

# COLLABORATING TO REPLACE LEAD SERVICE LINES



Counting and Communicating the Number and  
Location of Lead Service Lines

# AGENDA



- Background on the Collaborative
- Lead Service Line (LSL) Surveys and Materials Inventory – Big Picture
- Case study from Washington State on their LSL survey
- Case study from Washington DC on their interactive map of LSLs
- Communicating LSL information – known and unknown – online
- Q & A



**LEAD SERVICE LINE REPLACEMENT COLLABORATIVE**

[WWW.LSLR-COLLABORATIVE.ORG](http://WWW.LSLR-COLLABORATIVE.ORG)

# Current Members

\* Steering Committee Members

- American Public Health Association
- American Water Works Association\*
- Association of Metropolitan Water Agencies\*
- Association of State Drinking Water Administrators
- Blue Green Alliance
- Children's Environmental Health Network\*
- Clean Water Action\*
- Environmental Defense Fund\*
- Green and Healthy Homes Initiative
- Justice and Sustainability Associates
- Learning Disabilities Association of America
- National Center for Health Housing
- National Association of County and City Health Officials
- National Association of State Utility Consumer Advocates
- National Association of Water Companies
- National Conference of State Legislatures
- National Environmental Health Association
- National League of Cities
- National Rural Water Association
- Natural Resources Defense Council
- North East Midwest Institute
- RESOLVE\*
- Rural Community Assistance Partnership
- Trust for America's Health
- United Parents Against Lead
- Water Research Foundation

# Funding Sources

- How is the Collaborative funded?
  - ▣ Funding has been provided by the W.K. Kellogg Foundation and the Pisces Foundation.
  - ▣ The Collaborative is currently and will continue to be funded by in-kind contributions from its members.



# SPEAKER INTRODUCTIONS

- Scott Torpie

- Engineering Advisor, Washington State Department of Health



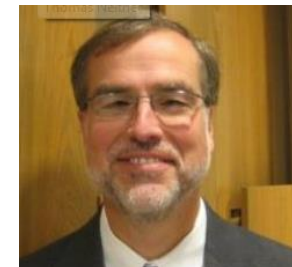
- Maureen Schmelling

- Director, Water Quality and Technology, DC Water



- Tom Neltner

- Chemicals Policy Director, Environmental Defense Fund



# LSL Surveys and Materials Inventory – Big Picture

LSL Replacement Collaborative  
October 10, 2018

Tom Neltner  
Chemicals Policy Director  
Environmental Defense Fund



# WHAT IS THE SIZE OF THE LEAD SERVICE LINE CHALLENGE



*AWWA presentation, CEHN webinar; Cornwell et al., 2016. National Survey of Lead Service Line Occurrence. Journal of American Water Works Association. Estimates there are 6.1 million LSLs in US based on 2013 survey of utilities.*



# GAO Report on LSL Inventory

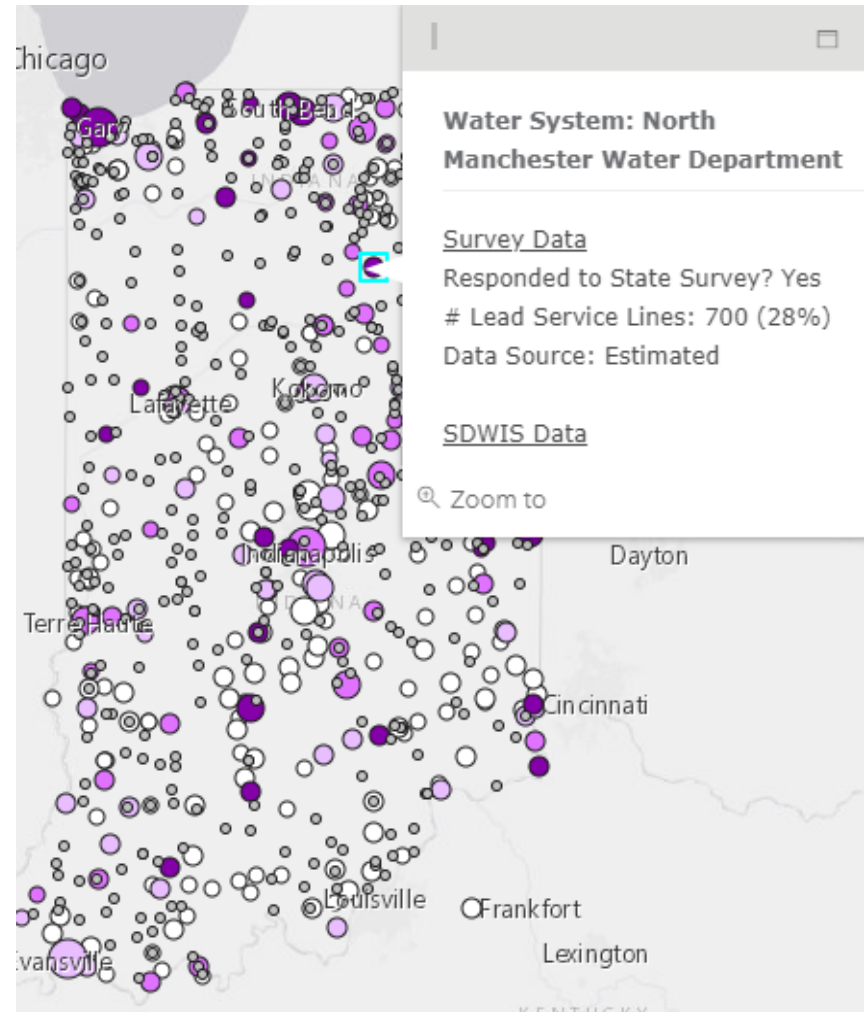
- Congress told GAO to examine issue to identify what is known about number of LSLs and how states responded to EPA's February 2016 letter asking states to work with utilities to publicize LSL inventories.
- GAO released report in September 2018.
- Total number of LSLs is unknown and national, state, and local estimates vary.
  - EPA's Lead and Copper Rule (LCR) does not generally require utilities to maintain complete information about LSLs or report the information to agency.
  - Estimates of LSLs exist and those GAO reviewed had significant limitations.
  - Methods used to arrive at the estimates vary.
- Most states reported fulfilling EPA's request, but potential challenges remain that EPA information sharing could help address.
  - 43 of 50 states said they would encourage utilities to publicize materials inventories.
  - Most large utilities GAO reviewed (100 largest) did not publicize materials inventories as EPA requested.
  - EPA identified potential challenges to publicizing materials inventories but has not followed up with all states about how to address challenges since 2016.
- Highlights Massachusetts, Ohio, and Washington State as well as Greater Cincinnati Water Works.

