



American Water Works  
Association

The Authoritative Resource on Safe Water®

# AWWA Activities, What will happen in 2016 and 2017, Impact of Flint

Presented at  
Water Research Foundation Symposium  
Philadelphia, PA  
March 29, 2016

# At the Forefront of Public Consciousness

*Flint residents demand action, accountability*

- Maureen Groppe, USA Today, 7. March 2016

*When will we know the water in Flint is safe to drink?*

- Mark Brush, Michigan Radio, 8. March 2016

*Unpaid water bills in Flint could hinder repairs*

- National Public Radio, 4. February 2016

*Audit faults Michigan Regulators in Flint water crisis*

- Associated Press, 4. March 2016



# National Drinking Water Advisory Council

1. **Locate and replace all lead service lines completely**, sharing responsibility for that replacement with customers
2. Conduct additional monitoring and analysis of water quality parameters in order to **better manage corrosion control**
3. **Expand educational outreach** to alert customers to the risks posed by lead and steps they can take to reduce those risks
4. Shift from current compliance monitoring to **analyzing customer-samples for lead** upon request.

*The Board of the American Water Works Association voted unanimously to support recommendations from the NDWAC that strengthen the Lead and Copper Rule and ultimately lead to the complete removal of lead service lines.*

*March 8, 2016*

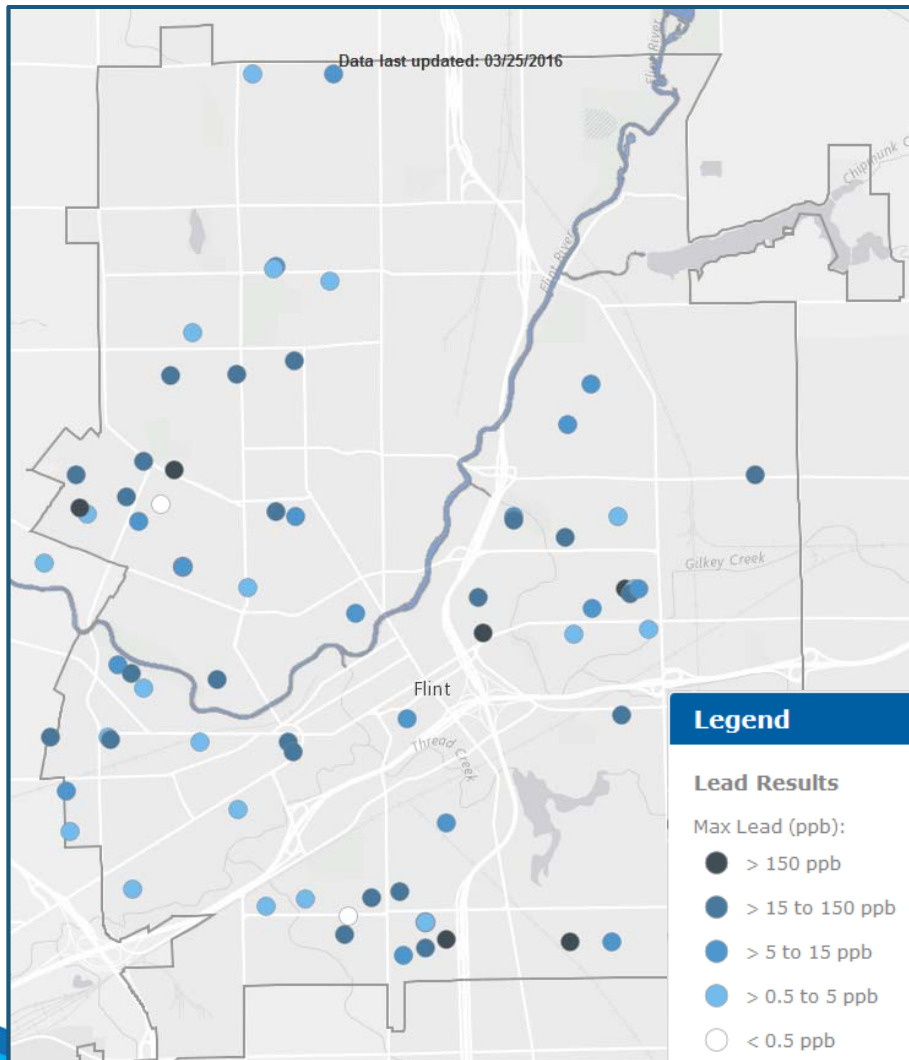


# EPA Letter to States

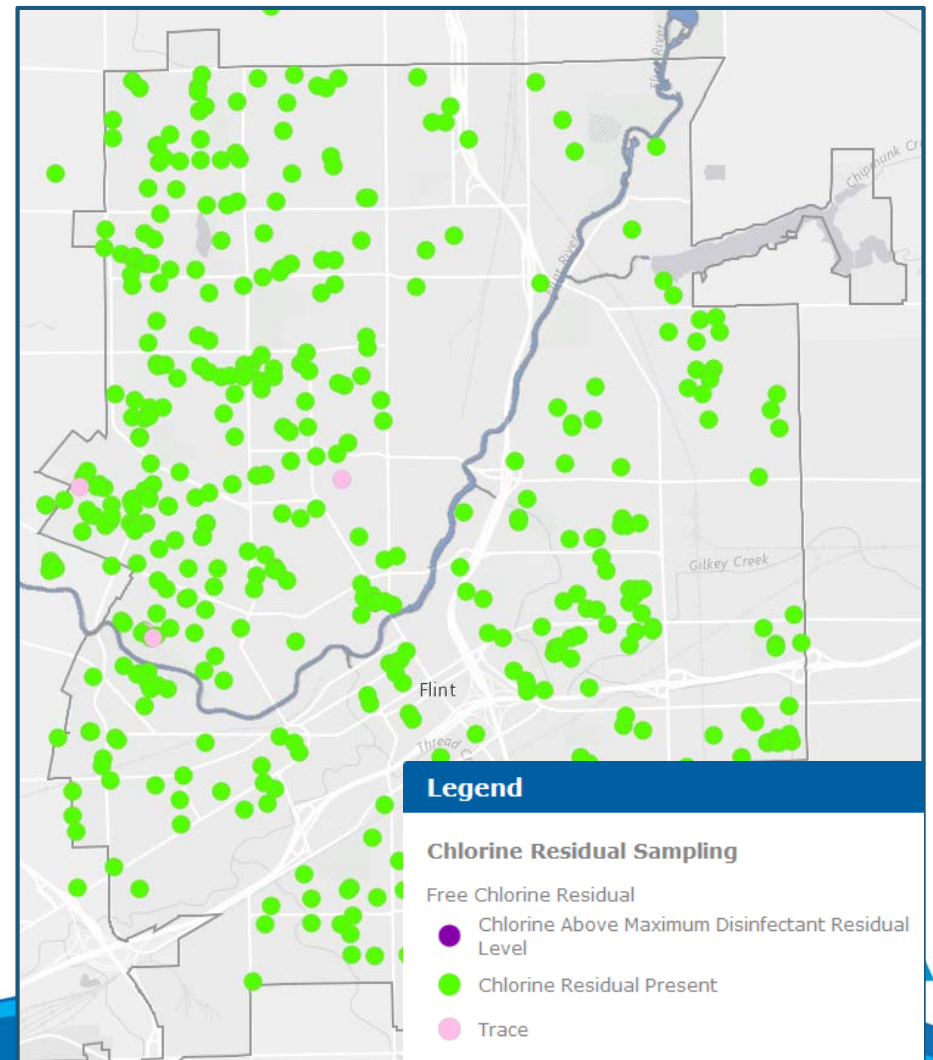
- Observed lead levels from compliance monitoring,
- Where lead service lines are located in the utility's service area, and
- Protocols used by the system to comply with the LCR compliance sampling requirements.



