



## Update on Lead and Copper Rule Changes and Sampling Results

Water Supply Citizens Advisory Committee

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February 13, 2024



# LCR Improvements -- It's Been a Long and Torturous Road

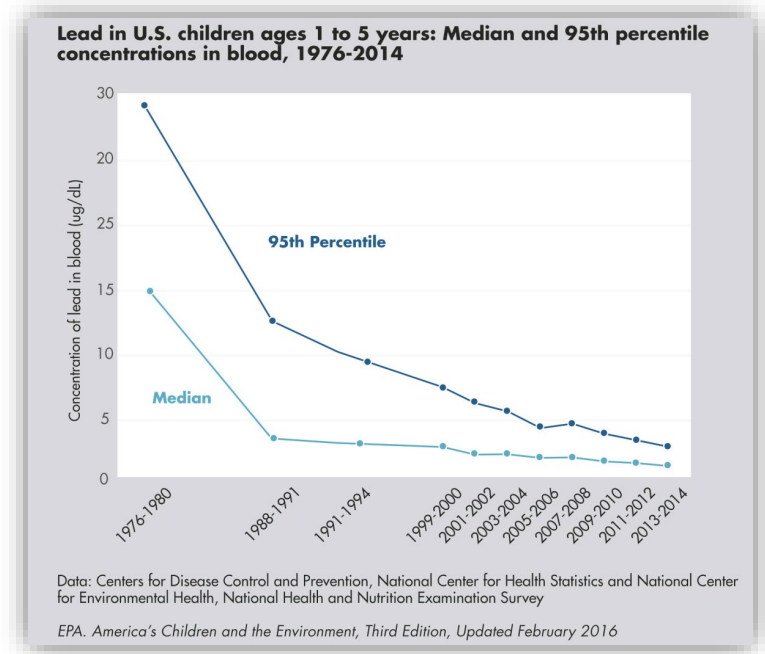
- These Revisions Have Been Under Development since 2004
- National Drinking Water Advisory Council Recommendations - December 2015
- Draft LCR Revisions – October 2019; Final LCRR – January 2021; Final Final - December 2021
- Compliance with LCRR – October 16, 2024
- LCR Improvements – December 2023
- Expected Final LCRI – October 2024





# Public Water Suppliers – Protecting Public Health

- Managing the Risk of Lead in Water is a Shared Responsibility
  - Public Water Suppliers
  - Our Customers
  - Public Health Officials and Health Providers
- Our Goal is public health protection
  - Lead in children’s blood is down 90 percent
  - Lead Levels at home taps down dramatically
  - But still more to be done
- Long Term Goals:
  - Reduce lead corrosion
  - Remove lead from contact with our water





# Major Changes

- Remove all lead service lines (including GRR) in 10 Years
- Lowers Action Level to 10 ppb (from 15); Eliminates Trigger Level
- Use higher of 1<sup>st</sup> and 5<sup>th</sup> Liter sample for 90<sup>th</sup> (LSL sites)
- Must document any legal barriers to replacing LSL
- Connectors added to Inventory Requirements
- Additional requirements for systems frequently over AL
- Many more outreach activities
- Incentives to replace LSL in 5 years – can defer changes to corrosion control



# Complicated Compliance Schedule

- “For the LCRI, EPA is proposing a compliance date of three years after promulgation of a final rule and is proposing that systems continue to comply with the LCR until that date, with the exception of the
  - LCRR initial LSL inventory,
  - notification of service line material, associated reporting requirements, and
  - the requirement for Tier 1 public notification for a lead action level exceedance...”
- Other aspects of LCRR deferred until LCRI compliance date



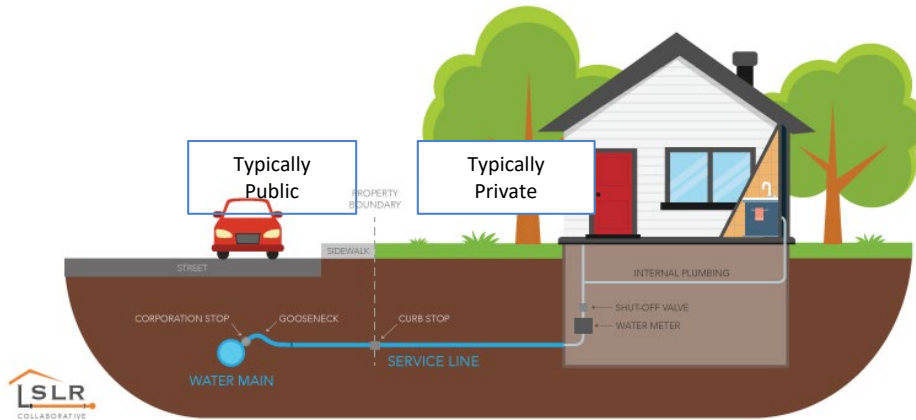
# The revised LCR Requires Initial Inventories by October 16, 2024





# LCRR Service Line Inventory

Must identify both Public side and Private side pipe material.