# LCR Materials Inventory v. State Survey of Utilities

- LCR materials inventories:
  - Limited – Identify sufficient LSLs to meet sampling requirements
  - Comprehensive – Identify all LSLs if Lead Action Level exceeded
  - CA and MI requiring comprehensive inventories *sort of*
  - LA and TX posting inventories and updates online
- State survey of utilities:
  - Counts of LSLs, leaded goosenecks, and unknowns
  - Mandatory – IL
  - Voluntary – IN, MD, MA, NH, NM, RI, WA
  - Other – NC and OH

# EDF Blogs on Inventories

- Developing accurate LSL inventories and making them public: Essential tasks – [July 17, 2018](#)
- Mandatory LSL inventories – Illinois and Michigan as strong models – [July 30, 2018](#)
- LSL inventories – Indiana as a good model of a voluntary survey – [July 31, 2018](#)
- Mapping state-level LSL information: Indiana as a model – [October 8, 2018](#)
- Map of Indiana – [www.edf.org/Indiana-LSL-Map](http://www.edf.org/Indiana-LSL-Map).





We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.



## LEAD COMPONENT SURVEY

Washington State Department of Health  
Office of Drinking Water

# Summary

## Washington's Experience:

- Non-regulatory approach can be successful.
- The Governor's 2016 Lead Directive gave us entry.
- Our survey revealed elimination of LSLs and LSCs within our state is within reach.
- Our large water systems have the capacity and interest to pursue elimination of LSLs and LSCs.

# Governor's Directive 16-06

Signed May 2, 2016, directing **state agencies** to:

- Address lead exposure in schools, child care settings, and rental properties.
- Improve state's blood lead monitoring program.
- Work with each water system to identify all lead service lines and lead components within two years.
- Work with stakeholders to develop policy and budgetary proposals with goal of removing all lead service lines and lead service components in water systems within 15 years.

# Step 1: Develop the Survey

## (May to August 2016)

Assembled group of 12 water systems who advised us on:

- Optimizing timing for survey release.
- Editing introduction, instructions, structure, and wording of questions.
- Making survey easy and short.
- Creating a quick “off ramp” with first two questions.
- Providing space for comment/explanation.

Provided definitions:

- Lead service line (LSL).
- Lead service connection (LSC) aka “lead gooseneck.”
- Clarified what we were **not** asking about (leaded CI joints, lead-alloyed brass).

## Step 2: Conduct the Survey (Sep. 2016 to Feb. 2017)

- Marketed the survey.
- Sent electronic survey to nearly all 4,100 water systems.
- Called each nonresponding water system serving 1,000+ connections.
- Informed utilities survey results would be made public.
- Wrote initial [summary of survey findings](#).
- Wrote [full survey report](#).



## Step 3: Review the Data (April to June 2017)

- 686 water systems responded (17 percent).
- Who we heard from and didn't hear from.
- Five water systems reported known or est. LSLs.
  - 916 LSLs (0.04% of connections).
- Fifteen water systems reported known or est. LSCs.
  - 6,370 LSCs (0.28% of connections).
- Forty water systems serving more than 1,000 connections reported "unknown" for LSLs and/or LSCs.

## Step 4: Post-Survey Follow-up (June 2017 to March 2018)

Sent survey report to DOH Secretary, Governor's Office, and the public through web page and publications (October 2017).