# Flint – Emphasis on Transparency



Source:  
<https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=a500e6bb17b3433c9e1bf131c2e883d1>



Source:  
<https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=7983421884ac46e6b1b0ac995d9717bb>

# Flint – Emphasis on Transparency

**Filter Water Results: Kitchen**

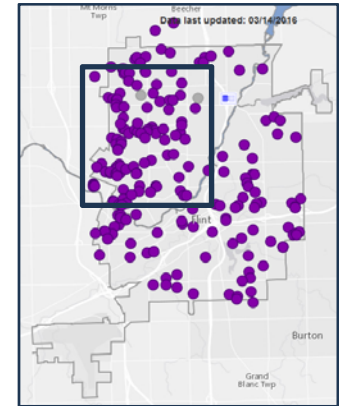
Date Sampled:	03/10/2016
Filtered Water - Used Tap Filter (ppb Lead)	
Unfiltered Water (ppb Lead)	1,100.00
Filtered Water - New Tap Filter (ppb Lead)	0.13
Note:	Prelim

[Zoom to](#)

**Filter Water Results: Kitchen**

Date Sampled:	03/06/2016
Filtered Water - Used Tap Filter (ppb Lead)	
Unfiltered Water (ppb Lead)	18.00
Filtered Water - New Tap Filter (ppb Lead)	0.11
Note:	Prelim

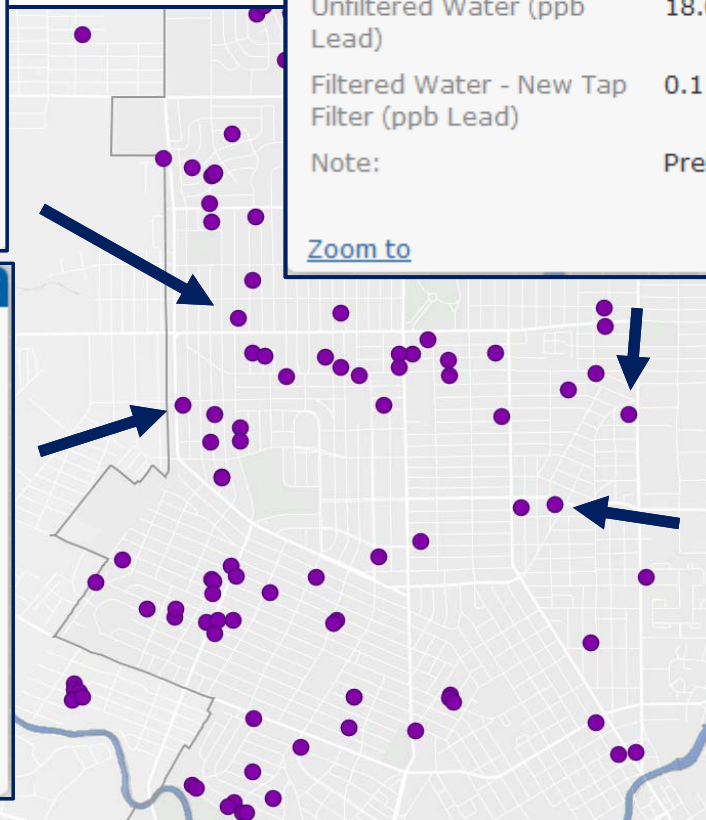
[Zoom to](#)



**Filter Water Results: Kitchen**

Date Sampled:	02/23/2016
Filtered Water - Used Tap Filter (ppb Lead)	
Unfiltered Water (ppb Lead)	92.00
Filtered Water - New Tap Filter (ppb Lead)	0.11
Note:	Prelim

[Zoom to](#)



**Filter Water Results: Kitchen**

Date Sampled:	02/29/2016
Filtered Water - Used Tap Filter (ppb Lead)	
Unfiltered Water (ppb Lead)	2.70
Filtered Water - New Tap Filter (ppb Lead)	0.11
Note:	Prelim

[Zoom to](#)

# 40 CFR 141.42 - Special monitoring for corrosivity characteristics.

... shall identify whether the following construction materials are present in their distribution system ...

