



Guidelines for Water Line Repairs and Replacements in Areas with Lead Service Lines

PWS-06-001

Division of Drinking and Ground Waters

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1. Introduction

The purpose of this document is to provide guidance to public water systems (PWSs) with public (system-owned) or private (customer owned) lead service lines (LSLs) on how to achieve simultaneous compliance with the requirements of Ohio Administrative Code (OAC) Rule 3745-81-84 – Lead Service Line Requirements and OAC Rule 3745-83-02 – Disruption of Service. Each of these rules have specific lead notification requirements, as well as other required actions involving water line work of various types. This guidance document will outline the steps a PWS must take depending on the type of work being done and where it occurs.

This document first establishes the requirements for disruptions of service and water main repairs. Next, it outlines the requirements for water main replacements in areas of LSLs; both planned, and emergency replacements are discussed. Should an emergency replacement be required, systems may have to meet the requirements of both OAC Rule 3745-81-84 and 3745-83-02. The document then explains what actions are required during an LSL replacement. When systems perform LSL replacements in conjunction with disruptions of service or planned water main replacement projects, the requirements of all corresponding rules must be met. This document provides guidance for water systems to achieve simultaneous compliance with these regulations.

This guidance was written in consultation with the Ohio Section of American Water Works Association (AWWA) who provided valuable insight for its development.

1.1 Background

There is some evidence that when LSLs are disturbed, particulate lead may be released into the drinking water, potentially reaching the consumer’s tap. OAC Rules 3745-81-84 and 3745-83-02 introduced new requirements that PWSs notify consumers in areas of LSLs when water line work may disturb these lead lines. There are also requirements for the PWS to notify affected consumers with a boil water notice or drinking water advisory if contamination or a potential for contamination exists when a PWS is conducting a water main repair or a depressurization occurs. This guidance document will assist PWSs in integrating the substantive requirements of these rules into existing standard operating procedures for water line repairs and replacements. The Division of Drinking and Ground Waters issued this draft on August 21, 2018.

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1.3 Definitions

Below are definitions of terms used throughout this guidance document.

Table 1: Definitions

OAC Rule 3745-83-02

Affected Area (Main Repair)	<i>The portion of the distribution system where the pressure of the system has dropped below 20 pounds per square inch gauge (psig) at ground level.</i>
Main Repair	<i>Any incident that requires the installation of pipe which does not exceed one section of pipe or 20 feet when using fusible pipe material.</i>
Main Replacement	<i>Any incident that requires installation of pipe which exceeds one section of pipe or 20 feet when using fusible pipe material. An emergency main replacement is a disruption of service that requires the replacement of more than one section of pipe.</i>

OAC Rule 3745-81-84

Full LSL Replacement	<i>Replacing both the PWS-owned portion of the LSL and the consumer-owned portion of the service line or replacing the entirety of the portion of the service line made of lead where no lead pipe remains in any portion of the service line.</i>
Impacted Area (Main Replacement)	<i>Any service lines that are moved, replaced, or reconnected to the main during the main replacement.</i>
Impacted Area (LSL replacement)	<i>Buildings, residences, or lines served by the service line being replaced (either partially or fully)</i>
Partial LSL Replacement	<i>Replacing only the portion of an LSL necessary to make the repair and/or reconnection to a service line or the replacement of just the portion of an LSL owned by the water system, where lead pipe remains in any portion of the service line between the water main and the structure.</i>
Main Replacement	<i>Any incident that requires installation of pipe which exceeds one section of pipe or 20 feet when using fusible pipe material. An emergency main replacement is a disruption of service that requires the replacement of more than one section of pipe.</i>

2. Disruption of Service Summary Tools

Ohio EPA has developed several tools and templates for water systems to comply with these regulations. **Figure 1: Disruption of Service Summary Flowchart** provides an overview of the utility-to-consumer notification requirements for different types of events. This flowchart is interactive; depending on the scenario, users can click on the text to be directed to the appropriate notification template. All notification templates, as well as Ohio EPA-approved language for the notifications, can be found in the appendices at the end of this document. **Table 2: Disruption of Service Summary Table** outlines the OAC requirements for different types of line work, including disruption of service events, main replacements, and LSL replacements. The headings in Table 2 link to the corresponding sections of this guidance.



*If an LSL is replaced in conjunction with a disruption of service event, LSL replacement requirements must be met for those served by the line.
 **Less than 45 days' notice is allowed in instances of emergency repairs, emergency replacements, or other mitigating circumstances.
 *** If pressure is not monitored during what would otherwise be considered a Type 1 or Type 2 repair, a Type 3 response must be conducted as a precaution, including Type 3 notification requirements.

