

IMPORTANT NOTE

This version of the “Lead and Copper Rule Revisions, Service Line Inventory Requirements - MDE Guidance” is correct as of April 2024 and does NOT include updates/changes to the LCRR with the new Lead and Copper Rule Improvements (LCRI) effective December 30, 2024. MDE plans to update this guidance to reflect EPA’s changes. MDE will notify water systems when an updated version of this guidance is available. Additionally, MDE will continue to communicate with water systems on any upcoming requirements (or any updates) under the LCRR and/or LCRI.



Lead and Copper Rule Revisions, Service Line Inventory Requirements - MDE Guidance

For Community and Non-Transient Non-Community Water Systems

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Introduction

The purpose of this guidance document is to help water systems comply with the Service Line Inventory requirements of the January 15, 2021, Lead and Copper Rule Revisions (LCRR), effective December 16, 2021. This guidance covers the lifecycle of the inventory, including inventory creation, acceptable methods for material investigations, reporting requirements, public accessibility of service line information, and service line consumer notification.

The practices surrounding service line material inventories are rapidly evolving as water systems create their inventory and improve them over time. Additionally, emerging research on service line identification methods is ongoing. Given the potential for new, relevant information to become available, the Maryland Department of the Environment (MDE) anticipates that future updates to guidance are possible as the United States Environmental Protection Agency (EPA) provides updated information.

This guidance reflects the requirements outlined in the LCRR. MDE expects additional updates and changes after the proposed Lead and Copper Rule Improvements (LCRI) is finalized. EPA anticipates finalizing the LCRI prior to October 16, 2024.

Background

Under the Lead and Copper Rule Revisions (LCRR) of the National Primary Drinking Water Regulations, effective on December 16, 2021, all Community and Non-Transient Non-Community water systems must develop a lead service line (LSL) inventory to identify the materials of service lines connected to the water distribution system. A Community Water System (CWS) is defined as a water system that supplies water to the same residents year-round. A Non-Transient Non-Community Water System (NTNCWS) is defined as a water system that regularly supplies water to at least 25 of the same people, for at least four hours per day, four days per week, and at least six months per year. Some examples of NTNCWS are schools, businesses, factories, office buildings, and hospitals, that have their own wells.

The inventory required under the LCRR must meet the requirements set forth in the Code of Federal Regulations ([40 CFR 141.84\(a\)](#)). All CWS and NTNCWS must develop an initial inventory by October 16, 2024, and submit it electronically to MDE no later than **October 16, 2024**. Full details of the inventory requirements can be found in 40 CFR 141.84(a) of the regulations, however, below are some key points:

- The inventory must include all service lines connecting the water distribution system to the building inlet¹ regardless of ownership (i.e., system-owned or customer-owned) or activity status (i.e., active or inactive) of the service line.
- Water systems must conduct a thorough review of records² to identify service line materials on both portions of the line (system-owned and customer-owned portions). This includes all existing construction and plumbing codes, permits, water system records including distribution system maps and drawings, historical records on each service connection, tap/tie/drill/service cards, meter installation records, historical capital improvement or master plans, standard operating procedures, and inspections/records of the water distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.

¹ The proposed LCRI (December 2023) includes the following in the definition of a service line: “Where a building is not present, the service line connects the water main to the outlet.”

² EPA is proposing in the LCRI, by the final LCRI compliance date, water systems must develop a baseline inventory, which builds upon the LCRR requirements of the initial inventory. This review of records must also include all connectors consisting of lead material. In the proposed LCRI, a connector, also referred to as a gooseneck or pigtail, means a short segment of piping not exceeding two feet that can be bent and is used for connections between rigid service piping, typically connecting the service line to the main. Since this definition of connector has not yet been finalized by EPA (expected October 2024), the length that defines a connector is still subject to change. A lead connector with a length that exceeds the length in EPA's final definition of a connector will be considered as a Lead Service Line pipe after the date the connector's definition becomes effective. MDE's inventory spreadsheet is designed to automatically take this into account when generating the service line material classification based on connector information provided.

