



BELLINGHAM, MA

OCT 2024

Lead Service Line Inventory and Replacement Plan



Lead Service Line Inventory and Replacement Plan

Bellingham, MA

October 2024

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Table of Contents

Section 1	Introduction	1-1
Section 2	Background	2-1
	2.1 System Background	2-1
	2.2 Scope	2-1
	2.2.1 Task 1 – Data Collection and Development of a Lead Service Line Inventory	2-1
	2.2.2 Task 2 – Homeowner Assessment	2-2
	2.2.3 Task 3 – Lead Service Line Replacement Plan	2-2
Section 3	Lead and Copper Rule	3-1
	3.1 Existing Conditions under the Previous Lead and Copper Rule Revisions	3-1
	3.1.1 Sampling Requirements	3-2
	3.1.2 Past Results	3-2
	3.2 Lead and Copper Rule Revisions	3-2
	3.3 Massachusetts Requirements	3-3
Section 4	Inventory	4-1
	4.1 Methods	4-1
	4.1.1 Data Collection	4-1
	4.1.2 Data Organization	4-2
	4.1.3 Assumptions	4-2
	4.2 Results	4-3
Section 5	Homeowner Self-Assessment Program	5-1
	5.1 Response Results	5-1
Section 6	Replacement Plan	6-1
	6.1 Verification of Remaining Unknowns	6-1
	6.2 Prioritization	6-1
	6.3 Procedure	6-1
	6.4 Funding	6-2
Section 7	Lead Sampling Requirements	7-1
Section 8	Customer Notification	8-1
	8.1 Education and Outreach	8-1
	8.2 Procedures	8-1
Section 9	Sampling and Reporting Requirements	9-1
Section 10	Anticipated Schedule	10-1

List of Appendices

Appendix A Homeowner Self-Assessment Materials

List of Tables

Table 2-1	System Overview	2-1
Table 3-1	Historic Lead Sampling	3-2
Table 4-1	Inventory Results	4-3

List of Abbreviations

ALB	After lead ban
DBE	Disadvantaged Business Enterprise
LCR	Lead and Copper Rule
LCRR	Lead and Copper Rule Revisions
LSL	Lead Service Line
LSLI	Lead Service Line Inventory
LSLR	Lead Service Line Replacement
LSLRP	Lead Service Line Replacement Plan
MassDEP	Massachusetts Department of Environmental Protection
MBE	Minority Business Enterprise
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/L	Milligrams per Liter (ppm)
PLB	Pre-lead ban
ppb	Parts per Billion (ug/L)
PWS	Public Water System
ug/L	Micrograms per Liter (ppb)
ULSL	Unknown lead service line
USEPA	U.S. Environmental Protection Agency
WBE	Women Business Enterprise
WP	Wright-Pierce

Section 1 Introduction

The Lead and Copper Rule (“LCR”), first promulgated in 1991, was enacted by the USEPA to protect public health and reduce exposure to lead and copper in drinking water. The LCR requirements are applicable to community water systems, non-transient, non-community water systems and state and tribal agencies which are responsible for instituting drinking water regulations. In January 2021, the USEPA published the Lead and Copper Rule Revisions (“LCRR”), the first major overhaul of the LCR since its publication.

The LCRR aims to better protect children at elementary schools and childcare facilities, get the lead out of the nation’s drinking water, and empower communities through information. Through the LCRR, the USEPA has instructed the nation to develop a Lead Service Line Inventory (LSLI) and a Lead Service Line Replacement (LSLR) plan. The LSLI and LSLR plan are intended to guide water utilities in the complete removal of lead products from drinking water systems. Water systems have until October 16, 2024, to develop and submit LSL inventories and replacement plans after which time LSL replacement will be required for lead service lines (LSL) and galvanized service lines that are downstream of LSLs. EPA is in the process of providing additional guidance through a new rule, Lead and Copper Rule Improvements (LCRI), which is expected to be issued prior to the October 2024 deadline.

Lead and copper containing plumbing can corrode and leach particulates into drinking water, which poses a threat to human health. The most common sources of lead in drinking water are lead pipes and brass or bronze faucets and fixtures. Lead containing pipes are most commonly water service lines that convey water from a publicly owned water main to an individual property. The LCRR requires that utilities create an inventory of the service lines in their water systems and identify which service lines contain lead. Subsequently, the LCRR requires utilities to develop an LSLR plan which details how the utility intends to remove identified lead containing service lines from their systems. The LCRR requires systems to remove the entire LSL, including both the portion of the service line on public property and the portion of the service line on the property owner’s private property. In many cases LSLs may terminate at the water meter requiring entry into a private residence to remove the entirety of the line.

Section 2 Background

2.1 System Background

Bellingham (the Town) maintains a water distribution system dating back to the 1800s consisting of approximately 110 miles of distribution mains. The system serves approximately 17,025 people. Customer types include residential, residential institutions, commercial, industrial, and municipal. The system has about 6,172 known service line connections as summarized in [Table 2-1](#).

Table 2-1 System Overview

Oldest Water Main Age	Miles of Pipe in System	Population Served	Number of Towns Served	Number of Wholesale Customers	Customer Types	Total Service Line Connections
1800s	110	17,025	1	0	5	6,172

2.2 Scope

To continue providing safe and reliable service to all customers and remain in compliance with the most recent Lead and Copper Rule Revisions, the Town recognizes the importance of creating and maintaining a Lead Service Line Inventory and developing a Lead Service Line Replacement Plan. To assist in these efforts, the Town commissioned Wright-Pierce (WP) to develop this LSLI and LSLRP. WP has worked with the Town according to the scope below, and this document represents the results of our partnership.

