Service Line Inventory Guidance

On December 16, 2021, the federal Lead and Copper Rule Revisions (LCRR) went into effect. The revised rule requires every federally defined community and non-transient, non-community water system to develop a service line inventory (also called a lead service line inventory (LSLI)). This guidance document explains service line requirements.

DEFINITIONS

Community Water System (CWS, federally defined**)** – A public water system (PWS) that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Customer – A homeowner, building owner, or non-owner resident served by a water system who may or may not be responsible for paying water bills.

Galvanized Service Line (GSL) – Iron or steel piping that has been dipped in zinc to prevent corrosion and rusting.

Galvanized Service Line Requiring Replacement (GSLRR) – A GSL that was or currently is downstream of an LSL or SL of unknown material. If a water system can't demonstrate that the GSL was never downstream of an LSL, it must presume there was an upstream LSL.

Gooseneck, Pigtail, or Connector (collectively gooseneck) – A short section of piping, typically not exceeding two feet, which can be bent and used for connections between rigid service piping. A lead gooseneck is not considered part of the LSL but must be replaced when encountered.


Lead Gooseneck: Source EPA

Lead Service Line (LSL) – Any portion of pipe that is made of lead which connects the water main to the building inlet. An LSL may be owned by the water system, owned by the property owner, or both. If the only lead piping serving the home is a lead gooseneck, and it is not a galvanized service line that is considered an LSL, the SL is not an LSL.

Lead Status Unknown Service Line (unknown SL) – An SL where its material is not known to be lead, galvanized requiring replacement, or a non-lead service line, such as where there is no documented evidence supporting material classification. The water system may classify the line as "Unknown" as an alternative to classifying it as "Lead Status Unknown," however, all requirements that apply to "Lead Status Unknown" service lines must also apply to those classified as "Unknown." Water systems may elect to provide more information regarding their unknown lines as long as the inventory clearly distinguishes unknown service lines from those where the material has been verified through records or inspection.

Non-Lead Service Line (non-LSL) – An SL that is determined through an evidence-based record, method, or technique not to be lead or not to be galvanized requiring replacement.

Nontransient Noncommunity Water System (NTNCWS) – A PWS that is not a CWS but is a subset of a noncommunity water system that regularly serves at least 25 of the same people, four hours or more per day, for four or more days per week, for 26 or more weeks per year.

THE BASICS

- The Lead and Copper Rule Revisions (LCRR) apply to all federally defined CWSs and NTNCWSs ("water systems," or "systems").
- By October 16, 2024, every water system, **with no exception**, must develop an initial service line material inventory that includes all SLs regardless of ownership and submit the inventory to its local health department (LHD).

> ***Note:*** *The State strongly recommends that every system prepares the inventory using the NYSDOH LSLI template.*

- An inventory must be publicly accessible.
- Water systems serving more than 50,000 people must provide their inventory online.
- Water systems with any LSL, GSLRR, or unknown SL must provide notification to people served by these lines within 30 days after completing the initial inventory.
- Systems must update their inventory annually or triennially depending on their monitoring frequency.

DO

- Start planning for a service line inventory as early as feasible.
- Record search is the best first step for most PWSs. Start gathering available records for your inventory.
- Find methods for identifying SL materials that are technically and financially available to your PWS.
- Try to digitize all historical records used for identifying service line materials.
- SL material identification must be evidence-based.
- Document every historical record, study result, report, and any information used for SL materials. You should be ready to submit them to the State, an LHD, or EPA when requested.
- Reach out to customers for their cooperation in identifying the customer-owned section of SL material.
- Document all records, e.g., LSL replacements and maintenance and repair of water main or service lines. For most PWSs, the inventory is a living document that needs updating when new information becomes available.

DON'T

- Don't wait until the last few months before 10/16/24.
- Don't assume materials of unknown SLs.
- Don't assume all historical records are accurate.
- Don't assume every method for identifying SL materials is suitable for every PWS.
- Don't assume there is no LSL or GSLRR in your system before evaluation.
- Don't assume the initial inventory is final. The inventory won't be final until there is no LSL, GSLRR or unknown SL.

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LEAD SERVICE LINE INVENTORY Q & A

1. What system needs to develop a service line inventory?

If your PWS is a federally defined CWS or an NTNCWS, you must develop an initial inventory to identify SL materials and submit it to your LHD by October 16, 2024. The inventory must include all SLs connected to the distribution system regardless of ownership, which means that you need to include both system-owned and customer-owned SLs in your inventory where SL ownership is shared. Figure 1 shows an example of an SL in which ownership is shared between a water system and a customer.