- Additionally, for the initial inventory, CWS must use any information on lead and galvanized iron or steel that they have identified in their previous distribution system materials survey from the 1980s ([40 CFR 141.42\(d\)](#)) when conducting the inventory of service lines in their distribution systems.
- Each overall/entire service line (i.e., connecting the water main to the building inlet³ or connecting the well to the building inlet) will be categorized according to the table below. The inventory spreadsheet will automatically generate the classification of the entire length of the service line (combination of both portions of the service line, including all segments) based on the water system input of the individual portions.

Entire* Service Line Material Classification	Definition
Lead	Any portion of the service line is known to be made of lead.
Galvanized Requiring Replacement (GRR)	The service line is not made of lead, but the downstream portion is galvanized, and the water system is not able to demonstrate that the galvanized line was never downstream of a lead service line.
Non-lead	All portions of the service line are known NOT to be lead or GRR through an evidence-based record, method, or technique.
Lead Status Unknown	The service line material is not known to be lead or GRR. For the entire service line or a portion of it (in cases of split ownership), there is not enough evidence to support material classification.

*Each portion of the service line is evaluated separately and is used to generate the overall material classification for the entire service line

- All Galvanized Requiring Replacement (GRR) and any lead-lined galvanized pipe are treated as lead service lines under these regulations and will be subject to similar requirements as lead service lines.
- For water systems that have lead and/or GRR service lines, the inventory must be made publicly accessible and include a location identifier⁴ (such as a street address, block, intersection, or landmark) associated with each lead and GRR service line. Water systems may, but are not required to, include a locational identifier for “Lead Status Unknown” service lines or list the exact address of each service line. Water systems serving greater than 50,000 persons must make the publicly accessible inventory available online.
 - **IMPORTANT NOTE:** When submitting the inventory spreadsheet to MDE, water systems should remove/delete the content in the columns with sensitive information, such as customer street addresses and/or latitudes/longitudes. MDE will not keep sensitive customer data on file.
- For water systems with no lead, GRR, or lead status unknown service lines in their inventory, the inventory will not need to be made publicly accessible as long as a written statement is made publicly accessible, in lieu of the inventory, declaring that the distribution system has no lead service lines or GRR service lines. Water systems may use a written statement template that will be made available on [MDE’s website](#); otherwise, water systems can create their own written statement regarding the inventory which must include a general description of all applicable sources of records and information described in paragraphs (a)(3), (5), and (6) of [40 CFR 141.84](#) used to make this determination. Water systems that do not use MDE’s template and create their own written statement must submit their statement to MDE.

³ The proposed LCRI (December 2023) includes the following in the definition of a service line: “Where a building is not present, the service line connects the water main to the outlet.”

⁴ Per the proposed LCRI, water systems will be required to provide a street address for each lead and GRR service line and lead connector in the publicly accessible inventory.

In August 2022, EPA released [Guidance for Developing and Maintaining a Service Line Inventory](#) which is a helpful document for water systems to reference throughout this inventory process as it contains best practices and case studies for inventory development.

Per the 1986 Safe Drinking Water Act (SDWA) amendments, lead water pipes were banned for use in drinking water service and distribution systems and the ban became effective in Maryland on March 30, 1989. However, the August 2022 guidance from EPA regarding service line inventories mentions that some States adopted their own laws disallowing the use of lead water pipes before the federal requirement. Additionally, local plumbing codes or ordinances may prohibit the use of lead water pipes in public water distribution systems prior to the federal or state requirements. Per the Code of Maryland Regulations (COMAR) 09.20.11.10A Water Service Pipes, effective upon filing on May 17, 1972, lead water pipe was not included in the list of acceptable drinking water service line pipe materials. MDE is currently conducting a full review of the regulations to confirm our understanding. In the near term, water systems should focus on water pipes installed before 1972 when completing their inventory. MDE's inventory spreadsheet currently classifies any service line installed on or after May 17, 1972, as "Non-Lead." MDE will notify all water systems if anything changes.

Special Requirements for "New" Water Systems

For "new" water systems, there will be a simple form to complete (in lieu of completing the service line inventory spreadsheet) that will indicate the entire distribution system was constructed after Maryland's law excluding lead pipes as an allowable material to be used for water service pipes (COMAR 09.20.11.10A) and/or a local ordinance (prior to Maryland's law) became effective. This "new" water system inventory form will be made available on [MDE's website](#). For the purpose of the LCRR service line inventory, a "new" water system is defined as a water system with the distribution service line pipes, connecting water mains to buildings, installed on or after **May 17, 1972, or the date on which the a local ordinance (prior to May 17, 1972) became effective**, with no reuse of pipes, fittings, or meters installed before May 17, 1972, or the date on which the local ordinance (prior to May 17, 1972) became effective.