...distribution mains ... and home plumbing

(d) Community water supply systems

and report to the State:

- [REDACTED]
- Copper from piping and alloys, service lines, and home plumbing.
- [REDACTED]
- Ferrous piping materials such as cast iron and steel.
- Asbestos cement pipe.
- In addition, States may require identification and reporting of other materials of construction present in distribution systems that may contribute contaminants to the drinking water, such as:
  - Vinyl lined asbestos cement pipe.
  - Coal tar lined pipes and tanks.



# 40 CFR 141.86 - Monitoring requirements for lead and copper in tap water.

(1) ..., each water system [redacted] of its distribution system [redacted], and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. ...

(2)... . When an evaluation of the information collected pursuant to § 141.42(d) is insufficient to locate the requisite number of lead and copper sampling ..., the water system shall review the sources of information listed below in order to ... . In addition, the system shall

[redacted]  
[redacted]  
water meters or performing maintenance activities):

(i) [redacted] department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;

(ii) [redacted] that indicate the material composition of the service connections that connect a structure to the distribution system; and

(iii) [redacted] which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

... shall complete a materials evaluation ... in order to identify a pool of target sampling sites ...

... collect such information ... in the course of ... normal operations ...

... All plumbing codes, permits, records in files of the building department(s) ... all inspections and records of the distribution systems ... all existing water quality information ...