Four (4) Classifications:

- ✓ Lead Service
- ✓ Galvanized Requiring Replacement (GRR)
- ✓ Lead Status Unknown  
*(assumed lead until status determined)*
- ✓ Non-Lead Service Line

If a Galvanized service line is or ever was downstream of a Lead or Unknown = Galvanized Requiring Replacement.



# Changes to LSL Replacement Plan – Now due October 2027

- Identify legal or tariff barriers to doing full replacement of LSL
- More emphasis on priority setting, especially for Environmental Justice areas
- Does not require funding private side, but strongly encourages
- Additional outreach activities
  - At least 4 attempts, with two methods
- Partial replacements prohibited
  - except for emergency repair or infrastructure projects
- Plan must be publicly available, on-line for over 50,000





# Outreach and Education Requirements

- Maintains annual notice to all LSL, GRR and unknowns - this year
- Revises required health language in all communication
  - “No safe level of lead in water”
- Provide results for all samples w/i 3 calendar days
- Focus on non-English speakers
- Adds inventory related work to disturbances requiring notice
- Additional outreach required if behind schedule on LSL replacement rate
- Changes to CCR – mention inventory, replacement plan & school sampling



## Monitoring Requirements – After October 2027

- If have LSL, GRR or unknowns,
  - start at twice–annual, standard number of samples
  - Reduced to annual if two rounds under AL, standard number
- Reduce to triennial monitoring if under the PQL of 5 ppb
- Continues requirement if have LSL, sample there
- For LSL sites, sample for lead in 1<sup>st</sup> and 5<sup>th</sup> liter, use higher for 90<sup>th</sup>
- “Find and Fix” renamed “Distribution System and Site Assessment”
  
- More systems will be required to sample for Water Quality Parameters – now includes systems over 10,000



## School and Child Care Facility Sampling – Now Begins After 2027

- Retains LCRR requirements
- Extends waiver for legacy sampling – 1/1/21 to LCRI compliance date
- Must include discussion of sampling program in CCR
- Begins at LCRI compliance date



# New Requirements for Systems that Exceed the Action Level

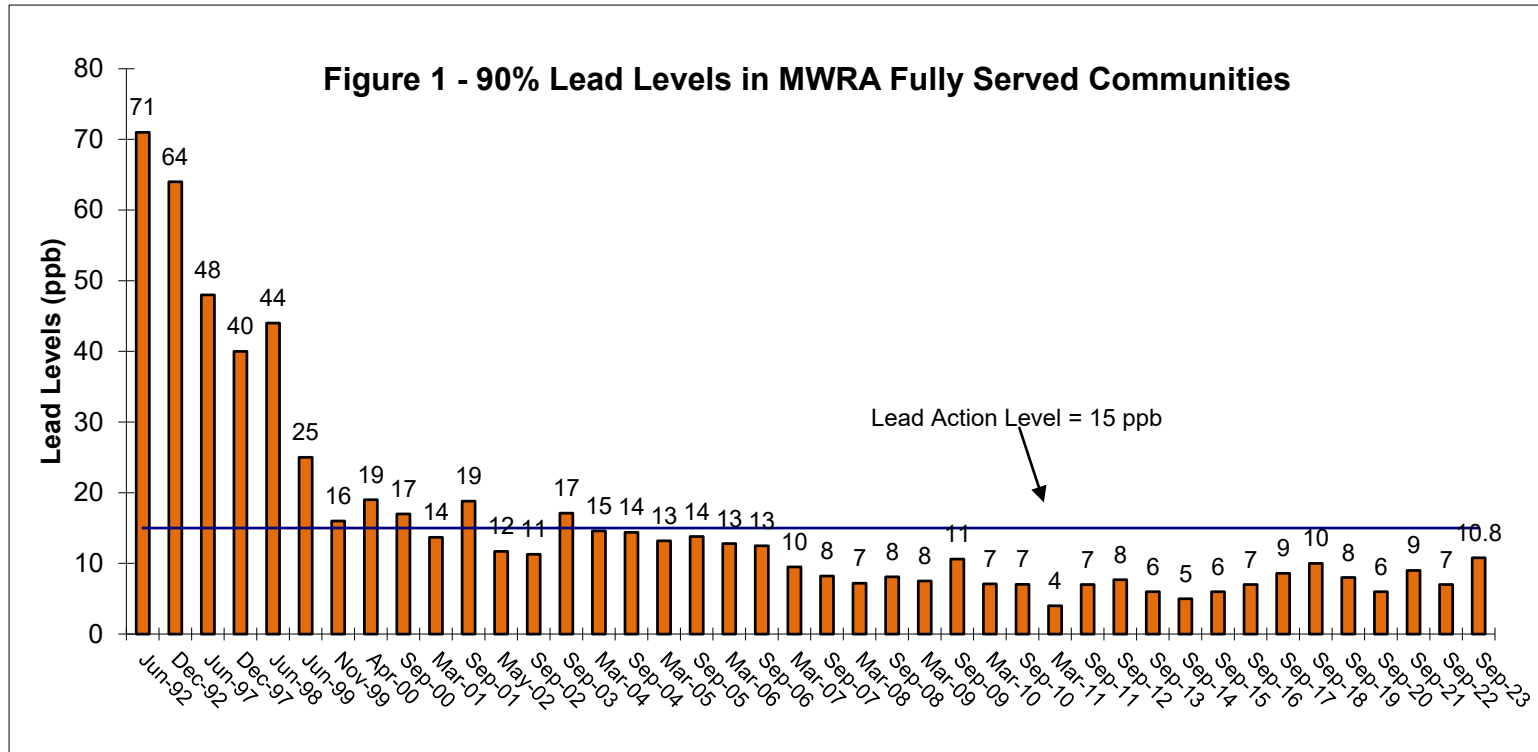
- Retains the 24-hour Public Notice
- Public Education after each Action Level Exceedance
- Public Education provided to every service connection, not customer
- Install or re-optimize corrosion control treatment
  - Provision to defer if replace 100% of LSL in 5 years at 20% per year
- If over Action Level 3 times in 5 years,
  - Additional outreach
  - Offer filters to everyone