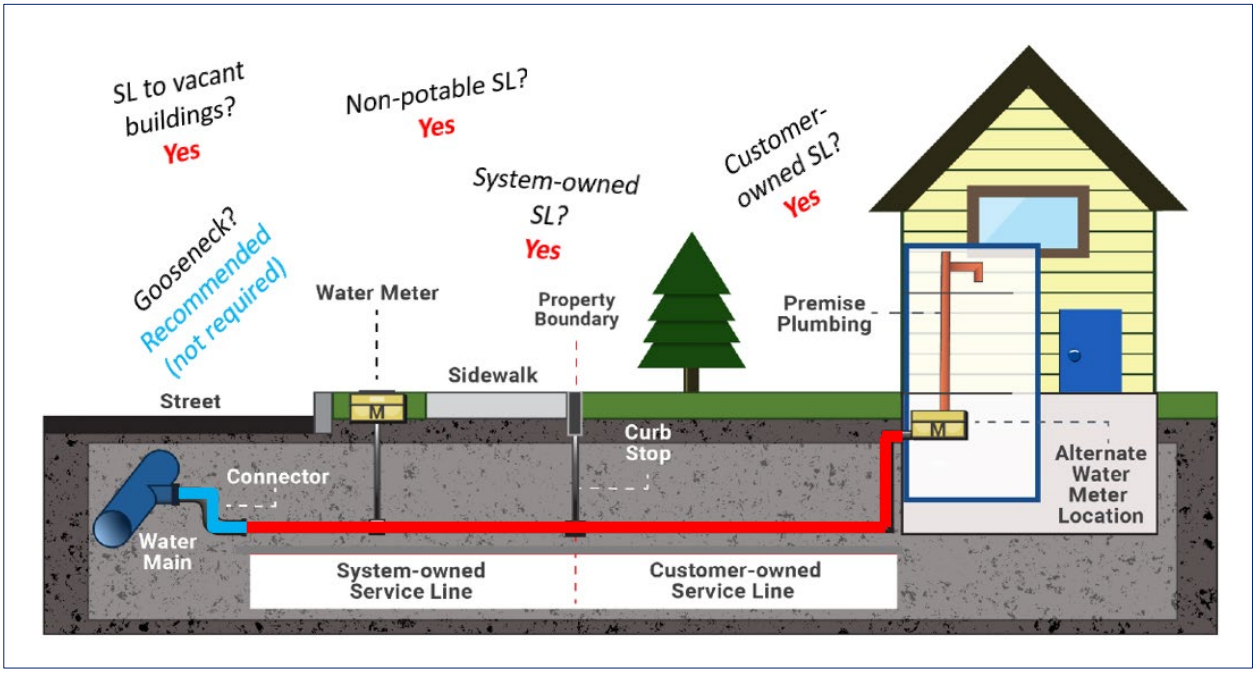


Figure 1 Example of Service Line Ownership Distinction between the Water System and Customer
The waterlines highlighted in red are required to be included in a service line inventory. Redrawn and modified from Guidance for Developing and Maintaining a Service Line Inventory, EPA, August 2022

2. Our system does not have any LSL, GSLRR, or unknown SL. Do we still need to prepare the inventory?

Yes, every CWS and NTNCWS, including systems with only non-LSLs, must prepare an initial inventory and submit it to its LHD by October 16, 2024. However, you are not required to provide inventory updates to the LHD or the public unless you find an LSL, GSLRR, or unknown SL in the future.

3. Do we need to include SLs connected to vacant or abandoned buildings?

Yes. You must inventory every SL in your system including SLs connected to buildings even if they are unoccupied and water service is turned off.

4. **We have non-potable service lines. Do we need to include those non-potable SLs in the inventory?**

   Yes, you must include all SLs in the inventory, regardless of the actual or intended use. These include SLs with non-potable applications such as fire suppression or those designated for an emergency.