Figure 1: Disruption of Service Summary Flowchart

Table 2: Disruption of Service Summary Table

	<i>Type 1 Event</i>	<i>Type 2 Event</i>	<i>Type 3 Event</i>	<i>Type 4 Event</i>	<i>Main Replacement</i>	<i>LSL Replacement</i>
Definition & Elevation	Controlled pipe repair where positive pressure is continuously maintained during the repair and there are no signs of contamination. <i>Elevate to Type 2 if Type 1 event response cannot be completed.</i>	Controlled repair of a distribution system component where positive pressure is maintained until a controlled shutdown of affected area can be completed and there are no signs of contamination. <i>Elevate to Type 3 if Type 2 event response cannot be completed.</i>	Disruption of service or water line repair where there is a loss of pressure at repair site and localized depressurization adjacent to repair, an uncontrolled shutdown, and/or there are signs of possible contamination intrusion. <i>Elevate to Type 4 if event cannot be localized to area adjacent to repair.</i>	Catastrophic failure with widespread depressurization in the system or actual contamination intrusion.	Newly constructed potable water main or disruption of service requiring the use of more than one length of pipe (or 20 feet when dealing with fusible material).	A partial LSL replacement occurs when only the portion of an LSL necessary to make the repair and/or the portion of an LSL owned by the water system is replaced, where lead pipe remains in any portion of the service line between the water main and the structure. After a full LSL replacement, no lead pipe remains in any portion of the service line.
	Note: Elevate to Type 3 if pressure is not monitored upstream and downstream or some other Director approved method is not used.			Note: If a Type 3 or 4 event requires greater than one length of pipe, replacement requirements must also be met.		Note: If LSLs are replaced during a main replacement or disruption of service, LSL replacement requirements must also be met.
Repair/Replacement Requirements	<ul style="list-style-type: none"> Monitor and record pressure upstream/ downstream of repair or follow director approved procedure. Excavate below repair and maintain pit water level below repair Repair under positive pressure and disinfect using AWWA Standard C651-14 Section 4.11.3.1 Test chlorine residual or verify disinfectant presence 	<ul style="list-style-type: none"> Monitor and record pressure upstream/downstream of repair or follow director approved procedure. Excavate below repair and maintain pit water level below repair Conduct controlled shut-down of affected area and disinfect using AWWA Standard C651-14 Section 4.11.3.2 Test chlorine residual or verify disinfectant presence 	<ul style="list-style-type: none"> Disinfect, repair, and flush using AWWA Standard C651-14 Section 4.11.3.3 Test for chlorine residual and comply with minimum chlorine residual 	<ul style="list-style-type: none"> Disinfect, repair, and flush using AWWA Standard C651-14 Section 4.11.3.3 Test for chlorine residual and comply with minimum chlorine residual 	<ul style="list-style-type: none"> As applicable, comply with AWWA Standard C651-14 Test for chlorine residual and comply with minimum chlorine residual 	<ul style="list-style-type: none"> As applicable, comply with AWWA Standard C651-14 Ohio EPA recommends completing all LSL replacements in accordance with AWWA Standard C810-17 Replacement and Flushing of Lead Service Lines
Documentation & Ohio EPA Communication	<ul style="list-style-type: none"> Document Type 1 response after repair in operation and maintenance records 	<ul style="list-style-type: none"> Document Type 2 response after repair in operation and maintenance records 	<ul style="list-style-type: none"> Document possible contamination Notify Ohio EPA as soon as possible, but within 24 hours if disruption affects 10% of users or more than 100 service connections Document Type 3 response throughout and submit to Ohio EPA following event 	<ul style="list-style-type: none"> Document actual contamination In consultation with Ohio EPA as soon as possible, but within 24 hours if disruption affects 10% of users or more than 100 service connections Document Type 4 response throughout and submit to Ohio EPA following event 	<ul style="list-style-type: none"> For water main replacements in areas that contain or are likely to contain LSLs, comply with record keeping requirements of OAC Rule 3745-81-90(J). 	<ul style="list-style-type: none"> Comply with record keeping and reporting requirements of OAC Rule 374-81-90
Consumer Notification	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Notify critical users as soon as possible, but within 24 hours Notify users in areas of LSLs unless utility has an Optional Lead Awareness Campaign 	<ul style="list-style-type: none"> Issue precautionary boil advisory/water use advisory to affected users as soon as possible, but within 24 hours in accordance with contingency plan process Notify users in areas of LSLs 	<ul style="list-style-type: none"> Issue boil advisory/water use advisory to affected users as soon as possible, but within 24 hours in accordance with contingency plan process Notify users in areas of LSLs 	<ul style="list-style-type: none"> Notify consumers in impacted areas 45 days in advance (or less during an emergency) 	<ul style="list-style-type: none"> All LSL replacements: notify owner of the intention to replace the PWS-owned portion of the SL, and offer to replace customer-owned portion Partial LSL Replacement: notify consumers served by the line 45 days in advance (or less during an emergency)
Sample	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Special purpose Total Coliform samples 	<ul style="list-style-type: none"> Special purpose Total Coliform samples 	<ul style="list-style-type: none"> Sample using AWWA Standard C651-14 Section 5.1 	<ul style="list-style-type: none"> LSL sample following a partial LSL replacement
Filters	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> In areas of LSLs, required if more than one pipe length is used and replacement requirements must also be met Required if an LSL is partially replaced and LSL requirements must be met 	<ul style="list-style-type: none"> In areas of LSLs, required if more than one pipe length is used and replacement requirements must also be met Required if an LSL is partially replaced and LSL requirements must be met 	<ul style="list-style-type: none"> Required for consumers in the impacted area in areas of LSLs (SLs served by replaced main), unless no lead remains on public or private side 	<ul style="list-style-type: none"> Full LSL replacement: None Partial LSL replacement: Required to those served by SL

3. Overview of Applicable Regulations

PWSs with LSLs (public or private) in their distribution are required to comply with multiple rules that are interwoven with one another. This guide will assist PWSs in achieving simultaneous compliance with the lead notification requirements required during water line repairs and replacements. This section outlines the regulations discussed in this guide.