- Incentive to do LSL replacement faster
  - Can defer installing or re-optimizing corrosion control if replace 100% of LSL and GRR, and resolve unknowns in 5 years, 20% per year after ALE
- Small system flexibility revised – option to CCT
  - Only for CWS under 3,300 population and NTNC
  - Install and maintain certified filters, or
  - Replace all lead-bearing premise plumbing

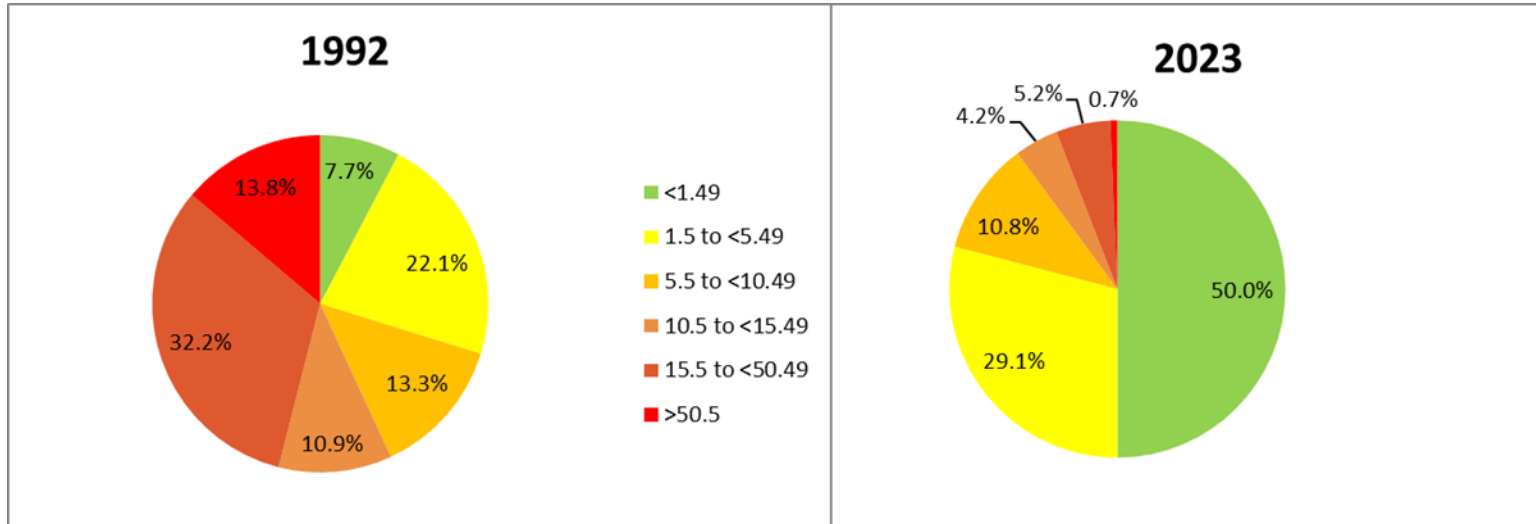


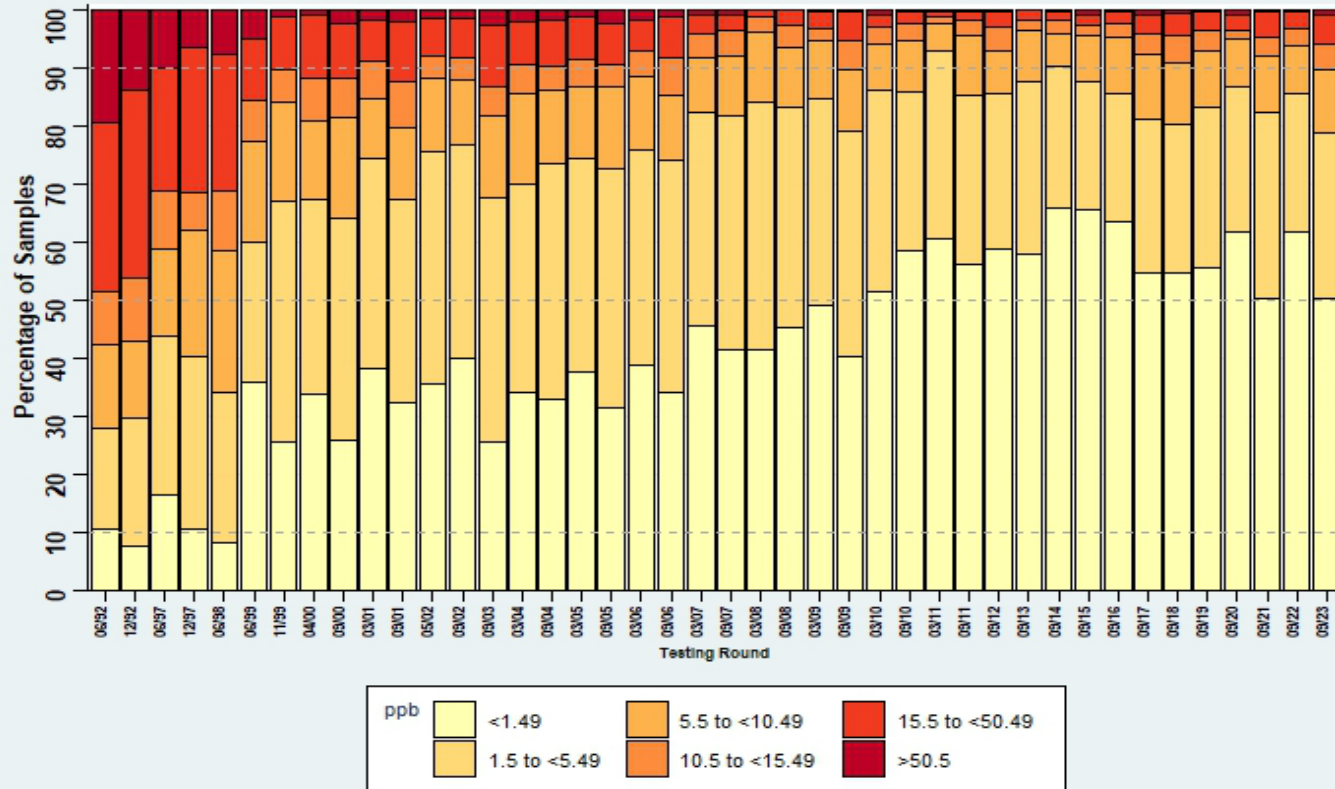