2.2.1 Task 1 – Data Collection and Development of a Lead Service Line Inventory

The purpose of Task 1 is to identify and inventory the locations of known lead service lines and reduce the number of suspect lead service lines or service lines with an unknown status. Our efforts under Task 1 will include:

- Virtual project kickoff meeting.
- Review the database of electronic tie cards provided by the Town and create an Excel database for use in subsequent tasks using the MassDEP required database format.
- Review existing information of suspected lead, galvanized, and other services if available.
- Review customer billing database in Excel, comma delimited, or Access database format as provided by the Town.
- Review available water service replacement information from water main installations and service replacements as provided.
- Review Masisi and Town parcel database to identify properties built after key lead service line dates to reduce potential buildings for follow up inspections. Key dates include lead pipes were used in Massachusetts until 1940 and lead solder until 1986. Other local plumbing codes, if available, may identify additional key dates.
- If available, collect and review record files and work orders related to the repair or replacement of lead service lines.
- Develop Screening Criteria.
- Inventory Development & Ranking
- Collect Existing GIS housing data from Town (if available) consisting of building type and year of construction.

- Review water main installation, housing, and service line data to see if a correlation between housing type and year of construction relates to LSLs.
- Using the data above, identify potential homes that could have LSLs and homes that are unlikely to have LSLs.
- Update the MassDEP lead service line inventory database.

2.2.2 Task 2 – Homeowner Assessment

Task 2 is meant to further confirm service material identification of suspect and unknown lead services identified in Task 1.

Recently, EPA and MassDEP issued new guidance on collecting data to help reduce the costs of this effort including having homeowners self-assess the service on behalf of the Town. This involves mailing instructions and literature to homeowners where unknown service materials exist. The information includes directions for assessing the pipe material and logging their findings on an app using MassDEP's online self-assessment form.

Our efforts included development and preparation of the self-assessment documentation, and customer education materials using template forms available from MassDEP and EPA. We will also provide contact information where homeowners can request additional details, ask questions, and obtain guidance as needed to complete the assessment.

At the conclusion of the homeowner self-assessment program, information collected will be incorporated into the database provided by MassDEP and a meeting will be held with the Town to develop a strategy for obtaining the remaining unknown data needed to complete the inventory (if necessary).

Service materials that are unable to be identified following this effort will be labeled as unknown. Future efforts for determining these unknown service materials (if necessary) will be determined at a later time and will be included as an amendment or a separate agreement.

2.2.3 Task 3 – Lead Service Line Replacement Plan

Based on the data collected in the prior Tasks, develop a lead service line replacement priority list and Capital Improvement Plan (CIP) assuming lead or unknown service materials are identified in the system.

- Development of LSLR prioritization list.
- Incorporate projected water meter replacements.
- Submittal of a draft prioritization and CIP to the Town for review and comment. Incorporate comments and prepare a final plan.
- Development of general procedure for replacing LSLs, including:
 - Property owner/resident notification, outreach, and education.
 - Scoping of replacement of LSL for a property.
 - Outline service line replacement procedure.
 - Providing pitcher filters or cartridge filters to customers for 6 months post-replacement (including instructions for use). Pitcher and/or cartridge filters will be provided by the Town.
 - Action plan if post-replacement tap sample is above trigger level.
- Recommendations shall allow the Town to proceed on its own to continue to investigate unknown service materials.

Services materials that are unable to be identified following this effort will be labeled as unknown. Future efforts to determine these unknown service materials will be determined at a later time and be included as an amendment or a separate agreement.

Section 3 Lead and Copper Rule

3.1 Existing Conditions under the Previous Lead and Copper Rule Revisions

The EPA created the original Lead and Copper Rule in 1991 to limit the volume of the two contaminants found in drinking water. The rule sets the Maximum Contaminant Level Goal (MCLG) for lead to non-detection and an action level for lead of 0.015 mg/L and 1.3 mg/L for copper. For a system to be in compliance, the concentration of lead and copper must be less than or equal to the action level in at least 90% of the samples (90 percentile sample). The number of samples taken is dependent on the size of the water system and samples are taken every six months. The sampling sites are chosen to be locations with higher likelihood of lead or copper detections. The number of samples taken can be reduced by half and the frequency can be reduced to annual, triannual, or every nine years if the criteria below is met.

Criteria to reduce to annual sampling:

- The system services under 50,000 people, and
- The lead and copper sample results are less than the action level for two consecutive 6-month monitoring periods; or
- The PWS meets optimal water quality parameters and lead sample results are less than the action level for two consecutive 6-month monitoring periods.

Criteria to reduce to triannual sampling:

- The Town must serve less than 50,000 people and the lead and copper action levels have not been exceeded in three years, or
- The lead concentration has been below the action level and the pH, alkalinity, calcium, and orthophosphate/silica have met their optimal water quality standard for the last three years of sampling, or
- Systems with 90th percentile concentrations of lead below 0.005 mg/L and copper below 0.65 mg/L for two consecutive 6-month sampling periods.

Criteria for sampling every nine years:

- N/A for Bellingham since one of the requirements is that the system serves less than 3,300 people.

For 90 percentile exceedances of the action levels, the water supplier must then take samples within six months of the exceedance to determine the contribution of lead or copper from the source water. The water supplier has two years from the initial exceedance to implement source water treatment which may include corrosion control treatment. The state will set a maximum permissible level for the compound based on the concentration of the detected contaminant in the source water. Upon a lead exceedance a public education campaign must begin. This includes mailers sent to each bill paying customer, and a notice with each water bill. The system must also work with local agencies to target and reach out to at risk populations like the elderly and youth.

If lead exceedances continue after the implementation of source water and corrosion control treatment, lead service line replacements will be required to remove lead from the distribution system. The lead service line replacement will be required until the lead samples taken are below the action level for two consecutive 6-month samples. Seven percent of the lead service lines were expected to be replaced annually under the existing LCRR.

3.1.1 Sampling Requirements

The Town serves 17,025 people. A system of that size is required to have 60 sample taps included in the lead and copper testing. By 2012, the Town had begun a reduced sampling schedule to only test tri-annually and only required 30 sampling locations. Without any 90th percentile exceedances of either the lead or copper action level, the Town has remained on the triennial reduced monitoring schedule. The Town sampled most recently in 2021 and will require another sample this year.