MDE Service Line Inventory Spreadsheet

All CWS and NTNCWS, with the exception of "new" water systems (see above), must complete the service line inventory spreadsheet.

MDE's service line inventory spreadsheet is designed to track and capture all required inventory information, including numbers of service lines, locations, materials, and classifications, as well as allowing water systems to document their investigation methods and organize their inventory. Water systems are required to use MDE's inventory spreadsheet to complete their service line inventory and must electronically submit the inventory spreadsheet to MDE.

The inventory spreadsheet includes features that will assist water systems, such as:

- Embedded notes containing helpful information (in addition to the information found in the "field description" cells and tabs/pages of the inventory spreadsheet) which can be found by hovering over the "field description" cells (denoted by a small red triangle located in the upper right-hand corner of the cell); and
- Appendices, which include spreadsheet instructions, details on investigation methods, visual aids and diagrams, tables, reference materials, and important compliance and reporting information; and
- Highlighting of specific cells that require input as a result of information entered into the inventory spreadsheet by the water system, and hatching of cells where information is not required; and

- Built-in formulas that automatically generate the overall material classification of service lines (see table above) and calculate the total number of service lines in each classification/category.

During the Fall of 2023, MDE hosted the first round of virtual trainings for community water systems on how to complete the MDE LCRR Service Line Inventory Spreadsheet. The Fall 2023 training focused on community water systems (both privately owned and publicly owned, including mobile home parks, towns, and cities). Training for “special” community water systems (e.g., retirement facilities, nursing homes, correctional facilities, etc.) and non-transient non-community water systems (e.g., schools and businesses), which typically have a small number of service lines and own the entire length of the service line, will be held in the Spring of 2024. MDE will have an example inventory spreadsheet with different service line examples and scenarios that will help water systems better understand how the inventory spreadsheet should be completed. The example spreadsheet will be available on [MDE’s website](#).

For NTNCWS, with the exception of “new” water systems (see above), the inventory spreadsheet is still required to be submitted to MDE. However, for many NTNCWS, there will only be a single service line from the well to the building or the water main to the building; therefore, only one row of the inventory spreadsheet will need to be completed across all applicable pages.

How the Inventory Spreadsheet is Organized

The first tab of the inventory spreadsheet is the “Introduction” page on which water systems will find general information related to the inventory spreadsheet as well as important logistical notes, a color-coded legend for column field names, and auto-generated classifications.

The inventory spreadsheet also consists of five pages on which water systems are required to provide information as applicable:

- **Page 1: Water System Information**
 - This page is for water systems to provide basic information related to their water system such as water system identification number (i.e., PWSID), name, person completing the inventory, etc. The page also contains the total numbers of service lines, including the tally based on data entered on the inventory spreadsheet, for the water system.
- **Page 2A: Overall/Entire Service Line from Water Main to Building and Building Information**
 - This page is for water systems to provide information related to the overall service line (e.g., unique ID, ownership, activity status, service connection type, location identifier, etc.). Optionally, water systems may also provide information related to the building to which the service line is connected (e.g., year building constructed, interior plumbing materials, Tier category under original LCR, etc.).
- **Page 2B: Connector Information**
 - This page is for water systems to provide information related to connectors (present or not).
- **Page 3: Information of 1st Portion of Service Line**
 - This page is for water systems to provide information related to the 1st portion (e.g. system-owned portion) of the service line (and all segments that comprise the 1st portion) including the material, diameter, installation year, basis of determination, investigation method(s) used, etc.
 - If the material of the service line is non-lead, water systems should still provide the specific material (e.g., copper, steel, etc.), if known.

- **Page 4: Information of 2nd Portion of Service Line**

- This page is for water systems to provide information related to the 2nd portion (e.g. customer-owned portion) of the service line (and all segments that comprise the 2nd portion) including the material, diameter, installation year, basis of determination, investigation method(s) used, etc.
 - If the material of the service line is non-lead, water systems should still provide the specific material (e.g., copper, steel, etc.), if known.

