



This guidance helps water systems comply with the service line inventory requirements of the January 15, 2021, Lead and Copper Rule Revisions (LCRR). It provides information needed for water systems to document their methods and organize their inventory.

All community and non-transient non-community (NTNC) water systems must develop an initial inventory of service lines that meets the LCRR requirements for both the public and private portions of every service line and **submit the lead service line inventory to the state by October 16, 2024.**

The LCRR inventory requirement directs water systems to undergo a record review of information pertaining to service lines, both water system-owned and customer-owned portions. The U.S. Environmental Protection Agency (EPA) understands that no inventory method is 100 percent accurate, and the LCRR requires utilities to update their inventories on a regular basis as new inventory information becomes available. Replacing lead service lines is the best way to reduce the risk of exposure to lead in drinking water across a community. EPA rule [National Primary Drinking Water Regulations: Lead and Copper Rule Revisions](#) and [Governor's 16-06 Directive](#).

## Lead Pipe Background in Washington

In 1986, Congress amended the Safe Drinking Water Act (SDWA) to prohibit the use of pipes, solder or flux that are not "lead free" in public water systems or plumbing in facilities providing water for human consumption. At the time, lead free was defined as solder and flux with no more than 0.2 percent lead and pipes with no more than 8.0 percent lead.

In 1996, congress further amended the SDWA to prohibit the use of pipe and plumbing fittings and fixtures that are not lead free in the installation and repair of any public water system or plumbing in a facility providing water for human consumption. The 1996 amendments also required lead-free plumbing fittings and fixtures (endpoint devices) to comply with a lead leaching standard.

Service lines for homes constructed after 1986 in Washington should be made of materials other than lead. Water systems developing their lead service line inventories may designate homes built after 1986 as not having a lead service line. There may be a local ordinance or code that provides an earlier date that you may use to classify non-lead materials.

## Inventory Templates and Required Minimum Elements

We require that water systems use [EPA's Service Line Inventory Template \(Excel\)](#) or this modified [EPA Inventory Template Edited for Washington Small Water Systems \(Excel\)](#) for tracking the details of the lead service line inventory. The EPA template has many columns for you to capture details that you should keep as part of completing your inventory. The modified template contains the minimum data required to meet the rule. If you use this spreadsheet, please make sure to keep your detailed records to support the data you are entering in the spreadsheet.

If you want to use a different format to capture inventory details, please contact your regional office. We require systems to submit data in an electronic file that we can read using a current version of Microsoft Excel; other formats require our prior approval.

There are many columns in the spreadsheet that may be important to collect for utility work and records; however, the following data fields are **required** to be submitted for each service connection.

- ◆ **Location Information.** Street Address (strongly recommend) or Other Locational Identifier: Enter a street address or another, non-address locational identifier (e.g., block, intersection, or GPS coordinates) for each service line. Do NOT include specific individual names or identifying information.
  - Unique Service Line ID: This field is optional. Assign a unique ID to each row that represents one service line.
  
- ◆ **Service Line Material Classification Minimum Required for both the utility and customer portions and the entire service line.** Each service line and portion of the service line where ownership is split must be categorized as one of the following:
  - Lead,
  - Galvanized Requiring Replacement,
  - Non Lead, or
  - Lead Status Unknown.
  
- ◆ **Was Material Ever Previously Lead?** Include this column if you choose to use more descriptive classifications for the system owned and customer owned portions. This is for determining whether a downstream or customer-owned galvanized service line would be considered galvanized requiring replacement. Refer to "Classifying the Entire Service Line."
  - Leave this field blank if system-owned portion of the service line is "Lead."
  - If "Yes" or "Don't know" and if the customer-owned or downstream service line is a galvanized line, then enter "Galvanized Requiring Replacement."
  - If "No" and if customer-owned or downstream service line is a galvanized line, enter "Galvanized."
  
- ◆ **Basis of Material Classification.** Options include:
  - Historical Records that may include the following.
    - Previous materials evaluation.
    - Installation record.
    - Service line repair or replacement.
  - Installation Date.
  - If the basis for material classification is that the installation date is after state or local lead ban.
    - If a water system uses a local ordinance that banned the use of lead other than the Washington lead ban implemented in 1986, provide in the Notes column the effective date of the local lead ban.
  - Service Line Size.