3.1.2 Past Results

Results from four lead sampling events are listed in [Table 3-1](#) below. Results include the most recent sampling event that occurred in 2021.

Table 3-1 Historic Lead Sampling

Date	Number of Samples	Minimum (mg/L)	Maximum (mg/L)	90 th Percentile
2009	61	0	0.062	0.003
2015	35	0	0.012	0.0056
2018	34	0	0.060	0.006
2021	35	0	0.0053	0.0043

Each result shows a 90th percentile lead concentration below the action level of 0.015 mg/L. The historic lead sampling results show a consistent low concentration of lead within Bellingham's system. Even at its highest concentrations, the lead concentrations at Bellingham's taps were below the action level.

3.2 Lead and Copper Rule Revisions

The Lead and Copper Rule Revisions (LCRR) changed several key components of the Lead and Copper Rule (LCR). Significant updates include:

- Defining a lead trigger level that initiates additional planning, monitoring, and treatment requirements.
- The original 90th percentile (P90) level above the action level requires more action than previously.
- Reprioritizes tap monitoring samples to focus more on LSLs and changes the tiering criteria. Also changes procedure for additional actions if individual samples exceed the trigger level.
- Changes collection procedure to fifth liter sampling.
- Changes monitoring frequency and corrosion control requirements for lead.
- Added a requirement to review Corrosion Control Treatment and Water Quality Parameter data during sanitary surveys against most recent guidance issued by EPA.
- If an individual sample exceeds 0.015 mg/L, follow up samples and additional actions will be required.
- Added requirements for the lead service line inventory, replacement plan, and outreach.
- Allows systems falling into certain categories to select their approach to address lead with primacy agency approval.
- More information about these changes can be found at (https://www.epa.gov/sites/default/files/2020-12/documents/reference_guide_for_pwss_12.21.20.pdf).

3.3 Massachusetts Requirements

MassDEP follows the EPA LCRR requirements. Additionally, MassDEP has developed the MA Lead Service Line Identification (MA-LSLI) Web App to help survey water customers on the material of their service line. The app conducts a survey which asks homeowners to provide information about their address, the year their home was built, what material they believe they have as their water service line and asks them to attach a picture of the service line at the meter. More information about the homeowner assessment app can be found in [Section 5](#).

MassDEP has also developed a variety of guidance regarding the LCRR and the LSLI. These include infographics, brochures, and outreach, as well as a unique template for the inventory. Additionally, MassDEP has made funding available for the service line inventory and the preparation of the lead service line replacement program.

Section 4 Inventory

4.1 Methods

Wright-Pierce worked with the Town to create a thorough inventory of their service lines. The methods of data collection, including the types of data used, their sources, and how data was organized, are summarized below.

4.1.1 Data Collection

Several methods were used to collect data to create the most thorough, accurate inventory with the data available. These different methods are described below.

4.1.1.1 Town Ordinances or Statutes

The Town was asked if they had any historical ordinances, statutes, or codes in place from prior to the lead ban describing the service line material that was Town practice to install, if any. However, the Town did not have any historical ordinances or statutes in place to this effect.

4.1.1.2 Billing Data

WP obtained data for the inventory through customer billing data, provided by the Town. Billing data provided account numbers, addresses, parcel information, and service type, to populate the site ID, locational identifier, and building type, columns A, B, P, respectively. It was also used to cross-check addresses and account numbers from the tie cards and to obtain a complete list of customers who are connected to water mains (as opposed to on private wells). This information was input into the inventory as a record review.

4.1.1.3 Tie Cards

The Town was able to provide general records such as digitized tie-cards in PDF or TIFF files containing information about the service pipes. Tie cards were used to populate service line material, size, and installation date where records indicated.

4.1.1.4 Work Order Permits

A list of work permits completed by the Bellingham DPW between 2011 and 2024 were used to modify existing inventory data on updated materials and build years. Because Bellingham does not have a town ordinance that would indicate the material used in replacement, when work permits indicated a replacement took place for either a public or private side service without a material indicated, then the material was listed as unknown, but non-lead, as no lead would have been used between the aforementioned years of 2011-2024. Similarly, it was assumed that if the existing material was not noted as lead on the permit, then no lead existed even if the material was unknown, as any lead would have been noted during the work order process. This information was input into the inventory as a record review.

4.1.1.5 Geographic Information System (GIS) and Town Assessor

WP analyzed the Town's GIS data to obtain water main ages. In 1986 Congress amended the Safe Drinking Water Act, banning the use of pipes, solder or flux which were not "lead free" in PWS of plumbing for drinking water use. "Lead free" was defined at the time as solder or flux with no more than 0.2% lead and pipes with no more than 8%. Therefore, if GIS suggests that water mains have been repaired or replaced at any time from 1987 to now, it is assumed that the public side of the service line was likewise replaced at the same time as the connecting water main and is considered "lead free", as was Town practice to do. Similarly, the Town Assessor provides building

construction data, and any structures built after the lead ban are deemed as having non-lead services. This information was input to the inventory as a record review.

4.1.1.6 Lead and Copper Sampling

Lead and copper sampling data from the Town provided up-to-date information of laboratory hits of lead throughout the system. Information from the sampling data was used to populate column C in the inventory. Lead sampling results were used to identify neighborhoods with concentrations of lead hits where lead pipes may still remain. This information was used to inform the prioritization in [Section 6](#).

4.1.1.7 Homeowner Self-Assessment Data

When all the above methods of obtaining data were explored, there were still a number of unknown service line materials existing in the system. At this point, homeowner self-assessments were conducted to fill in these blanks on the private side. Please refer to [Section 5](#) for a detailed description of the homeowner self-assessment program.