The inventory spreadsheet also contains a worksheet summarizing the classification of the entire service line (SL) which is automatically generated based on the classifications of each portion of the service line (see Appendices D and I for additional information):

- **SL Classification - AutoGen: Service Line Material Classification (Automatically generated based on data provided on Pages 2A through 4)**

- This worksheet contains a summary of the automatically generated material classification for each portion of the service line as well as each entire service line for all of the service lines in the inventory spreadsheet. The worksheet also shows the activity status of each of the service lines.

This inventory spreadsheet is also accompanied by the following appendices that **all water systems should review prior to using the inventory spreadsheet** and refer to as they are completing the inventory spreadsheet:

- **Appendix A: Service Line Scenarios**

- This appendix contains four different scenarios of service lines that water systems will encounter in their water distribution system. For each of the service line, water systems will need to select a scenario that best represents that particular service line.

- **Appendix B: An Example of a Service Line from a Water Main to a Building, and Possible Connector Locations**

- This appendix contains an example diagram of a service line from a water main to a building and possible connector locations.

- **Appendix C: Required Records Review**

- This appendix contains EPA's minimum requirements for the records review that must be completed by all CWS and NTNCWS by October 16, 2024.

- **Appendix D: Investigation Methods**

- This appendix contains information on all MDE-approved investigation methods (including records and field), as well as investigation methods used for information gathering purposes only.

- **Appendix E: 1972 COMAR 09.20.11.10, Water Supply System Materials**

- This appendix contains documentation of Maryland's law disallowing the use of lead for water service line pipes in water distribution systems.

- **Appendix F: Instructions on How to Copy-Paste Data as "Values" Only (i.e., Without Any Formatting) in Microsoft Excel Spreadsheet**

- This appendix contains instructions on how to copy-paste data as "Values" in Microsoft Excel Spreadsheet.

- **Appendix G: Instructions on How to Make and Remove a Selection(s) in Cells under Columns Marked as "MULTI-SELECT DROP-DOWN"**

- This appendix contains instructions on how to make and remove a selection(s) in cells under columns marked as "MULTI-SELECT DROP-DOWN".

- **Appendix H: Listed Drop-Down Options**
 - This appendix provides a summary of the drop-down options available on Pages 1 - 4 of the inventory spreadsheet.
- **Appendix I: Service Line Classification and Activity Status (for informational purposes and/or internal use only)**
 - This appendix contains information related to service line classification and activity status. Some of the information on this appendix is for MDE internal use only.
- **Appendix J: List of Community and Non-Transient Non-Community Water Systems in Maryland**
 - This appendix contains a list of CWS and NTNCWS that were active in MDE's database as of March 2024.

Appendices A through G are available on [MDE's website](#).

Characteristics of Service Line for Determining Classification

The classification (i.e., "Lead", "Galvanized Requiring Replacement", "Non-lead", or "Lead Status Unknown") of each portion of the service line will be automatically generated on the inventory spreadsheet based on three specific pieces of information (i.e., characteristics) related to the current service line: **Material**, **Diameter**, and **Installation Year**. The classification of each portion of the service line will then be used to generate the classification of the entire service line (see Appendix I of the inventory spreadsheet for more information).

Note that for each portion of a service line, there may be one or more segments that comprise that portion. A segment is defined as a piece of service line pipe with each end connected to a fitting, valve, and/or meter. For additional details regarding segments, refer to Appendix D.

If the material of the service line pipe is not known, then the diameter of the service line pipe (pipe diameter greater than 3 inches indicates non-lead) and/or installation year of the service line pipe (pipe installation on or after May 17, 1972, or the effective date of the local ordinance (prior to May 17, 1972), indicates non-lead) can be useful.

These three characteristics (i.e., Material, Diameter, and Installation Year) may be obtained through a records review and/or other investigation method(s) and will help water systems with the determination of the classification of the service lines. During records review and investigation, if any discrepancies are found, water systems may need to conduct additional investigation methods to resolve the discrepancies. Additional information can be found in Appendix D.