- If the basis for classification is that the service line diameter is greater than two (2) inches.
- Field inspection (no records)— If “Yes,” describe the field verification method. You may use the notes column to capture the field verification date.
- Other or Emerging Methods—Requires state approval—refer to “Approved Verification Methods.” If you select Other, please include a note on what “Other” is.

**We recommend** water systems collect the following data fields and any other data found during the development of the inventory to assist with future planning, operations and maintenance activities, determination of future monitoring locations, asset inventory and capital improvement planning, and funding applications:

- ◆ Lead connector, lead solder, or other fittings that contain lead—strongly recommend including lead connectors as the proposed EPA Lead and Copper Rule Improvements requires inventorying lead connectors (goosenecks) in a future inventory.
- ◆ Interior building plumbing that contains copper pipes with lead solder installed on or before 1986 or local lead ban.
- ◆ Current LCR sampling site.
- ◆ Pipe material and size (for non-lead).
- ◆ Building type connected to service line.
- ◆ Documenting sensitive populations and disadvantaged neighborhoods if not already captured in other utility work.

The above list is not all inclusive. Please consider the effort you are putting into developing this inventory, and what additional information you can collect at the same time that will assist you with planning and operations.

## Classifying the Entire Service Line

The lead service line inventory must include material data on both the water-system-owned portion of the service line (water main to the meter) and the private-side portion of the service line (meter to the building inlet). Internal premise plumbing is not required to be inventoried.

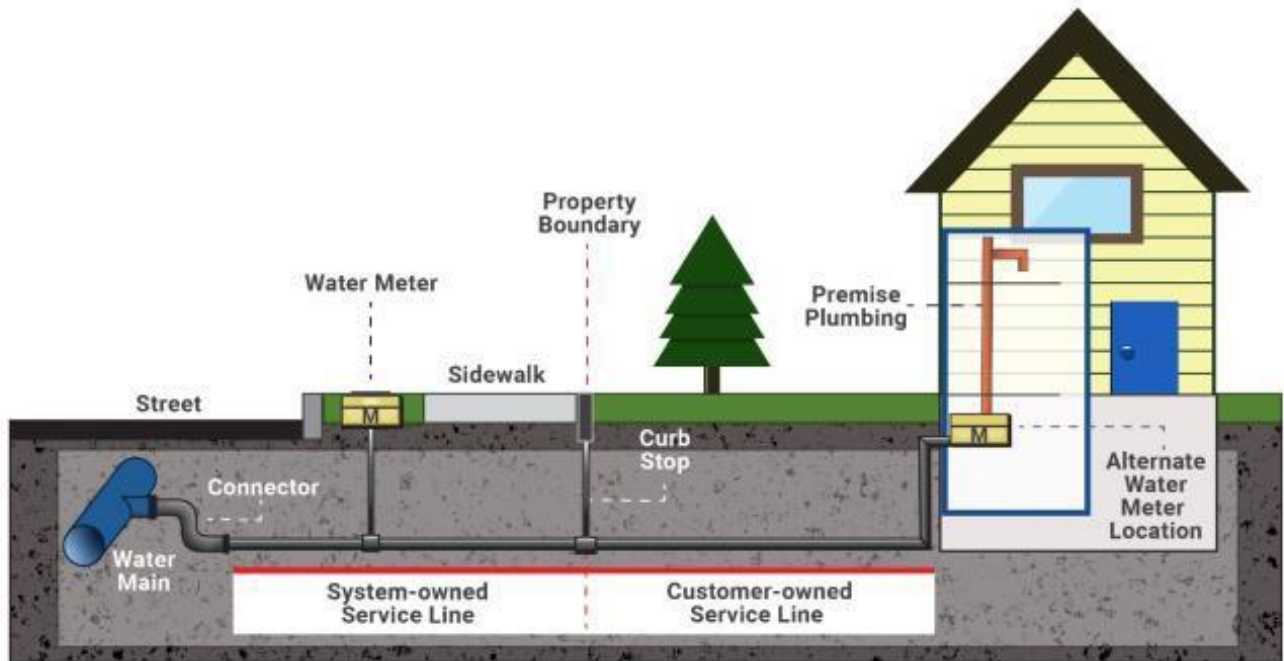
Each service line or portion of the service line where ownership is split must be categorized as one of the following:

- ◆ Lead,
- ◆ Galvanized Requiring Replacement,
- ◆ Non-Lead, or
- ◆ Lead Status Unknown.

