

Rule Update:
Ch. NR 809, Wis. Adm. Code
related to control of lead and copper in drinking water



March 14, 2025 | RULE STAKEHOLDER COMMITTEE
DRINKING WATER & GROUNDWATER PROGRAM

Proposed NR 809 Rule Change Presentation

Rule Area	Presenter
Lead and Copper Compliance Monitoring	Sarah Gunnell, Lead & Copper Monitoring Spec.
Lead Action Level Exceedances	Briana Harter, Lead & Copper Rule Coordinator
Corrosion Control	Sam Munk, Corrosion Control Specialist
Schools and Childcare Facilities	Briana Harter, Lead & Copper Rule Coordinator
Service Line Inventories	Cora Bachhuber, Service Line Inventory Specialist
Lead Service Line Replacements	Ann Hirekatur, Lead & Copper Section Manager

Abbreviations and Acronyms

- **PWS** Public Water System
- **CWS** Community (public) Water System

- **LSL** Lead Service Line
- **GRR** Galvanized Requiring Replacement Service Line

- **ALE** Action Level Exceedance
- **ppb** parts per billion
- **PN** Public Notice

- **CCT** Corrosion Control Treatment



Compliance Monitoring

Sarah Gunnell

Lead and Copper Monitoring Specialist

Compliance Monitoring Requirements













- **Where** are PWS required to monitor? (i.e. monitoring site tier criteria)
- **How** are PWS required to conduct compliance monitoring (i.e. sampling methods)?
- **When** and how often are they required to monitor (i.e. monitoring frequency)?
- **What** are the new reduced monitoring requirements/criteria?

*Intent of compliance monitoring requirement changes—
Testing where the lead is*

Compliance Monitoring Site Tier Criteria

Where are PWS required to monitor?

	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
STRUCTURE TYPE	 Single-family*	 <ul style="list-style-type: none">• Non-res• Multi-family	 Single-family	 Single-family	 Any structure
MATERIAL TYPE	 Confirmed Lead service line or premise plumbing	 Confirmed Lead service line or premise plumbing	 Lead Gooseneck or Galvanized pipe or premise plumbing downstream of a <i>former</i> LSL.	 Copper plumbing with lead solder (installed prior to lead ban)	 Materials representative of sites throughout distribution system

Compliance Monitoring Sampling Methods

How are PWS required to conduct compliance monitoring?

- PWS are prohibited from including statements in their sampling instructions directing samplers to:
 - remove and clean aerators prior to sampling; or
 - to conduct pre-stagnation flushing.
- PWS must supply samplers with wide-mouth bottles for sample collection.
- First- and fifth- liter sampling is required in structures with lead service lines (i.e. Tier 1 and Tier 2 sites).

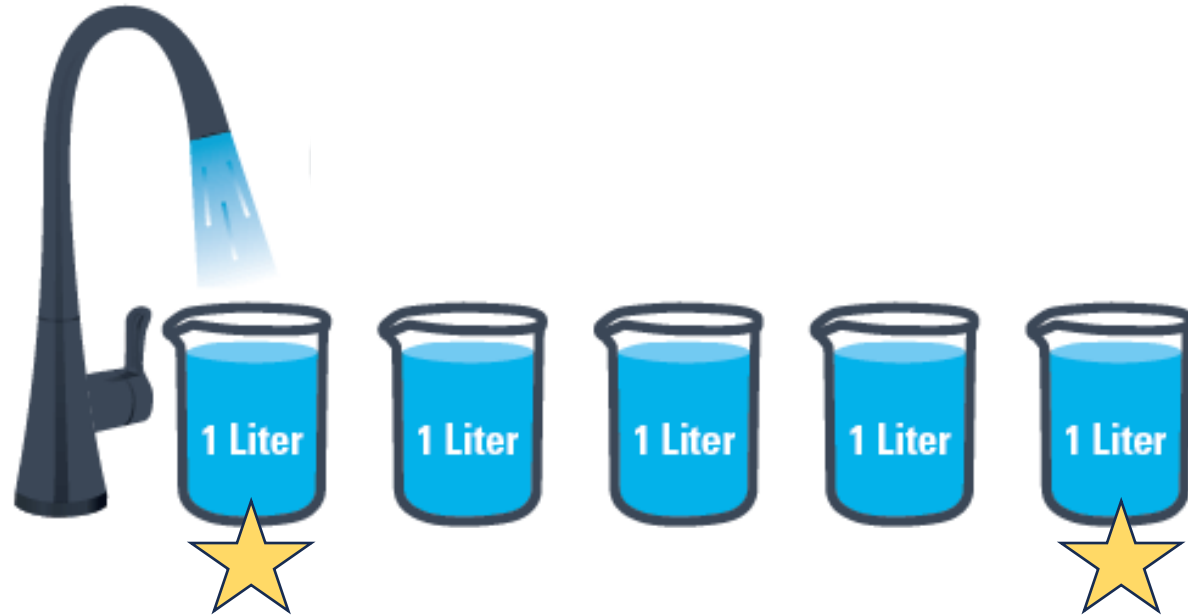


Compliance Monitoring Sampling Methods

5th liter sampling



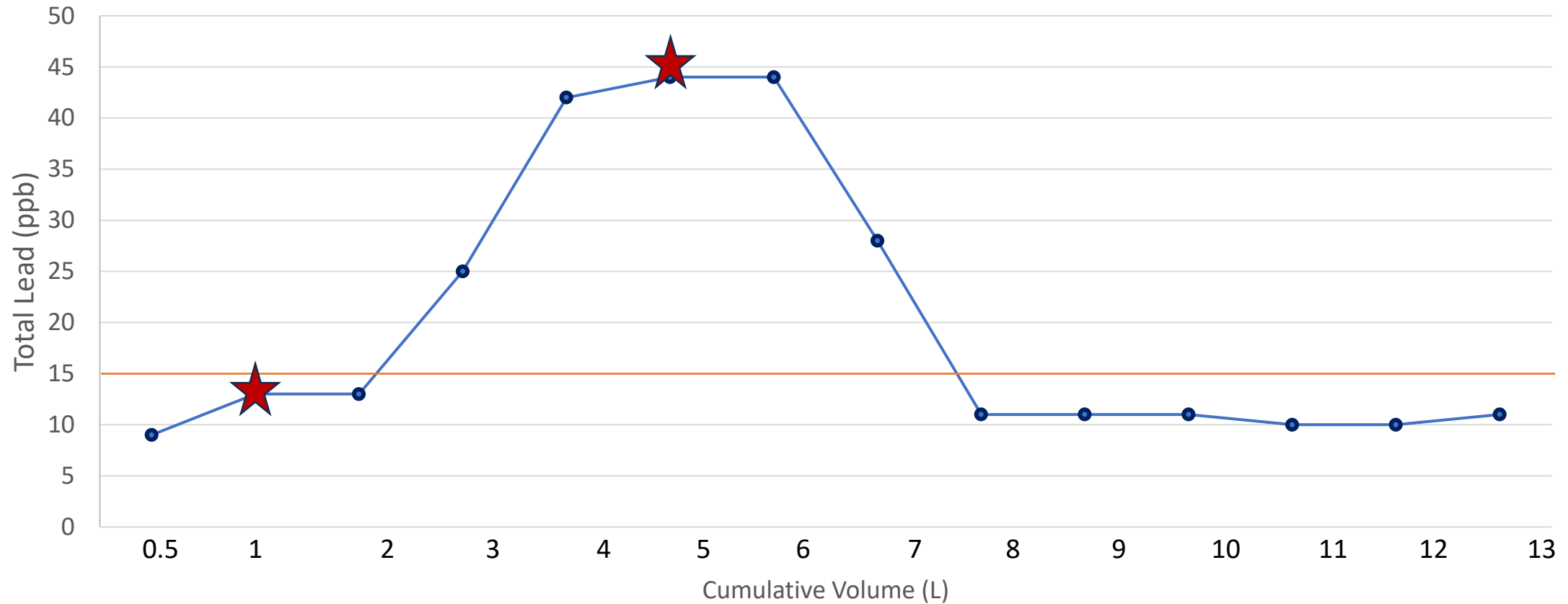
First-liter sampling



1st and 5th liter sampling

Compliance Monitoring Sampling Methods

5th liter sampling



Compliance Monitoring Frequency

When and how often are PWS required to conduct compliance monitoring?

PWS that meet either of the following criteria will be required to conduct two-consecutive rounds of standard monitoring beginning January 1, 2028.



PWS has lead service lines or galvanized requiring replacement service lines in their inventory.



PWS exceeded reduced lead action level of 10 ppb in their most recent tap monitoring period as of November 1, 2027.

Compliance Monitoring Frequency

When and how often are PWS required to conduct compliance monitoring?

Other events that will trigger standard monitoring requirements:

- PWS exceeds a lead or copper action level (*under the 1991 LCR standard monitoring is optional after an ALE until 3-5 years later*).
- Has no lead or GRR service lines in its inventory on November 1, 2027 but subsequently discovers such a service line.
- Other CCT-related events that will be covered in CCT portion of the presentation.

Reduced Monitoring Requirements

PWS that qualify for reduced
ANNUAL
monitoring sample at the
STANDARD
number of sites

- All samples taken must be analyzed for **lead** (i.e. standard number of sites)
- Only the number of samples equal to the reduced number of sites must be analyzed for **copper** (i.e. PWS serving more than 100 people will only analyze half of their copper samples)

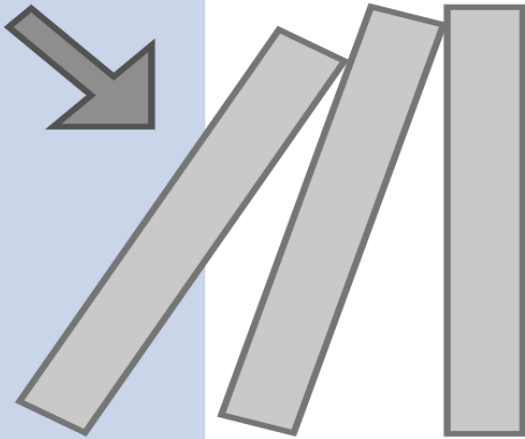
PWS that qualify for reduced
TRIENNIAL
monitoring sample at the
REDUCED
number of sites

- Lead and copper samples taken from the reduced number of sites are all analyzed.