4.1.2 Data Organization

To organize the data collected, WP populated the Service Line Inventory Excel Workbook as provided by MassDEP. The workbook was downloaded from the Mass.gov website and the start-up instructions were followed to characterize the system with its PSW ID # and the threshold number of multi-family residences in the PWS. The workbook is macro-enabled with dropdown options for many of its columns. WP was able to transfer information the Town has provided directly into the inventory, then revise the data to follow MassDEP's guidelines. Any work that subcontractors performed for the project was able to be merged directly into one inventory, since WP provided them with a copy of the MassDEP workbook and instructions on how to import data. When all data was inventoried, WP used the Inventory Validation feature to ensure all inputs were valid. Finally, the workbook was exported MassDEP through the workbook's export feature according to the directions. A summary of the results is described and shown below.

4.1.3 Assumptions

While filling out the inventory, WP made a few assumptions to create the most thorough and complete inventory possible. A summary of these assumptions is noted below.

- When the Town replaces a water main, they also replace all the services on that water main from main to curb. If a water main was replaced ALB (after lead ban), the public side services were therefore assumed to have been replaced ALB and therefore are non-lead.
- If a tie card had only one material and one date on it, the material and date were assumed to be for both the public and private side unless otherwise noted.
- The building-built year was obtained from the Town Assessor. If the building was built ALB, the services were assumed to have been installed ALB and therefore be non-lead unless other information had been presented in the tie card. Likewise, if the building was built PLB (pre-lead ban), the services were assumed to have been installed PLB and therefore could potentially contain lead unless otherwise noted.
- The building-built year was used for the house plumbing install date.
- Where no evidence of there being a previous lead line was found, the site was marked as having never had a lead line previously.
- Where the public side material was copper, plastic, or unknown non-lead, the site was marked as not having a gooseneck.

4.2 Results

Table 4-1 below summarizes the findings.

Table 4-1 Inventory Results

Total Inventoried Services = 6,172	Public Side	Private Side
Lead	0	35
Unknown, not lead	1,341	1,356
Unknown, potentially lead	3,431	2,642
Galvanized or cast iron	26	146
Copper	230	888
Plastic	1,142	1,103

Section 5 Homeowner Self-Assessment Program

The homeowner's self-assessment form was developed by MassDEP to assist in the collection of data where record drawings were unable to confirm information. The homeowner's assessment is an online form that can be accessed through the MassDEP website. Through the website, homeowners would respond to a number of questions and upload a picture of their service line at the meter. This information is automatically exported to a spreadsheet which both the Town and WP had access to. This was used to fill in remaining unknown service materials on the private side in the Lead Service Line Inventory. Utilizing the homeowner self-assessment approach allowed the Town to verify a number of unknowns on the private sides without needing staff to physically access customer's basements. In turn this allowed the Town to allocate more funding to other aspects of the project for a more complete inventory.

3,583 homeowners within the Bellingham Water District were notified and asked to complete the assessment to provide information on their water connection to fill unknowns about the water service for the Lead Service Line Inventory. Notifications were mailed out with the option to complete the assessment online or to fill out a paper version and mail it back. The mailers also included educational materials on lead. A total of 2 rounds of mailers were sent. The mailers are included in [Appendix A](#).

The homeowner's assessment consists of the following questions:

- Are you the owner or a tenant (renter)?
- First Name
- Last Name
- Email Address
- Phone Number
- Street Address
- City/Town
- Water Supplier
- Building Construction Year
- Service Line Material

Lastly, it asks homeowners to upload a picture of their service line. These photos were verified by WP to confirm service line material.

5.1 Response Results

Of the 3,582 homeowners who were sent the assessment, 964 filled out the form for a response rate of 27 percent by the end of the total. Of the total respondents, 299 (31%) filled out the online form, and 665 (69%) opted for the paper copy. The response rate leaves 2,618 services that will require manual checking where a representative of the Town will have to go to each of the remaining residences to check for the missing information.

Section 6 Replacement Plan

6.1 Verification of Remaining Unknowns

The Town will take steps to verify the remaining unknown service line materials. These steps may include but are not limited to:

- Test pits / hydroexcavation
- Water quality sampling
- Probe-based measurement of electrical resistance to verify material, i.e., Electro Scan
- Machine learning or predictive modeling
- Homeowner basement/meter pit inspections
- Identification and documentation during normal operations, such as:
 - Water meter reading, repair, or replacement
 - Service line repair or replacement
 - Water main repair or replacement
 - Backflow prevention inspections
 - Any other capital improvement project or street repair project with excavation

These methods will be utilized based on funding availability and utility capacity.

6.2 Prioritization

Replacement of lead service lines will be prioritized in areas of the community with higher concentrations of the most vulnerable populations. According to the EPA, states must prioritize schools and child care programs in low-income areas (i.e. schools with at least 50% of the children receiving free and reduced lunch and Head Start facilities), elementary and childcare programs that primarily care for children 6 years and under, older facilities that are more likely to contain lead plumbing, and schools and childcare facilities built before 1988 that are more likely to have lead pipes, fixtures, and solder. Also recommended as a priority are elderly care facilities, hospitals, and youth centers, as lead in drinking water affects the elderly and children under 6 years of age the most. Other vulnerable populations, such as people living at or below the poverty line and historically BIPOC communities should be prioritized as well.

The Town contains several of the aforementioned facilities that will be targeted for lead service line replacement first. Also prioritized will be neighborhoods that were shown to have at least one elevated sample of lead during the Town's lead and copper sampling.

6.3 Procedure

The Town's lead service line removal plan incorporates the MassDEP goal of protecting public health by planning to remove all lead service lines by 2037. This will begin with physical basement inspections to verify unknown services on the curb stop to meter portion and vacuum excavations to verify material on the main to curb stop portion. Basement inspections will be completed by PWS staff and vacuum excavations will be subcontracted out until all unknowns are verified. Unknown materials will be verified during routine service line replacements, repairs, and meter replacements and readings.