Follow-up phone interviews (Jan to Mar 2018):

- All systems reporting known or estimated number of LSLs and/or LSCs.
- Systems with 1,000+ connections answering "unknown" for estimated LSLs and/or LSCs.

## Step 5: Revise Survey Data: LSLs (April to June 2018)

Of the five systems that originally reported LSL estimates:

- Three revised their original estimate to zero LSLs.
- One completed replacement of all known LSLs.
- One considers the original estimate of 300 LSLs still valid.
- LSL estimates constitute 0.01% of survey respondent service connections.

# Step 5a: Revise Survey Data: LSLs

## *[Continued]*

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Of the 32 systems that originally reported “unknown” LSLs:

- Twenty-seven systems have no reason to believe they have any active LSLs and changed their answer to “none.”
- Five systems believe there are a small number of LSLs still in service, but have no basis to provide an estimate.

## Step 5b: Revise Survey Data: LSCs

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Of the 15 systems that originally reported LSC estimates:

- Estimates changed based on work they've done over the past 12 months. Total estimated is about 5,000 LSCs.
- LSC estimates constitute 0.21% of survey respondent service connections.
- All but one system is interested in funding support to replace their lead goosenecks and the old water mains attached to them.

## Step 5b: Revise Survey Data: LSCs

### *[Continued]*

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Of the 30 systems that originally reported “unknown” LSCs:

- Eighteen systems have no reason to believe they have any active LSLs.
- Twelve systems believe LSCs are or might be still in service but cannot estimate or quantify number.
- Published [update to the summary of survey findings](#).

# Step 6: Funding LSL and LSC Replacement (Fall 2018)

## DWSRF Eligibility Criteria.

- All work performed within 500 feet of a replaced LSL or LSC is eligible for reimbursement. Eligible work includes service line (main to the meter) and water main replacement, regardless of pipe material; **OR...**
- At least 50.1% of the total service line replacement costs (from main to the meter) are associated with LSL or LSC removal and replacement.

# What We Learned

- Washington's large utilities don't have many active LSLs. Small utilities have few, if any.
- Gov's Directive and survey gave us entry to communicate with large utilities.
- Despite no state authority to require lead identification and removal, large utilities are committed to doing so.
- Surveys need follow up.
- Uncertainty has to be acceptable.





# Conclusions

- Governor's Initiative drove the survey.
- Utilities doing much more than we knew.
- Operators want to affect positive change in their community.
- Large utilities cooperated and were forthcoming.
- Survey supported and, in some cases, triggered action.
- The only help utilities need is money.
- The survey helped align our loan program with utility needs.