# Full Lead Service Line Replacement

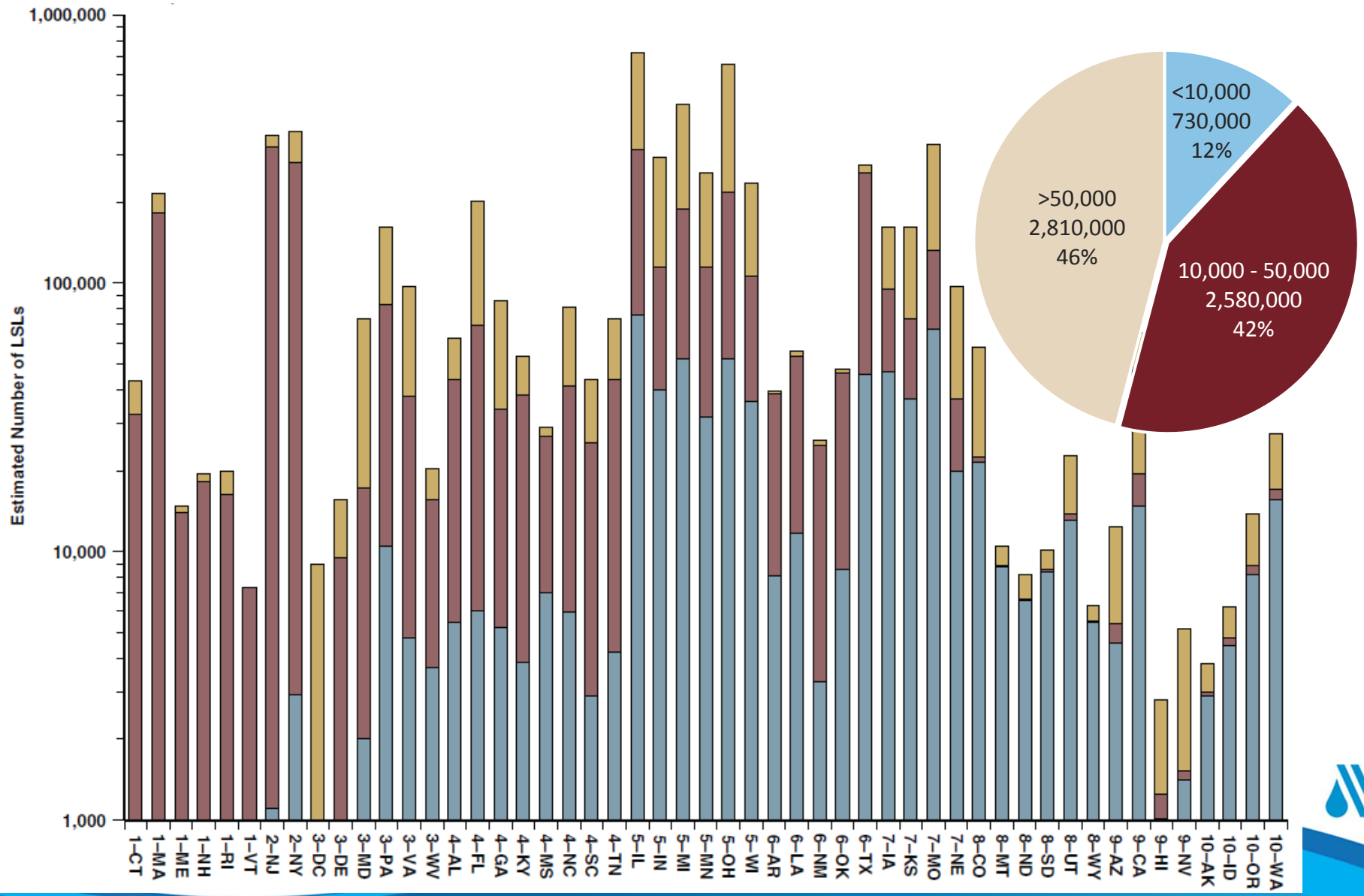


Managing lead in drinking water is a shared responsibility between utility and customer.

Source: Graphic courtesy of AWWA



# Number of Lead Lines in U.S.



Source: Cornwell, D. A., R. A. Brown, and S. H. Via. Forthcoming. "National Survey of Lead Service Line Occurrence." *Journal AWWA* 108(4) April 2016: E182-E191, in press.



# Replacing Lead Service Lines



Utility owns 26 ft  
Customer owns 44 ft  
Line runs under tree and  
through landscaping.

Average cost for this utility  
Utility side \$2,500  
Customer side \$3,500  
(Utility-wide \$52.5 M and  
\$73.5 M, respectively)