# System – wide results





# Significant Increase in Samples with Lowest Lead Levels (despite shift in sampling pool)









# Sample Distribution – Recent Sampling Rounds

	2015	2016	2017	2018	2019	2020	2021	2022	2023
LTE one ppb	66 %	64 %	55 %	55 %	56 %	62 %	50%	54%	50%
LTE five ppb	87 %	85 %	80 %	79 %	80 %	86 %	82%	84%	79%
LTE ten ppb	95 %	95 %	92 %	90 %	93 %	95 %	92%	94%	90%
LTE fifteen ppb	98 %	98 %	96 %	94 %	96 %	96 %	95%	97%	94%
90 <sup>th</sup> percentile	6 ppb	7 ppb	9 ppb	10 ppb	8 ppb	6 ppb	8.6 ppb	7.3 ppb	10.8 ppb



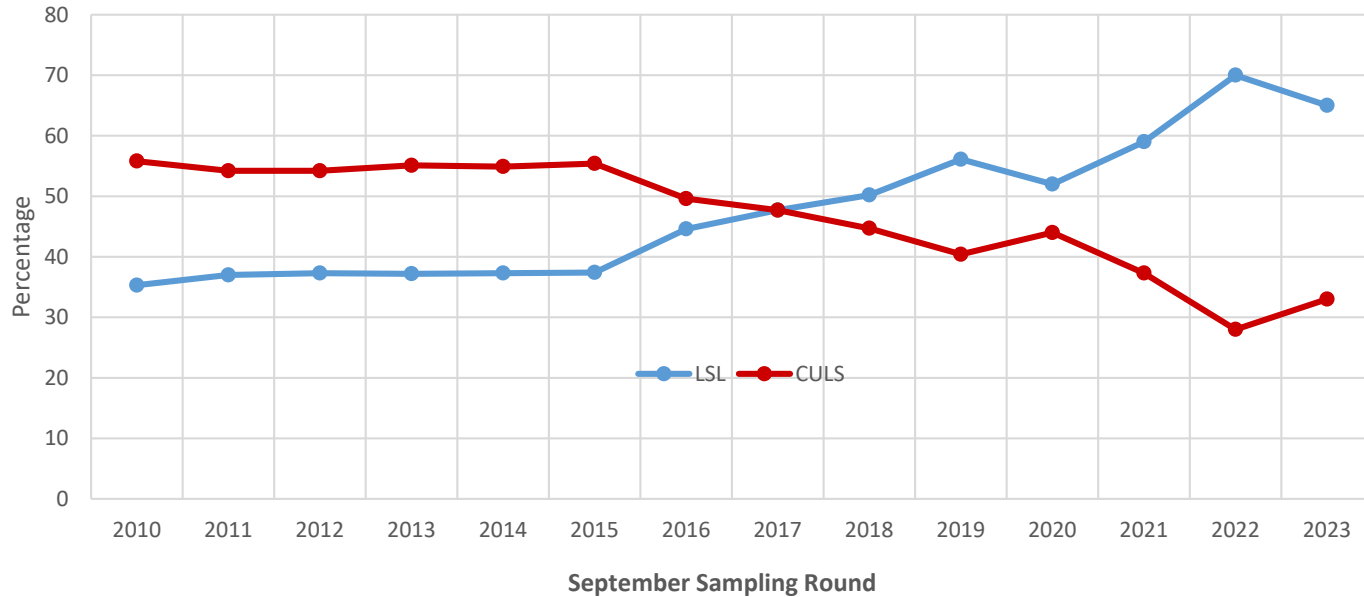
# Distribution and Site Assessment OWQP Sampling