Investigation Methods

Although the LCRR only requires a records review to be conducted by water systems for their initial inventories (due October 16, 2024), the goal of the inventory is to identify the materials of all service lines in the distribution system to ultimately replace all lead and GRR service lines. Therefore, if the records review does not provide the required information, MDE recommends conducting additional investigations using other methods to obtain a characteristic(s) of the service lines. These additional investigations could also help reduce the number of service lines classified as "Lead Status Unknown" in the water system's inventory, which would be beneficial to the water system since service lines classified as "Lead Status Unknown" may require additional compliance actions, such as sampling, notification, and service line replacement.

Appendix D accompanying the inventory spreadsheet contains information on all MDE-approved investigation methods, including Records Review, Field Investigation Methods, and Analytics/Predictive Methods. Appendix D also contains investigation methods used for information gathering purposes only. **Before deciding on which investigation method(s) will be used**, it is important for water systems to review Appendix D in order to gain a better understanding of each method and which methods are approved by MDE.

Each method will be noted in Appendix D accompanying the inventory spreadsheet as either “not considered for verification purposes (i.e., it is for information gathering purposes only)” or it can be used for verification of service line material, diameter, and/or installation year.

NOTE: Various investigation methods may cause disturbances in the service lines resulting in potential water quality concerns (e.g., release of particulate lead) and damage to pipes. It is the responsibility of water systems to mitigate and address any disturbance caused during investigation. In addition to the notification and flushing requirements set forth in the LCRR (40 CFR 141.85(f)), MDE recommends following your utility’s Standard Operating Procedures (SOPs) when handling these disturbances.

As required by the LCRR, water systems must deliver notice and educational materials to consumers during water-related work that could disturb lead service lines⁵.

Types of Investigation Methods

There are three general categories of investigation methods: (1) Records Review, (2) Field Investigation Methods, and (3) Analytics/Predictive Methods. An in-depth description of each method can be found in Appendix D accompanying the inventory spreadsheet.

Records Review

The following types of records are approved by MDE for verification:

- Plumbing Permits
- Local Building and Plumbing Codes, Local Ordinances, Public Works Standards
- Federal/State Plumbing Codes
- Construction Contracts
- Property Records on File with County – Not SDAT
- Distribution System Maps and Drawings
- Capital Improvement Plans and/or Master Water & Sewer Plans
- Tap/Tie/Drill/Service Cards
- Records of Maintenance/Inspection Performed by Water System Personnel or Contractors
- Meter Installation/Maintenance/Inspection and/or Reading Records Performed by Water System Personnel or Contractors
- Utility Standard Operating Procedures (SOPs)
- Other Record(s) - need pre-approval from MDE

⁵ The proposed LCRI also requires this notice and educational materials for disturbances to GRR and unknown service lines as well as disturbances related to inventorying efforts.

The following types of records are not considered for verification purposes (i.e., for information gathering purposes only):

- Statements from Water System Senior Personnel and Retirees
- Interviews with Plumbers, Building Inspectors, Pipe Suppliers, Local Contractors, and/or Developers who have Specific Knowledge of the Site/Area
- Community Surveys

Field Investigation Methods

The following types of field investigation methods are approved by MDE for verification:

- Visual Inspection of Exposed Service Line Pipe (with or without Excavation)
- Non-Exposed Service Line Pipe Inspection Methods
 - Metal Detector
 - Electrical Resistance/Conductivity Test on the Interior of the Pipe
 - Ground-Penetrating Radar (GPR)
 - Other Non-Exposed Service Line Pipe Inspection Method(s) - need pre-approval from MDE

The following types of field investigation methods are not considered for verification purposes (i.e., for information gathering purposes only):

- Non-Exposed Service Line Pipe Inspection Methods
 - Internal CCTV Inspection of Inside of the Entire Portion of the Service Line Pipe

Analytics/Predictive Methods

Analytics/Predictive Methods involves making predictions using a subset of known information to predict results. The following types of analytics/predictive methods are approved by MDE for verification:

- Interpolation
- Predictive Modeling using Statistical Analysis ONLY (i.e., without Machine Learning)
- Predictive Modeling using Machine Learning
- Other Analytics/Predictive Method(s) - need pre-approval from MDE

The following types of analytics/predictive methods are not considered for verification purposes (i.e., for information gathering purposes only):

- Special Water Sampling for Lead (not for compliance purposes)

Water systems that are interested in using Analytics/Predictive Methods should consider the following:

- The accuracy of the output (i.e., prediction) is dependent upon the overall quality of the known information that is used to make a prediction.
- Depending on the method selected, additional review by MDE may be needed.
- MDE retains the authority to reject the results of the method if the method does not conform to the requirements.
- A full report detailing the methodology of the method will need to be provided when the inventory spreadsheet is submitted to MDE.