Lead service line replacements will commence during or after verification of remaining unknowns. If lead or galvanized requiring replacement service lines are found during vacuum excavation, the Town will replace the

service line at the same time. Service lines with any amount of lead line or galvanized requiring replacement lines will be completely replaced from main to meter with 1" plastic pipe. Lead goosenecks will be replaced if found.

6.4 Funding

The Bipartisan Infrastructure Law presents a historic opportunity to address lead challenges in communities across America. The Bipartisan Infrastructure Law provides \$15 billion through EPA's Drinking Water State Revolving Fund (DWSRF) in the form of grants and loans to water systems for lead service line replacement (LSLR). Forty-nine percent of this funding must be provided to disadvantaged communities (as defined by the state) as grants or principal forgiveness loans—which can provide a pathway for underserved communities that might not otherwise have access to funding for water infrastructure upgrades. Eligibility requirements and DWSRF application instructions can be found on the Mass.gov website.

Going through the Division of Municipal Services (DMS) and the Massachusetts Clean Water Trust (CWA) can take upwards of two years to acquire the funds needed to begin the work for LSLR projects. As such, it is recommended that towns stay proactive as opposed to reactive and apply for DWSRF assistance before LSLR becomes the town's top priority.

While the DWSRF is seen as the primary source of funding for LSLR related work, it is possible for municipalities to use money from other sources to pay for any LSLR projects. Private bank loans and dipping into the town's general fund are other options for payment, but these methods do not provide grant money or reduced interest rates that are given by DWSRF funds. It is highly recommended that all communities, particularly those that are identified as disadvantaged, take advantage of DWSRF funding where applicable.

The Town is a Tier 2 community and is considered a disadvantaged community, which gives it access to more funding opportunities.

Section 7 Lead Sampling Requirements

The Lead and Copper Rule Revisions (LCRR) were published by the EPA in December of 2021. The goal of the revisions is to begin a proactive approach to lead removal from drinking water. Lead in any concentration is known to have a negative effect on those exposed. The goal of the regulation is to remove all lead from drinking water before an exceedance of lead is discovered. Under the old LCR, only an exceedance of 15 ug/L or greater requires replacement of any lead pipe. Under the new LCRR, if the trigger level of 10 ug/L is exceeded, the system will fully replace a goal % of service lines annually. The goal is set by the state and the system. If the action level of 15 ug/L is exceeded, 3% of lines are required to be fully replaced annually and 20% of schools and childcare facilities must be tested annually. Additional Lead and Copper Rule Improvements (LCRI) are planned to be finalized by October 16, 2024.

The LCRR requires water distributors to create Lead Service Line Inventories (LSLI) that can then be used to then create a Lead Service Line Replacement Plan (LSLRP) by October 16, 2024, for removal and replacement of any lead services within the distribution system, prioritizing those that effect at risk communities such as the elderly and children.

The proposed LCRI is expected to require five liters of samples to be taken with lead testing being done of the first and fifth sample, with the higher of the two being used in the 90th percentile calculation. Additionally, samples are expected to be required in schools and childcare facilities. The sampling requirements are expected to be finalized before the October 16, 2024, deadline along with the LCLRP requirements so that distributors have time to prepare their replacement and sampling plans.

Section 8 Customer Notification

8.1 Education and Outreach

Within 30 days after submitting the service line inventories to MassDEP in 2024, the Town is required to inform all persons with a lead or unknown service line status that their service line may potentially contain lead. This notification must be repeated every year until there is no longer any lead, galvanized requiring replacement, or lead status unknown service line in the PWS distribution system. The notice must include:

- A statement that the service line material is unknown but may be lead
- An explanation of the health effects of lead (this will meet requirements of section 141.85 (a)(1)(ii))
- Steps a person at the service connection can take to reduce exposure to lead in drinking water
- Information about the opportunities to verify the material of their service line

The Town will certify that they have delivered the initial and annual consumer notifications and lead service line informational materials to consumers that have a lead status unknown service line to MassDEP and provide a copy of the notification and informational materials by July 1st for the previous calendar year.

If the Town causes disturbance to a lead, galvanized requiring replacement, or lead status unknown service line that results in the water to an individual service line being shut off or bypassed, such as operating a valve on a service line or meter setter, and without conducting a partial or full lead service line replacement, must provide the persons served by the water system at the service connection with information about the potential for elevated lead levels in drinking water as a result of the disturbance as well as instructions for a flushing procedure to remove particulate lead. The water system must comply with these requirements before the affected service line is returned to service.

If the disturbance of a lead, galvanized requiring replacement, or lead status unknown service line results from the replacement of an inline water meter, a water meter setter, or gooseneck, pigtail, or connector, the water system must provide the person served by the water system at the service connection with:

1. Information about the potential for elevated lead levels in drinking water as a result of the disturbance,
2. Public education materials that meet the content requirements for lead Public Education (141.85(a)).
3. A pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, instructions to use the filter, and six months of filter replacement cartridges.

The water system must comply with these requirements before the affected service line is returned to service.

8.2 Procedures

Following the award and allocation of funds from the DWSRF or other sources to update the system's service lines, the replacement of lead and unknown service lines does not happen overnight. While it is possible that water traveling through these outdated lines is not contaminated, customers with service lines marked for replacement should be alerted so they can take preventative measures to ensure the purity of their drinking water. The easiest steps that can be taken to reduce lead in drinking water include:

- If service line material is unknown, customers can contact the water utility for information regarding a recommended, certified lab where residents can bring their water for testing. This will not reduce lead levels in drinking water, but it will give an indication on if further lead prevention measures need to be taken.
- Flush the home water system by doing laundry, washing the dishes, taking a shower, or other water intensive activities prior to water consumption.
- Regularly clean aerators in homes to prevent the buildup of sediment, debris, and lead on its screen. If left dirty, this particle build up can be responsible for clogging faucets and deposit lead into drinking water.
- Install a properly graded filter to remove lead from drinking water sources. This includes ensuring that any cartridge that comes with the filter is installed properly and replaced when required.