Lead Action Level Exceedances (ALEs)

Briana Harter

Lead and Copper Rule Coordinator





Lead ALE Changes*

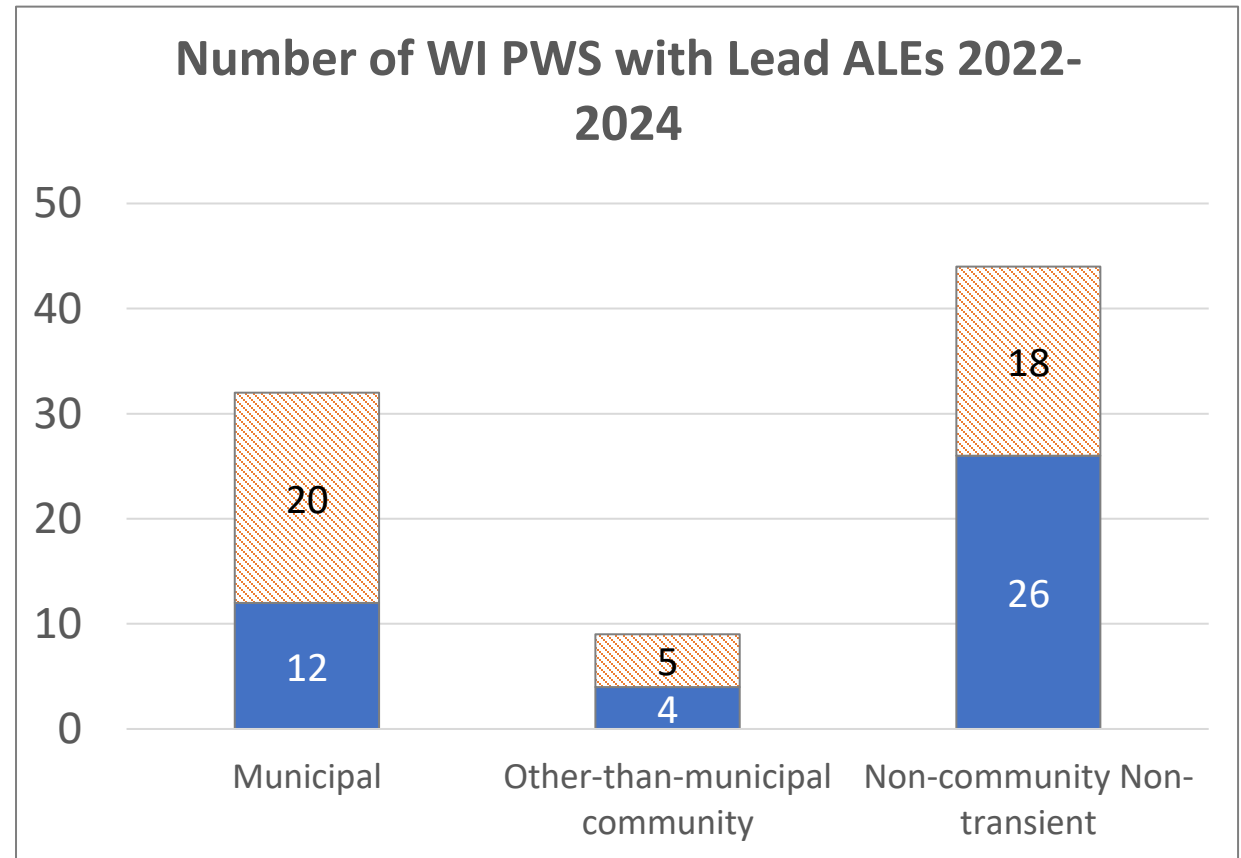
- Lead ALE reduced from 15 ppb to 10 ppb
- Lead 90th percentile calculation methodology
- Post lead-ALE requirements (non-CCT)*
 - Lead ALE Tier 1 PN
 - Lead health effects language
 - Standard monitoring
 - Filter distribution and additional education for multiple lead ALEs

**Changes to CCT requirements following a lead ALE will be covered in the CCT portion of the presentation.*

Lead ALE Changes

The LCRI reduces the threshold for triggering a lead ALE from 15 ppb to 10 ppb.

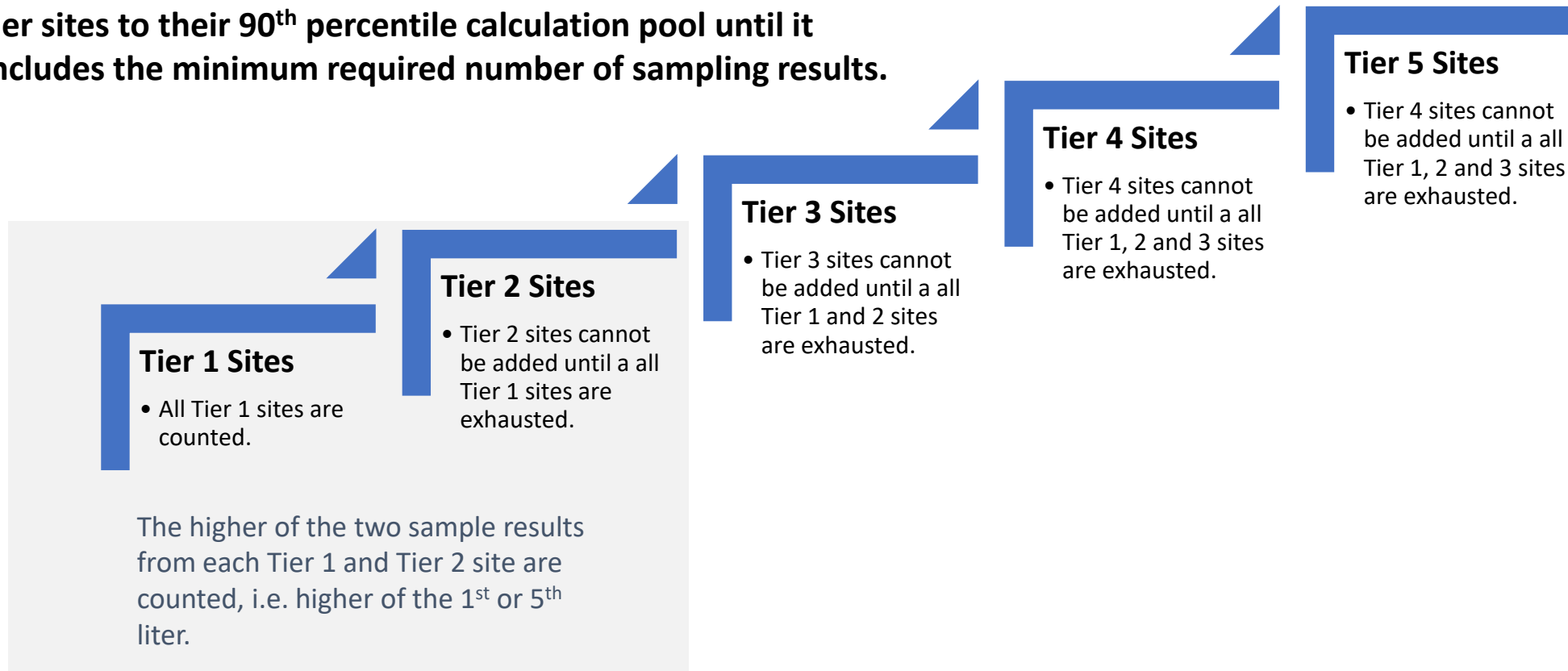
-  Number of WI PWS that exceed the action level of 15 ppb
-  Number of WI PWS that would have exceeded an action level of 10 ppb



90th Percentile Calculation

What samples can be counted towards 90th percentile?

PWS continue adding sample results from the highest priority tier sites to their 90th percentile calculation pool until it includes the minimum required number of sampling results.

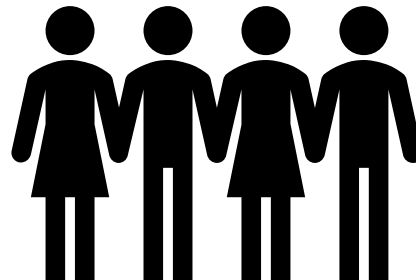


Lead ALE Tier 1 Public Notice (PN)

Within 24 hours of learning they have a Lead ALE, PWS must:



Deliver a Tier 1 PN to their water consumers.



Provide a copy of the Tier 1 PN to EPA and DNR.



New Lead Health Effects Language

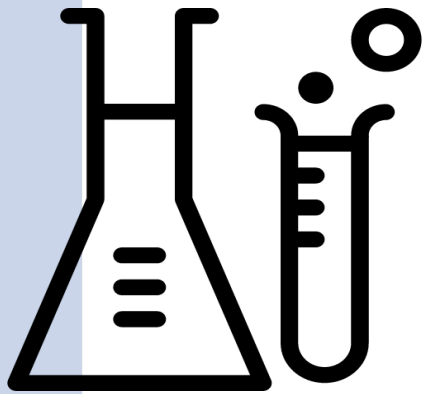
40 CFR 141.85(a)(1)(ii)

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant people, infants (both formula-fed and breastfed), and young children. Some of the health effects to infants and children include decreases in IQ and attention span. Lead exposure can also result in new or worsened learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy may be at increased risk of these harmful health effects. Adults have increased risks of heart disease, high blood pressure, kidney or nervous system problems. Contact your health care provider for more information about your risks.

Monitoring, Filter and Outreach Requirements

- Standard monitoring is required after an ALE rather than optional.
- PWS that get 3 lead ALEs in any 5-year period must do all of the following.
 - Make pitcher filters or point-of-use devices certified to reduce lead and 6-months of replacement filter cartridges available to all consumers .
 - Continue to make replacement filter cartridges available until the system no longer has at least three lead ALEs in a rolling 5-year period.
 - Conduct at least additional outreach activity every six months beyond what is required after a single ALE until the system no longer has at three or more lead ALEs in a rolling 5-year period.





Corrosion Control

Sam Munk

Corrosion Control Specialist

Abbreviations and Acronyms

- **CCT** Corrosion Control Treatment
- **OCCT** Optimal Corrosion Control Treatment
- **WQPs** Water Quality Parameters (e.g. pH, alkalinity, orthophosphate, disinfectant residual, chloride, sulfate, iron, manganese, etc)
- **OWQPs** Optimal Water Quality Parameters
- **POU** Point of Use (treatment)

Corrosion Control Changes

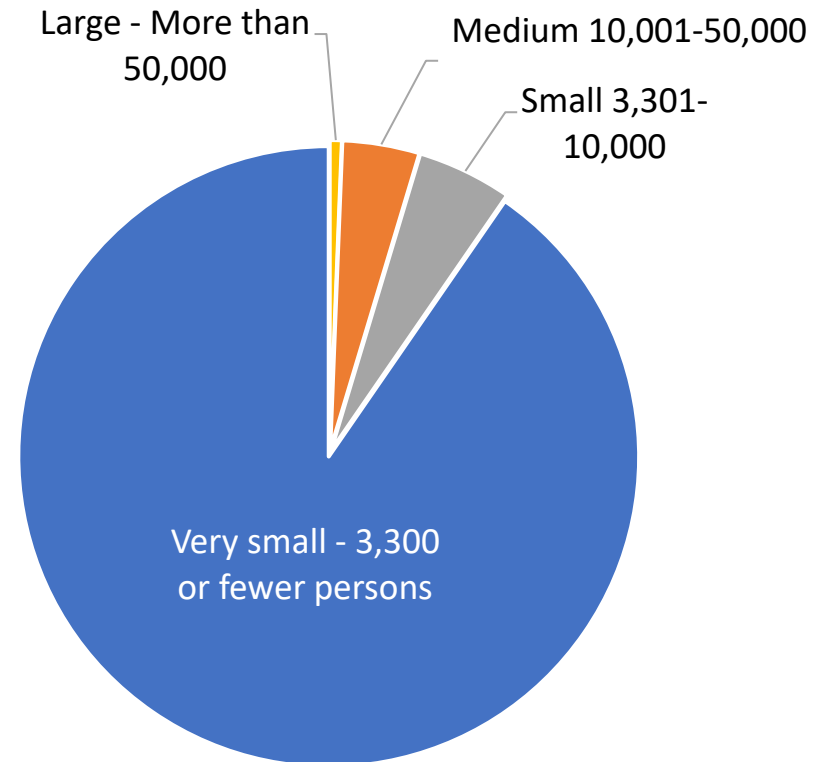
- Post ALE - Corrosion Control Treatment (CCT) Steps
- Small System Flexibility Options
- CCT-related standard monitoring requirement triggers
- Water quality parameter (WQP) monitoring requirements
- Distribution Site Assessments

Post-ALE Corrosion Control Treatment Steps

New Requirement:

PWS that have LSLs and serve a population of more than 10,000 that exceed the lead action must conduct pipe-rig/loop studies using harvested lead service lines from their distribution system to assess the effectiveness of CCT options on the existing pipe scale.