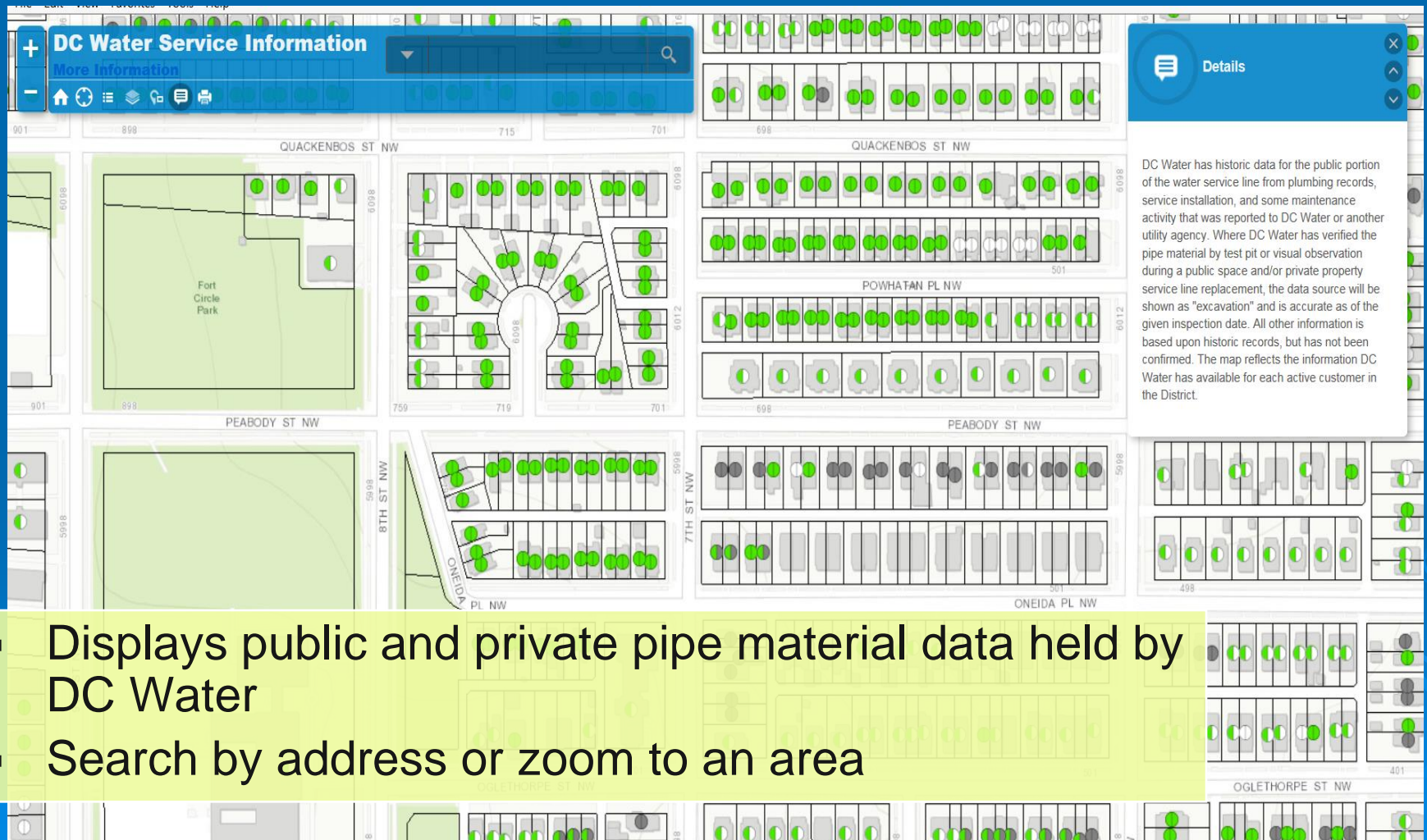
# Service Line Map for Public Use

Maureen Schmelling  
Director of Water Quality and Technology  
DC Water

# Presentation Outline

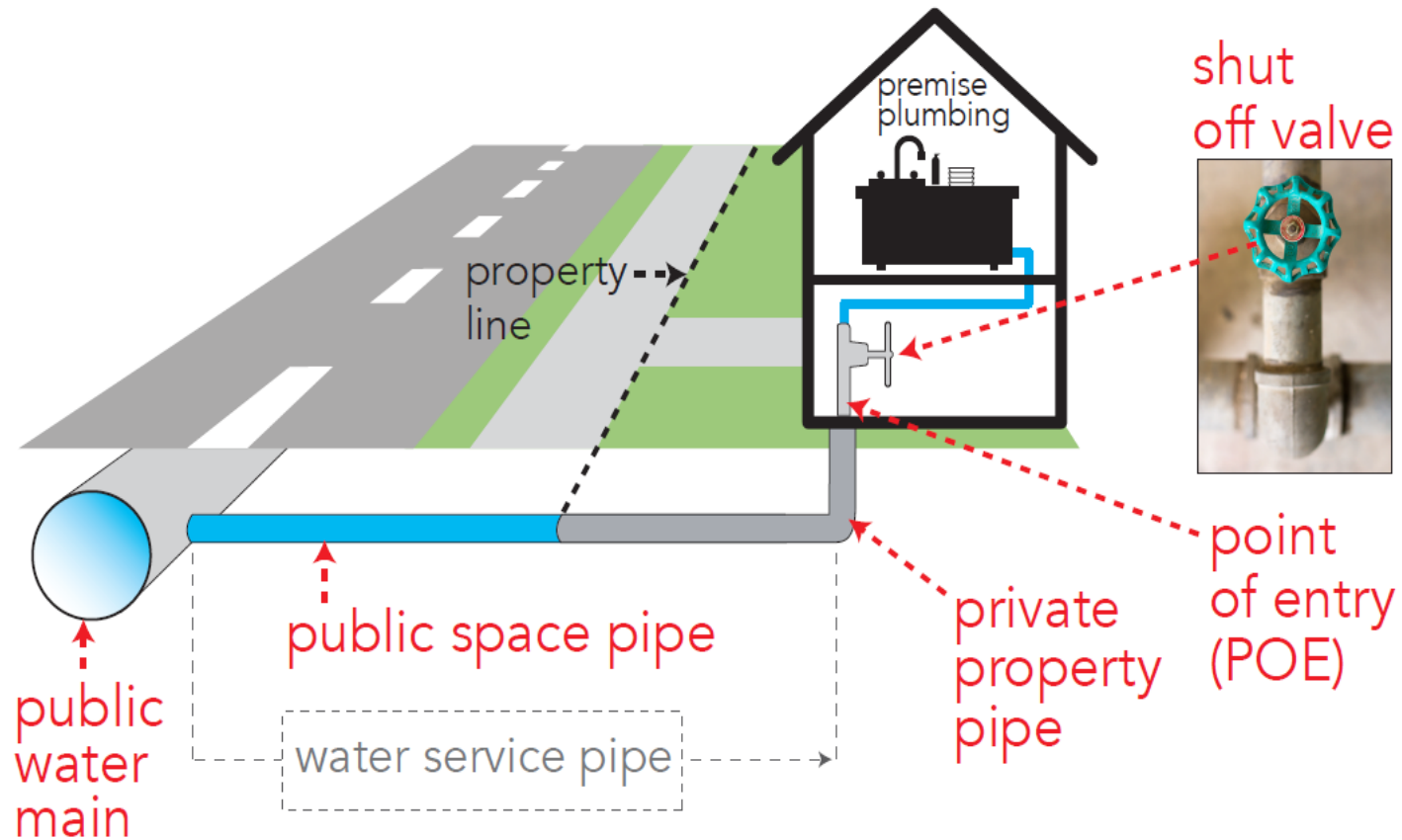
- View the Map
- Sources of data
- Translation of data for the map
- Disclaimer