These preventative steps are recommended for customers of the system that have been identified as living in a residence with lead or unknown service line status to reduce the negative health impacts associated with lead consumption. It is important to note that these steps are temporary solutions for the customer prior to the replacement of their service lines.

Section 9 Sampling and Reporting Requirements

Once the funds are acquired and lead service line replacement begins, the Town will continually update its lead line service inventory (LSLI). The Town will provide MassDEP with updated versions of the inventory within 30 days of the end of each tap sampling monitoring period until the Town has no remaining lead status unknown service lines. As stated in the introduction, each PWS must update their inventory by October 16, 2024. PWS's are free to submit their LSLI prior to this date. If any lead, galvanized requiring replacement (GRR), or unknown service lines are identified within the LSLI, the PWS is required by the EPA to send out a notification to the impacted customers informing them of their service line status. This notification must be sent to the customer within 30 days following the completion of the LSLI, per EPA guidelines.

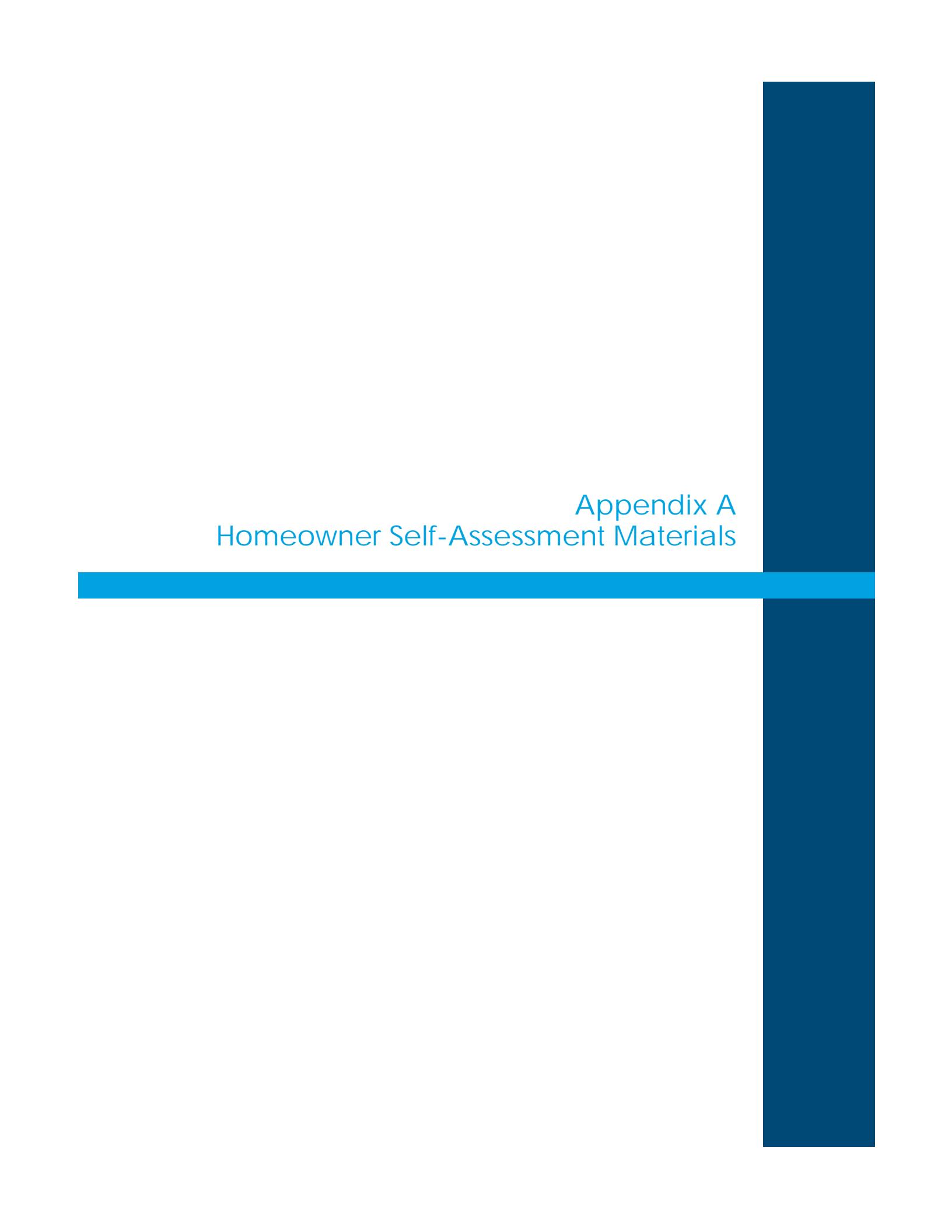
As of September 2023, MassDEP is developing a tool to help PWSs share their inventories with the public. Once this statewide program is complete, all PWSs must upload the latest version of their inventory to the specified location. The LSLI is considered public knowledge, and the system should have it accessible to the public on their PWS website or other means that can be accessed by the public. PWSs who serve over 50,000 customers are required to host the LSLI online. The Town does not fall under this requirement.

The Town will begin LCRR monitoring by January 2025 as required. If the system exceeds the 90th percentile for lead or the lead trigger level and is serving a population over 10,000 people, the Town will conduct a full lead service line replacement program or a goal-based full lead service line replacement program at a rate approved by MassDEP. Notice will be sent to customers within 30 days of the end of the sampling period when the action level exceedance occurred. The notification will be repeated annually until sampling results are at or below the lead action level.

Section 10 Anticipated Schedule

The schedule below follows standards set forth by both the EPA and MassDEP to ensure the health and safety of the public regarding service lines requiring replacement.