Wisconsin Public Water System Size

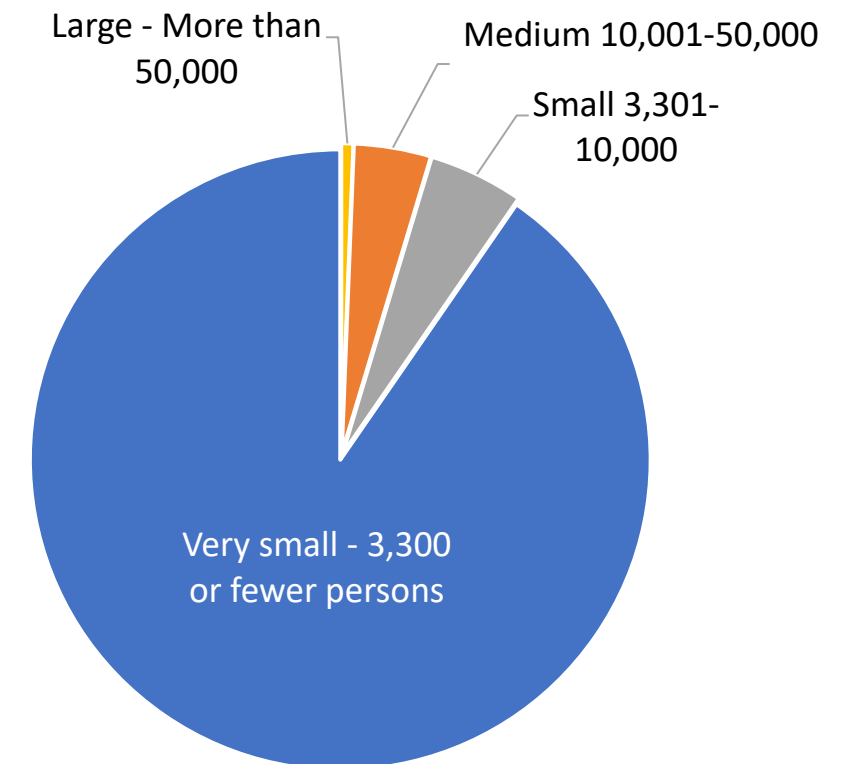


Post-ALE Corrosion Control Treatment Steps

New Flexibilities:

- Systems with lead or galvanized requirement replacement (GRR) service lines can defer installing or re-optimizing CCT if they replace 100 percent of their LSL and GRR service lines in five years or less.
- If approved by the state, PWS with existing OCCT that exceed the lead action level can make an existing treatment modification without a new study.
- PWS serving **10,000 or fewer persons** have the option of choosing study types other than pipe loop/rig tests.
- PWS serving **3,300 or fewer persons** have the option of implementing small system flexibility options.

Wisconsin Public Water System Size



Small System Flexibility Options

PWS serving 3,300 or fewer persons and all non-community PWS have the option of implementing one these options in lieu of installing CCT after a lead ALE.

Point-of-Use Devices Certified to Reduce Lead

- Install and maintain of point-of-use (POU) devices at every tap used for cooking and/or drinking.
- Provide public education to all consumers on proper use of POU devices.
- Conduct regular monitoring of water passing through all POU devices on a 3-year cycle.
- Report results of POU monitoring and take action if the lead concentration at any location exceeds 10 ppb.

Plumbing Material and Fixture Replacement

- Replace all plumbing materials and fixtures that do not meet the definition of lead-free within one year.

CCT-Related Monitoring Requirements

CCT –related events that trigger PWS requirements to conduct standard monitoring:

- Fails to operate within/above the range/minimum values of state-designated optimal water quality parameters (OWQPs) for more than nine days in any tap monitoring period.
- Installs or re-optimizes OCCT or adjusts OCCT following a Distribution System Site Assessment.
- Notifies the State of an upcoming addition of a new source or long-term change in treatment.
- Small or medium water system grows to become a large water system (i.e., serve >50,000 people) and has no corrosion control treatment (CCT).
- If a large water system, has no CCT, and its lead 90th percentile exceeds 5 ppb.

Water Quality Parameter Monitoring Requirements

New Requirement

for PWS serving 10,001 or more persons

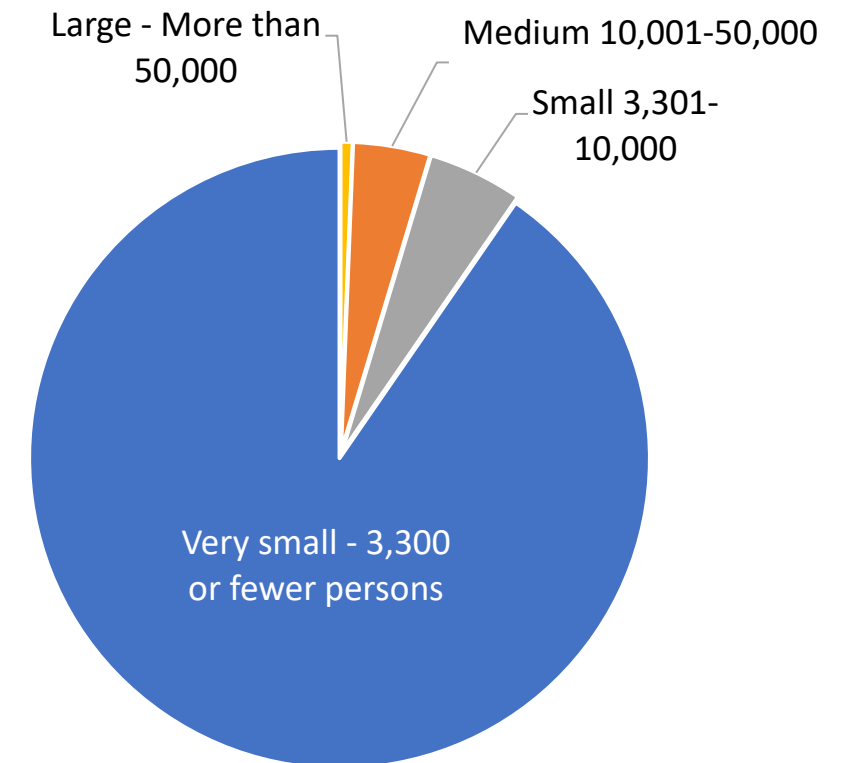
- PWS serving between 10,001 or more persons with a lead 90th percentile above 5 ppb must conduct regular WQP monitoring. *This is already required for systems serving more than 50,000 persons.*

New Flexibility

for PWS serving 10,000 or fewer persons

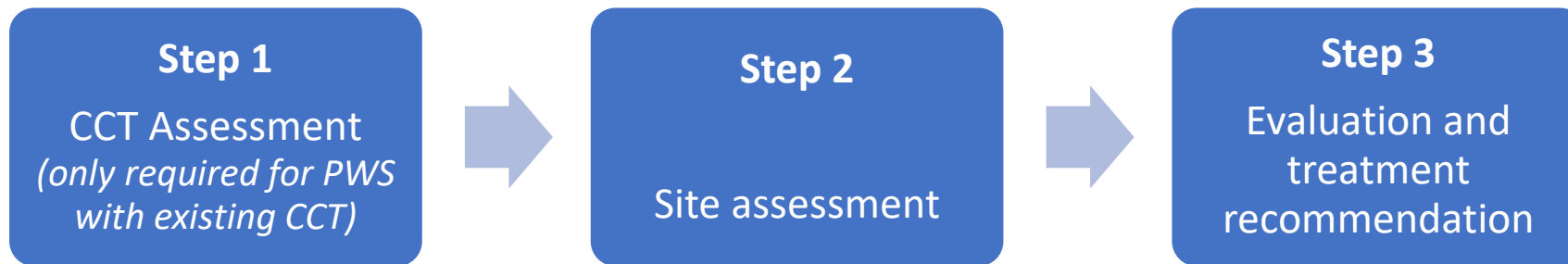
- Small PWS without CCT that exceed the lead AL conduct two rounds of WQP monitoring beginning in the monitoring period **immediately following** the monitoring period when they ALE occurred instead of during the same monitoring period, as is currently required.

Wisconsin Public Water System Size

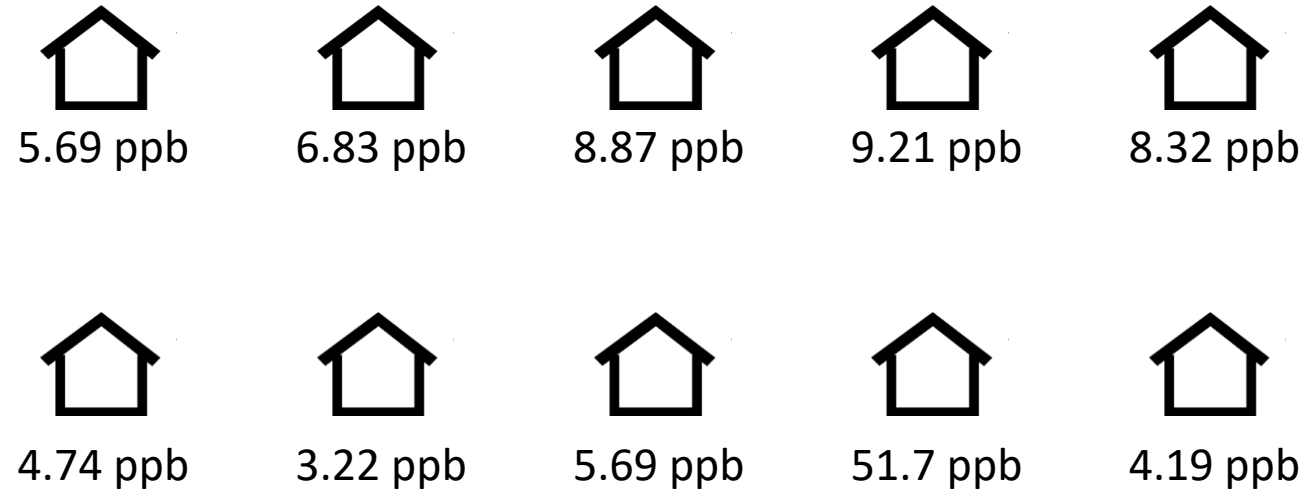


Distribution Site Assessments

If any single tap monitoring sample has a lead concentration greater than 10 ppb, PWS must conduct a **Distribution System Site Assessment** even if the PWS 90th percentile is below 10 ppb.