# DC Water's Interactive Map of Service Lines



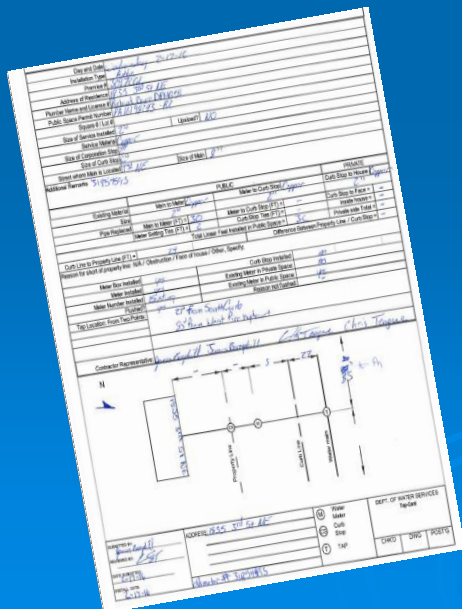
# Service Line Sections


## UNDERSTANDING YOUR WATER SERVICE PIPE

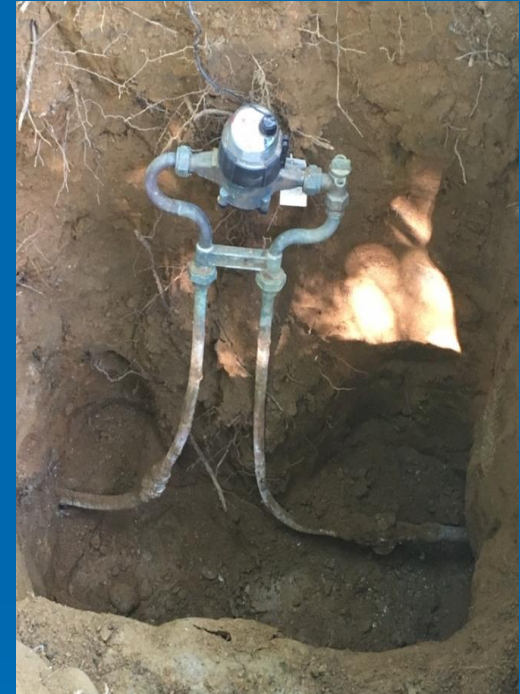


# Sources of Data

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



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



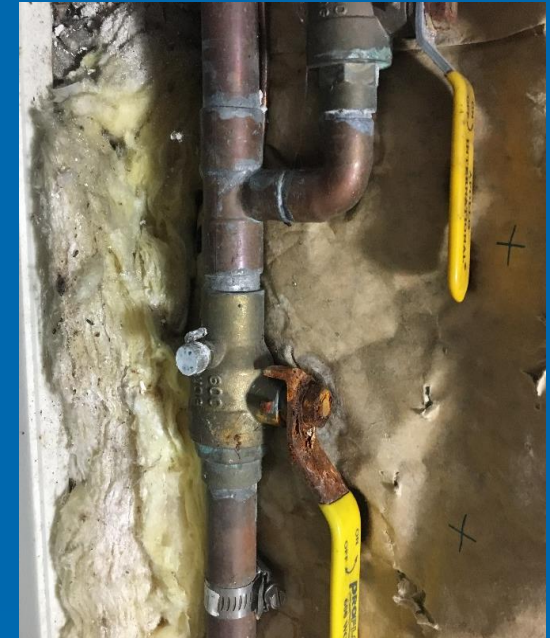


# Sources of Data (cont.)

- Resident supplies information
  - Picture of pipe breaking through wall
    - POE – update private side only
  - Documentation from plumber / contractor
  - Verbal – do not update records



Lead Pipe



Copper Pipe – POE not visible  
-Lead still possible

# Translating Data to Public Information

Data Source	Public Service Type	Tap Date / Type of Work	Website Service Type Viewed by Public	Website description
Customer Service	Copper	<1985 or Null	Copper	Assess further for confirmation
Customer Service		>=1985	Copper	Copper likely based on water service connection yr
Customer Service	Lead		Lead likely	Lead likely based on historic documentation
Customer Service	Non-lead by size		Non-lead	Service line has 2" or greater diameter, therefore not lead
Meter Changeout	Copper		Copper	Assess further for confirmation
Service Replacement	Copper	Replacement	Copper	Service pipe replaced [insert date field]
Inspection	Copper	Test pit	Copper	[insert date field] excavation revealed copper pipe
Inspection	Lead	Test pit	Lead	[insert date field] excavation revealed lead pipe
Historical data	Copper		Copper	Copper likely based on historic documentation
Historical data	Lead		Lead	Lead likely based on historic documentation
Service Tap	Copper		Copper	New service installed [insert date field]