Milestone	Required Completion Date
Submit completed LSLI and LSLRP	10/16/2024
Notification of service lines requiring replacement	30 days after upload of LSLI
Compliance with LCRI	2027
Unknown service material identification	Ongoing through 2037
Finish LSL replacements	Ongoing through 2037



Appendix A

Homeowner Self-Assessment Materials



Town of Bellingham

Department of Public Works
26 Blackstone Street
Bellingham, MA 02019
LSL@BellinghamMA.org

Jesse M. Riedle
DPW Director
June 27, 2024

Re: Checking Your Home for Lead Service Water Line

Dear Customer:

Bellingham Department of Public Works (DPW) is required by Environmental Protection Agency (EPA) to develop a Water Service Line Inventory and is **requesting its customers to identify existing lead service lines**. This mailing includes steps to identify your service line and submit this information to DPW by using the Mass Lead Service Line Identification (MA-LSLI) Web App or by filling out and mailing back the form included in this letter. **This information is being sent to all customers with unknown materials for water services. Please respond by August 30th, 2024.**

ONLINE OPTION

Identifying a water service line connecting the water line in the street to your home.

If you do not know or are uncertain if you have a lead service line, take the following two steps:

Online Option – Step 1: IDENTIFICATION



Use EPA's Protect Your Tap: A Quick Check for Lead (<https://www.epa.gov/ground-water-and-drinking-water/protect-your-tap-quick-check-lead-0> or scan the QR code to the left) to help you determine if your service line is made of lead. Choose Start the Guide at the bottom of the page. Within the guide, choose Municipal Water. Then click on "I'll skip this step for now or my supplier wasn't sure. You may still have a lead service line or lead in other plumbing materials or faucets. To confirm, proceed to locate your water line." Then continue with the guide. It uses pictures and step-by-step directions to identify lead service lines and provides resources to learn more.

Online Option – Step 2: SNAP A PICTURE OF YOUR SERVICE LINE and UPLOAD



Use the MassDEP sponsored web application for consumers, the **Mass Lead Service Line Identification (MA-LSLI) Web App** (<https://app.smartsheet.com/b/form/f9ee39b7972f443ca63e8b936cd7f92b> or scan the QR code to the left). The app may be accessed on your mobile device or any computer online. **Please note you do not need to download anything to your mobile device or computer.** All you need to do is take a photo, upload it to the 'app' website and answer a few basic questions, such as name, address and phone number). EPA's Protect Your Tap: A Quick Check for Lead guide document from Step 1 will help you know where to take the photo. Voila! You are one step closer to safer drinking water!



Town of Bellingham

Department of Public Works
26 Blackstone Street
Bellingham, MA 02019
LSL@BellinghamMA.org

PAPER MAIL OPTION

If you prefer to complete this application on paper and return the form on Page 4 to the Bellingham Department of Public Works, please complete the following steps:

Paper Mail Option – Step 1: IDENTIFICATION

- ✓ Find your water meter which may be in your basement, crawl space, garage, or outside.



- ✓ Find your water line/service line. Service lines are the sections of pipe used to connect a home to the main water line. If your meter was inside, the service line should be near it on the same wall. If your meter was outside, the service line should enter the home closest to that spot.



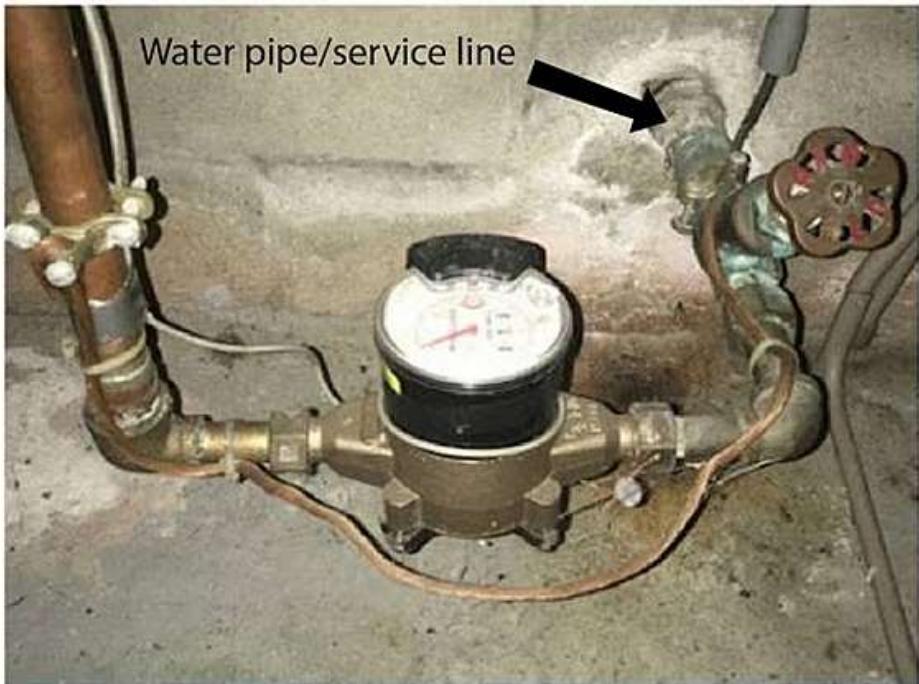
Town of Bellingham

Department of Public Works

26 Blackstone Street

Bellingham, MA 02019

LSL@BellinghamMA.org



- ✓ Determine pipe material. If your pipe is metal, use a key or a coin to gently scratch the pipe. If the pipe is orange and a magnet won't stick to it, it is likely copper. If the pipe is hard to scratch and a magnet sticks to it, it is likely galvanized steel. If the pipe was easy to scratch and magnet won't stick to it, it may be lead. If your pipe is plastic, there may still be lead in other parts of your plumbing such as faucets.
- ✓ Complete the form on the following page.