5. **Do we need to inventory private SLs inside a property owned by a business or other entities such as an office building complex, shopping center, university, prison, mobile home park, and apartment connected to our system?**

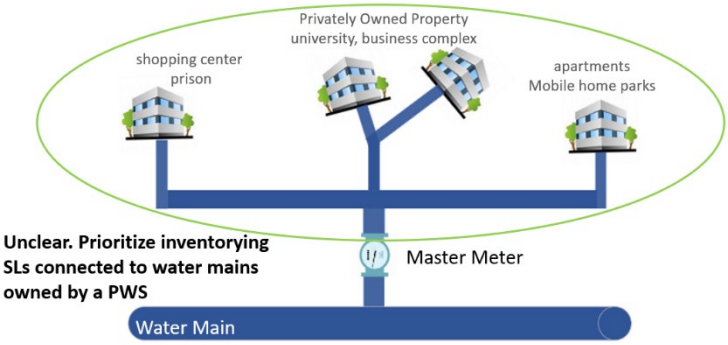


Illustration: M. Kim, BWSP

Unclear. Prioritize inventorying SLs connected to water mains owned by a PWS

Yes, the service lines connected to a privately-owned distribution system after a master meter must be included in the inventory. You may prioritize inventorying service lines connected to water mains owned by your system while coordinating with the owners of those private properties to identify their service line materials.

6. **Many NTNCWSs and small CWSs do not have clear SLs. Small schools, apartments, and business offices are examples of these systems. Do they need to prepare the inventory? If so, what portion of pipes need to be included in the inventory?**

   Yes, systems that do not have an extensive distribution system, such as those with a direct connection from a well to a single building must report the material from the well to the building inlet for their inventory.

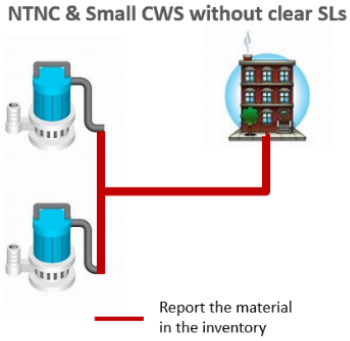


Illustration: M. Kim, BWSP

Materials of water line from the well(s) to the building inlet

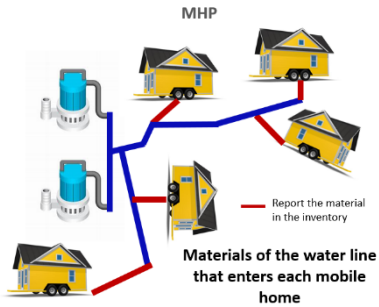


Illustration: M. Kim, BWSP

Materials of the water line that enters each mobile home

7. **In general, a mobile home park (MHP) with its own well(s) does not have typical distribution systems or SLs. What portion of lines needs to be included in the inventory?**

   These systems should inventory the water line material that enters each building.

8. **Is an SL connected to a lead gooseneck, pigtail, or connector (collectively gooseneck) an LSL?**

   No. A lead gooseneck is not considered to be a part of the LSL at this time. This may change in future revisions.

9. Is a galvanized service line downstream of a lead gooseneck a GSLRR?

No. If the only lead piping serving the home is a gooseneck, and there was never any other lead line or unknown SL upstream of the galvanized service line, it is not a GSLRR.

> ***Note:*** *A gooseneck material doesn't affect a determination of galvanized service line between a GSLRR and a non-lead.*

10. When is a galvanized service line considered a GSLRR?

A galvanized SL that was or currently is downstream of an LSL or SL of unknown material is a GSLRR by the definition. If a water system can't demonstrate that the GSL was never downstream of an LSL, it must presume there was an upstream LSL. Figure 2 shows examples where a galvanized service line is a GSLRR.