3.1 OAC Rule 3745-83-01: Operational Requirements

This rule establishes the disinfection requirements for water mains prior to being placed into service or after a disruption of service. PWSs are required to meet the requirements of *American Water Works (AWWA) Standard C651-14 Disinfecting Water Mains* and monitor and comply with their minimum chlorine residual.

3.2 OAC Rule 3745-83-02: Disruption of Service

If a PWS is unable to maintain a minimum pressure of 20 pounds per square inch gauge (psig) at all points in the distribution system, the incident is considered a disruption of service. This rule establishes additional requirements for PWSs that experience a disruption of service, beyond those established in OAC Rule 3745-83-01. Depending on the type of disruption event, a PWS is required to follow a specific procedure to disinfect the line, make the repair, notify the public, and document the response to Ohio EPA.

Additionally, OAC Rule 3745-83-02 specifies the difference between a water main repair and a water main replacement and outlines specific consumer notification requirements for PWSs completing a water main repair in an area that contains or is likely to contain LSLs.

3.3 OAC Rule 3745-81-84: Lead Service Line Requirements

This rule outlines requirements for PWSs conducting a water main replacement in an area that contains or is likely to contain LSLs. Systems are required to provide prior notice of the work to be performed and offer a drinking water treatment unit filter to consumers in the affected area.

OAC Rule 3745-81-84 also establishes individual LSL replacement requirements. When a system is planning an LSL replacement, with or without a water main replacement, the system must first provide the owner a prior notice of the work to be performed and offer to replace the private side of the service line (may be at property owner's expense). If the owner declines the offer and the PWS conducts a partial LSL replacement, the PWS must collect a service line sample following the replacement and offer a drinking water filter certified to remove lead.

3.4 OAC Rule 3745-81-85: Public Education, Supplemental Monitoring Requirements, and Consumer Notification of Results

Whenever a lead and copper sample is taken, PWSs are required to issue a consumer notice (CN) of results to the owner and those served by the line within two business days of receiving the laboratory results. This rule also outlines the mandatory lead public education requirements following an action level exceedance; some language from these requirements may be useful in establishing an optional lead awareness campaign.

3.5 OAC Rule 3745-81-86: Monitoring Requirements for Lead and Copper in Tap Water

This rule established LSL mapping requirements for all community water systems. In addition, water systems must sample for lead and copper in accordance with this rule, including service line samples following a partial LSL replacement.

3.6 OAC Rule 3745-81-90: Reporting and Record Keeping Requirements

This rule outlines the reporting and record keeping requirements for the rules controlling lead and copper. PWSs shall retain all information required by the rules for no fewer than 12 years.

4. Disruption of Service Events in Areas of Lead Service Lines

In the event a PWS is unable to maintain a minimum pressure of 20 psig at ground level at all points in the distribution system, the incident shall be deemed a disruption of service. Disruptions of service are split into four types, depending on the potential for risk to human health. A Type 1 disruption of service event represents the least amount of risk and a Type 4 disruption of service event represents a catastrophic failure with widespread depressurization in the distribution system or contamination intrusion.

When responding to a disruption of service event, PWSs must comply with OAC Rule 3745-83-02, which states: “in affected areas that are known or likely to contain LSLs, that experience a disruption of service event, PWSs shall provide public notification as follows: in areas where repairs are conducted in Type 2, 3, and 4 events, the PWS shall provide a notice acceptable to the director; in areas where replacement is conducted, the PWS shall comply with provisions contained in [OAC Rule 3745-81-84].” These provisions include a lead notice and the offer of drinking water treatment unit filters to consumers in the impacted area.

To be considered a water main repair, a water system must use acceptable repair methods and may not use more than one length of pipe when responding to the event; refer to [Section 1.3: Definitions](#) for more information on the differences between a water main replacement and water main repair. Water main replacement requirements are discussed further in [Section 5: Water Main Replacements in Areas of Lead Service Lines](#); however, if a water main replacement is needed in response to a disruption of service event, systems will be required to meet the requirements of both Section 4 and Section 5 to be in compliance with the rule.

OAC Rule 3745-83-02 requires notifications and/or advisories depending on the disruption of service event type, response, and location. **Table 3: Disruption of Service Notification Requirements** gives a general overview of these requirements and the rest of this section details the specific requirements for lead notification. [Appendix C: Disruption of Service Lead Notification Templates](#) includes sample templates for this section.

