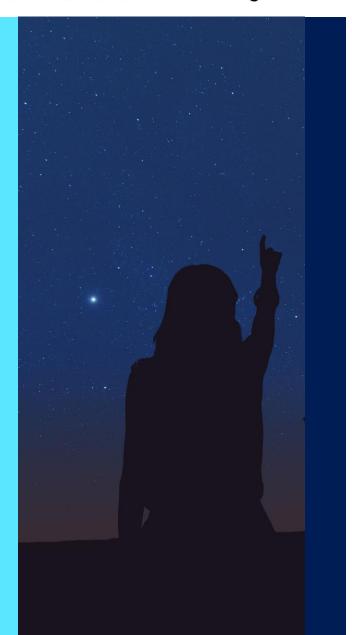
Leading on Lead: Long-Term Lead and Copper Rule Revisions, Compliance, and Funding

In the kNOW Webinar April 28, 2022



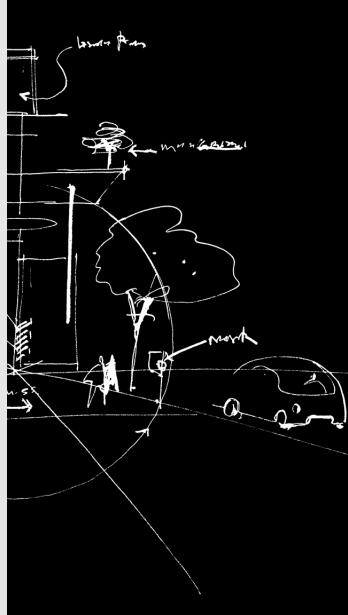
Moderator:

Russell Ford, Jacobs Drinking Water and Reuse Global Solutions Director

Speakers

- Lauren Wasserstrom
 Jacobs National Practice Leader for Lead and Copper Rule Compliance
- Tugba Akgun

 Jacobs Northeast Practice Leader for Lead and
 Copper Rule Compliance
- Jennifer Liggett
 Jacobs Global Technology Leader for Drinking Water Quality



Agenda

- Overview of the Lead and Copper Rule Revisions
- Implications of State Requirements
- BIL Funding
- Resources

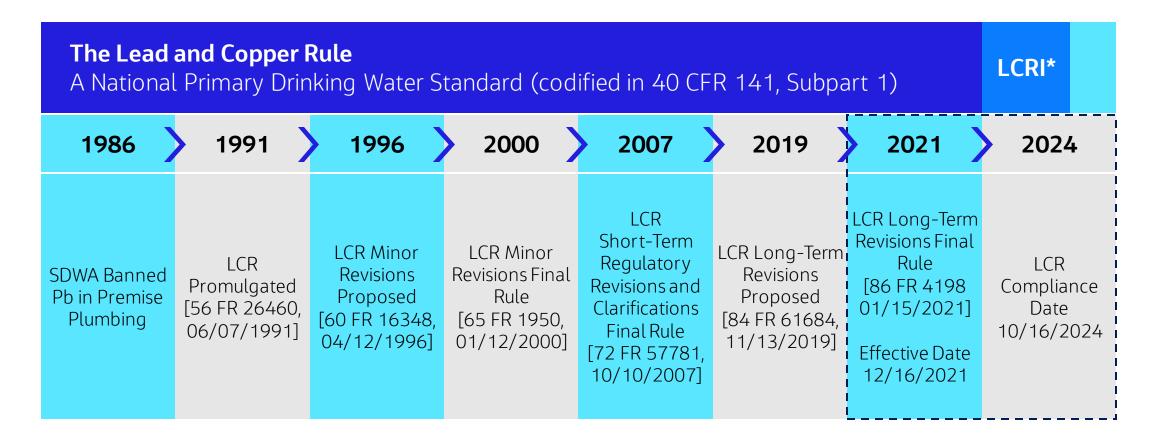


Poll Question

Overview of the Lead and Copper Rule Revisions (LCRR)

Lauren Wasserstrom

National Practice Leader for Lead and Copper Rule Compliance



CFR= Code of Federal Regulations; FR = Federal Register; LCR = Lead and Copper Rule; Pb = Lead; SDWA = Safe Drinking Water Act LCRI = Lead and Copper Rule Improvements

^{*}LCRI will be promulgated by October 16, 2024, and will impact requirements of the LCRR, including compliance dates and other key aspects of the rule.

LCRI Overview

December 2021



including best practices, case studies, and templates. EPA is also updating the Safe Drinking Water Information System to support state and Tribal data management needs for inventories.

New Rulemaking Action: Lead and Copper Rule Improvements

EPA intends to immediately begin to develop a proposed National Primary Drinking Water Regulation: Lead and Copper Rule Improvements to address key issues and opportunities identified in our review. EPA intends to promulgate the LCRI prior to October 16, 2024.