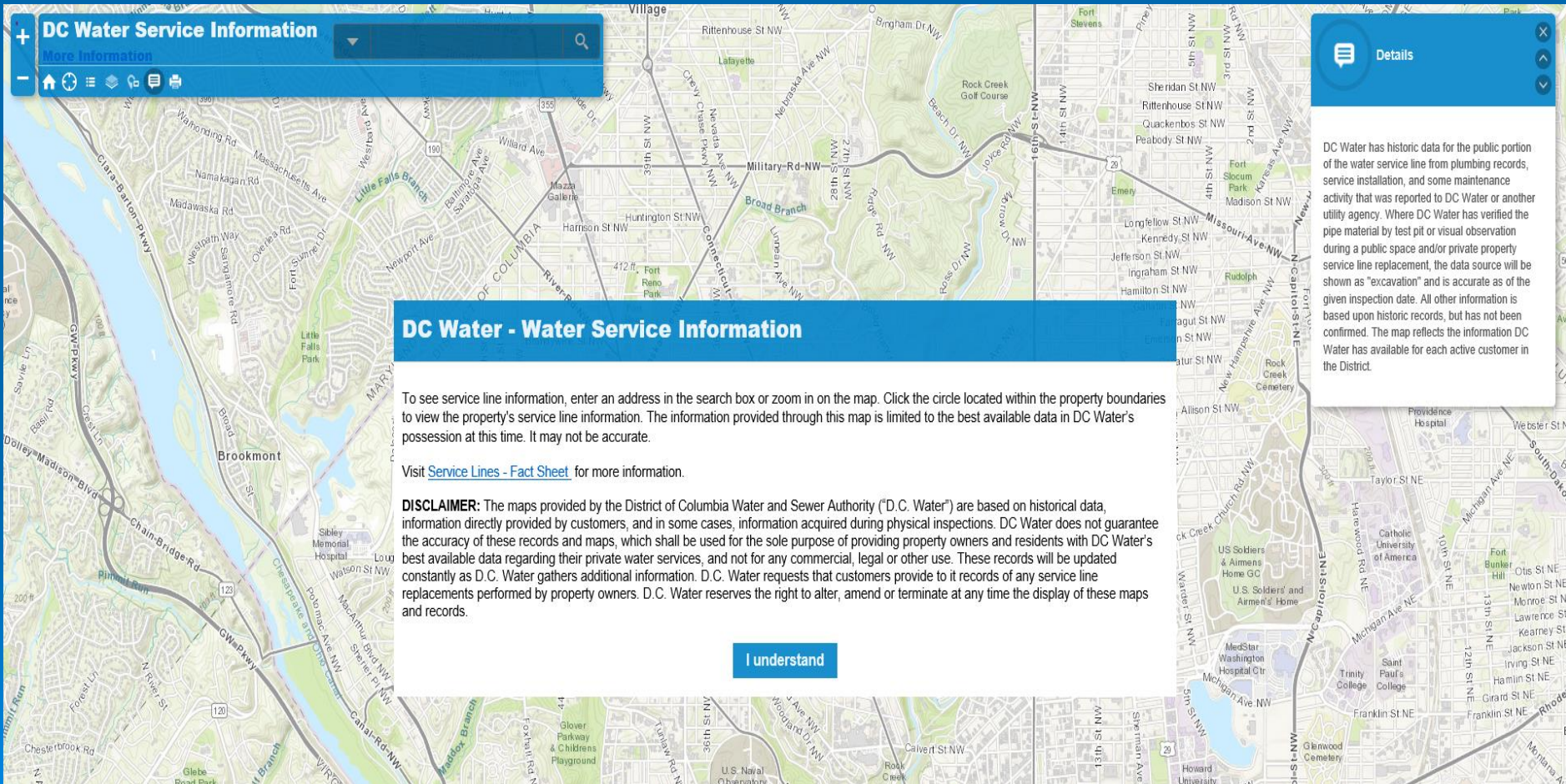


# Translating Data – Private Side

Data Source	Private Service Type	Website Service Type Viewed by Public	Website description
Customer	Copper	Copper	Customer reported copper on private side or entering home
Service Replacement	Lead	Lead	Connected pipe in public space to lead pipe at the property line

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

# Disclaimer for Data



**DC Water Service Information**

More Information

**DC Water - Water Service Information**

To see service line information, enter an address in the search box or zoom in on the map. Click the circle located within the property boundaries to view the property's service line information. The information provided through this map is limited to the best available data in DC Water's possession at this time. It may not be accurate.

Visit [Service Lines - Fact Sheet](#) for more information.