Table 3: Disruption of Service Notification Requirements

Event Type	Response	Location	Consumer Notification Requirements
Type 1	Repair	Any	None.
Type 2	Repair	No LSLs	Notify consumers who have a critical need of water.
		Areas that contain or are likely to contain LSLs	Notify all users in affected area of work to be performed including approved lead language OR notify Critical Users and meet the minimum requirements for an Optional Lead Awareness Campaign.
Type 3 or Type 4	Repair or Replacement	No LSLs	Issue a boil water or water use advisory (precautionary or actual) to all potentially affected consumers.
	Repair	Areas that contain or are likely to contain LSLs	Issue a boil water or water use advisory (precautionary or actual), including approved lead language, to all potentially affected consumers.
	Replacement	Areas that contain or are likely to contain LSLs	Issue a boil water or water use advisory (precautionary or actual) to all potentially affected consumers and meet the requirements of OAC Rule 3745-81-84*.

*Note: the lead notification requirements of 81-84 may be integrated into the boil water/water use advisory; see Section 5 for additional information on the requirements for water main replacements.

4.1 Affected Area

The affected area for a disruption of service event is the portion of the distribution system where the pressure drops below 20 psig at ground level. The affected area can be determined using pressure gauges, or another method acceptable to the director. In affected areas that are known or likely to contain LSLs, utilities completing Type 2, 3, or 4 repairs are required to issue a public notification acceptable to the director.

Utilities can determine if the affected area is known or likely to contain LSLs by using their lead maps. Guidance on developing these maps using historical records, maintenance records, customer self-reporting and other information is detailed in Ohio EPA's *PWS-04: Guidance for Lead Mapping in Distribution Systems*. Areas listed as "unknown" on the map are considered to be areas of LSLs for lead notification purposes, unless the system can verify otherwise. Maps should be easily accessible and updated regularly so that systems can easily respond to disruption of service events.

4.2 Notice Requirements

Notices may be required during a disruption of service event, regardless if the affected area contains or is likely to contain LSLs. If the affected area contains or is likely to contain LSLs, a lead notice may also be required. **Table 3** offers a summary of the notification requirements for disruptions of service.

Type 1 Disruption of Service Event

A Type 1 event is "a controlled pipe repair where positive pressure is continuously maintained during the repair, and there are no signs of contamination intrusion. No notice to consumers is required during Type 1 events, even if the affected area contains or is likely to contain LSLs.

Type 2 Disruption of Service Event

A Type 2 event is "a controlled repair of a distribution system component where positive pressure is maintained until a controlled shutdown of the affected area can be completed, and there are no signs of contamination intrusion." In areas documented to not have LSLs, PWSs are required to notify critical users in the affected area in accordance with the PWS's contingency plan. However, in affected areas that contain or are likely to contain LSLs, utilities are required to provide a lead notification acceptable to the director. Notices should be delivered to users in the affected area in advance of the repair or as soon as possible (ASAP) but within 24 hours of the repair.

For Type 2 disruption of service events only, Ohio EPA will consider an Optional Lead Awareness Campaign to serve as the notification acceptable to the director. In order for a utility to use the campaign in lieu of direct-consumer notification during a Type 2 event, the campaign must meet the minimum requirements outlined in *Section 4.4: Optional Lead Awareness Campaign Requirements*. More information on this content of this program can be found in *Appendix B: Optional Lead Awareness Campaign*.

Type 3 or Type 4 Disruption of Service Event

A Type 3 event is "a disruption of service or water line repair where there is one or more of the following: a loss of positive pressure at the repair site and localized depressurization adjacent to the repair prior to a controlled shutdown; an uncontrolled shutdown; or there are signs of possible contamination intrusion." A Type 4 disruption of service event means "a catastrophic failure with widespread depressurization in the system or actual contamination intrusion." During Type 3 and 4 disruption of service events, consumers must be directly notified with either a boil water advisory or a water use advisory. In affected areas that contain or are likely to contain LSLs, utilities are required to include within the advisory a lead notification acceptable to the director. Notices must be delivered as soon as possible but within 24 hours of the disruption of service.

4.3 Lead Notice Language for Disruption of Service Events

Lead notices must include language acceptable to the director. At a minimum, the notice must explain that the work being performed may cause a temporary increase in the lead levels in drinking water and provide guidance on measures the consumers can take to reduce lead levels at the tap. Refer to [Appendix A: Approved Lead Language](#) for language that is acceptable to the director for use during a disruption of service event.

Should an affected area that contains or is likely to contain LSLs experience a disruption of service that requires a water main replacement, systems must also comply with the provisions contained in OAC Rule 3745-81-84. These provisions require a lead notice to consumers in the impacted area that offers drinking water treatment unit filters to consumers in the impacted area in addition to explaining that the work being performed may cause a temporary increase in the lead levels in drinking water and providing guidance on measures the consumers can take to reduce lead levels at the tap. More information on main replacement requirements can be found in [Section 5](#).

Example templates with acceptable lead language are included in [Appendix C](#). The highlighted portion in the templates include the approved lead language and should be used in its entirety. Systems should, however, remove the additional filter language when a water main **repair** is conducted. Beyond this change, if a system wishes to modify the highlighted section, the PWS must gain approval from its district office prior to sending the notice to consumers. PWSs are strongly encouraged to modify the non-highlighted portion of the notices to include information specific to the event.