Focus Areas for the Proposed Rulemaking

- Replacing all Lead Service Lines. Replacing all lead service lines is an important public
 health goal. EPA intends to propose requirements that, along with other actions, would replace
 all lead service lines as quickly as feasible. EPA's proposal will fully consider the agency's
 statutory authority and required analyses, including an economic analysis.
- Compliance Tap Sampling. EPA intends to assess data to consider opportunities to strengthen
 compliance tap sampling requirements. Robust tap sampling methods are essential to
 identifying locations with elevated lead, whether the source of the lead is a lead service line or
 leaded plumbing materials within a residence.
- Action and Trigger Levels. For the proposed rule, the agency plans to explore options to reduce
 the complexity and confusion associated with these levels with a focus on reducing health risks
 in more communities. The agency will also evaluate whether the trigger level requirements of
 the LCRR are still necessary with a proactive lead service line replacement and more protective
 action level.
- Prioritizing Historically Underserved Communities. EPA intends to explore how to replace lead
 service lines in a manner that prioritizes underserved communities. EPA will evaluate options to
 prioritize the removal of lead service lines in communities disproportionately impacted by lead
 in drinking water. The goal of these potential lead service line replacement regulatory
 improvements—coupled with non-regulatory actions—is to more equitable protect public
 health.

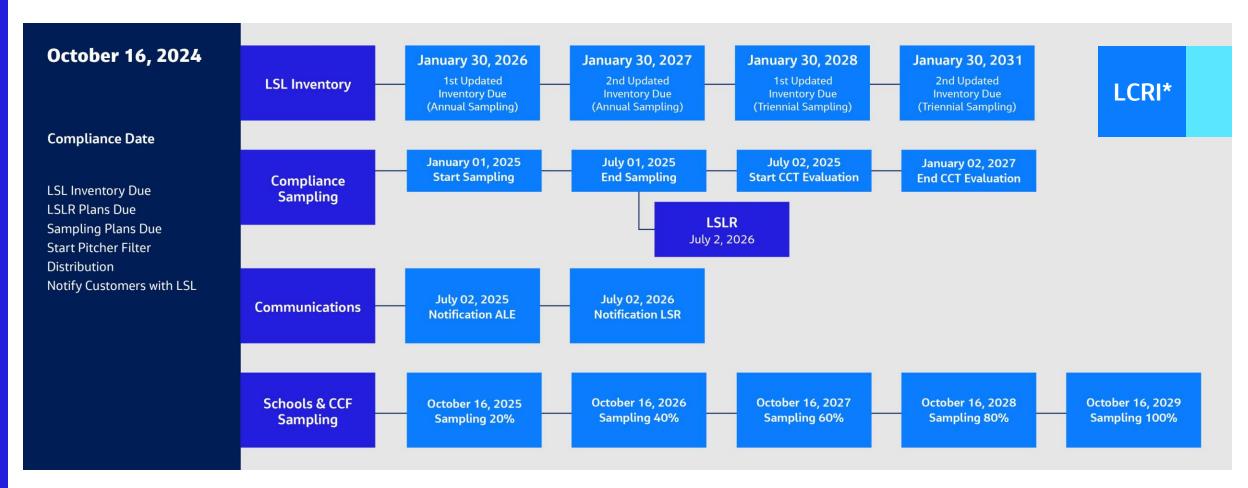
Additional Actions to Reduce Lead in Drinking Water

EPA concluded that there are additional actions outside of the SDWA regulatory framework for the Lead and Copper Rule that can further reduce lead in drinking water. They include:

- Additional Infrastructure Funds. EPA announced that it will allocate \$2.9 billion in Bipartisan
 Infrastructure Law funding to states, Tribes, and territories to remove lead service lines. This
 2022 allocation is the first of five allotments that will provide \$15 billion in dedicated funding
 for lead serve line replacements. In addition to the dedicated investment in lead service lines,
 the Law provides an additional \$11.7 billion in general funding through the DWSRF, which can
 also be utilized for lead removal projects.
- Equity in the Distribution of Funds. EPA will seek opportunities to provide technical assistance to small and disadvantaged communities, promote awareness of the availability of

- Replacing all Lead Service Lines (LSLs)
- Compliance Tap Sampling
- Action and Trigger Levels
- Prioritizing Historically Underserved Communities

LCRR Compliance Timeline



^{*}EPA has stated the initial compliance deadline and requirements for the service line inventory will remain in any final LCRI.