- 2021 Full Round – 22 sites, all met OWQP limits
  - pH range = 9.3 - 9.7, average = 9.6
  - Alkalinity range = 40 - 42, average = 41 mg/l
- 2022 Spring “repeat round” – 4 sites, all met OWQP limits
  - pH range = 9.6 - 9.8, average = 9.7
  - Alkalinity range = 41 - 42, average = 41.5 mg/l
- 2022 Full Round – 18 sites, all met OWQP limits
  - pH range = 9.3 – 9.6, average = 9.5
  - Alkalinity range = 38 – 41, average = 40 mg/l
- 2023 Full Round – 35 sites, all met OWQP limits
  - pH range = 9.2 – 9.6, average = 9.45
  - Alkalinity range = 41.2 – 43.9, average = 42.3 mg/l
- All regular OWQP sampling taken at same time as LCR samples met limits



# Share of sample pool that is LSL has increased substantially

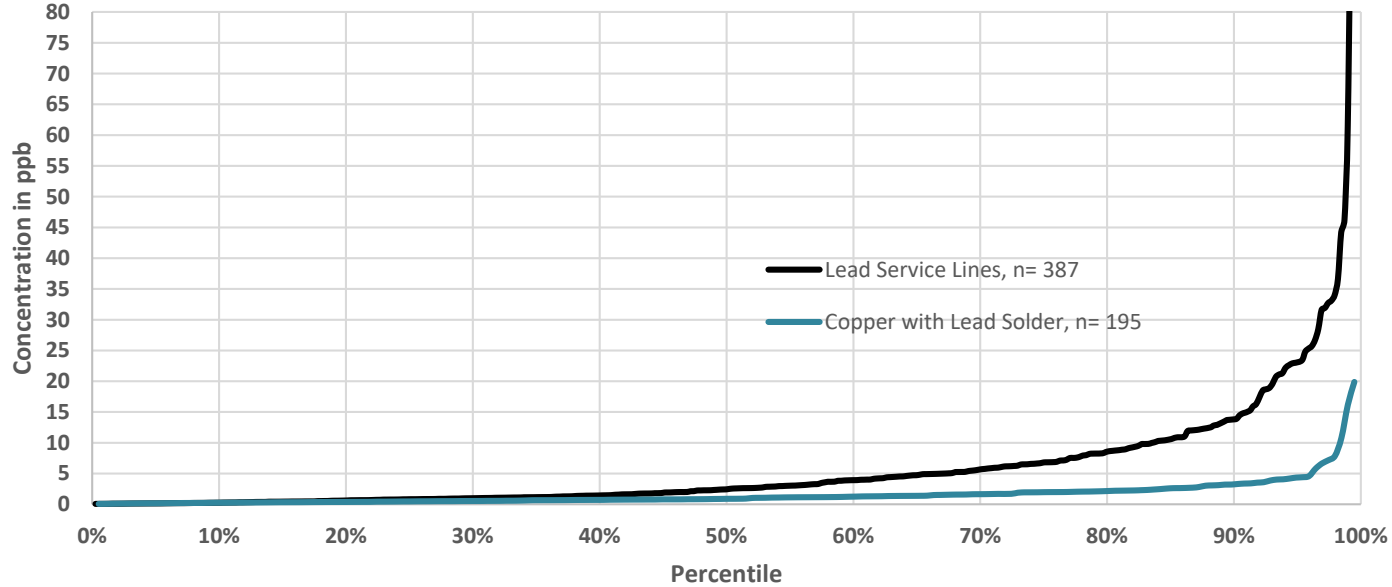
## Percentage of Samples from Homes with Lead Service Lines