4.4 Optional Lead Awareness Campaign Requirements

If a PWS wants to use this voluntary program in lieu of completing direct consumer notification during Type 2 disruption of service events, the system will be required to implement an optional lead awareness campaign. More information on creating and implementing an optional lead awareness campaign can be found in Appendix B. At a minimum, systems must:

- Implement at least 3 types of consumer awareness activities.
 - 1 high impact print material that includes Type 2 notification language ([Appendix A.2](#)).
 - 1 other type of activity with high consumer education impact.
 - 1 other activity from **Table B.1: Consumer Awareness Activities**.
- Submit a Lead Awareness Campaign Certification Form ([Appendix B.4](#)) to Ohio EPA yearly with the PWS's Consumer Confidence Report (CCR).
- Include an explanation of the campaign annually in the CCR.
 - Include information as to where consumers can find the materials.
 - Include a statement that the campaign is being used to meet a portion of the notification requirements in OAC Rule 3745-83-02.

4.5 Documentation

For Type 1 and Type 2 of disruption of service events, OAC Rue 3745-83-02 requires that PWSs document the activities and events during the repair on a form approved by the director to demonstrate the PWS followed the applicable response established in rule.

For Type 3 and Type 4 of disruption of service events affecting greater than 10% of a system's customers or 100 service connections, whichever is least, OAC Rue 3745-83-02 requires PWSs to notify the appropriate Ohio EPA District Office representative or Ohio EPA's environmental response hotline and speak to a person. Systems must document any possible or actual contamination and during the event, document the activities and events on a form approved by the director to demonstrate the PWS followed the applicable response

established in rule. The form shall be submitted to the District Office within 48 hours or the next business day, whichever is later, of the disruption being corrected.

4.6 Event Escalation and Other Actions

There are instances in which disruption of service events may be escalated, requiring a different response type. When an event is escalated, systems are required to follow the requirements of the new event type, including the lead notification requirements. Additionally, if a repair ends up requiring more than 1 length of pipe or 20 feet when dealing with fusible material, a PWS shall follow the requirements for a water main replacement in addition to the requirements of the event type.

Disruption of service events require specific actions to be taken by utilities depending on the event type; however, the focus of this guidance is lead notification requirements. More information on event escalation and other requirements for disruptions of service can be found in **Table 2** or in OAC Rule 3745-83-02.

5. Water Main Replacements in Areas of Lead Service Lines

Water main replacements involve more than one pipe segment or more than 20 feet of pipe if made of a fusible material (e.g. HDPE). Generally, water main replacements occur when introducing a new main to the distribution system; however, a replacement may be required during a wide-spread or catastrophic disruption of service event

Whether planned or in response to a disruption of service, PWSs must comply with OAC Rule 3745-83-01(C)(6) when conducting a water main replacement. Systems must disinfect the main in accordance with *AWWA Standard C651-14 Disinfecting Water Mains*, monitor for chlorine residual, and comply with their minimum chlorine residual. Should a water main replacement be required in response to a disruption of service, systems are also required to comply with OAC Rule 3745-83-02, as discussed in [Section 4: Disruption of Service Events in Areas of Lead Service Lines](#). Should the main replacement occur in an area that contains or is likely to contain LSLs, systems are also required to meet the requirements of OAC Rule 3745-81-84. The rule requires that systems conducting a water main replacement in area with known LSLs or in an area that is likely to contain LSLs shall:

- “Provide notice of the work to be performed by the system to consumers in the impacted area at least 45 days prior to commencing replacement.”
 - “The notice shall include language, acceptable to the director, that explains that work being performed may cause a temporary increase in lead levels in drinking water, instructions for lead filter use, and guidance on measures the consumer can take to reduce lead levels at the tap.”
 - A shorter timeframe is allowed in conjunction with emergency replacements and upon the discovery of LSLs in an area documented not to contain LSLs.
- Prior to beginning a water main replacement, offer drinking water treatment unit filters up to a period of three months to consumers in the area impacted by the replacement. The filters shall meet NSF/ANSI standard 53 for “Drinking Water Treatment Units – Health Effects.”

The specific requirements for water main replacements in areas of LSLs are discussed in further detail in this section. Example language can be found in [Appendix D: Pre-Construction Notification Templates](#).

5.1 Impacted Area

Customers in the impacted area are those customers whose service lines are moved, replaced, or reconnected to the main during the main replacement. Lead notices and the offer to provide filters are required for all consumers in the impacted area, **even if those consumers do not have LSLs**.

As with the affected area for disruption of service events, utilities should use their lead maps to determine if the impacted area during water main replacements is in an area is known or likely to contain LSLs. Guidance on developing these maps is detailed in Ohio EPA’s [PWS-04: Guidance for Lead Mapping in Distribution Systems](#). These maps and the information contained in the guidance document should be reviewed in the planning stages of any main replacement project to determine if LSLs may exist in the impacted area. Areas listed as “unknown” are considered to be areas of LSLs for lead notification purposes.

If full LSL replacements are completed throughout the impacted area such that **the impacted area would no longer be considered an area that contains LSLs**, then the requirements for lead notices and the offer to provide filters does not apply. This scenario is only applicable if no lead pipe is in use on the public or private side of the service lines in the impacted area when water service is restored.