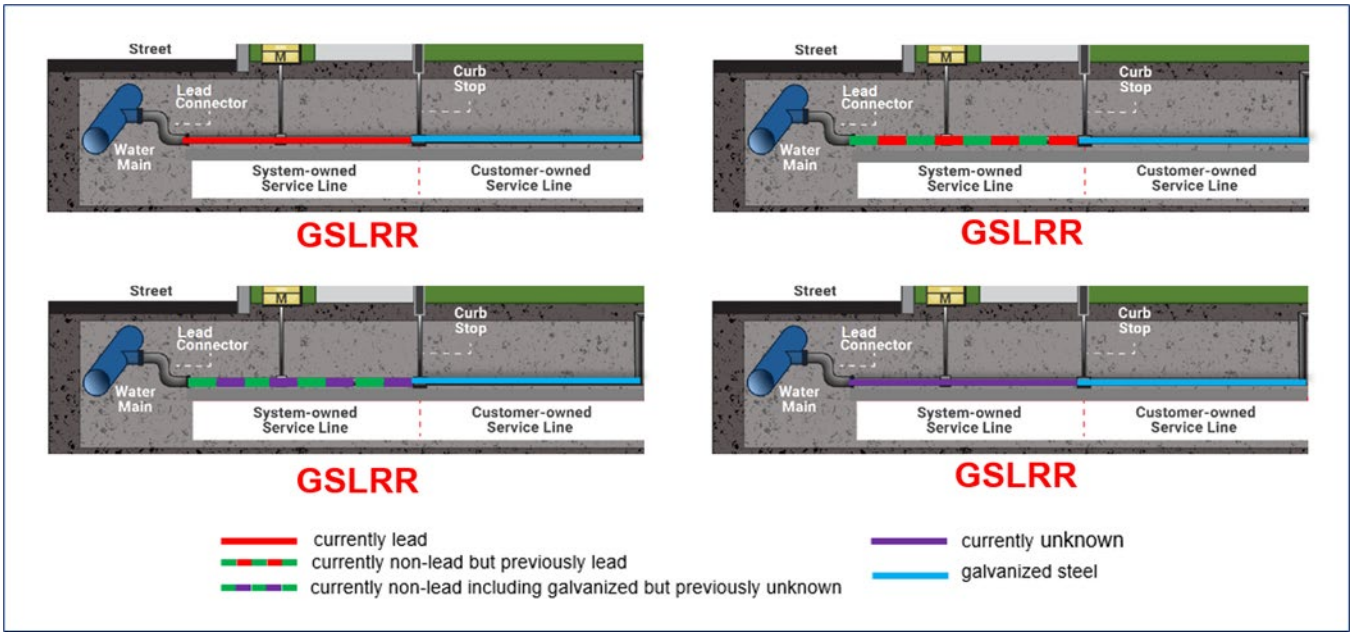


Figure 2 Examples of Galvanized Service Line Requiring Replacement.

11. Do we need to include goosenecks in the inventory?

The State recommends but doesn't require including goosenecks in the inventory.

12. What information do we need to include in the inventory?

a) The following information is required In NYSDOH LSLI Template:

i. A street address associated with each LSL and GSLRR – A block, intersection, or landmark is acceptable if a local code doesn't allow using an exact address. An address or other locational identifier for an unknown SL is strongly recommended but not required.

ii. Whether an SL owned by a water system is or ever was made of lead.

iii. Identify a material of each SL owned by a water system and a customer among one of the following:

- Lead including lead-lined galvanized.
- Copper.
- Galvanized.
- Plastic.
- Known Other.
- Unknown but could be lead.
- Unknown but unlikely lead.
- Unknown.

iv. A method used to verify the material of each SL owned by a water system and a customer.