- An electronic form indicating the specific method used and a list of service lines that had materials obtained through prediction as well as service lines that were validated (e.g., records review, field investigation, etc.) will need to be provided when the inventory spreadsheet is submitted to MDE.
- For predictive modeling using machine learning, a threshold (i.e., a point at which water systems consider service lines to be lead, non-lead, or a specific material) must be set by the water systems in collaboration with their predictive modeling software providers/contractors.
- For statistical analysis without machine learning, a confidence level of at least 95% and a margin of error of no more than 5% must be used (NOTE: Depending on how subgroups are defined, a higher confidence level and a lower margin of error may be required by MDE).
- For certain methods (i.e., interpolation and statistical analysis without machine learning), if field validation investigations yield a different material from what was predicted, then the method cannot be used for that entire subgroup (e.g., homogenous neighborhood).

Note: Appendix D covers analytics/predictive methods in greater detail

Investigation Assistance from Water Customers

For the customer-owned portion of a service line, water systems may seek the assistance of water customers to help make a determination of the service line material. Below are some helpful links that can be used to direct and/or instruct residents on how to identify service line materials:

- EPA guide for determining service line material - <https://www.epa.gov/ground-water-and-drinking-water/protect-your-tap-quick-check-lead-0>
- Lead Service Line Replacement Collaborative - <https://www.lslr-collaborative.org/>
- Philadelphia Water Department - <https://water.phila.gov/pool/files/how-to-check-your-service-line-for-lead.pdf>
- Madison, Wisconsin “Lead in water: What you should know” - <https://www.cityofmadison.com/water/water-quality/lead-copper-in-water/lead-in-water-what-you-should-know>
- Hazel Crest, Illinois “Lead Service Line Inventory Project” - https://villageofhazelcrest.org/departments/public_works/lead_service_lines_inventory_project.php
- Environmental Policy Innovation Center - <https://www.policyinnovation.org/blog/lead-free-water-challenge-what-we-learned-about-proactive-communications-around-lead-service-line-replacement?rq=lead-free%20water%20challenge>

Water systems that are seeking assistance from water customers in identifying the material of their individual service line may want to consider creating an online portal for customers to upload photos or videos of service lines. For an example, please visit the [Massachusetts Department of Environmental Protection’s webpage](#) on LCRR, Information for Public Water Systems.

Funding and Technical Assistance for Service Line Inventories and Lead Service Line Replacements

MDE’s Water Infrastructure Financing Administration has funding opportunities for water systems (CWS and non-profit NTNCWS) for Capital Projects including those related to service line inventories, identification of materials, and replacement of lead connectors (goosenecks or pigtails) and lead or GRR service lines. The funding is available through the Drinking Water State Revolving Loan Fund (DWSRF) Bipartisan Infrastructure Law (BIL). More information may be found on [MDE’s Water Infrastructure Financing Administration webpage](#).

On November 4, 2022, EPA announced a selection of Environmental Finance Centers (EFCs) that will help communities across the country access federal funding for infrastructure projects that improve public health and environmental protection, including service line inventories and lead service line replacements. The current regional and national EFCs that provide assistance for water infrastructure projects include [University of Maryland](#), [Rural Community Assistance Program \(RCAP\)](#), [Environmental Policy Innovation Center \(EPIC\)](#), [U.S. Water Alliance](#), and [Moonshot Missions](#). The selected EFCs will help underserved communities that have historically struggled to access federal funding receive the support they need to access resources for water infrastructure improvements. For more information on EFCs, visit [EPA's Environmental Finance Centers webpage](#).