5.2 Lead Notification Requirements

Lead notices are required to be delivered **at least** 45 days prior to the beginning of the main replacement to customers in the impacted area. In instances where temporary water is provided for all consumers in the impacted area, the 45-day notice requirement is based on when consumers will be taken off the temporary water and reconnected to the system. Less than 45 days' notice may be allowed when the replacement is in conjunction with emergency repairs/replacements or other mitigating circumstances (i.e. upon the discovery of LSLs in an area documented not to contain LSLs).

Notices may be hand delivered, mailed, emailed, or delivered using another delivery method if approved by the director. If multi-family units are part of the impacted area, the water system has the option to post the information in conspicuous locations (common areas of the building, entrances, etc.) within the building rather than delivering the notice to every unit. In the instances of schools, hospitals, or other non-residential buildings, the water system is required to notify the building administrator. Systems may need to implement a variety of delivery methods to ensure all consumers served by the line are notified.

Systems may tailor their notification methods to fit their needs as long as the minimum rule requirements are met. For planned water main replacement projects, most water systems already provide consumers with a notice of work to be done using a pre-construction letter or doorhanger. Typically, these describe the work to be performed, the expected start and end date of the project, any expected traffic impacts, etc. The lead notice and offer to provide filters could be included with any materials that the utility already provides as one pre-construction packet. Utilities may also choose to provide a separate notification containing the required lead language, for example a postcard or door tag.

As discussed in [Section 4](#), if a replacement is required during a Type 3 or 4 disruption of service, the lead notice should be incorporated into the boil water or water use advisory required by OAC Rule 3745-83-02.

5.3 Lead Notice Language for Water Main Replacements

Lead notices for water main replacements must include language explaining that the work being performed may cause a temporary increase in the lead levels in the drinking water. Notices must also include guidance on measures the consumers can take to reduce lead levels at the tap and instructions on when to use the filters offered by the water system. Refer to [Appendix A](#) for the language approved by Ohio EPA to meet the lead notification requirements of OAC Rule 3745-81-84 during both a planned water main replacement and a water main replacement conducted in response to a disruption of service.

An example template for a Type 3 or 4 disruption of service event is included in [Appendix C](#). An example template for a pre-construction notification to be used during planned water main replacement projects can be found in [Appendix D](#). The highlighted language in the templates is approved by Ohio EPA to meet the lead notification requirement and should be used in its entirety. Modifications to the highlighted section will need to be approved by the PWS's district office prior to sending the notice to consumers. It is highly encouraged that utilities modify the non-highlighted portion of the templates to include project-specific information.

Drinking Water Treatment Unit Filters

Prior to beginning a water main replacement, utilities are required to offer drinking water treatment unit filters up to a period of three months to consumers in the area impacted by the replacement. Note that filters must be offered to all residential locations in the impacted area, not just those served by LSLs. The lead notice must provide instructions on filter use, as noted in the required lead language in [Appendix A, Section 7: Drinking Water Treatment Unit Filters](#) discusses the filter provision of OAC Rule 3745-81-84 in further detail.

Non-Residential Buildings

For non-residential buildings such as restaurants, schools, hospitals, office building, etc., it may be impractical to offer filters or to provide alternative water supplies during a water main replacement project. In these situations, it is the water system's responsibility to contact the building administrators to establish methods to reduce the risk of lead exposure. Methods that could be implemented by building administrators include: flushing, cleaning aerators, finding alternative water supplies, or in some cases, providing filters for specific at-risk populations. A sample pre-construction notice to building administrators can be found in [*Appendix D*](#).

5.4 Documentation

OAC Rule 3745-81-90 requires system to retain on the premises original records of all sampling data and analysis, reports, surveys, letters, evaluations, schedules, Director's determinations, and any other information required by OAC Rule 3745-81-80 to 3745-81-89. Each water system shall retain these records for no fewer than 12 years. Additionally, LSL replacement information shall be used to update the service line maps every five years in accordance with OAC 3745-81-86(A)(9).

To demonstrate compliance with OAC Rule 3745-81-84, utilities may document the following: procedures for determining when the various notifications are given; records of the addresses where notices were sent and where filters were provided; procedures for distributing filters; and information as to the presence of LSLs that remain in service following the main replacement project or any LSLs fully replaced during the project.

6. Lead Service Line Replacements

When conducting an LSL replacement, Ohio EPA recommends systems do so in accordance with *AWWA Standard C810-17 Replacement and Flushing of Lead Service Lines*. Generally, water systems replace the system-owned portion of LSLs as they are found, via planned water main replacements or while completing emergency repairs or replacements. However, whether an LSL is replaced as an individual project or in conjunction with other projects, utilities must meet the LSL replacement requirements of OAC Rule 3745-81-84, outlined in this section.

In accordance with OAC Rule 3745-81-84, prior to commencing an LSL replacement, a PWS must take the following actions in cases where the system does not own the entire LSL:

- “Notify the owner of the line that the system will replace the portion of the service line that it owns.”
- “Offer to replace the owners portion of the line” at the owner’s expense.