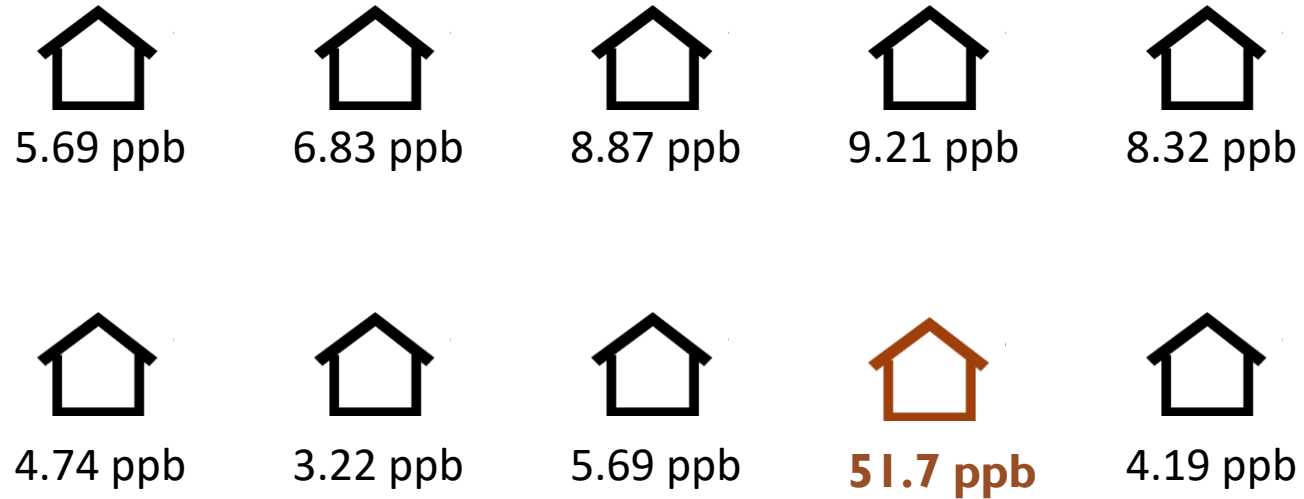


Distribution Site Assessments



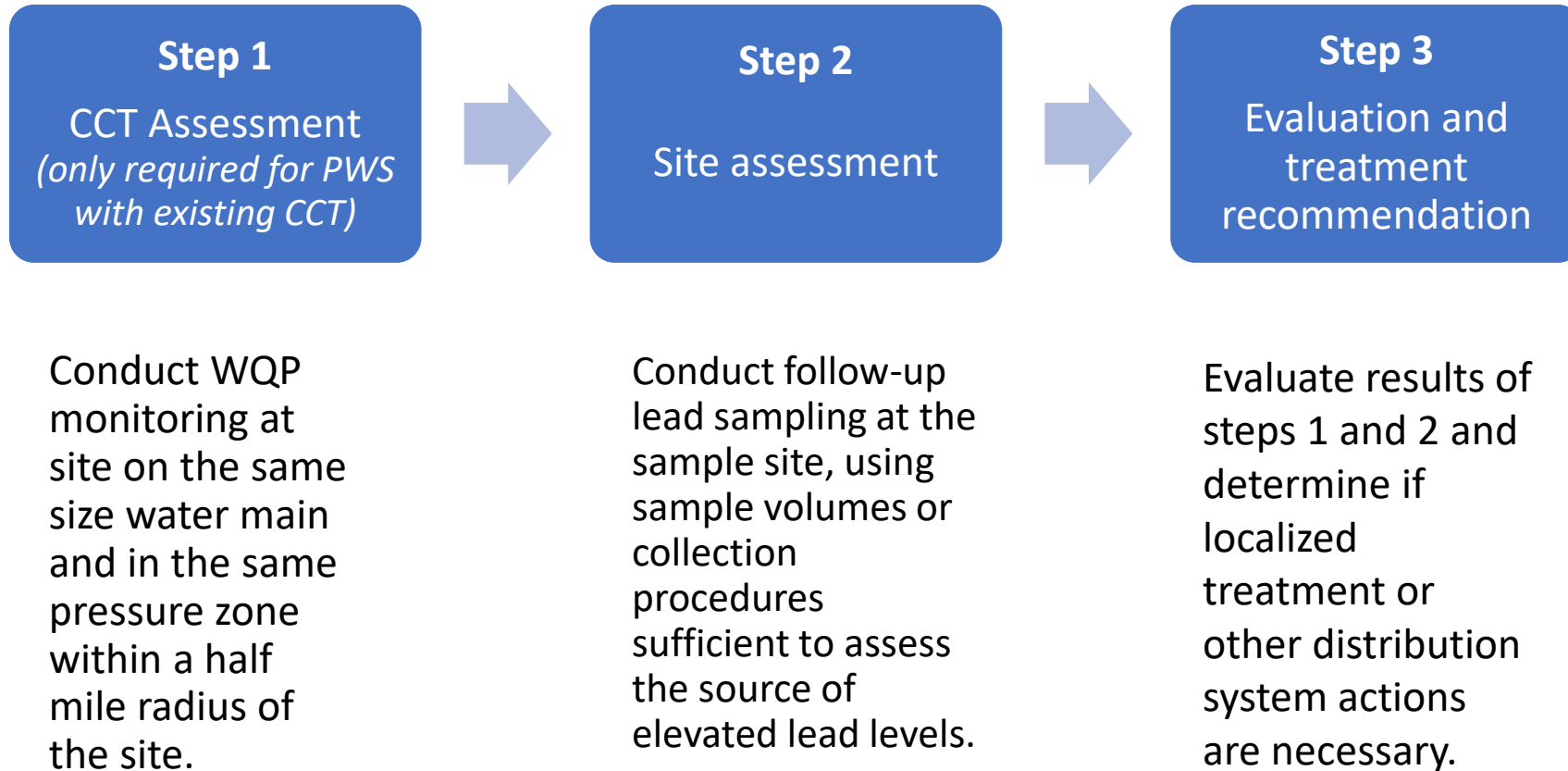
Pb 90th 9.21 ppb, below the action level

Distribution Site Assessments



One individual sample had levels that exceed 10 ppb

Distribution Site Assessments





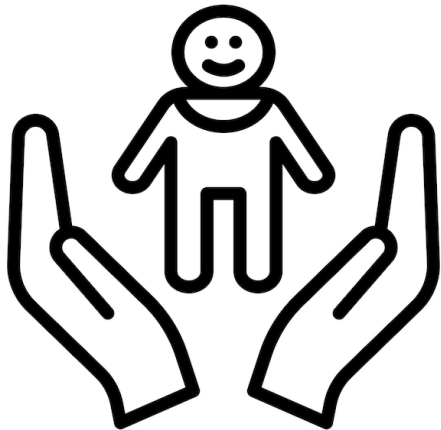
Schools and Childcare Facilities

Briana Harter

Lead and Copper Rule Coordinator

Monitoring & Education in Schools and Childcare Facilities

Licensed Childcare Facilities



Elementary Schools



Secondary Schools



Community water systems (CWS) must develop and maintain a list of schools and childcare facilities they serve water to. The initial list must be submitted to the State by November 1, 2027. The list must be revised and submitted to the state at least once every five years.*

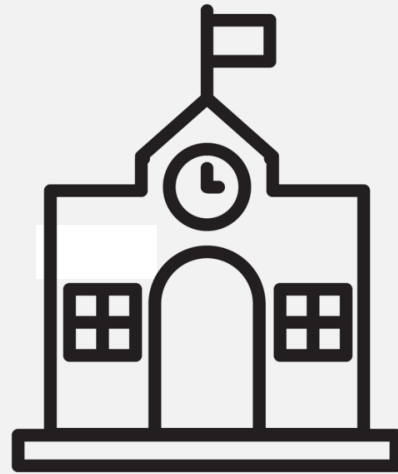
**Schools and childcare facilities constructed on or after January 1, 2014, and that are not served by a lead service line, galvanized requiring replacement service line or lead status unknown service line can be excluded from the list.*

Monitoring & Education in Schools and Childcare Facilities

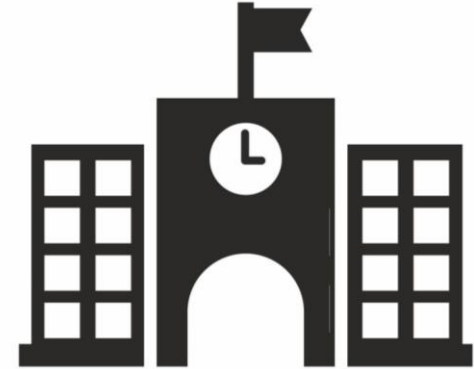
Licensed Childcare Facilities



Elementary Schools



Secondary Schools



CWS must sample for lead once at each childcare facility and elementary school on their list once over the first five years – i.e. 20% per year beginning in Nov 2027.

CWS must notify each secondary school on their list that they are eligible to be sampled for lead and sample if requested.

Monitoring & Education in Schools and Childcare Facilities

Number and location of required monitoring sites at each childcare facility/school

	Childcare	School
Drinking water fountain	1	2
Kitchen faucet used for food/drinking preparation	1*	1
Classroom faucet or other outlet used for drinking	1*	1
Nurses office faucet (as available)	0	1
Total Number of Required Sampling Locations	2	5

**Sampling required in one of these two location types in childcare facilities*

Required sampling protocol: 250-mL first-draw samples from a cold water tap after an 8- to 18-hours stagnation period

Monitoring & Education in Schools and Childcare Facilities

- CWS must provide sampling results within 30 days after receipt of the results to:
 - the sampled school or childcare facility,
 - the local and state health department; and
 - the DNR.
- After the first five years sampling, sampling at childcare facilities and all schools - elementary and secondary - is only required when requested by the facility.
- CWS must also annually contact all schools and childcare facilities on their list and provide information about health risks of lead in drinking water, steps consumers can take to reduce their exposure and EPA's 3Ts guidance.

Monitoring & Education in Schools and Childcare Facilities

A state may grant a waiver to a CWS for schools and childcare facilities sampled under a state law or program if:

✓ Sampling meets LCRI frequency & protocol requirements

OR

✓ Sampling meets LCRI frequency & protocol requirements (except sample size & stagnation time)

AND

Remediation actions are required

OR

✓ Sampling requirements are less than once every 5 years

AND

Remediation actions are required

OR

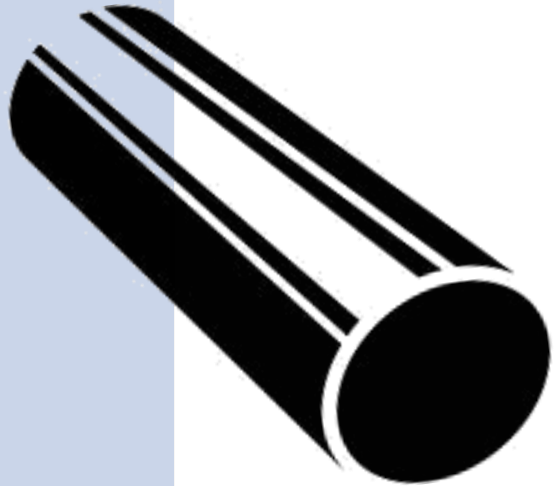
✓ School/childcare facility maintains certified POU devices on fixtures used for consumption

OR

✓ Sampling is under and complies with the [Voluntary School and Childcare Lead Testing and Reduction Grant Program](#)

AND

At least the minimum number of samples are collected

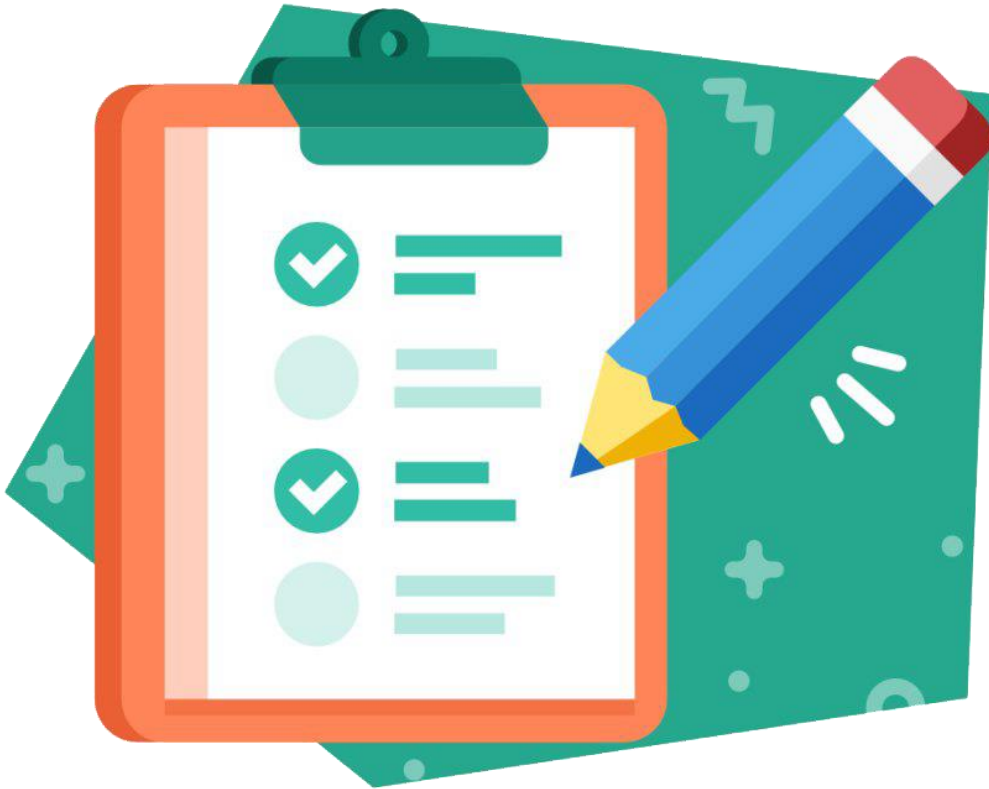


Service Line Inventory

Cora Bachhuber

Service Line Inventory Specialist

LCRI Inventory Requirements



- Inventory Definitions
- Inventory Requirements
- Baseline Inventory Timeline
- Accessibility, Notification, & Reporting Requirements
- Public Education Requirements
- Validation of Non-Lead Service Lines