# 2023 Sampling Results – 10.8 ppb - 65% LSL

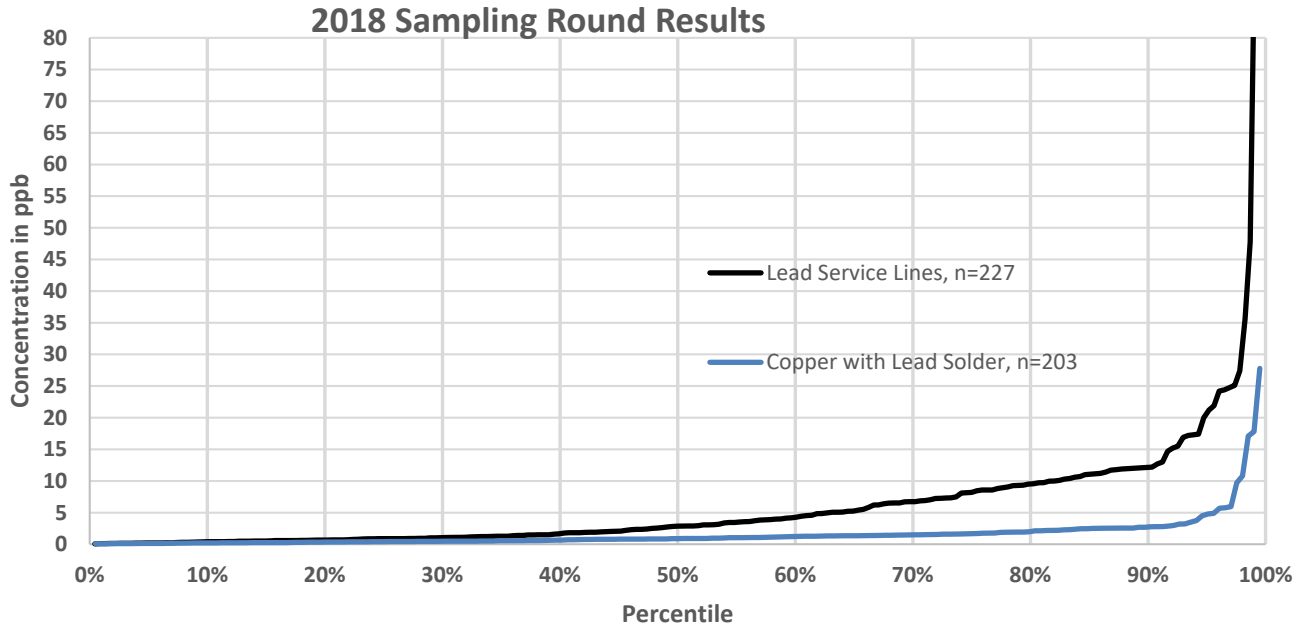
## 2023 Sampling Round Results



Type	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile	% of Total
LSL	2	7	13	23	65
CULS	1	2	3	4	33



# 2018 Sampling Results – 9.7 ppb - 50% LSL

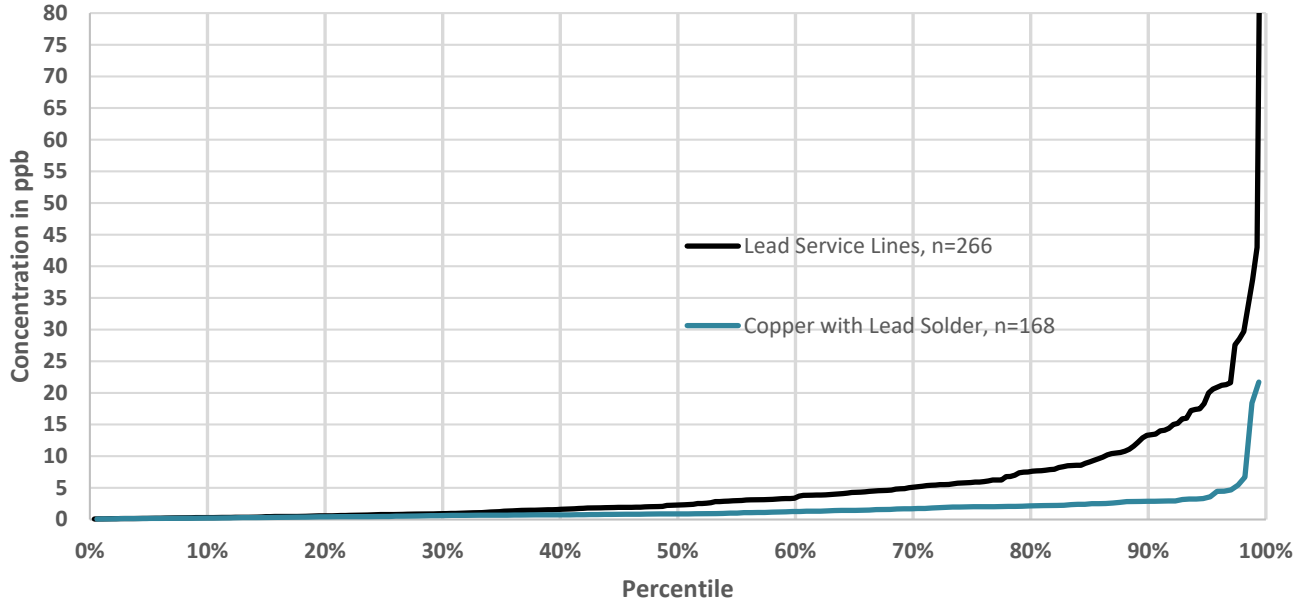


Type	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile	% of Total
LSL	3	8	12	19	50%
CULS	1	2	3	4	45%