Key Aspects of the LCRR



LSL Inventory



Compliance Sampling



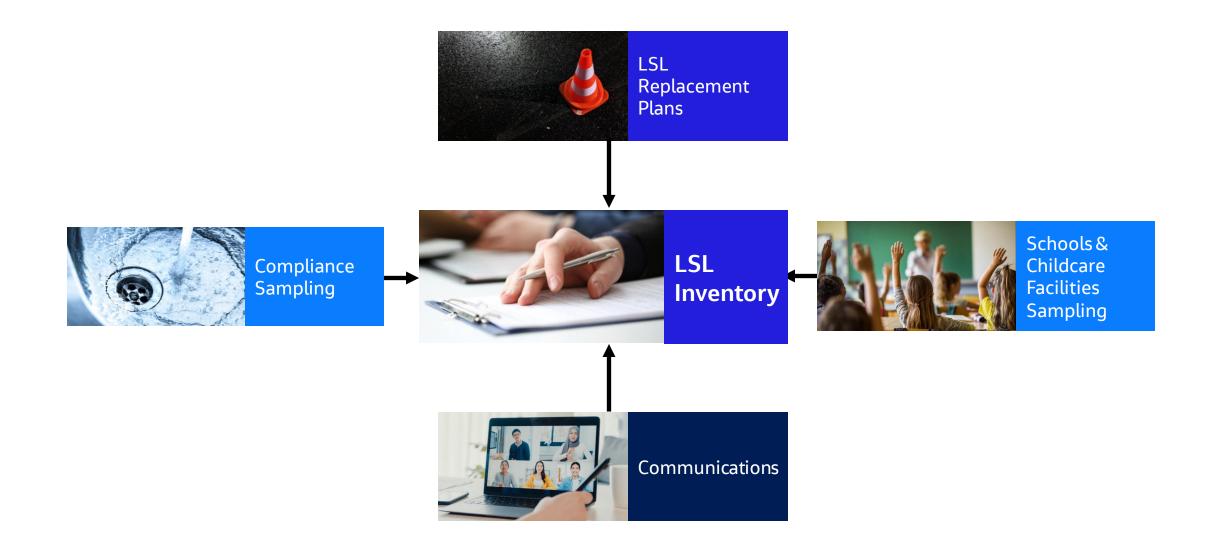
LSL Replacement Plans



Schools & Childcare Facilities Sampling

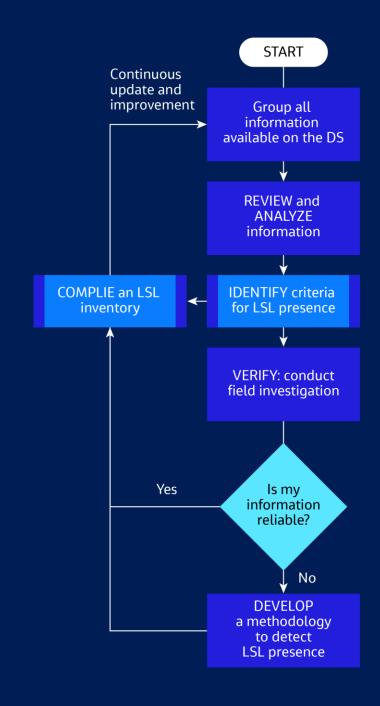


Communications



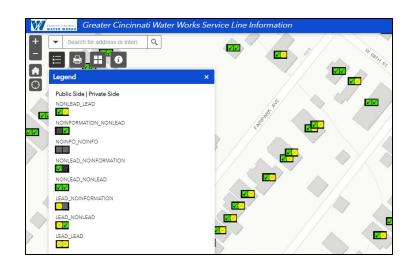
LSL Inventory – Best Practices

- Start with records review/desktop analysis
 - Understand the data you have and where to find it (e.g., as-builts, tap cards, installation and construction records)
 - Determine year of lead ban in plumbing code, if before 1986
 - Record lead connectors (e.g., lead goosenecks and pigtails) where records exist
- Develop criteria to indicate probability of lead
 - Year premise was built, or year service line was installed
 - Diameter of service line
 - Materials in surrounding area
- Develop plan for field identification of service line materials
- Develop workflow to identify unknown service line materials or if lead was upstream of galvanized service lines
- Implement data collection on service lines during maintenance or construction operations if not already being done



LSL Inventory - Best Practices Cont'd

- Develop robust data management practices
- Determine inventory platform to track service line materials and verification sources
- Establish how inventory information will be disseminated, including website for map if serving over 50,000 people
- Determine and adhere to state requirements for inventory development and submission



https://la.mygcww.org/do-i-have-a-lead-service-line/



https://geo.dcwater.com/Lead/

Tools Available to Identify Service Line Materials

Tool	Advantages	Disadvantages
Historical records review (e.g., utility records, plumbing codes)	AvailabilityPotential low cost	UncertaintyAccess
Customer driven data (e.g., scratch/magnet tests or photos of SL material)	Inclusion of customerPotential low cost	ReliabilityAccessCommunication/public education
Water quality sampling with associated system-specific lead threshold (e.g., sequential or profile sampling)	Empirical dataCollaboration	 CCT may reduce concentrations Access Customers do not follow directions
Closed-circuit television inspection and camera scope	Visual observation	Some images unclearAccess
Predictive modeling and machine learning	 Prioritize areas More consistent, complete, accurate predictions 	 Margin of error Requires large datasets High upfront effort to build the model
Potholing and vacuum/hydro-excavation	Exposed SL for visual inspection	Unable to view full length of pipeHigh cost and physical disturbance
Visual inspection by utility (e.g., curb box or meter pit inspection)	Low costPhysical characteristics to determine SL material	AccessUnable to view full length of pipe