A split ownership service line means that a system and the customer each own a portion of the service line. A single classification per service line is also required by the LCRR. Table 1 from Exhibit 2-3 of EPA’s Guidance for Developing and Maintaining a Service Line Inventory shows how to classify the material classification for the entire service line when ownership is split.

Exhibit 2-2 of Guidance for Developing and Maintaining a Service Line Inventory (USEPA, 2022).

**Exhibit 2-2: Example of Service Line Ownership Distinction between the Water System and Customer**



**Exhibit 2-3: Classifying Service Line Materials When Ownership is Split According to the LCRR 40 CFR §141.84(a)(4)**

System-Owned Portion	Customer-Owned Portion	Classification for Entire Service Line
Lead	Lead	Lead
Lead	Galvanized Requiring Replacement	Lead
Lead	Non-lead	Lead
Lead	Lead Status Unknown	Lead
Non-lead	Lead	Lead
Non-lead and never previously lead	Non-lead, specifically galvanized pipe material	Non-lead
Non-lead	Non-lead, material other than galvanized	Non-lead
Non-lead	Lead Status Unknown	Lead Status Unknown
Non-lead, but system is unable to demonstrate it was not previously Lead	Galvanized Requiring Replacement	Galvanized Requiring Replacement
Lead Status Unknown	Lead	Lead
Lead Status Unknown	Galvanized Requiring Replacement	Galvanized Requiring Replacement
Lead Status Unknown	Non-lead	Lead Status Unknown
Lead Status Unknown	Lead Status Unknown	Lead Status Unknown

Source: Exhibit 2-3 of *Guidance for Developing and Maintaining a Service Line Inventory* (USEPA, 2022).

## Approved Identification Methods

The LCRR 40 Code of Federal Regulation (CFR) §141.84(a)(3) requires water systems to use the following information to develop an inventory. The rule requires water systems to review historic records prior to utilizing alternative methods to complete the inventory.

- ◆ All construction and plumbing codes, permits, and existing records or other documentation that indicates the service line materials used to connect structures to the distribution system. (Example: determine if there is any ordinance—city or county building department—that prohibits lead lines and its effective date.)
- ◆ All water system records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures. (Example: Tap cards may contain helpful information, such as the diameter of the service line and the installation date of the main and user service line.)
- ◆ All inspections and records of the distribution system indicating the material composition of the service connections that connect a structure to the distribution system.

Please note that operator interview alone cannot be used as part of the basis of material classification. Interviews are useful as part of records review (tap cards, GIS, service line repair or replacement records, plumbing codes, etc.—reference Exhibit 4-1: Requirements for Historical Records Review for

Initial Inventory Development under the LCRR, EPA Guidance for Developing and Maintaining a Service Line Inventory ([epa.gov](https://www.epa.gov))

**Pipe Dating.** The initial or most recent construction of the service line (both purveyor- and customer-owned) can be used in conjunction with a state or municipal/local code banning lead to determine non-lead status if the initial or most recent construction occurred after a lead ban. Any construction occurring after 1986 is assumed to not contain lead pipes; however, there may be an earlier local lead ban date. You will not need physical verification, but you'll need to verify dates of construction by a record or building permit. All installations after the state ban or local ban can be labeled non-lead.

We contracted with Celerity Consulting Group, LLC to research plumbing codes and local ordinances to identify counties and municipalities who prohibited the installation of lead service lines prior to the Safe Drinking Water Act federal lead ban of June 19, 1986. The research was funded through Drinking Water State Revolving Fund set-asides. Local codes and ordinances for all 39 counties and the 25 largest municipalities by population were assessed.

The research results concluded that most counties and municipalities assessed did not have available records of local ordinances prohibiting installation of lead service lines predating the 1986 federal date. Historical records for a few local governments provided evidence of ordinances omitting lead as an approved material for service line installation prior to 1986 on either the private or public side of the service line. These include King County (as early as 1957), City of Seattle (as early as 1951), City of Everett (as early as 1965), and City of Lakewood (as early as 1945). Public water systems conducting a lead service line inventory with service area boundaries that include areas covered by lead ban dates earlier than 1986 must document reasoning for using the earlier date when classifying pipe materials within the distribution system.