Abbreviations

L = Lead

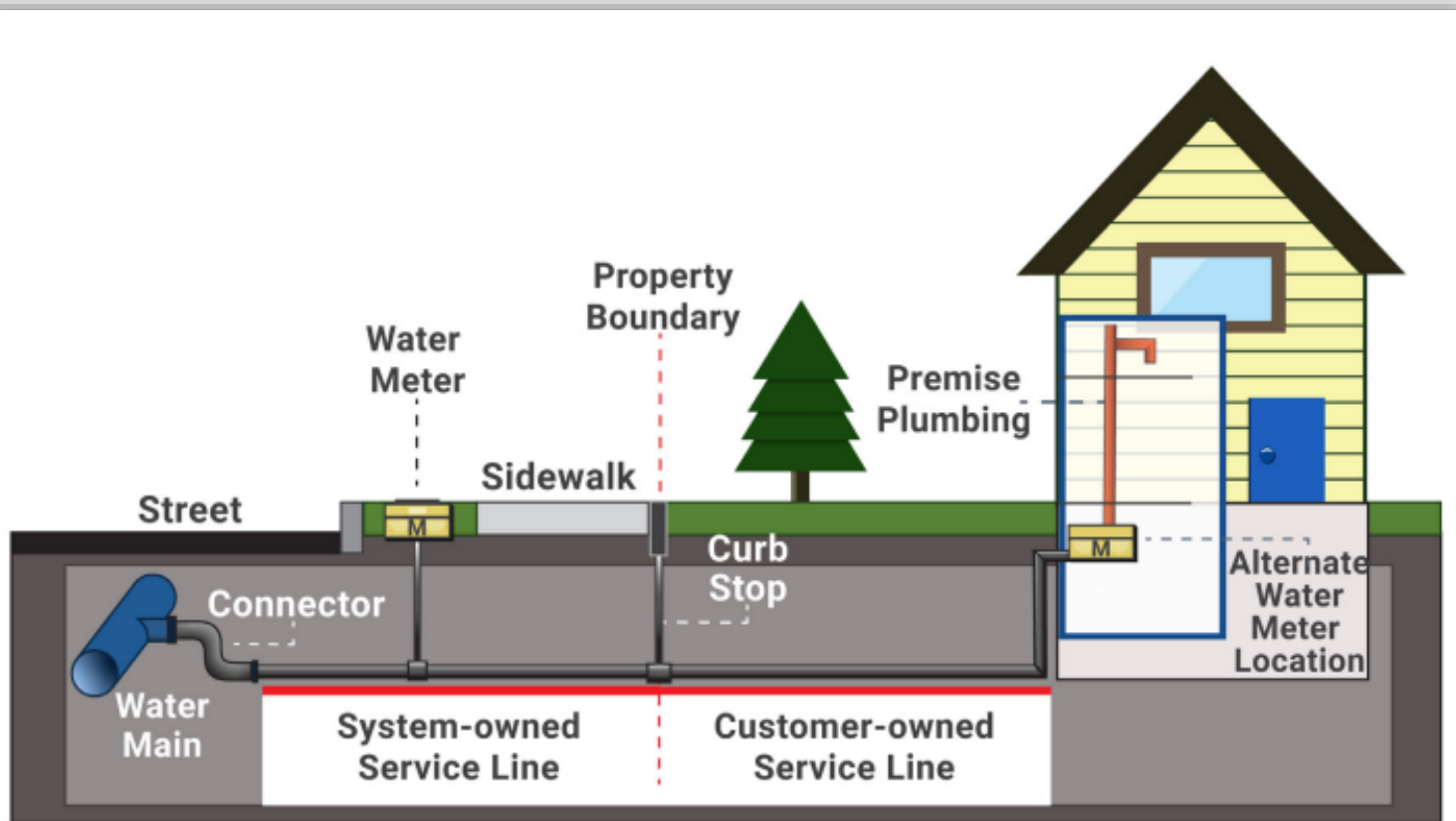
NL = Non-Lead

GRR = Galvanized Requiring Replacement

LSU = Lead Status Unknown

SL = Service Line

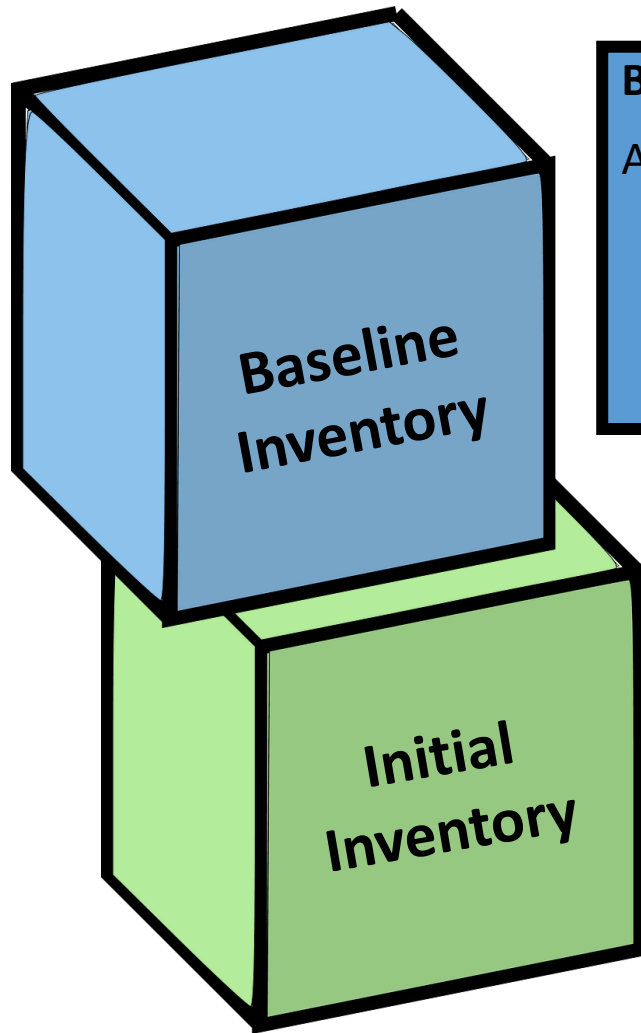
Inventory Definitions



Service line (SL) = A portion of pipe that connects the water main to the building inlet.

Connector = A short segment of piping not exceeding 3 feet that can be bent and is used for connections between service piping, typically connecting the service line to the water main.

INITIAL & BASELINE INVENTORY OVERVIEW



Baseline Inventory (2027)

All PWS must develop and submit a baseline inventory.

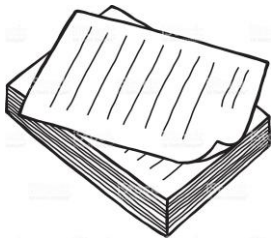
- Must include information on lead connectors, as well as any updated or new information on service line materials and locations.
- Must include address for every LSL, GRR or lead status unknown

Initial Inventory (2024)

- All PWS were required to develop and submit an initial Service Line Materials Inventory.
- This inventory must include all service lines, regardless of ownership status.
- Service lines must be categorized as lead, non-lead, GRR, or unknown

2027 Baseline Inventory Requirements

By November 1, 2027, PWS must:



1. Review records on lead connectors and categorize connections as lead, non-lead, unknown or no connector present.



2. Include information identified on connectors as well as any updated or new information on service line materials and locations.



3. Make the Baseline Inventory publicly accessible, and include addresses for each service line.

Baseline Inventory Timeline



Inventory Accessibility, Notice & Reporting Requirements



Public Accessibility

PWS are required to make their service line inventory publicly accessible

Applies to all PWS regulated by the lead and copper rule.



Consumer Notice (CN)

PWS must deliver a consumer notice to all persons served by a lead, galvanized requirement replacement (GRR), or lead status unknown service line.

Only applies to PWS with one or more L, GRR or Lead Status Unknown

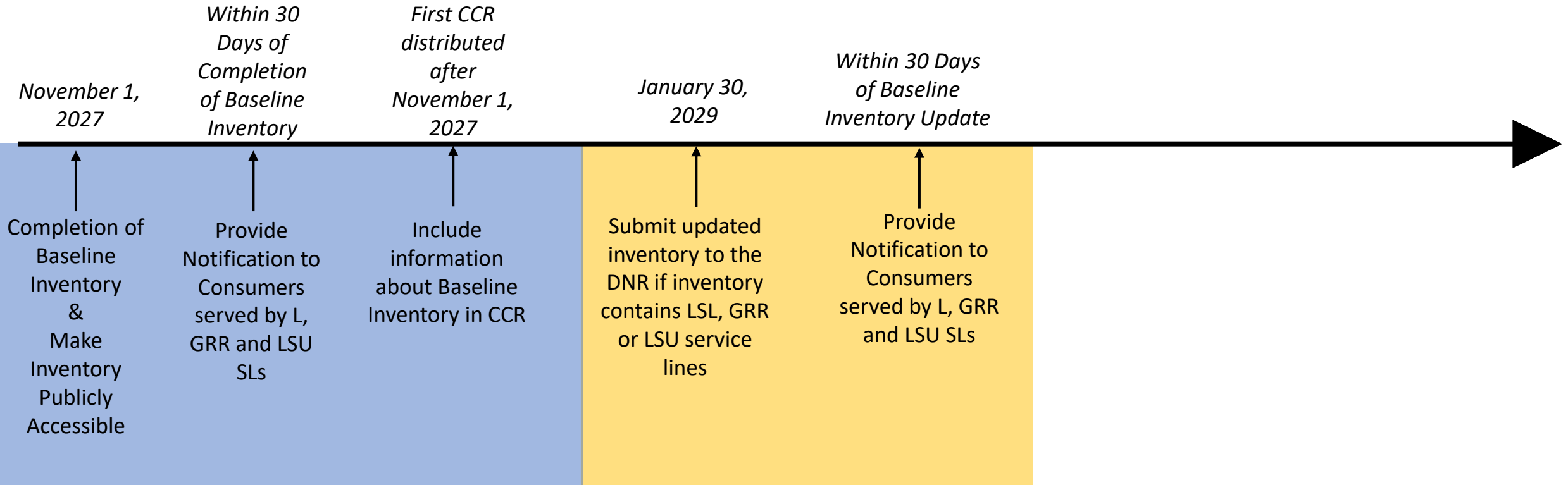


Consumer Confidence Report (CCR)

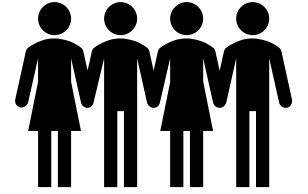
Community Water Systems (CWS) must include inventory information in their CCR.

Only applies to community water systems.

Baseline Inventory Timeline



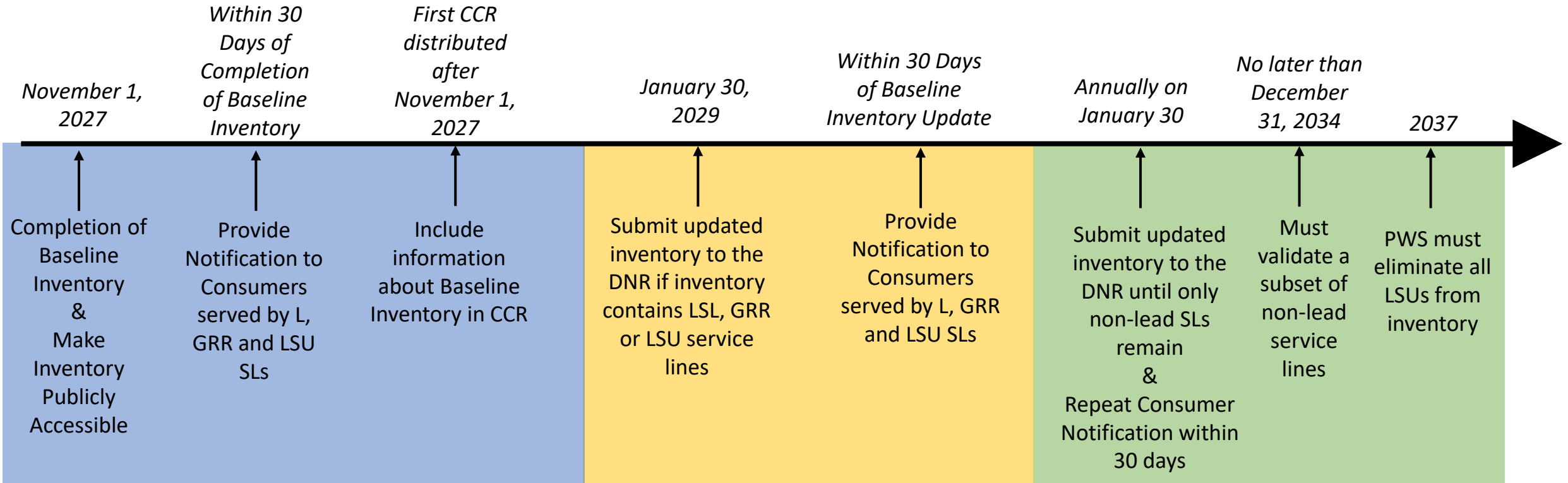
INVENTORY PUBLIC EDUCATION (PE) REQUIREMENTS



When a PWS has an ALE and provides PE to customers...