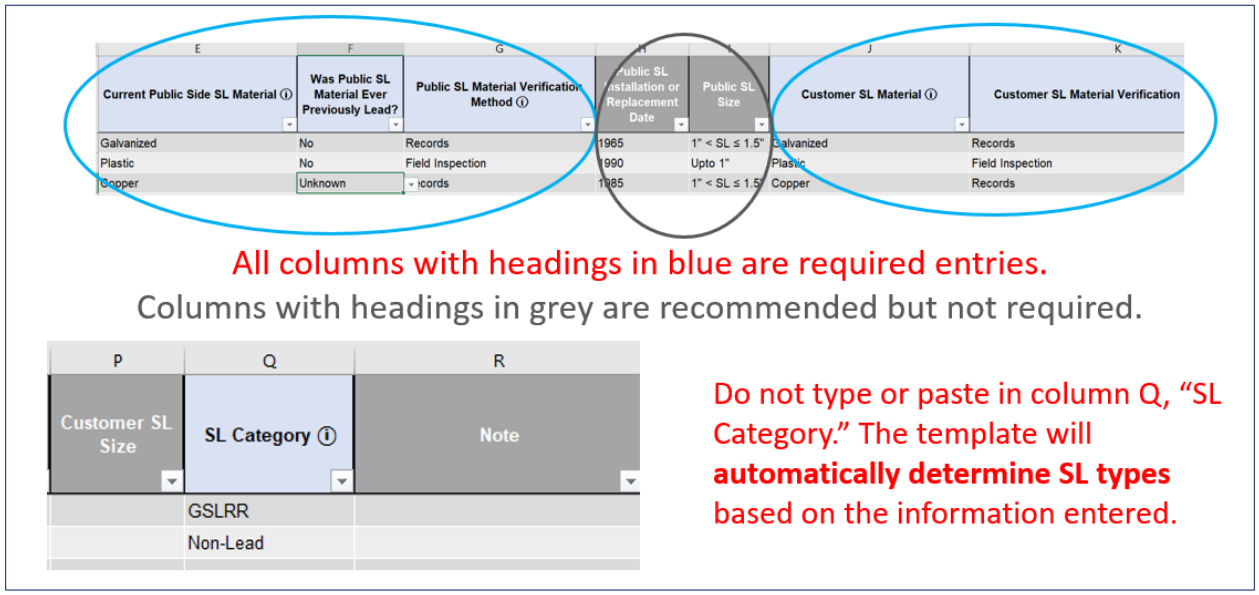


Figure 3-A Example of Filling Out the NYSDOH LSLI Template

b) Based on the information you entered, each SL will be automatically categorized as one of the following in the NYSDOH LSLI Template:

- Lead service line (LSL).
- Galvanized service line requiring replacement (GSLRR).
- Lead status unknown service line (unknown SL).
- Non-lead service line (non-LSL)

c) Although not required, NYS recommends tracking the following information in the LSLI Template:

- Whether lead gooseneck, pigtail, or connector is currently present.
- Installation date for public- and customer-side SLs.
- Size of the public- and customer-side SLs.
- Whether lead solder, point-of-use, or point-of-entry point treatment is present.

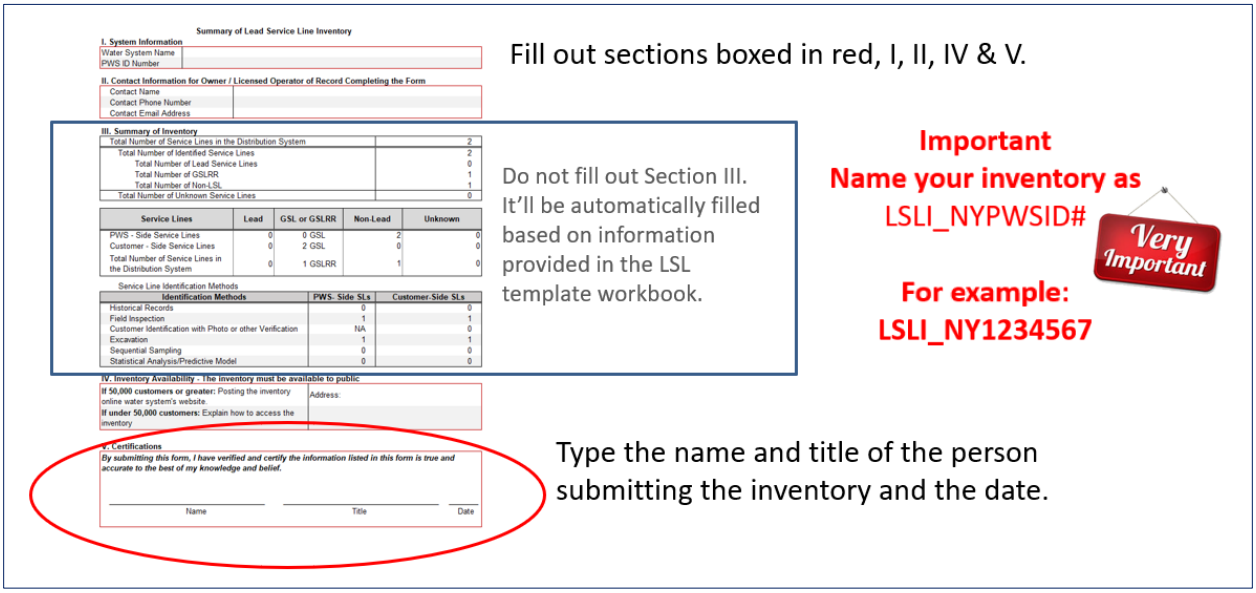
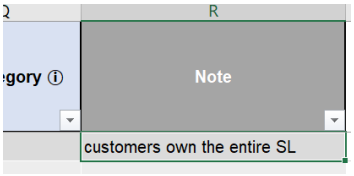


Figure 3-B Example of Filling Out the NYSDOH LSLI Template

13. A customer owns the entire service line in our water system. How should I fill out the NYSDOH inventory template?

Same as with the case where the ownership splits, enter information about the SL section from the main to the curb stop in the "Public Side SL" information columns (from D to I); and about the SL section from the curb stop to the building inlet in the "Customer SL" columns (from J to P). You may enter the ownership information in the "Note" column (column R) in the "Service Line Inventory Template" worksheet; for example, "a customer owns the entire SL."