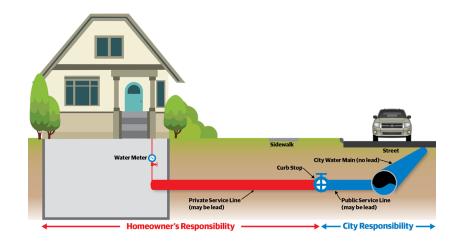
Other Key Compliance Aspects

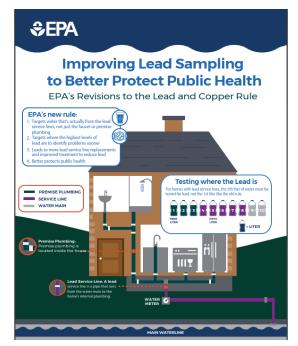
LSL Replacement Plans

- Performing complete removal
- Notifying customers
- How to prioritize removal
- Providing filters and public education
- Flushing instructions
- Funding/financing for customer replacement
- Consider equity issues

Compliance Sampling

- Additional sampling
 - 1st and 5th liter
 - Find and Fix
- Lead trigger level
- Determine backup sampling locations
- Customer communication and notification
- Corrosion control treatment





Other Key Compliance Aspects Cont'd

Sample Door Hanger: Before Lead Service Line Replacement

The following is model text for a door hanger that can be distributed just prior to utility main replacement or rehabilitation.

{Utility Logo}

48-Hour Notice

	itility Name} is replacing the water main on your block. This work may affect your operty on[INSERT DATE].
	This work will temporarily affect your water service starting at am/pm for approximatelyhours.
	We will be working in public space, but depending on the location of the property line, we may need to dig in your yard.
	We will be replacing or reconnecting the pipe on the public space. We will then need to flush your water service pipes. Please open the valve to your outside faucet and make sure the outside faucet is available to us.
	Other
Fo	or more information, please contact:
{U	tility Name)'s Contractor:
{U	tility Name} Project Manager: {Project manager's name}
24	-Hour Customer Service Line: {Utility customer service line number}
{U	Itility Website}

- Monitoring in Schools and Licensed Childcare Facilities
 - Additional sampling
 - Obtain list of licensed childcare facilities
 - Develop list of schools built after 2014
 - Establish necessary contacts
 - Determine if there are existing sampling plans that meet the requirements
 - Reporting and communicating results
- Public Communication and Outreach
 - Public trust and confidence
 - Transparency
 - Talking points
 - Strategic approach for communication
 - Public engagement (e.g., townhall meetings, emails in multiple languages, bill stuffer, door hangers, webpage)

Overarching Considerations for LCRR Compliance

- Staffing requirements
- Internal/external coordination and communication
- Public education and outreach
- Data management and reporting
- Funding/financing
- Legal aspects
- Consulting with state/primacy agency

Implications of State Requirements for LCRR Compliance

Tugba Akgun

Northeast Practice Leader for Lead and Copper Rule Compliance

State Specific LCRR Requirements

State	Description
Wisconsin	Required reporting for the portion of the service line owned by regulated CWSs* since 2004. Extended the requirement to include reporting for the portion of the service line not owned by the CWS in 2018.
California	Required all CWSs to compile an inventory of known partial or total lead user service lines in use in its distribution system by July 1, 2018. The submission deadline for the final user service line inventory and a plan for replacement was July 1, 2020.
Michigan	Required utilities to submit a preliminary inventory by January 1, 2020 and requires a complete inventory before 2025 (with all unknowns determined).
Illinois	Required CWSs to report their number of service lines, grouped by materials, beginning in April 2018 and annually thereafter for both public and private portions
Indiana Massachusetts Washington North Carolina	All conducted voluntary surveys of CWSs in 2016 MA – published a report WA – conducted follow-up interviews to confirm estimates and published reports