- **Systems with L, GRR, or LSU service lines and lead and unknown connectors** must include information about the service line inventory
- **Systems with L, GRR, or LSU service lines** must include additional information in PE materials about:
 - Replacement of Lead and GRR service lines
 - Identification of LSU service lines

Baseline Inventory Timeline



**New customers served by a L, GRR or LSU service line must be notified by the water system at the time of service initiation*

Validation of Non-Lead Service Lines



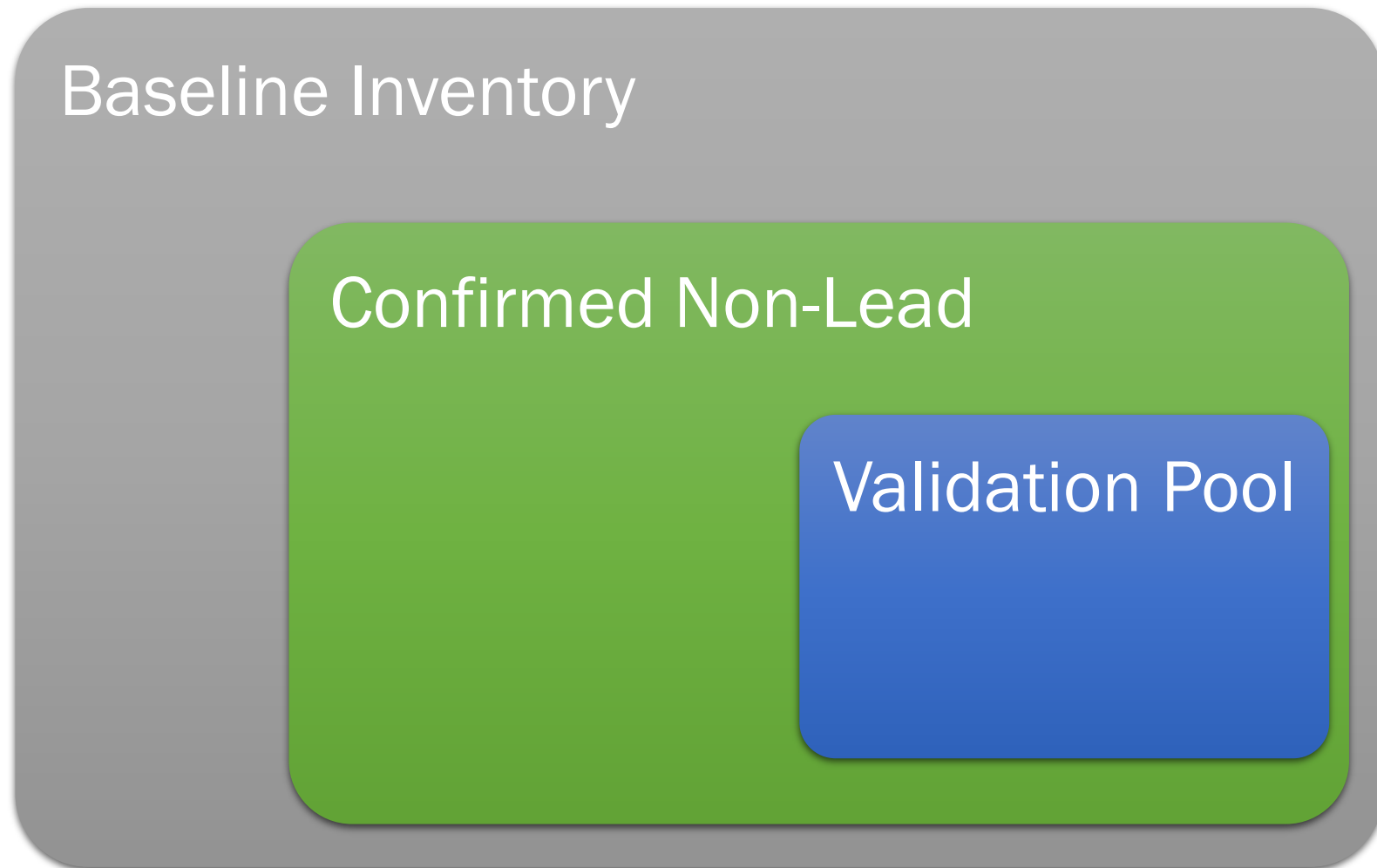
To assess inventory accuracy, water systems must:

- Validate a subset of their non-lead service lines by **December 31, 2034**.
- Report validation results to DNR by **January 30, 2035**.

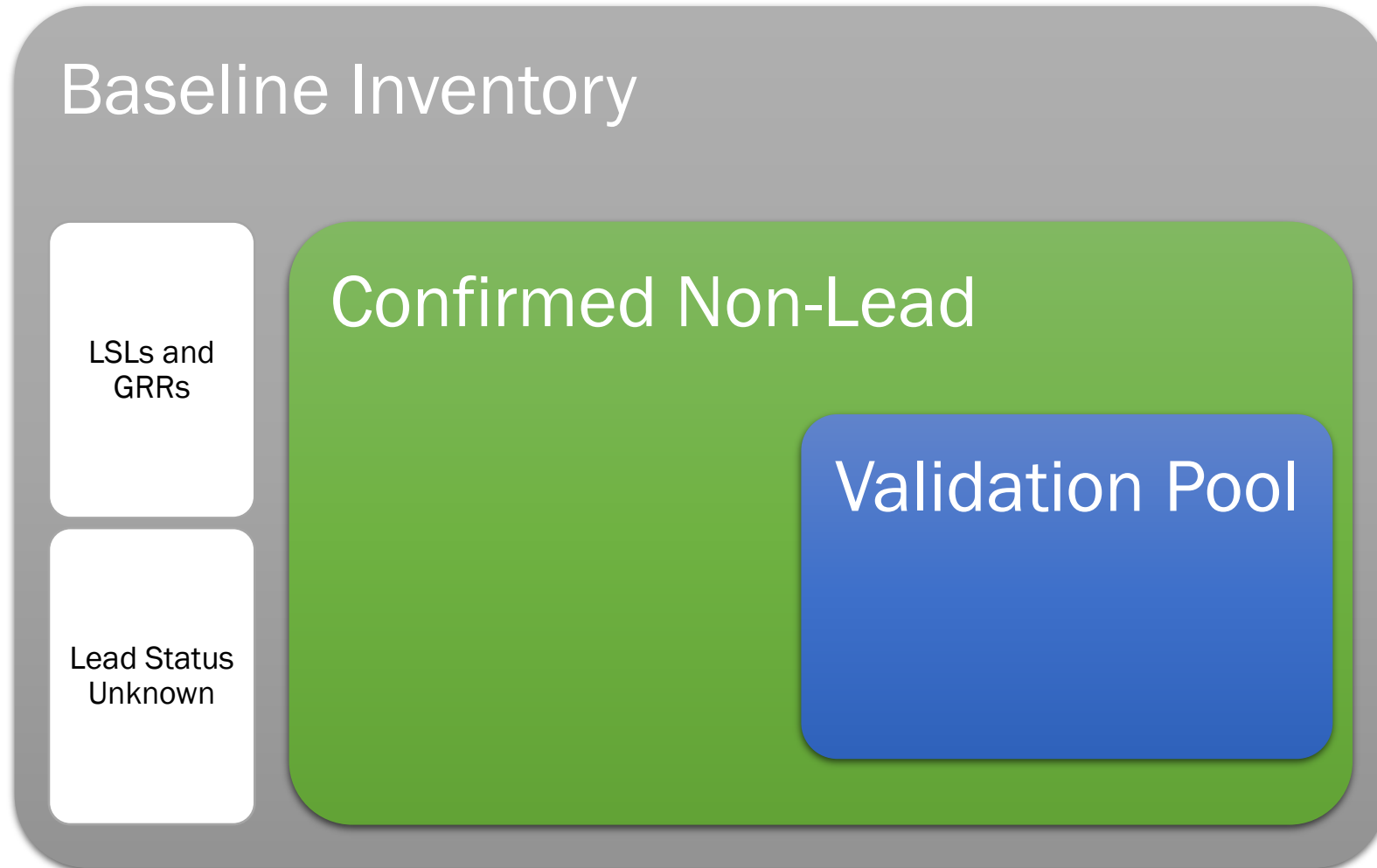
If a water system identifies a Lead or GRR service line during validation, they must:

- Provide the State with those service line locations and the method(s) used to categorize the service lines.
- Update the service line inventory.
- Comply with any actions required by the State to address the inventory inaccuracy