- The [University of Maryland EFC](#) is providing direct support to municipalities, tribes, and water utilities in Maryland to help them access federal and state funding to address water infrastructure needs across drinking water, wastewater, stormwater, and source water. This assistance will be delivered through March 2028 at no cost to recipients through an award from EPA. Available services include assistance identifying water challenges; developing plans; building technical, financial, and managerial capacity; and completing funding application materials. Assistance is available on a need basis, with priority given to historically underserved and disadvantaged communities. To request assistance, contact Michelle Kokolis at mkokolis@umd.edu.

The Maryland Rural Water Association (MRWA) has Circuit Riders who are available to assist small water systems (population under 10,000) with completing their service line inventories. Please visit their [website](#) or contact them at info@md-rwa.org for additional information.

For questions related to MDE's service line inventory spreadsheet, please contact the Lead and Copper in Drinking Water Division at Reporting.LeadCopperRule@maryland.gov.

Lead Service Line Replacement Information

As water systems complete their service line inventory, they may discover LSLs and GRRs. Locating these service lines is the first and critical step to replacing them; however, water systems do not need to complete their entire service line inventory before beginning to replace LSLs/GRRs. Funding opportunities to replace these service lines are available through the DWSRF from the BIL. Please see the Funding and Technical Assistance for Service Line Inventories and Lead Service Line Replacements section above.

When replacing LSLs, lead connectors, and/or GRRs, water systems need to be aware of the requirements listed below. Please note that with the proposed LCRI (December 2023), many Rule provisions, except for the initial inventory requirements, **may be subject to change**.

- *Lead service line replacement plan* - Any water systems that identify LSLs and/or GRRs in their inventory will need to submit a replacement plan to MDE in accordance with [40 CFR 141.84\(b\)](#);
- *Operating procedures for replacing lead goosenecks, pigtails, or connectors* - [40 CFR 141.84\(c\)](#);
- *Requirements for conducting lead service line replacement that may result in partial replacement* - [40 CFR 141.84\(d\)](#);
- *Requirements for conducting full lead service line replacement* - [40 CFR 141.84\(e\)](#);

- To demonstrate compliance with the above requirements of this section, water systems must report to MDE the information specified in [40 CFR 141.90\(e\)](#).

Additional information regarding LSL replacements will be forthcoming in future guidance from MDE.

Notification for Lead, GRR, and Lead Status Unknown Service Lines

Water systems with lead, GRR, or lead status unknown service lines must provide notification to people served by these lines within 30 days after completing the initial inventory. For new customers, the notice must be provided at the time of service initiation. The notification must be repeated annually until the entire service line is no longer a lead, GRR, or lead status unknown service line ([40 CFR 141.85\(e\)](#)). Delivery must be by mail or another MDE-approved method ([40 CFR 141.85\(e\)\(4\)](#)).

All notifications must include the following:

- A statement that the service line material is lead, GRR, or lead status unknown;
- Information on the health effects of lead. Details on required health effects language are available in [40 CFR 141.85\(a\)\(1\)\(ii\)](#); and
- Steps to minimize exposure in drinking water.

Additional content is required based on service line material classification as follows for:

- Confirmed LSLs, the notification must also include information about opportunities to replace the LSL, any available financing programs, and a statement that the water system must replace its portion if the property owners notify the water system that they are replacing their portion.
- GRR, the notification must also include information about opportunities for service line replacement.
- Lead status unknown, the notification must also include a statement that the service line is unknown but may be lead and information about opportunities to verify the material of the service line.

Water systems serving communities with a large proportion of non-English speaking consumers must provide public education materials, including those in [40 CFR 141.85\(e\)](#), in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language. Water systems must demonstrate that they delivered the notification and provide a copy of the notification and information materials to MDE annually by July 1 for the previous calendar year ([40 CFR 141.90\(f\)\(4\)](#)).

A form to certify the completion of this notification requirement will be forthcoming and will be available on [MDE's website](#).

Please note that with the proposed LCRI (December 2023), many Rule provisions, except for the initial inventory requirements, **may be subject to change**.

Service Line Inventory Reporting Requirements

Water systems must report the following information to MDE to demonstrate compliance with the requirements of the LCRR. Additional information as it relates to service line inventories can be found in [40 CFR 141.90\(e\)](#).