**Pipe diameter** can be used to determine if a pipe is non-lead. Most lead pipes and lead goosenecks are two inches in diameter or less. We allow water systems to use a non-lead designation for any pipe larger than two inches in diameter.

## Other Identification Methods

Investigation methods are used to assess accuracy of historical records and gather information when service line material is unknown. These methods are NOT required under the LCRR but are methods for systems to consider when classifying the remaining unknowns.

There is no requirement to unearth service lines for the purpose of inventorying; however, **physical visual inspection** of the piping is an acceptable method to determine the material of a service line. You can visually inspect the service line at the meter or valve box. A record of the physical visual verification must be made by the water system.

When physically identifying the material of a service line that has a split ownership (i.e., water-system-owned, and customer-owned), a water system may consider the following locations or points: the connection at the main, the pipe from the main to the meter, the connection at the meter, the pipe to the building inlet, and the connection at the building. A water system needs to plan how to verify the material of the pipe and connectors (recommend if connectors exist). Not all service lines need to be inspected at all points. We require a minimum of one verification

point for each side (utility-owned and customer-owned) of the service line; however, the water system may need to verify more locations on the service line to ensure the inventory is accurate. The water system may discuss their inventory plans with their ODW regional engineer.

We encourage water systems to classify the actual material of the service line (i.e., plastic or copper) as often as possible as an alternative to classifying it as “non-lead” to help with future assets.

Customers may self-report the material of the customer-owned portion of the service line by using their records or performing a visual inspection (e.g., by using scratch or magnet tests or lead paint test kits) to identify the material. We offer a template on our [Lead Service Line Inventory](#) page that could help develop instructions for customers and obtain a written record for verification. You may also find examples of cities using customers’ verification in EPA’s inventory guideline section 5.1.1.

**Statistical Method** is approved and strongly recommended for water systems that have not found lead service lines and still have unknowns. Please refer to [Statistical Guidance for Group A PWS Evaluation of Unknown Service Lines 331-723 \(PDF\)](#).

**Other methods** such as predictive models, water quality monitoring, and new emerging methods for determining “unknown” material require state approval. Please contact your regional engineer to discuss.

## Other Public Notification and Accessibility Requirements

Water systems must notify every person served by a lead, galvanized requiring replacement, or lead status unknown within thirty days of completing their inventory.

Inventories must be publicly accessible. We require you to tell us how you will make the inventory publicly accessible. Water systems serving more than 50,000 people must provide the inventory online for customer access.

Community water systems must indicate on their consumer confidence reports how customers can access service line inventory information.

## Submittal Process/Requirements

Each community and NTNC public water system must submit a file containing required data elements per service connection in an electronic file that can be read using a current version of Microsoft Excel. We require water systems to use the EPA template or an approved alternative. When you are ready to submit your inventory, use the LSLI Submittal Portal link on our [Lead and Copper Rule Revisions webpage](#) to submit your summary form and detailed inventory.

## Additional Resources

EPA’s [Guidance for Developing and Maintaining a Service Line Inventory](#) to help guide public water systems in developing and maintaining the LSL inventory.

National Lead service line inventory-related information and tools.

- ◆ [Lead Service Line Replacement Collaborative](#).

- ◆ [Lead service line identification: A review of strategies and approaches.](#)
- ◆ [Lead Service Line Inventory Symposium: 2022—ASDWA.](#)
- ◆ [EPA Office of Water—LSL Identification and Replacement Webinars.](#)
- ◆ [EPA December 2021 announcement of the LCR and the LCRI.](#)
- ◆ [EPA Basic Information about Lead in Drinking Water.](#)
- ◆ [AWWA Lead Resource Page.](#)
- ◆ [Association of State Drinking Water Administrators \(ASDWA\).](#)

## For More Information

Please email your questions to [LCRRassistance@doh.wa.gov](mailto:LCRRassistance@doh.wa.gov) or talk to your regional engineer.

Contact our nearest regional office from 8 AM to 5 PM, Monday through Friday.

[Eastern Region](#), Spokane Valley 509-329-2100.

[Northwest Region](#), Kent 253-395-6750.

[Southwest Region](#), Tumwater 360-236-3030.



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