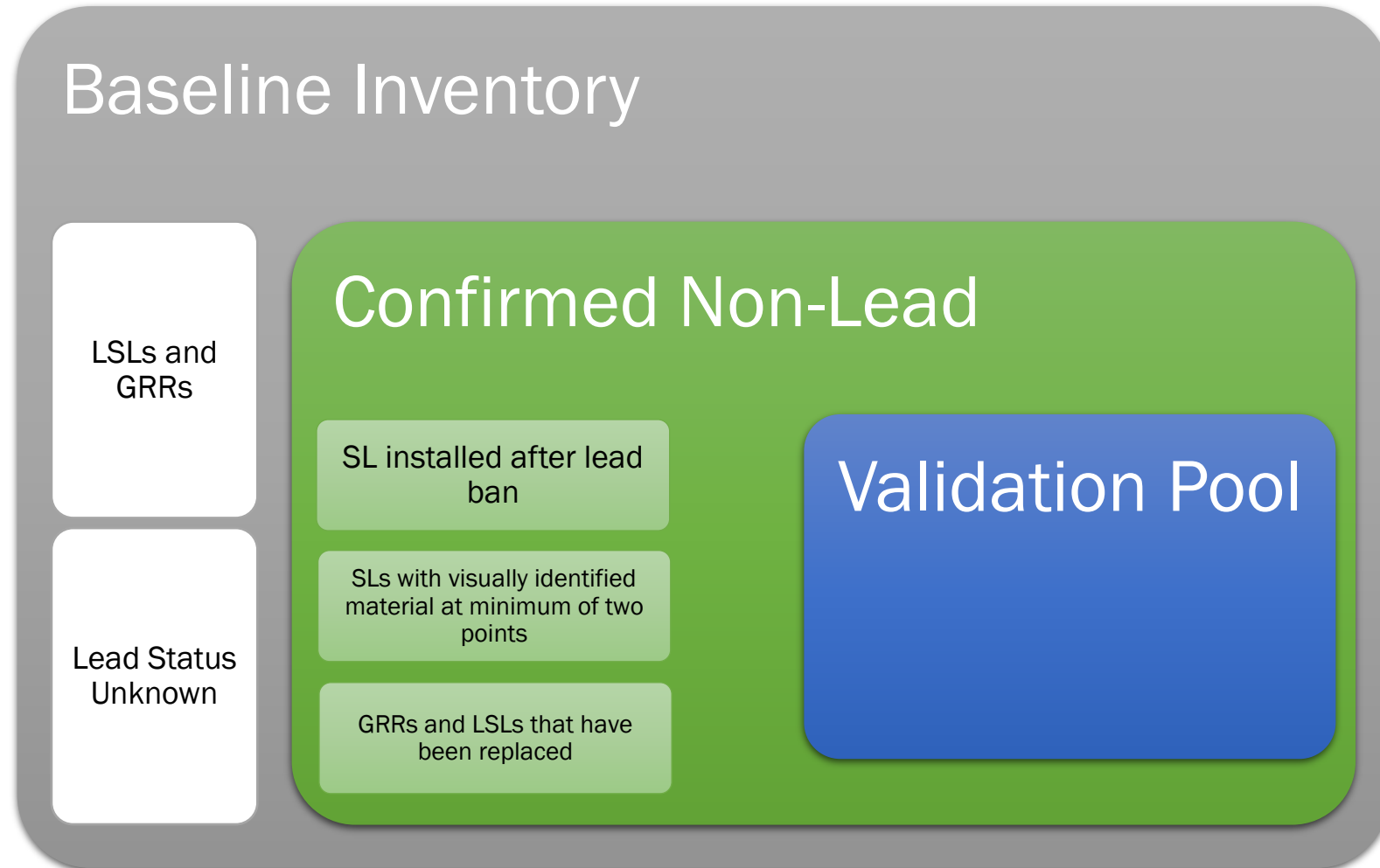
Baseline Inventory Validation Pool



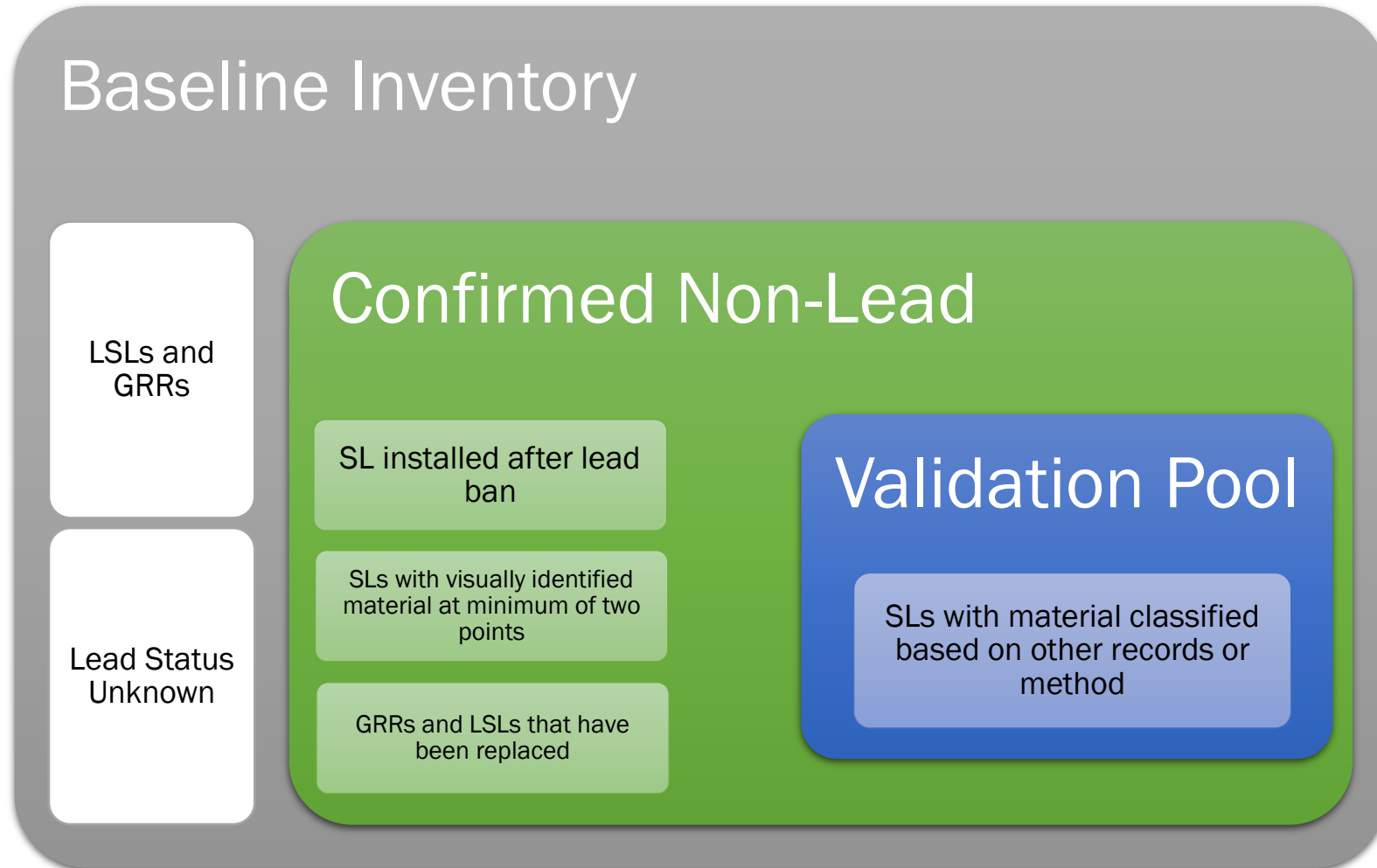
Baseline Inventory Validation Pool



Baseline Inventory Validation Pool



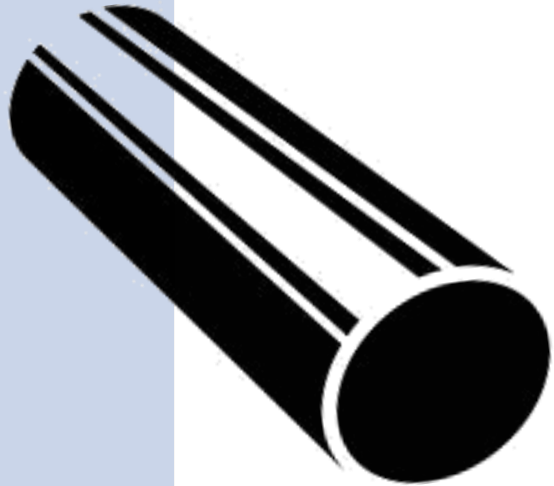
Baseline Inventory Validation Pool



Inventory Validation Steps for Non-Lead Service Lines

1. Identify the validation pool
2. Determine the minimum number of validations required
3. Randomly select service lines to be validated
4. Validate the service line material through a two-point visual inspection
5. Submit results to the state

Size of Validation Pool	Number of Validations Required
<1,500	20% of validation pool
1,500 to 2,000	322
2,001 to 3,000	341
3,001 to 4,000	351
4,001 to 6,000	361
6,001 to 10,000	371
10,001 to 50,000	381
>50,000	384



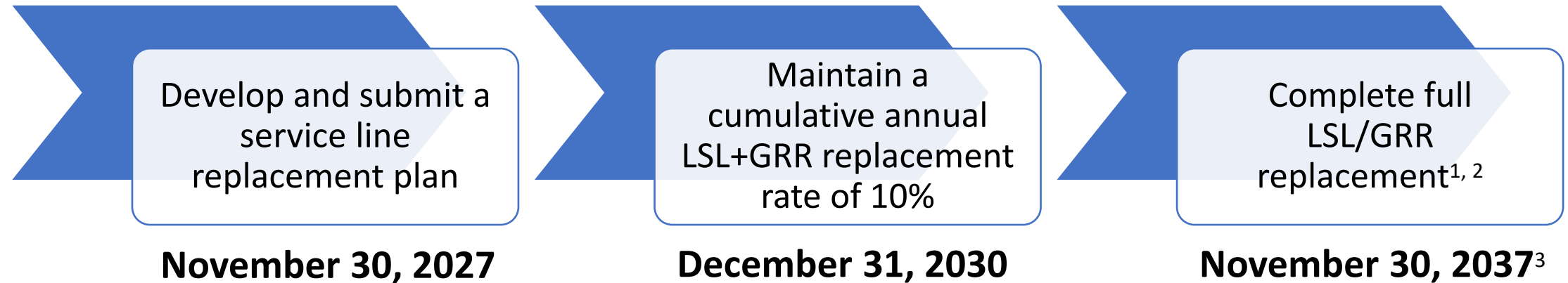
Lead Service Line Replacement

Ann Hirekatur

Lead and Copper Section Manager

Overview of Service Line Replacement Requirements

PWS with one or more LSLs, GRRs, or LSU in their inventory must:



¹ PWS are not required to remove SL that are not under their control, or to replace SL under their control if doing so would result in a partial replacement.

² All lead status unknown SL must either be confirmed to be non-lead or removed.

³ PWS that meet certain criteria may apply for a deferred deadline.

Service Line Replacement Plan Requirements

Replacement Plan Requirements*

Strategy to identify the material of all unknown service lines.

An SOP for conducting full LSL and GRR replacement.

A communication strategy for informing consumers 1) about the replacement plan/program and 2) before full or partial LSL or GRR replacement.

Procedures for consumers to flush particulate lead following an LSL/GRR/Unk SL disturbance or full/partial LSL/GRR replacement.

A strategy to prioritize service line replacement based on certain required factors.

A funding strategy for conducting service line replacement.

Identification of laws, regulations, and/or water tariff agreements that affect the PWS ability to conduct full replacement.

For PWS that identify lead-lined galvanized SLs in their inventory, a strategy to determine their extent.

Service Line Replacement Requirements

Obtaining property owner consent



Water systems must make a “reasonable effort” to obtain property owner consent.

A “reasonable effort” is defined as at least 4 attempts to engage the property owner using at least 2 different communication methods (e.g., in-person conversation, phone call, text message, email, written letter, postcard, or door hanger)

Lead Service Line Replacement Requirements

Control and Ownership Issues

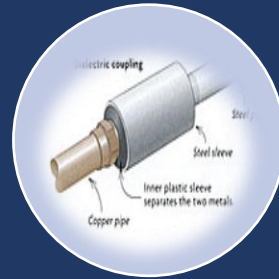
- If a water system is unable to gain access to conduct full service line replacement, the water system is not required to replace any portion of the service line because the service line is not under the control of the water system and the rule prohibits partial lead service line replacements with some exceptions.
- PWS must continue to annually publish the addresses of service lines it is not required to replace in the publicly accessible inventory, deliver annual notification of service line material to the consumer, and make a reasonable effort to gain access to conduct service line replacement when the property changes ownership.

Lead Service Line Replacement Requirements

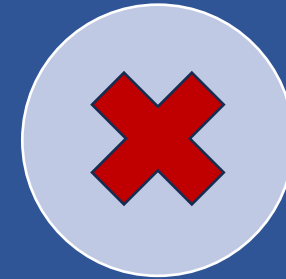
Partial Replacements



Prohibited unless part of an emergency repair or in coordination with planned infrastructure work that impacts the service line.*



Must install a dielectric coupling separating the remaining portion of the SL & the replaced portion of the SL to prevent galvanic corrosion unless the replaced SL is plastic.