# 2021 Sampling Results – 8.6 ppb – 59% LSL

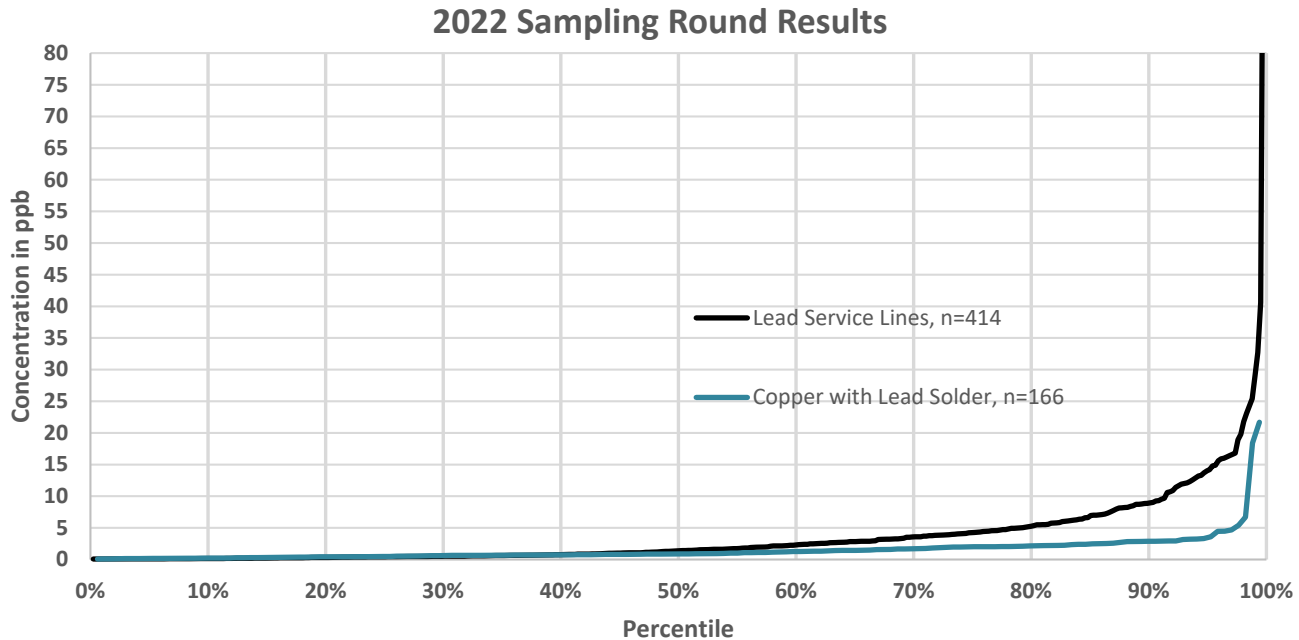
## 2021 Sampling Round Results



Type	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile	% of Total
LSL	2	6	13	18	59%
CULS	1	2	3	3	38%



# 2022 Sampling Results – 7.3 ppb – 70% LSL



Type	Median	75 <sup>th</sup> Percentile	90 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile	% of Total
LSL	1	4	9	14	70%
CULS	1	1	2	4	28%



# Almost all high samples are from sites with lead service lines

- In 2023 sampling round:
  - 35 of 595 samples were over the action level
  - 31 of the 35 were from sites with lead service lines
- In 2022 sampling round:
  - 18 of 595 samples were over the action level
  - 17 of the 18 were from sites with lead service lines





## Over past 10 years – vast majority of sites over the AL were LSL (91%)

Action Level = 15		Action Level = 10
1028	Unique sites sampled	1028
101	# over AL	161
92	# that were LSL	147
6	# that were lead solder	9