NJ Bill – Requirements

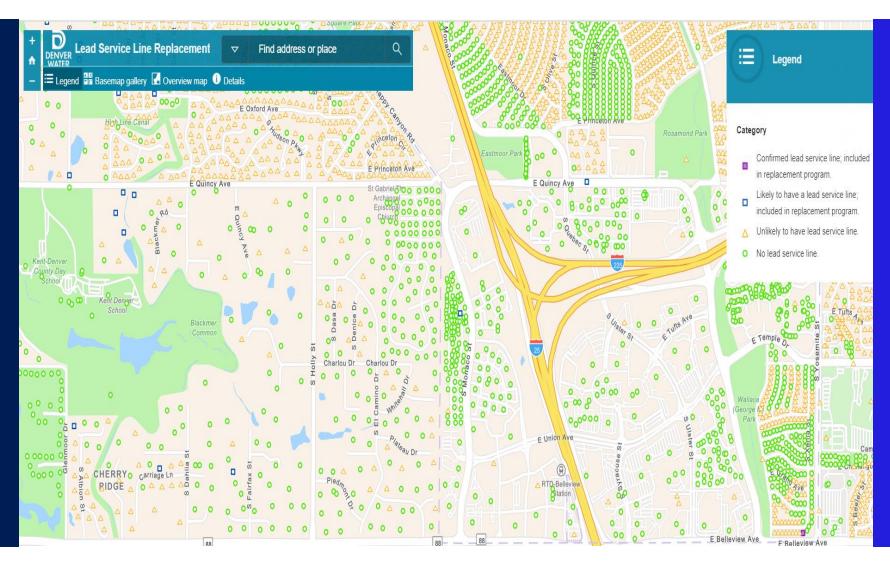
On July 22, 2021, the Governor signed legislation into law for mandatory lead service line replacement, "NJ Bill A5343/S3398", P.L.2021, Ch.183, effective immediately upon signature

Date	Requirement	
1/22/22	Submittal of initial service line inventory	
2/21/22	Written notifications of the known lead service lines via certified mail	
7/22/22 (and annually thereafter)	Submit updated inventory of LSLs	
7/22/22 (and update annually thereafter until all LSLs are identified and replaced)	Develop LSL Replacement plan Provide status update reports in December 2022	
7/22/31	Replacement of all lead service lines	

NJ State Law vs Federal EPA Rule Variances

	EPA LCRR	NJ State Law		
Definition of LSL	Includes "galvanized requiring replacement" when galvanized SL is downstream of a LSL	Includes galvanized SLs		
LSL Replacements	Discourages partial LSLR and does not count partials towards replacement goal rate	Bans partial LSL replacements		
Threshold for water systems to publish their inventory online	Population of >50,000	Population of >3,300		
LSL Replacement Rate	Minimum 3% annually for water systems that exceed the lead action level	Average of at least 10% of all identified LSLs		
Replacement Deadline	Not to exceed 15 years (CWS approved for LSLR and subsequently exceed the lead action level)	Within 10 years of the effective date of the State Act (by 2031)		

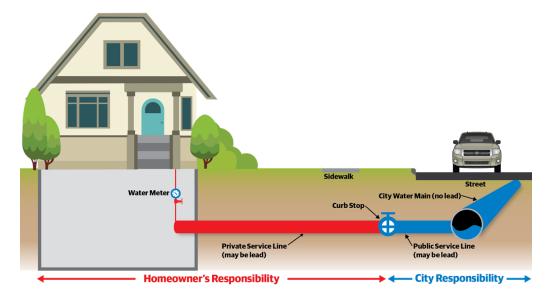
1. NJ State Law - Lead Service Line Inventory



- All community water systems must develop a service line inventory by January 22nd, 2022
 - Must indicate if service is lead, non-lead, or lead status unknown
 - Galvanized service line [composed of galvanized steel] is considered to be a LSL under the State Law
 - Must include both public and private portions of the service line
 - Must make publicly available if serving over 3,300 customers
 - Provide notification via certified mail to customers with lead service lines (Feb. 21)

2. NJ State Law - Lead Service Line Replacement Plans

- LSL replacement plan must be completed and submitted to NJDEP by July 22, 2022, and must be annually updated thereafter
- Average annual replacement of at least 10% percent of all LSLs that were identified by the water system on the submittal date of initial LSLR Plan
- Partial replacements are not permitted
 - Must replace both public and private portions of LSL
 - Local governments can pass an adoption of ordinance to enter property to perform a lead service line replacement
 - Replacement plans must include financing options and payment information for customers









https://www.dcwater.com/new-lead-service-line-replacement-assistance-programs

3. NJ State Law - Customer Communication Plans

- Optional first-time notifications for LSL discoveries made after Feb. 21 certified mails, but strongly recommended by DEP
- Tracking and management of customer inquiries, complaints, SL data surveys and updates based on customer / field input
- Communications for identifying unknown SL materials on the customer side
- LSLR Plans shall be made publicly available on the CWS website
- Notifications for the LSL replacements:
 - Attempt to inform the owner and any residents in person or in writing of the date and time of the LSL replacement
- If a public CWS serves a municipality in which the primary language of 10 percent or more of the residents is a language other than English, the public CWS shall provide the notice in both English and the other language spoken by residents