- SL from the main to the curb stop – enter SL information in the "Public Side SL" columns (from D to I).
- SL from the curb stop to the building inlet – enter SL information in the "Customer SL" columns (from J to P).
- Leave a note in the "Note" column (column R) or inform your LHD when submitting the inventory.



14. What method can we use to identify SL material?

You can use the following methods for identifying SL materials:

a) utility or public records showing service line materials (refer to Item 15).

b) field inspection by PWS staff or a professional plumber.

c) excavation such as trenching and hydro-vacuuming (refer to item 20).

d) sampling, e.g., sequential sampling, flush sampling, or first draw sampling (refer to item 16).

e) statistical analysis/predictive model (refer to Item 17).

f) customer identification with a scratch and/or magnet test followed by photo or field verification by PWS staff (applicable to customer-owned SL, refer to item 19).

g) other methods acceptable to your LHD.

15. Can we use public and utility records for identifying SL material?

You can use the following information for this purpose. You need to cross-check records with other records, field investigations, previous SL investigations, and customer self-identification of SL materials. If you don't have confidence in the accuracy of records, you need to perform physical confirmation.

a) All construction and plumbing codes, permits, and existing records or other documentation which indicates the SL materials used to connect to the distribution system.

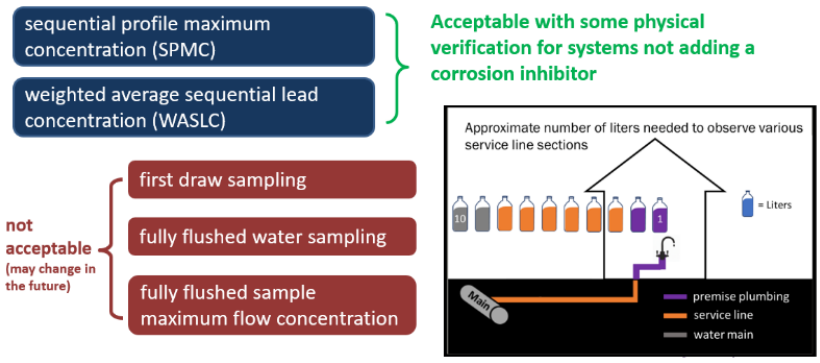
b) All water system records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures.

c) All inspections and records of the distribution system that indicate the material composition of the service connections that connect to the distribution system.

d) Any other resource, information, or identification acceptable to your LHD.

> ***Note:*** *You need to identify and track SL materials in your inventory when you encounter SLs during normal operations (e.g., checking SL materials when reading water meters or performing maintenance activities).*

16. Can we use sampling to identify service line materials?



Sampling methods are not acceptable for systems using a corrosion inhibitor. For systems that do not add a corrosion inhibitor, sequential sampling for SL material identification is acceptable only when it is part of a study approved by an LHD. Up to 20 percent physical verification of SL materials tentatively identified with the sampling will be required. If the accuracy of the physical verification result is less than 90%, the sampling should not be used without physical confirmation.

17. Is a predictive (probability) model or statistical analysis acceptable to become a known service line without physical verification?

A predictive model and statistical analysis are useful tools for budget planning and prioritizing LSL replacements. A model's output typically needs physical verification due to an inherent inaccuracy of any model or statistical analysis. However, on a case-by-case basis, some of the model and statistical analysis results will be accepted without physical verification. You must provide sufficient information to the State and the LHD to evaluate how much physical verification is adequate. Examples of the information include:

- a number of unknown SLs
- a number of known SLs
- completeness of historical SL materials records
- random physical verification process such as the proposed number of SLs that will be physically verified
- confidence interval for the model

Note that a State's initial determination for a required physical verification rate can be revised based on the accuracy of physical confirmation results.

18. The Safe Drinking Water Act and New York State banned lead pipes and solders from supplying drinking water in June 1986. Can we categorize SLs installed after June 1986 non-LSLs?

If you have the following records, choose actual SL materials or "known other," if actual SL material is not known, from the dropdown menu in column E (Current Public Side SL Material) and in column J (Customer SL Material).