Time and effort to  
effectively engage  
customers

Locating lead services

Access to private  
Property

Shared cost

Solutions for  
economically challenged  
households

Prioritization relative to  
other needs

Consideration in estimate  
of rate burden

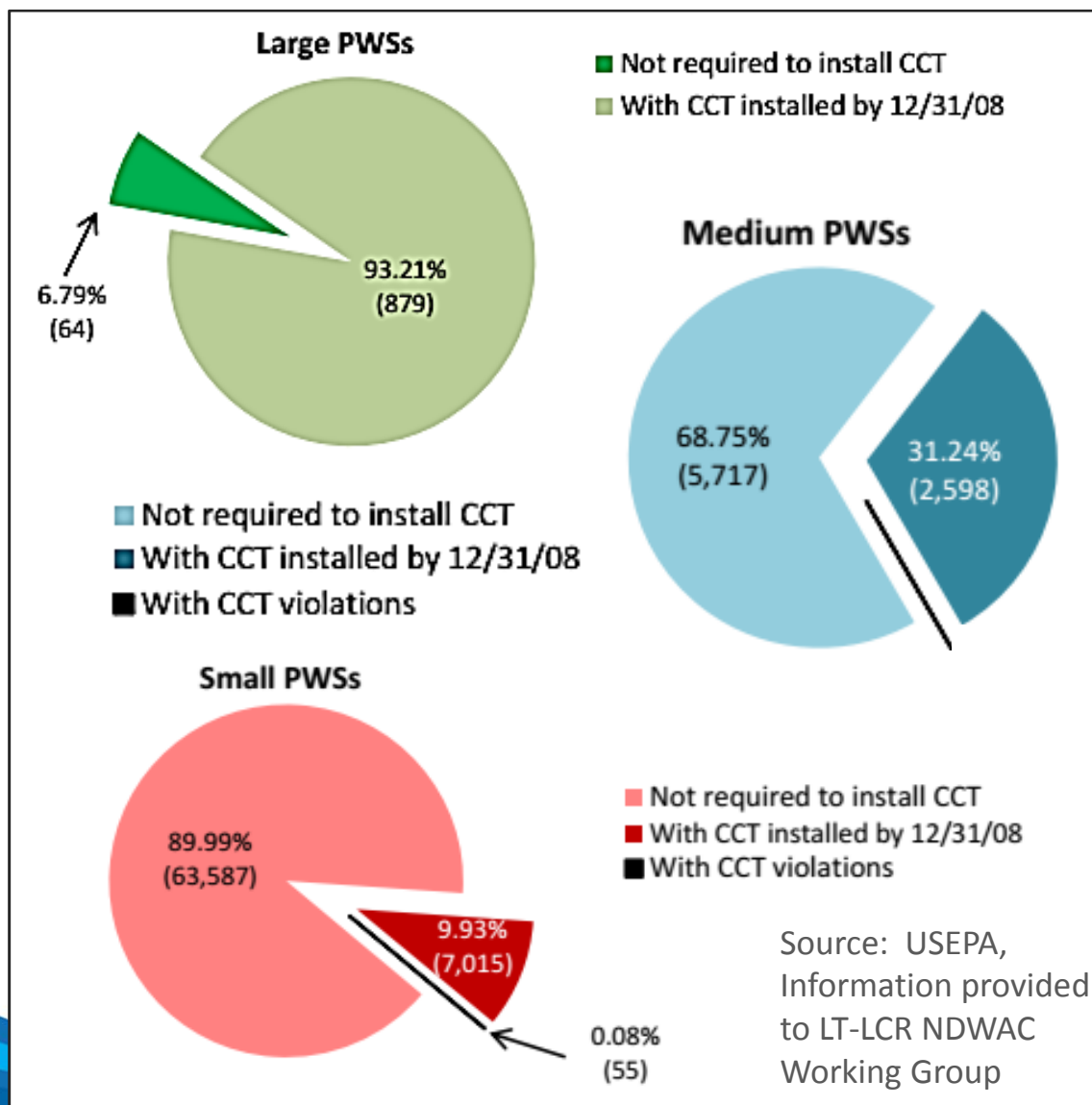


Utility owns 21 ft  
Customer owns 17 ft  
Line runs through wall.



Source: Photographs courtesy of Greater Cincinnati Water Works

# Optimized Corrosion Control



1. With years of experience systems have de- facto water quality parameter regimes
2. NDWAC proposal would have many more plants actively monitoring and managing water quality for corrosion control



# EPA Letter to States / Memorandum

## Letter to States

- Confirm state protocols and procedures are consistent with LCR and EPA guidance
- Use EPA guidance for LCR sampling protocols
- Use EPA guidance for procedures for optimizing corrosion control
- Post procedures for identifying Tier 1 sample sites

## Memorandum

- Recommends against pre-stagnation flushing
- Recommends use of wide-mouth bottles
- Revised wording of instructions for homeowners



# National Infrastructure Funding Discussion

- Water infrastructure is now a top tier policy topic
- Recognition that a portfolio of funding tools is needed
  - State Revolving Loan Funds
  - Water Infrastructure Finance and Innovation Act
  - Municipal bonds and private capital
- Challenges include:
  - Funding communities in fiscal distress
  - Supporting improvements to private property

+ LSL Replacement  
**\$30 billion**

Recycled water  
**\$6 billion**

Drinking Water  
**\$1 Trillion**

CSO  
**\$48 billion**

Stormwater  
**\$19 billion**

Wastewater collection  
and treatment  
**\$198 billion**



Thank you for the opportunity to make this presentation. Questions?

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**Lead**  
RESOURCE COMMUNITY



Welcome to the Lead Resource Community

AWWA members have worked to protect consumers against lead in drinking water for many years, creating scores of helpful communications, technical and public policy resources. In light of the ongoing situation in Flint, Michigan, these many resources are now available from this single hub. Here you will find insights on corrosion control and other lead management issues, the latest legislative and regulatory developments, and public outreach tools to help you speak with consumers and other key stakeholders.

*You can track development of lead issue and available resources on AWWA's Lead Resource Page.*