EPA Rule – State Implementation

- EPA believes that states best understand individual water system's characteristics, its technical, financial, and managerial capacity, as well as community demographics
- EPA agrees that final rule should not include a provision for the Regional Administrator to establish a goal LSLR rate that would supersede a state decision
- EPA LCRR requires that water systems conduct LSLR on a shorter schedule (i.e., greater than 3% percent annually) where the state has determined it is feasible for the system
- EPA believes that the primacy agency is in the best position to evaluate the system's recommendation and determine a goal rate for LSLR

Bipartisan Infrastructure Law Funding

Jennifer Liggett

Global Technology Leader for Drinking Water Quality

Overview of BIL

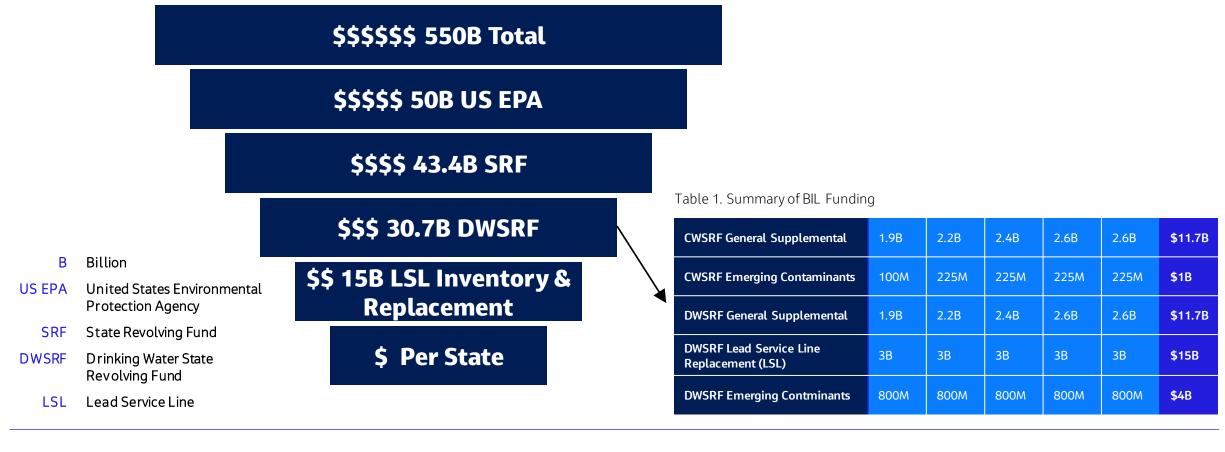


Infrastructure
Improvements
and Jobs Act
(IIJA) =
Bipartisan
Infrastructure
Law (BIL)

 Signed by President Biden on November 15, 2021

Clean Water and Drinking Water State Revolving Funds

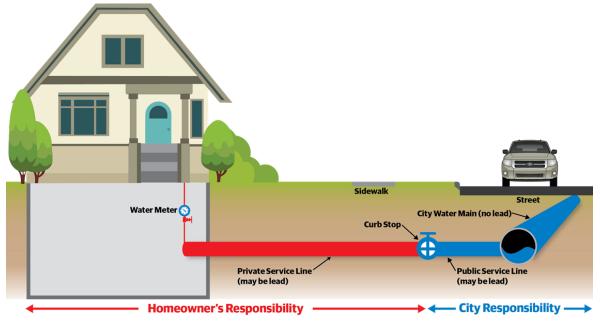
US EPA Memo Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law on March 8, 2022



Attachment 1: BIL Funding Implementation

- Technical information for DWSRF programs funding lead service line inventories and lead service line replacements
 - For a project or activity to be eligible it must be otherwise DWSRF eligible and be a LSLR project or associated activity directly connected to the identification, planning, design, and replacement of LSL
 - Must replace full LSL
 - EPA encourages states to fund private portion at no additional cost to premise owner
 - In addition to LSL and GRR, includes goosenecks, pigtails, and connectors





Attachment 1: BIL Funding Implementation Cont.

- Subsidization
 - No state match
 - 49% principal forgiveness/grants
- States must prioritize disadvantaged communities
 - EPA reiterates the directive to states to review and refine their definition of disadvantaged community, affordability criteria, and point system. More information in Appendix E.



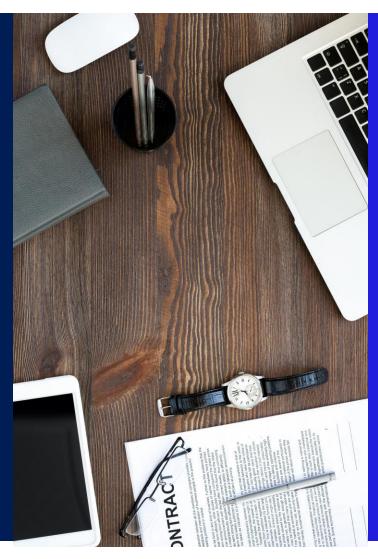
Attachment 1: Appendix D

- List of eligible activities
 - LSL and GRR removal (gooseneck etc.)
 - Replacement of curb stops, curb stop boxes, other SL appurtenances that are removed as part of LSLR
 - Site restoration
 - Permit fees
 - Temporary pitcher filters or POU devices certified by ANSI
 - LSL inventory activities
 - Planning and design for infrastructure listed above
 - Non-routine lead sampling (not for compliance) as part of LSLR project