- No later than October 16, 2024, water systems must submit to MDE an initial inventory of service lines as required in [40 CFR 141.84\(a\)](#).
- The water system must provide MDE with an updated inventory in accordance with their tap sampling schedule, but no more frequently than annually. The updated inventory must be submitted within 30 days of the end of each tap sampling monitoring period⁶.
 - Water systems that have demonstrated that there is no lead, GRR, or lead status unknown service lines in their inventory, including “new” water systems, will no longer be required to submit inventory updates to MDE, except as described below.
 - In the case that a water system meeting the requirements above, subsequently discovers any service lines requiring replacement in its distribution system, it must notify MDE within 30 days of identifying the service line(s) and prepare an updated inventory in accordance with [40 CFR 141.84\(a\)](#) on a schedule established by MDE.
- For water systems that have lead, GRR, or lead status unknown service lines, if there are no updates to the inventory before the next submittal due date, the water system must still submit the inventory spreadsheet to MDE certifying that there are no updates.
- Any water system with lead service lines in its inventory must certify on an annual basis that the water system has complied with the consumer notification of lead service line materials as specified in [40 CFR 141.85\(e\)](#). For more information, see “Public Notification for Lead, GRR, and Lead Status Unknown Service Lines” section above.

Annually, by July 1, water systems must certify to MDE that they delivered notification to affected customers after any lead service line disturbance in accordance with [40 CFR 141.85\(f\)](#) for the previous calendar year. Water systems must also submit a copy of the notification to MDE. A form to certify the completion of this requirement will be forthcoming and will be available on [MDE’s website](#). For additional information see [40 CFR 141.90\(f\)\(6\)](#).

Consumer Confidence Report Inventory Requirements

The LCRR requires CWS to include in their annual Consumer Confidence Report (CCR) a statement that they have prepared a service line inventory and instructions on how to access the inventory and tap sampling results ([40 CFR 141.84\(a\)\(10\)](#) and 40 CFR 141.153(d)(4)(xi))⁷. CWS with no lead, GRR, or lead status unknown service lines can instead provide a statement in the CCR that they have no LSLs or GRRs with the description of methods used to make that determination ([40 CFR 141.84\(a\)\(9\)](#)).

Lead and Copper Rule Improvements

On November 30, 2023, EPA announced the proposed [Lead and Copper Rule Improvements \(LCRI\)](#), [Docket No. EPA-HQ-OW-2022-0801](#), in the Federal Register. Key provisions in the proposal include:

- The vast majority of water systems would be required to replace lead services lines within 10 years.

⁶ The proposed LCRI requires water systems to provide updates to service line inventories to the primacy agency on an annual basis, which may or may not align with their tap sampling schedules, beginning no later than one year after the compliance date of October 16, 2024.

⁷ Per the proposed LCRI, CWSs with lead, GRR, or unknown service lines must include a statement in the CCR about how to access the service line inventory and replacement plan. Furthermore, under the proposed LCRI, CWSs must also include a statement about the system sampling for lead in schools and licensed child care facilities and may direct the public to contact their school or child care facility for further information.

- All water systems would be required to regularly update their inventories, create a publicly available service line replacement plan, and identify the materials of all service lines of unknown material.
- Water systems with lead service lines would be required to collect first liter and fifth liter samples at sites with lead service lines and use the higher of the two values when determining compliance with the rule.
- The lead action level would be lowered from 15 µg/L to 10 µg/L. When a water system's lead sampling exceeds the action level, the system would be required to inform the public and take action (such as installing or adjusting corrosion control treatment) to reduce lead exposure while concurrently working to replace all lead pipes.
- Water systems with multiple lead action level exceedances would be required to conduct additional outreach to consumers and make filters (that are certified to reduce lead) available to all consumers.

Additionally, EPA is proposing in the LCRI to require all water systems with non-lead service lines to validate the accuracy of a subset of non-lead service lines in their inventory. The validation would include non-lead service lines that were identified by a method other than 1) records review or 2) two-point visual inspection. The proposed validation tests the reliability of the water system's inventory and provides systems, States, and consumers with additional confidence in the accuracy of the inventory. To view EPA's Proposed Inventory Validation Requirements, click [here](#).

For more information on the proposed LCRI, see <https://www.epa.gov/ground-water-and-drinking-water/lead-and-copper-rule-improvements>.