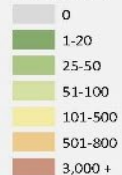
# Current LSL Inventory

## Reported Number of Lead Service Lines and Lead Loan Participation (2016-2023)

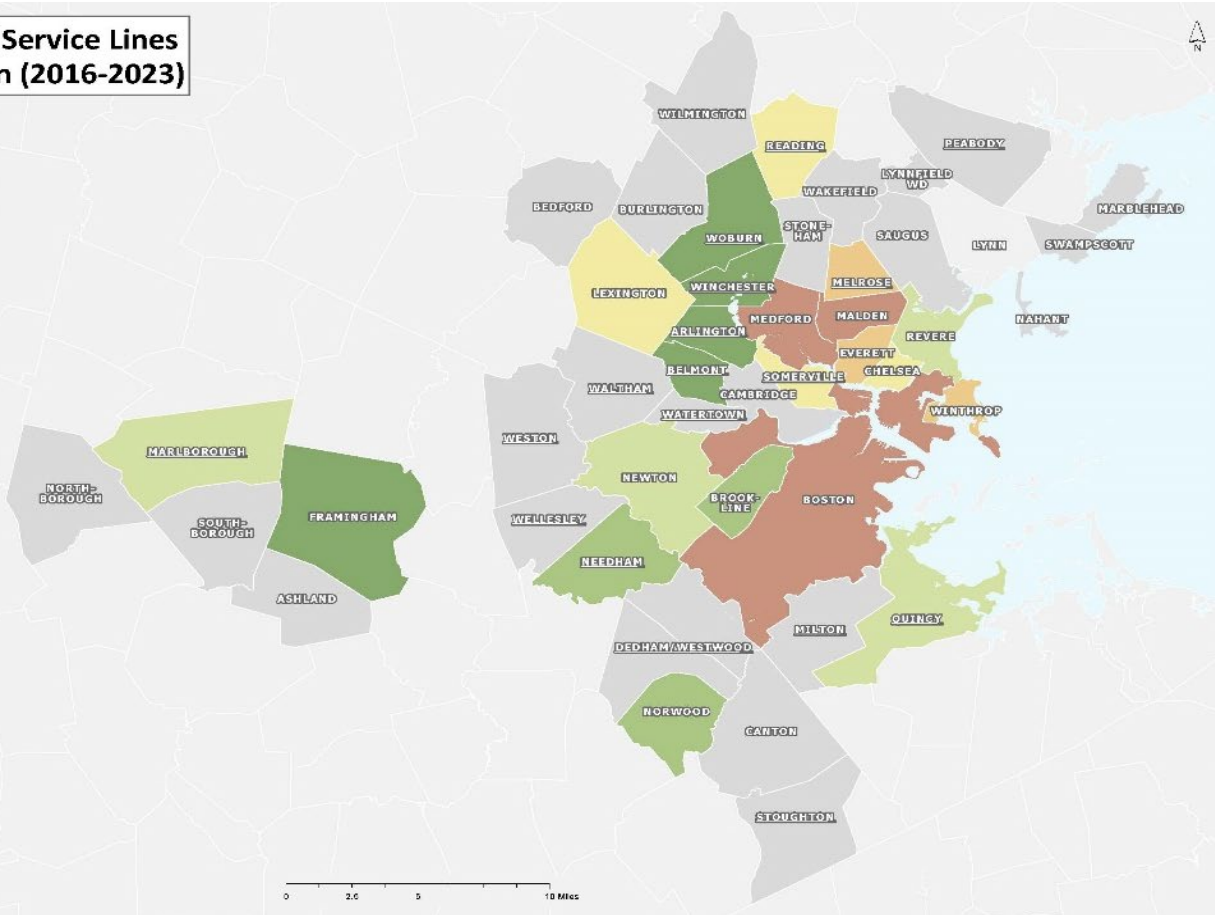
Community	Lead Loan Program Funds Distributed
<b>TOTAL</b>	<b>\$41,301,894</b>
Boston	\$3,464,919
Chelsea	\$1,800,000
Everett	\$5,500,000
Lexington	\$3,880,000
Malden	\$500,000
Marlborough	\$5,000,000
Melrose	\$1,035,000
Needham	\$1,000,000
Newton	\$4,000,000
Quincy	\$1,500,000
Reading	\$1,500,000
Revere	\$1,495,000
Somerville	\$2,455,000
Watertown	\$1,500,000
Weston	\$160,000
Winchester	\$2,800,000
Winthrop	\$3,711,975

Note: All MWRA water communities are eligible to participate in the Lead Loan Program (LLP). LLP funds can be used for inventories, lead lines, galvanized lines and goosenecks removal.

### Reported Number of Lead Service Lines



**TOWN** Communities with reported goosenecks in their system





# MWRA Lead Loan Program

- \$100 Million for community projects
- 10 year interest-free loans
- Projects must replace **ALL** lead pipe within a service line - **BOTH** public and private portions
- If any portion of service is lead or brass, entire service is eligible for replacement
- Funding for Inventory is an eligible cost





# MWRA Lead Loan Program – \$41.3 Million to 17 Communities

Through December 2023

– Boston	\$3,464,919
– Chelsea	\$1,800,000
– Everett	\$5,500,000
– Lexington	\$3,880,000
– Malden	\$500,000
– Marlborough	\$5,000,000
– Melrose	\$1,035,000
– Needham	\$1,000,000
– Newton	\$4,000,000
– Quincy	\$1,500,000
– Reading	\$1,500,000
– Revere	\$1,495,000
– Somerville	\$2,455,000
– Watertown	\$1,500,000
– Weston	\$160,000
– Winchester	\$2,800,000
– Winthrop	\$3,711,975



6,334 LSL replaced (LLP and LWSAP); 1,265 in progress

- Winthrop's of \$980,000 distribution planned for 2/9/24



# 90<sup>th</sup> Percentile Results Significantly Lower for Non LSL Sites

Year	2018	2019	2020	2021	2022	2023
90th Percentile Full system	10	8	6	9	7	11
90th Percentile Just LSL	12	11	8	13	9	14
90th Percentile Just Lead Solder	3	3	2	3	2	3

Red shows results over proposed new Action Level of 10 ppb

# Questions or Comments?

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