\$\$15B *LSLI & LSLR*

Attachment 1: Appendix D Cont



- List of eligible activities from set-asides
 - Planning and design for LSLR infrastructure projects
 - Developing or updating LSL inventories
 - Providing technical assistance to small water systems
 - Funding state staff and contractors to work on LSLR education and outreach and inventory plans
 - Non-routine lead sampling (not for compliance purposes)

\$\$15B *LSLI&LSLR*

Attachment 3: DWSRF Base Funding Implementation



- List of eligible activities
 - Corrosion control studies and/or infrastructure and water meters are eligible under this funding program

\$\$\$ 30 7B

DWSRF

Funds Available by State

Attachment 1 – Appendix A:
Bipartisan Infrastructure Law: Environmental Protection Agency
2022 State Revolving Fund (SRF) Grants to States, Tribes, and Territories by
Program

	DWSRF General	DWSRF Lead Service Line Replacement	DWSRF Emerging Contaminants	CWSRF General	CWSRF Emerging Contaminants
Alabama	\$38,787,000	\$61,114,000	\$16,286,000	\$19,901,000	\$1,045,000
Alaska	\$17,992,000	\$28,350,000	\$7,555,000	\$10,652,000	\$559,000
Arizona	\$32,359,000	\$50,986,000	\$13,587,000	\$12,021,000	\$632,000
Arkansas	\$27,070,000	\$42,653,000	\$11,367,000	\$11,642,000	\$612,000
California	\$158,733,000	\$250,107,000	\$66,649,000	\$127,290,000	\$6,687,000
Colorado	\$35,550,000	\$56,015,000	\$14,927,000	\$14,236,000	\$747,000
Connecticut	\$17,992,000	\$28,350,000	\$7.555,000	\$21,804,000	\$1,145,000
Delaware	\$17,992,000	\$28,350,000	\$7,555,000	\$8,738,000	\$459,000
District of Columbia	\$17,992,000	\$28,350,000	\$7,555,000	\$8,739,000	\$459,000
Florida	\$70,829,000	\$111,601,000	\$29,741,000	\$60,077,000	\$3,156,000
Georgia	\$42,400,000	\$66,808,000	\$17,804,000	\$30,092,000	\$1,581,000
Hawaii	\$17,992,000	\$28,350,000	\$7,555,000	\$13,785,000	\$724,000
Idaho	\$17,992,000	\$28,350,000	\$7,555,000	\$8,738,000	\$459,000
Illinois	\$67,885,000	\$106,964,000	\$28,505,000	\$80,494,000	\$4,229,000
Indiana	\$27,502,000	\$43,334,000	\$11,548,000	\$42,893,000	\$2,253,000
Iowa	\$28,504,000	\$44,913,000	\$11,969,000	\$24,063,000	\$1,265,000
Kansas	\$20,875,000	\$32,891,000	\$8,765,000	\$16,065,000	3844 000
Kentucky	\$29,649,000	\$46,717,000	\$12,450,000	\$22,652,000	\$1,190,000
Louisiana	\$26,930,000	\$42,433,000	\$11,308,000	\$19,565,000	\$1,028,000
Maine	\$17,992,000	\$28,350,000	\$7,555,000	\$13,777,000	\$724,000
Maryland	\$32,960,000	\$51,934,000	\$13,840,000	\$43,046,000	\$2,261,000
Massachusetts	\$41,750,000	\$65,783,000	\$17,531,000	\$60,428,000	\$3,175,000
Michigan	\$44,168,000	\$69,593,000	\$18,546,000	\$76,528,000	\$4,020,000
Minnesota	\$27,465,000	\$43,276,000	\$11,533,000	\$32,713,000	\$1,719,000
Mississippi	\$19,368,000	\$30,518,000	\$6,133,000	\$10,055,000	\$842,000
Missouri	\$31,720,000	\$49,980,000	\$13,319,000	\$49,339,000	\$2,592,000
Montana	\$17,992,000	\$28,350,000	\$7,555,000	\$8,738,000	\$459,000
Nebraska	\$17,992,000	\$28,350,000	\$7,555,000	\$9,103,000	\$478,000
Nevada	\$20,857,000	\$32,864,000	\$8,758,000	\$8,738,000	\$459,000
New Hampshire	\$17,992,000	\$28,350,000	\$7,555,000	\$17,786,000	\$935,000
New Jersey	\$30,708,000	\$48,385,000	\$12,894,000	\$72,730,000	\$3,821,000
New Mexico	\$17,992,000	\$28,350,000	\$7,555,000	\$8,738,000	000,ود
New York	\$73,481,000	\$115,781,000	\$30,854,000	\$106,145,000	\$10,318,000
North Carolina	\$55,254,000	\$87,062,000	\$23,201,000	\$32,122,000	\$1,688,000
North Dakota	\$17,992,000	\$28,350,000	\$7,555,000	\$8,738,000	\$459,000