- written records showing the entire distribution system was constructed after June 1986 or after your municipality banned lead pipes for supplying drinking water ("lead ban"); and
- the entire length of customer-owned SL was built after June 1986 or the lead ban.

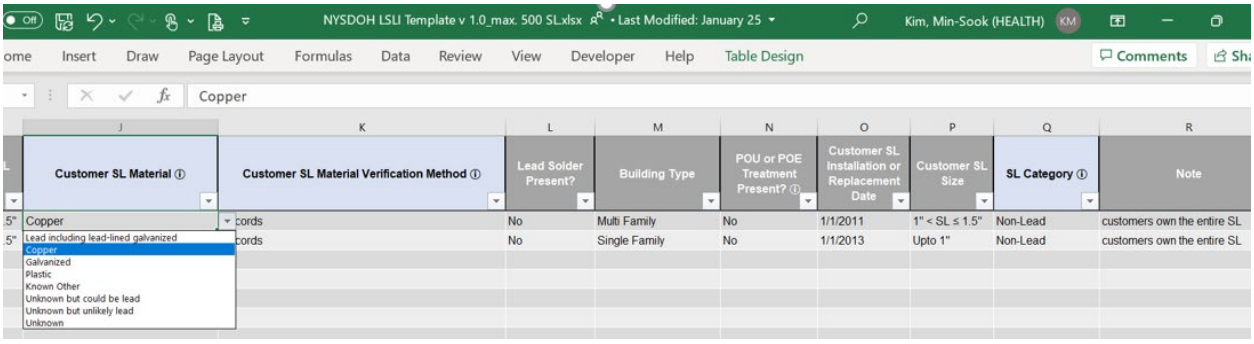


Figure 3-C Example of Filling Out the NYSDOH LSLI Template

The NYSDOH LSLI Template will automatically determine and enter qualifying SL as "non-Lead" in column Q ("SL Category"). No further verification is required. If you do not have such records, you need to verify service line material with one or more methods included in Item 14.

19. Can we use customers' identification of their SL materials?

You may use customer surveys or interviews to identify customers' SL materials in combination with verification by qualifying water system staff, e.g., an inspection of photos of customers' SL. If a photo does not clearly indicate an SL material, you need to use other reliable verification methods, e.g., visiting a customer's house. You must provide sufficient information to assist your customers in accurately identifying the SL materials. Online surveys can be a useful tool as customers can upload their photos when taking a survey. The NYS DOH has a video to assist homeowners to identify their SL materials. You can find the video online at NYS DOH and on YouTube:

https://www.health.ny.gov/environmental/water/drinking/lead/

https://www.youtube.com/watch?v=PcO5FCE9Vfw

20. We will identify unknown SLs with potholing (hydro-vacuuming). What is an acceptable potholing practice?

You need to conduct potholing according to the following:

- unknown utility side - at least 18" from main to curb stop
- unknown private side - at least 18" from the curb stop to the building and, if applicable, visual observation of the SL before the shutoff valve inside the building

The same three-point verification will apply to verification with the camera. Your municipality may require more stringent service line material verification strategies.

21. How should we submit the inventory to the LHD?

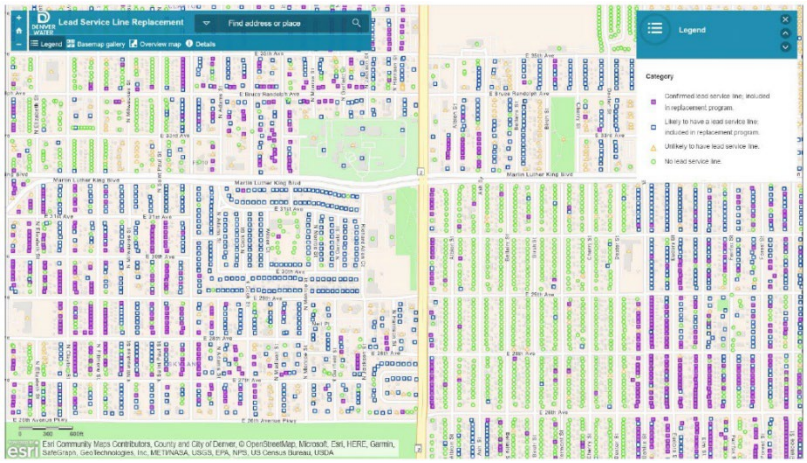
We strongly recommend every PWS prepares the inventory using the State's Template and submit it electronically via e-mail as an attachment. If your inventory is too large to send via e-mail, you may submit it by uploading it to PWS' cloud storage services such as OneDrive or Google Drive; and sharing a link with the State and your LHD. If you don't have an appropriate resource to send the large-sized inventory, NYS may be able to arrange it for you.