Plastic



Scratched Lead



Copper



Galvanized Steel & valve



Town of Bellingham

Department of Public Works
26 Blackstone Street
Bellingham, MA 02019
LSL@BellinghamMA.org

Paper Mail Option – Step 2: FILL OUT FORM and MAIL or DROP OFF

If you choose not to use the Online Submission, fill out this form and mail OR drop off to EITHER of the below locations:

Bellingham DPW
ATTN: LSL
26 Blackstone Street
Bellingham MA 02019-1602

or

Bellingham Town Hall
ATTN: LSL
10 Mechanic Street
Bellingham MA 02019-1602

If you completed the Online Submission, you do not need to fill out and return the form below.

Are you the owner or a tenant (renter)?

First Name

Last Name

Email Address

Phone Number

Street Address

House Construction Year

Service Line Material (Plastic, Lead, Copper,
Galvanized Steel, Don't Know) *

** If you are unsure, it's okay to select the material you believe it to be. If necessary, the Bellingham DPW will follow up with you.*



Town of Bellingham
Department of Public Works
26 Blackstone Street
Bellingham, MA 02019
LSL@BellinghamMA.org

QUESTIONS AND ADDITIONAL INFORMATION

I'M USING THE ONLINE SUBMISSION, WHO IS MY WATER SUPPLIER?

Your water supplier is Bellingham DPW (PWS ID: 2025000).

WHAT WILL OUR SYSTEM DO WHEN WE GET YOUR SUBMISSION?

Once we receive your submission, we will record your data into our inventory database. The DPW will reach out if you are still unsure of your service line material. Please make sure your contact information is included with your submission.

WHAT WILL HAPPEN IF YOUR SERVICE LINE IS LEAD?

The DPW has limited funding available to replace lead service lines at no charge to the customer. If a lead line is identified, the DPW will reach out with information on replacing the service line if funding is still available.

LEAD SERVICE LINE INFORMATION

For more information regarding lead in water services, please see included lead notice and visit the Town website at <https://www.bellinghamma.org/department-public-works>.

CONTACT INFORMATION

We look forward to your interest and participation in this program. Thank you for your important input for safe drinking water! If you have any questions, please contact the Bellingham DPW at LSL@bellinghamma.org

Sincerely,

Bellingham Department of Public Works



Town of Bellingham

Department of Public Works

26 Blackstone Street

Bellingham, MA 02019

LSL@BellinghamMA.org

What you should know about Lead.

Our system's water mains that carry the water to you are made mostly of iron and plastic, and therefore do not add lead to water. However, lead can get into tap water through the service line that connects your home to the water main if it is made of lead. Lead may also come from lead solder used to connect pipes in home plumbing, and from some faucets and fixtures.

When lead is present in water, it is typically due to the water flowing through service lines or internal pipes or plumbing in buildings with lead pipes or plumbing with lead solder or brass.

Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems. Because lead may pose serious health risks, both the EPA and the Centers for Disease Control and Prevention (CDC) agree that "there is no known safe level of lead in a child's blood".

If you think you have a lead service line and want to reduce your exposure to lead, you should do the following:

- **Use only cold, fresh water for drinking, cooking, and preparing baby formula.** Run the water for at least 1 minute or until after it turns cold.
- **Do not boil the water to remove lead.** Boiling water will not reduce lead. Excessive boiling of water makes the lead and copper more concentrated – the lead and copper remains when the water evaporates.
- **Test your home for lead:** The only way to determine the level of lead in drinking water at your home is to have the water tested by a state certified laboratory. The cost to test is usually between \$10 and \$50. Consider having your paint tested also. A list of labs is available online at <http://eeaonline.eea.state.ma.us/DEP/Labcert/Labcert.aspx> or you can call MassDEP at 978-682-5237 or e-mail Labcert@mass.gov.
- **Consider alternative sources or treatment of water.** If your water contains lead you may want to consider purchasing bottled water or a water filter. If considering a filter read the package to be sure the filter is approved to reduce lead or contact NSF International at 800- NSF-8010 or www.nsf.org for information on performance standards for water filters. Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality. Also, if you are considering using bottled water, note that it may cost up to 1,000 times more than tap water. Simply flushing your tap, as described above, is usually a cheaper and equally effective alternative.
- **Check whether your home has a lead service line. IF YOU DO, HAVE IT REMOVED.**
- **Contact your health care provider or your local health department to find out if your child needs to be tested for lead.** A blood lead level test is the only way to know if your child is being exposed to lead. For more information on Massachusetts' childhood lead testing program, contact the Department of Public Health (DPH) at <https://www.mass.gov/orgs/childhood-lead-poisoning-prevention-program> or at 1-800-532-9571.
- **If you have health concerns,** please contact your health care provider with any questions.

For more information on Lead see <https://www.mass.gov/lead-in-drinking-water>



**Town of Bellingham
Department of Public Works
215 Depot Street
Bellingham, MA 02019-1602
LSL@BellinghamMA.org**

Dear Customer,

The Bellingham DPW is required by the Environmental Protection Agency (EPA) to develop a Water Service Line Inventory and is **requesting its customers to help by identifying existing lead service lines**. This mailing includes steps to identify your service line and submit this information to the DPW by using the Mass Lead Service Line Identification (MA-LSLI) Web App. **This information is being sent to all customers with unknown materials for water services.**

Identifying your water service material is easy. Scan the QR code below or visit the DPW's website at <https://www.bellinghamma.org/688/Lead-Service-Line-Inventory>



Scan for instructions on how to easily identify and report your water service line material.



for instructions on how to identify your service and submit this information to the DPW, to print a paper form, or for further information on this program.

If no response is received, the DPW will follow up with you schedule a basement inspection to determine your water service line material.

Thank you for your important input for safe drinking water! If you have any questions, please contact the Bellingham DPW at LSL@BellinghamMA.org.



WRIGHT-PIERCE 
Engineering a Better Environment

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Burlington, MA 01803
978.416.8000 | wright-pierce.com