOIN US NEXT WEEK
FOR OUR STATES-ONLY DEBRIEF!

Wednesday, March 2

3:00-4:30 EST

Contact your state drinking water administrator for the states-only Teams invite