**DISCLAIMER:** The maps provided by the District of Columbia Water and Sewer Authority ("D.C. Water") are based on historical data, information directly provided by customers, and in some cases, information acquired during physical inspections. DC Water does not guarantee the accuracy of these records and maps, which shall be used for the sole purpose of providing property owners and residents with DC Water's best available data regarding their private water services, and not for any commercial, legal or other use. These records will be updated constantly as D.C. Water gathers additional information. D.C. Water requests that customers provide to it records of any service line replacements performed by property owners. D.C. Water reserves the right to alter, amend or terminate at any time the display of these maps and records.

I understand

**Details**

DC Water has historic data for the public portion of the water service line from plumbing records, service installation, and some maintenance activity that was reported to DC Water or another utility agency. Where DC Water has verified the pipe material by test pit or visual observation during a public space and/or private property service line replacement, the data source will be shown as "excavation" and is accurate as of the given inspection date. All other information is based upon historic records, but has not been confirmed. The map reflects the information DC Water has available for each active customer in the District.



## DC Water - Water Service Information

To see service line information, enter an address in the search box or zoom in on the map. Click the circle located within the property boundaries to view the property's service line information. The information provided through this map is limited to the best available data in DC Water's possession at this time. It may not be accurate.

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I understand

# Closing Remarks

- Most data are not perfect, but still useful to share
- Plan for receiving information from residents
- Create business rules for updating information


# Communicating LSL information – known and unknown – online

## LSL Replacement Collaborative October 10, 2018

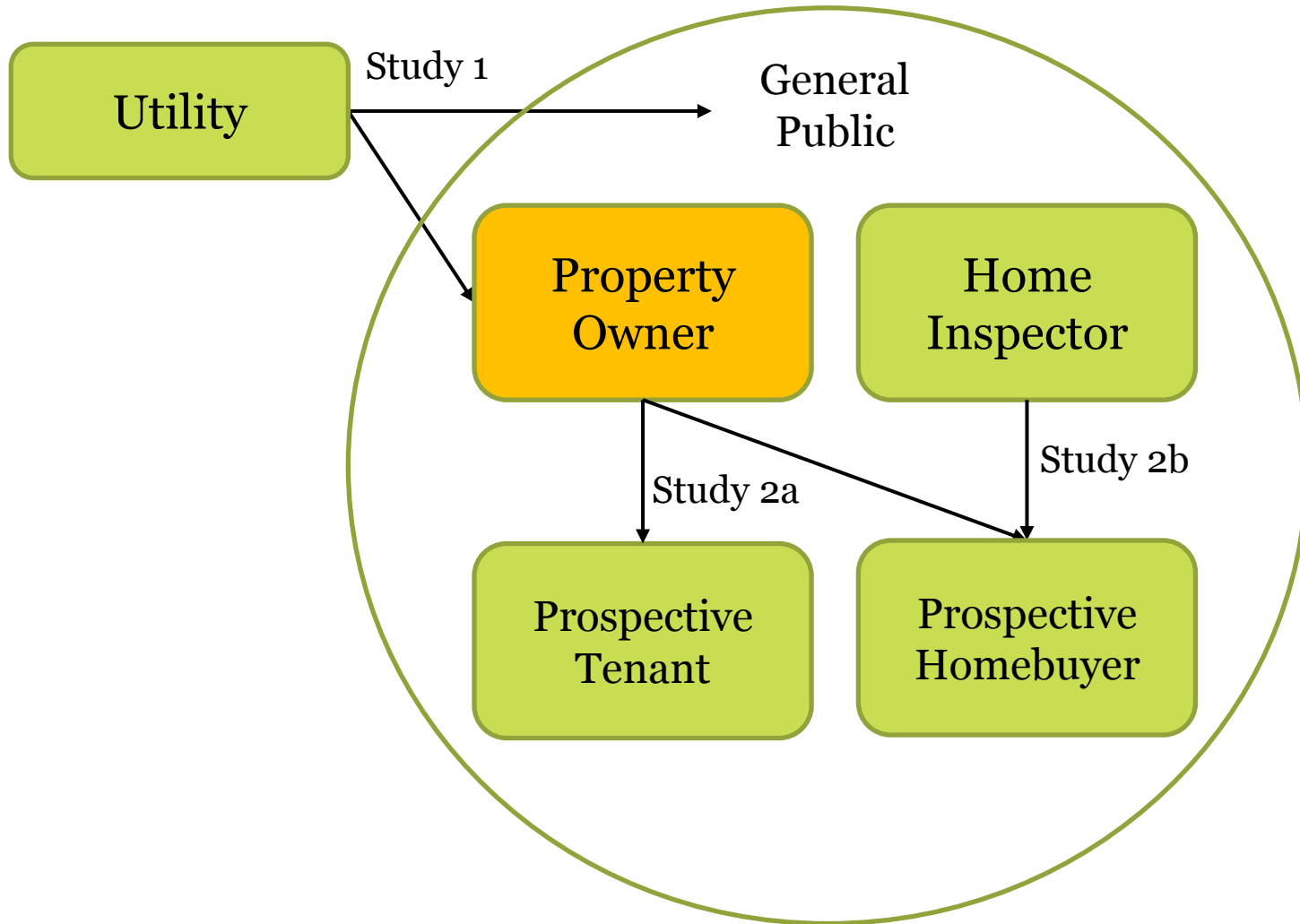
Tom Neltner  
Chemicals Policy Director  
Environmental Defense Fund