22. Should we have our inventory available to the public?

You must have your inventory publicly available and include instructions to access the inventory in your Annual Water Quality Report. If your system serves more than 50,000, you must have the inventory available online.

23. How do we make the inventory available to the public?

The NYS does not have specific formats for a publicly available inventory. The following are a few examples of available options:



Denver's SL Inventory as of 12/15/21.
Source: Guidance for Developing and Maintaining a Service Line Inventory (epa.gov)

- Interactive web-based map which may have real-time update capability (most powerful tool)
- Static map
- Searchable online database, e.g., the inventory prepared using the NYS DOH template at the water system's website
- Printed maps, tables, or spreadsheets (not recommended unless a system has not more than a few hundred service lines)

24. We have only non-LSL in the system. Do we still need to have the inventory available to the public?

If you have no LSL, GSLRR, or unknown SL on any portion of the SL, either owned by your water system or customers, you may have a written statement declaring that the distribution system has no LSL or GSLRR available instead of having the full inventory available to the public. The written statement must include a general description of all applicable sources used for the inventory. Be reminded that you still need to develop a full initial inventory. The written statement is not a substitute for the initial inventory.

25. We have LSLs, GSLRRs, or unknown SLs and have made our inventory available to the public. Are there any other public notification requirements specific to the inventory?

Initially, within 30 days of the completion of the initial LSL inventory, you must provide the following notification to every customer with an LSL, GSLRR, or unknown SL. You must repeat the notification annually until the entire service connection is no longer an LSL, GSLRR, or unknown SL. For new customers, you need to provide the notice at the time-of-service initiation. Refer to Table 1 below for public notification requirements.

Table 1 Public Notification Requirement to persons served by an LSL, GSLRR, or unknown SL

All persons served by LSL
• A statement that the person's SL is lead • An explanation of the health effects of lead that meet the current LCR requirements • Steps the affected persons can take to reduce exposure to lead in drinking water • Information about opportunities to replace LSLs • Any available financing programs

• A statement that the system must replace its portion of LSL if the property owners notify the system that they are replacing their portion of LSL
All persons served by GSLRR
• A statement that the person's SL is galvanized requiring replacement • An explanation of the health effects of lead that meet the current LCR requirements • Steps the affected persons can take to reduce exposure to lead in drinking water • Information about opportunities for SL replacement
All persons served by unknown SL
• A statement that the person's SL is unknown but may be lead • An explanation of the health effects of lead that meet the current LCR requirements • Steps the affected persons can take to reduce exposure to lead in drinking water • Information about opportunities to verify the material of the SL

26. How often do we need to update the inventory?

The service line inventory is a live document that requires continuous updates until there is no LSL, GSLRR, or unknown SL based on all available sources of new information, such as service line replacements, and maintenance and repair records. The LCRR requires the inventory be updated at the following frequencies and submit it to your LHD within 30 days from the end of each monitoring period.

a) Annual update if your system's monitoring frequency is semi-annual or annual.

b) Triennial update if your system's monitoring frequency is triennial.

c) No update if your system has no LSL, GSLRR, or unknown SL. If you find any LSL or GSLRR in the future, you need to notify the LHD within 30 days of identifying the SL and prepare an updated inventory on a schedule established by your LHD.

Note: *EPA may revise the inventory requirements under the future revision. Until any change in the LCRR, a PWS must comply with the LCRR inventory requirements, including the update requirement.*

27. Is funding available for preparing the inventory?

The Bipartisan Infrastructure Law, also known as the Infrastructure Investment and Jobs Act or Bipartisan Infrastructure Bill, provides funding for preparing an SL inventory for applicable water systems. Visit the following NYSDOH site for more information:

https://health.ny.gov/environmental/water/drinking/docs/lead_service_line_project_submission_guidance.pdf

REFERENCES

40 CFR Part 141 § 141.80 to § 141.93 available at https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-141#subpart-I

Guidance for Developing and Maintaining a Service Line Inventory, EPA August 2022 available at https://www.epa.gov/system/files/documents/2022-08/Inventory%20Guidance_August%202022_508%20compliant.pdf