If the PWS conducts a **partial** LSL replacement, the system must take the following additional actions:

- Provide notice to residents of all buildings served by the line at least 45 days before the replacement.
 - “The notice shall include language, acceptable to the director, that explains that work being performed may cause a temporary increase in lead levels in drinking water, provides instructions on filter use, and guidance on measures the consumer can take to reduce lead levels at the tap.”
 - A shorter timeframe is allowed in conjunction with emergency repairs or replacements.
- Prior to beginning the LSL replacement, offer drinking water treatment unit filters up to a period of three months to consumers in the area impacted by the replacement. The filters shall meet NSF/ANSI standard 53 for “Drinking Water Treatment Units – Health Effects.”
 - For partial LSL replacements, the impacted area is buildings served by the service line.
- “Inform the residents served by the line that the system will, at the systems expense, collect a sample from each partially-replaced LSL that is representative of the water in the service line for analysis for lead content within 72 hours after the completion of the partial replacement.”
 - Collect the sample and report the results of the analysis to the owner (of the service line) and residents served by the line within 2 business days of receiving the laboratory results.

These requirements are discussed in further detail below. Applicable templates for this section can be found in [Appendix D](#) and [Appendix E: Lead Service Line Sample Request Templates](#).

6.1 Offer to Replace Private-Side Lead Service Lines

When performing a partial LSL replacement, in cases where the water system does not own the entire line, OAC 3745-81-84 (C) requires the water system to notify the owner and offer to replace the customer-owned portion of the line. As stated in the rule, “a system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by state, local, or common law.”

Because LSLs are often replaced as a part of water main replacement projects, utilities could include the offer to replace the private portion of the LSL in a pre-construction letter or doorhanger. Systems also have the option to include the offer to replace the private-side line with the requirements for partial LSL replacements. However, systems may choose to extend this offer through a separate mailing, by meeting directly with the

consumer, or through other means. Example language for offering to replace the privately-owned lead service line is included in [Appendix D](#).

Further Considerations

Prior to the service line replacement, utilities may need to develop a way to obtain estimates of the cost to perform the work on the property to provide an estimate to the customer. Although not required of utilities, it is also highly encouraged for PWSs to work with local financial institutions or use other means to provide financing options for the customers. Systems should contact their legal representation to develop contracts between the property owners and the utility that will allow utilities or their contractors to have access to the property to perform the work and obligate customers to pay for the work.

Additionally, if the customer is to pay for the work, coordination with the customer, contracting for the work, and arranging for financing may take a significant amount of time (i.e. longer than the minimum 45 days for the lead notification required by rule). **This timeline should be well thought out by the utility and the offer to replace the service line should be delivered in consideration of this time.**

Note: If a full LSL replacement is conducted such that no lead remains in use on the public or private side then the provision of a lead notice, the offer to provide filters, and the post-work sampling are not required.

6.2 Lead Notification Requirements

Lead notices are required to be delivered **at least** 45 days prior to the beginning a partial LSL replacement. Less than 45 days' notice may be allowed when the replacement is in conjunction with an emergency repair or replacement or in other mitigating circumstance. PWSs should consult their district office in these circumstances.

Lead notices may be delivered through phone calls, hand delivered, emailed, or mailed to the consumers served by the line. Other delivery methods may be used if approved by the director. If multi-family units are served by the line, the water system also has the option to post the notice in conspicuous locations (common areas of the building, entrances, etc.) rather than delivering it to every unit. In the instances of schools, hospitals, or other non-residential buildings, the water system is required to notify the building administrator. **Systems may need to implement a variety of delivery methods to ensure all consumers served by the line are notified.**

6.3 Lead Notice Language for Lead Service Line Replacements

The lead notices must include language that explains that the work being performed may cause a temporary increase in the lead levels in drinking water. Notices must also include guidance on measures the consumers can take to reduce lead levels at the tap and instructions on when to use the filters offered by the water system. Refer to [Appendix A](#) for the language approved by Ohio EPA to meet the requirements of OAC Rule 3745-81-84.

An example template for an LSL replacement pre-construction notice can be found in [Appendix D](#). As with emergency main replacements in areas of LSLs, should an LSL replacement be required during a disruption of service event, the notification requirement may be fulfilled through the boil/water use advisory templates found in [Appendix C](#). The highlighted language is approved by Ohio EPA to meet the lead notification requirement and should be used in its entirety. Modifications to the highlighted section will need to be approved by the PWS's district office prior to sending the notice to consumers. It is highly encouraged that utilities modify the non-highlighted portion of the template to include project-specific information.

Drinking Water Treatment Unit Filters

Prior to beginning a partial LSL replacement, utilities are required to offer drinking water treatment unit filters up to a period of three months after the replacement to consumers served by the line. The lead notice must provide instructions on filter use, as noted in the required lead language in [Appendix A, Section 7](#) discusses the filter provision of the rule in further detail.

Note: Templates provided in this guidance document combine the offer to replace the LSL, lead notice language and the offer for lead filters into a single pre-construction notice.