# Basic concepts

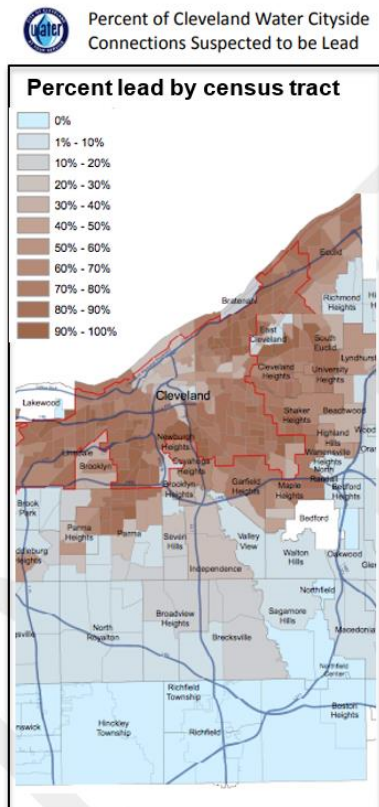
- Property sale or rental is prime opportunity to replace LSL, either proactively or as part of mortgage
  - Utilities on-line maps and customers notices provide incentive to property owners to proactively replace or disclose to potential homebuyers and renters
  - EPA LCR revision may require notice to property owners of some form
- 

# EDF/Cornell behavioral studies



# Online, address-specific estimates

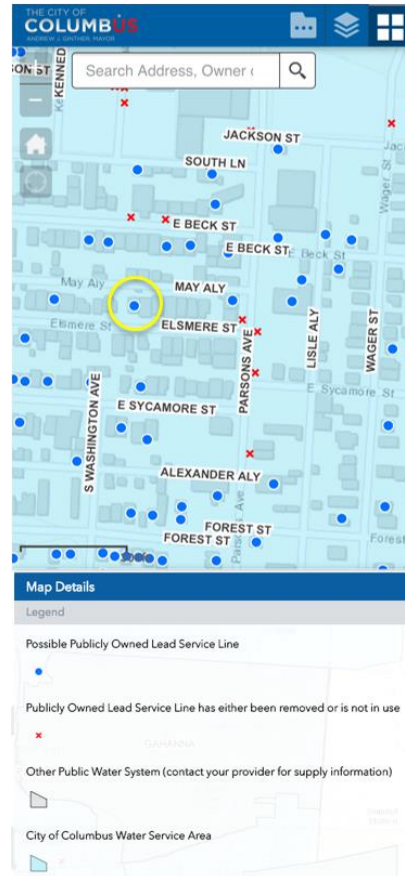
## Cleveland PDF Map



## Cincinnati Interactive Map



## Columbus Interactive Map



## Cleveland Database

Check Your Cityside Connection | Check Your Property | What You Can Do About Lead

Do I have a lead cityside connection?

Like many older water systems across the country, the Cleveland Water system does contain some cityside lead connections. Cityside connections are maintained by Cleveland Water. In general, if your home was built after 1954 or your connection is larger than one inch in diameter, it is unlikely that you have a lead cityside connection. To see a map of our service area that shows the percentage of Cleveland Water's cityside connections that are suspected to be lead, click [here](#). If you would like to have your water tested, click [here](#) for a list maintained by Ohio EPA of certified laboratories that can test for lead and many other potential contaminants.

Use the search tool below to find out about the cityside connection that serves your property.

House Number:

Street Direction:

Street Name:

Zip Code:

Captcha Code:

Enter Captcha Code:

Search



# Comparison of four tools

Tool	Map	Individual addresses or buildings displayed	Public Side Info available	Private Side Info Available	Indicates When Material is Unknown
Cleveland PDF	Yes, static	No	Yes	No	No
Cincinnati Interactive	Yes, dynamic	Yes	Yes	Yes	Yes
Columbus Interactive	Yes, dynamic	Yes	Yes	No	No
Cleveland Database	No	Yes	Yes	No	No

# Which tool do you prefer?

- Respondents had seen three of the four tools.
- Everyone saw the Cleveland tools, but only one of the interactive maps (Cincinnati or Columbus).

Rank	Group that saw Cincinnati map	Group that saw Columbus map
1	Cincinnati 53.5%	Cleveland Database 62.2%
2	Cleveland Database 37.0%	Columbus Map 22.9%
4	Cleveland PDF 9.5%	Cleveland PDF 14.8%

(% of respondents in that group that chose that map as their preference)

# Our takeaways on utility communication tools

- Provide information about specific properties.
  - Provide information on the private side, in addition to the public side, of the service line.
  - Be explicit about what is not known.
  - Consider the legend, colors, and icons carefully.
- 