Page 30 of 56

- Each state will administer and track all SRF funding with EPA region oversight
- EPA has approved amounts per state listed in Attachment 1: Appendix A

Colorado: \$56M

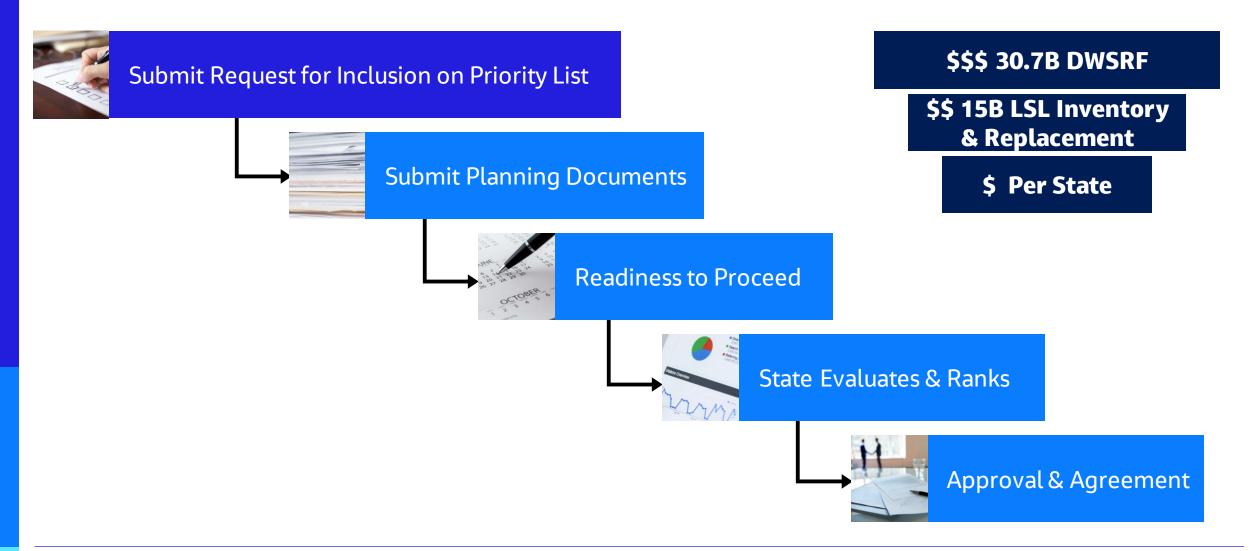
Illinois: \$106.9M

Mississippi: \$30.5M

North Carolina: \$87M

\$ Per State

DWSRF Application Process



What Does This Mean for Me?

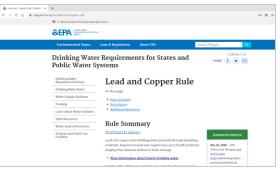
- Water System
 - BIL funding is available for LSL inventories and replacements as well as other items listed in the EPA Memo
 - Need to determine amount needed and eligibility
 - High level cost estimates for overall program activities covered by BIL
 - Need to coordinate with State/Primacy Agency
- State
 - Management of funds with EPA Region oversight
 - Set-aside money for small systems and technical assistance
 - Can use money for program implementation

Key Takeaways

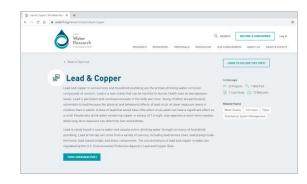
- Establish service line inventory (both public and private portions) and ensure information is publicly accessible
- Develop and/or update sampling and LSL replacement plans as well as communications materials, and determine appropriate contacts (e.g., schools, childcare facilities, local and state health agencies)
- Monitor for state level mandatory changes to the EPA LCRR rule
- Collaboration with State/Primacy Agency is key to determine the LSL replacement goal rate
- BIL funding is available for LSL inventories and replacements as well as other activities outlined in the EPA Memo
- Coordination with State/Primacy Agency is essential for eligibility criteria and application process as each may have varying criteria and processes

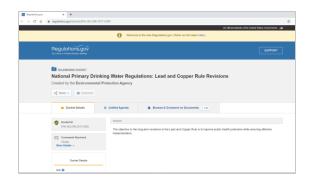
Resources

Resources













- Jacob's In the kNOW LCRR Webinar
- EPA Website
 - 3Ts for Reducing Lead in Drinking Water
- Federal Register
- AWWA Website
- ASDWA Website
 - Framework for the LSL Inventory Requirements
- WRF Website
- LSL Replacement Collaborative
- EPA BIL Memo
- State or Primacy Agency

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