Do not count towards the system's mandatory replacement rate

**Infrastructure work as referred includes activities such as water main or meter replacement. Projects solely to replace lead and GRR service lines as part of a service line replacement program are not covered by this exception.*

Lead Service Line Replacement Requirements

Eligibility for Deferred Deadlines

PWS than can show that

10% of the total LSLs and GRRs in their replacement pool

exceeds

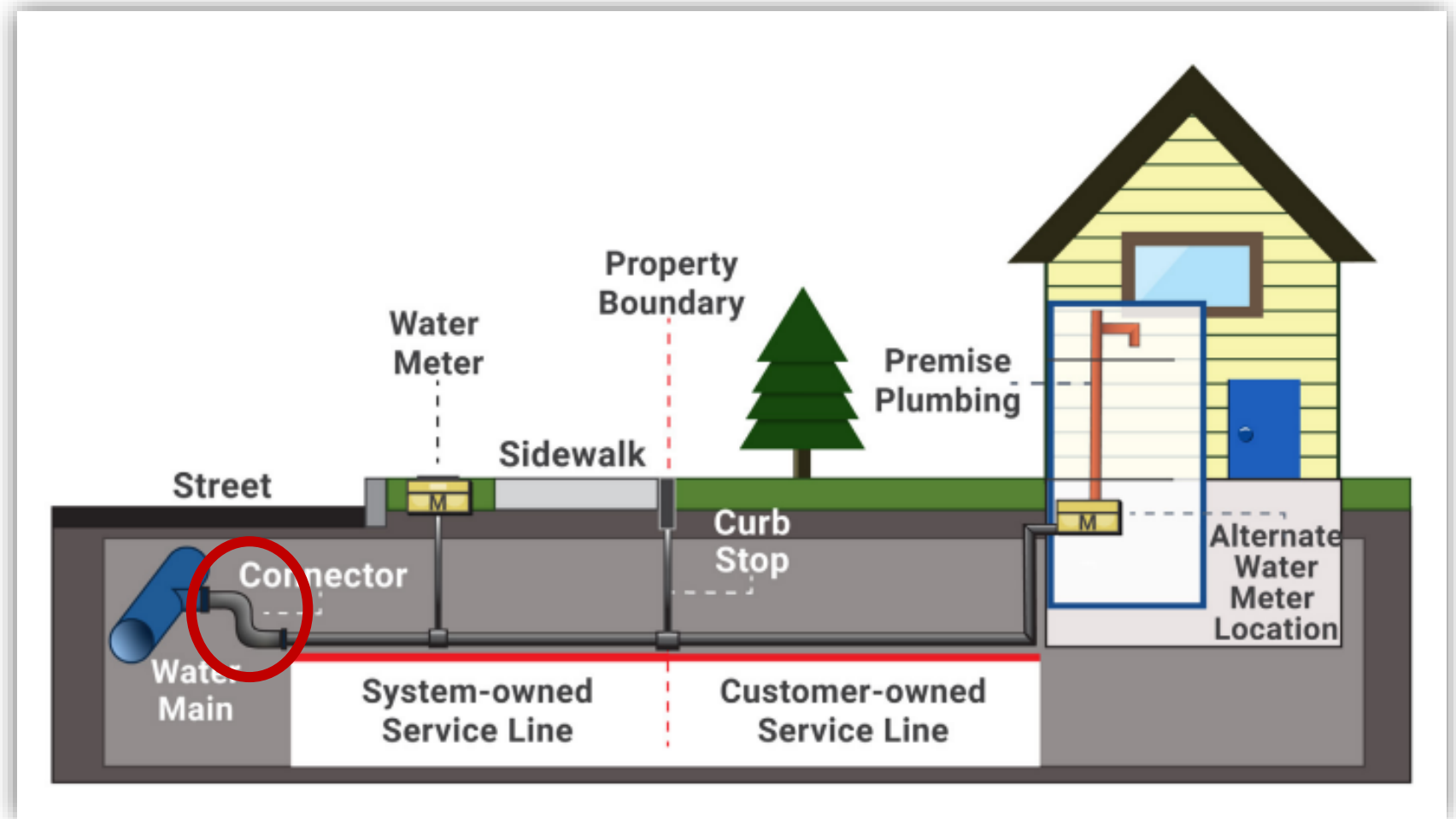
39 replacements annually per 1000 service connections

may apply for a deferred deadline

Lead Service Line Replacement Requirements

Lead Connectors

- PWS must replace lead connectors under their control when encountered during planned or unplanned infrastructure work.
- Replacing a lead connector does not count as an LSL or GRR replacement.



Lead Service Line Replacement

Notification and Risk Mitigation Requirements






Lead service line replacement activities can break apart corrosion scales and cause temporary increases in lead in drinking water.

To protect public health, the proposed rule would require PWS to conduct the notification and risk mitigation measures listed below after full and partial lead and GRR service line replacements, and whenever an LSL, GRR or lead status unknown service lines is disturbed as the result of other activities, such as the replacement of an inline water meter or water main replacement in which the service line pipe is physically cut.

- Notification that explains that the consumer may experience a temporary increase of lead levels in their drinking water due to the replacement and PWS contact information.
- Written information about how consumers can flush service lines and premise plumbing.
- Provide a pitcher filter or point-of-use device that is ANSI certified to reduce lead along with six months' worth of replacement cartridges and instructions for use.
- Offer to collect and analyze a follow-up lead tap sample between three and six months after the replacement.

Lead Service Line Replacement Requirements

What counts as an LSL replacement?

	Counts as a replacement?	
Full LSL Replacement		Yes
Partial LSL replacement		No
Gooseneck (GN), pigtail, or connector replacement		No
Test out		No
Confirming a lead status unknown service line to be non-lead		No

Lead Service Line Replacement Requirements

Calculating Service Line Replacement Rates

Step 1:

Calculate the replacement pool

Step 2:

Determine the cumulative number of lead and GRR service lines replaced

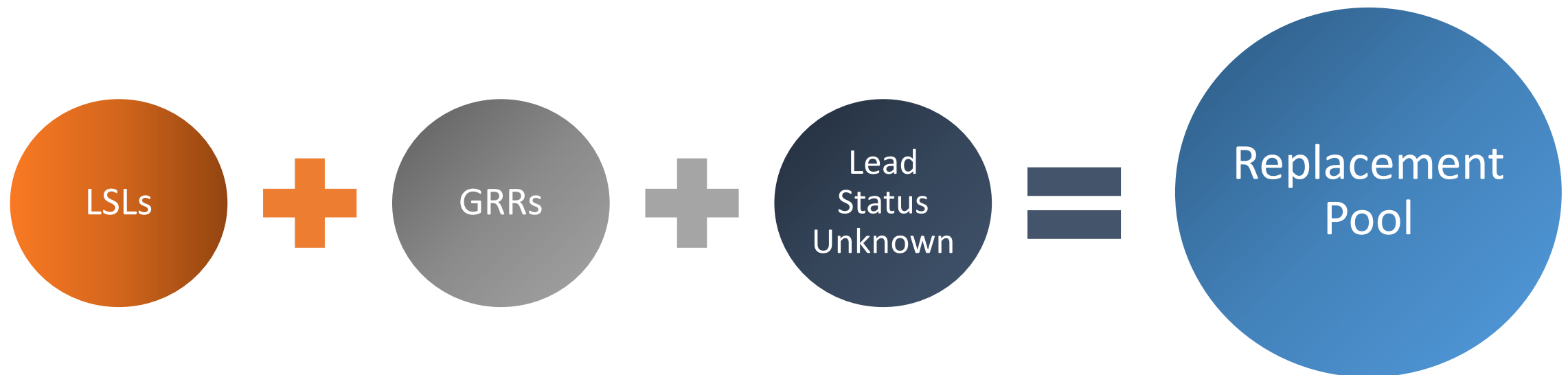
Step 3:

Calculate the cumulative average annual replacement rate and compare it to the minimum required rate

Lead Service Line Replacement Requirements

Step 1 Calculate the replacement pool

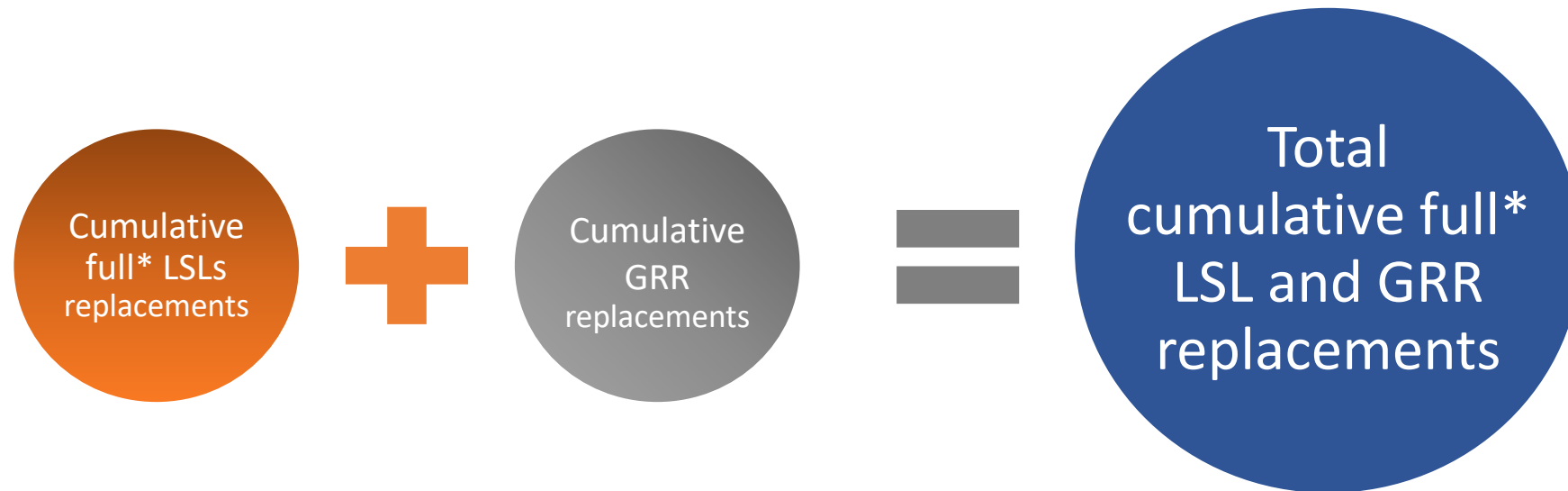
Calculate the number of service lines in the replacement pool using the number of LSLs, GRRs and lead status unknown in the baseline inventory submitted on or before November 1, 2027.



Lead Service Line Replacement Requirements

Step 2 Determine number of replaced lead and GRR service line

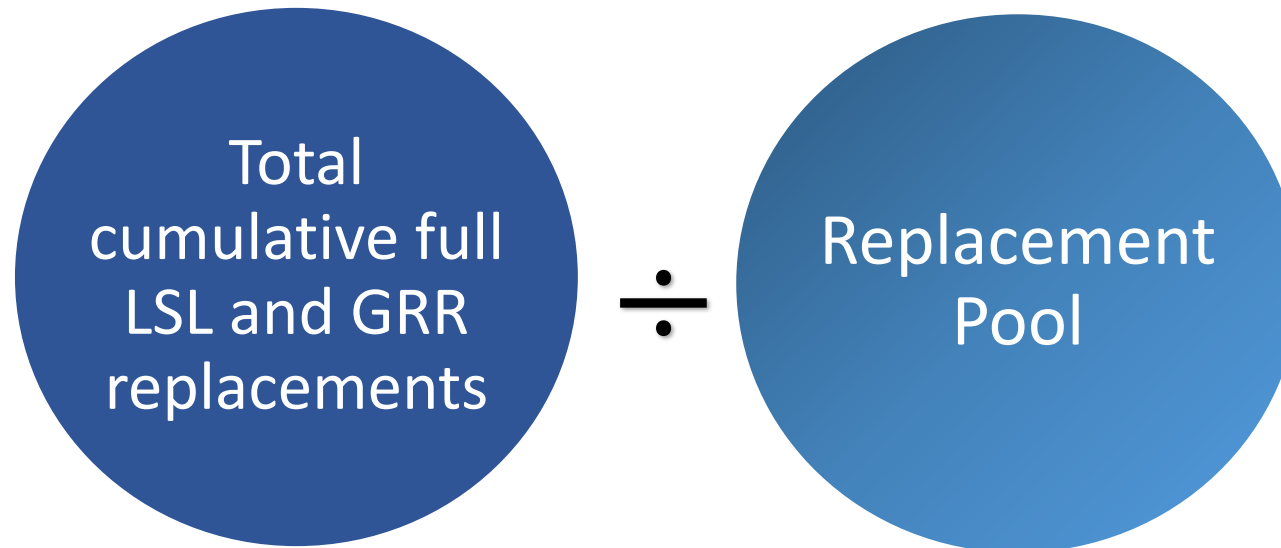
Calculate the cumulative number of full LSL and GRR replacements* since November 30, 2027.



**Full replacement means that the entire length of the service line (both the system and customer side) is categorized as non-lead as the result of the replacement. Full replacement can be achieved by replacing the entire service line or by replacing one portion of the line if the other portion is already non-lead (e.g., replacing a customer-owned lead service line when the system-owned service line is non-lead).*

Lead Service Line Replacement Requirements

Step 3 Calculate the cumulative average annual replacement rate



Number of program years completed

Questions and Discussion



March 14, 2025 | RULE STAKEHOLDER COMMITTEE
DRINKING WATER & GROUNDWATER PROGRAM