Non-Residential Buildings

For non-residential buildings such as restaurants, schools, hospitals, office building, etc., it may be impractical to offer filters or to provide alternative water supplies following a partial LSL replacement. In these situations, it is the water system's responsibility to contact the building administrators to establish methods to reduce the risk of lead exposure. Methods that could be implemented by building administrators include: flushing, cleaning aerators, finding alternative water supplies, or in some cases, providing filters for specific at-risk populations. Building administrators may also decide to take service line samples following partial LSL replacements, as the PWS is only required to take service line samples at residential locations. A sample pre-construction notice to building administrators can be found in [Appendix D](#).

6.4 Post Replacement Sampling

For each **residence** in which a partial LSL replacement is performed, the water system must collect a **service line sample** within 72 hours after the partial replacement occurs. The type of sampling required after a partial LSL replacement is different than the routine lead and copper sampling performed for compliance with the lead and copper rule (LCR). A service line sample taken post-replacement should capture water which has stood in the service line for at least 6 hours, unlike the first draw samples taken for compliance. Service line sample requirements are contained in OAC Rule 3745-81-86 (B)(3); the rule requires that "each service line sample shall be 1 liter in volume and have stood motionless in the LSL for at least 6 hours. Each LSL sample shall be collected in one of the following three ways:

1. At the tap after flushing the volume of water between the tap and the LSL. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the LSL.
2. Tapping directly into the LSL." (Not recommended as this may increase lead levels in the water).
3. "If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the LSL."

The first and second method of sample collection will rely heavily on the water utility to collect the sample while the third method relies on the resident to do the collection. Example sampling requests can be found in [Appendix E](#).

All three methods rely on participation of the resident to either allow access to the interior of the building, or to do the sampling themselves. Because collection of the sample requires participation by the building occupant, in instances where the occupant refuses to participate in the sampling, or otherwise cannot be reached by the water system, the PWS must document the offer to sample and the refusal.

Service line samples should be reported as special purpose to Ohio EPA. If the resident or building owner agrees, systems may add the site as a lead and copper sample monitoring point (SMP) and submit the sample

with its corresponding SMP ID; otherwise, samples should be submitted as DS000 and include the address and contact information for the consumer.

As required by OAC Rule 3745-81-85, systems must report the results of the service line sample to the owner and residents served by the line within 2 business days of receiving results from the laboratory. Systems should use the *standard lead consumer notice (CN) template*. As with the pre-replacement notice, if a multi-family residence is served by the line, the water system has the option to post the CN in conspicuous locations within the building. In the instances of schools, hospitals, or other non-residential buildings, the water system shall notify the building administrator; however, for PWSs that are themselves schools, daycares, nursing homes, or correctional institutions, the parents legal, guardians, or power of attorney must be directly notified. More information on consumer notice of results can be found in OAC Rule 3745-81-85.

6.5 Documentation

OAC Rule 3745-81-90 requires system to retain on the premises original records of all sampling data and analysis, reports, surveys, letters, evaluations, schedules. Director's determinations, and any other information required by OAC Rule 3745-81-80 to 3745-81-89. Each water system shall retain these records for no fewer than 12 years. Additionally, LSL replacement information shall be used to update the service line maps every five years in accordance with OAC 3745-81-86(A)(9).

To demonstrate compliance with OAC Rule 3745-81-84, utilities may document the following: procedures for determining when the various notifications are given; records of the addresses where notices were sent and where filters were provided; procedures for distributing filters; and where sample bottles and instructions were provided for service line sampling and customer response to the request for sampling.

7. Drinking Water Treatment Unit Filters

OAC 3745-81-84 (D) requires the water system to offer consumers up to three months' worth of water filters certified to remove lead for use after the work is performed. Filters are to be offered in the following scenarios:

1. Following a partial LSL replacement to consumers served by that line.
2. To consumers in the area impacted by a water main replacement that occurs in an area that contains or is likely to contain LSLs, including to consumers not served by an LSL.

Note: A PWS is not required to offer filters if lead is completely removed during a project. For main replacement projects, filters are not required if complete LSL replacements throughout the impacted area are completed such that no lead is in use on the public or private sides after the project. Filters are also not required in conjunction with full LSL replacements.

Water systems can fulfill the filter requirement by including the offer and information on how to obtain the filter in the pre-construction notice, by providing separate information on requesting filters to the consumers, or by directly delivering the filters to the consumers.

7.1 Filter Requirements

Filters shall meet *NSF/ANSI standard 53 for "Drinking Water Treatment Units – Health Effects"* for the **removal of lead** and are required to last users for 3 months. While some filters have an average life-span of 3 months or more with regular use, others have a life-span of 1 month; if this is the case, a supply of replacement cartridges is also required to be provided with the filters. Systems should follow the manufacturer's recommendation or guidelines to ensure 3 months' worth of filters are provided. Filters can be of any type (pitcher-type, sink mount, etc.) as long as the filter meets NSF/ANSI standard 53.

For partial LSL replacements, filters should last for three months after the service line work or reconnection to the premise is completed. For main replacement projects, the three-month period starts when water service is restored at that particular premise, not the beginning or end of the entire main replacement project nor when the consumers receive their filters. For systems which elect to distribute the filters prior to the work being performed at that premise, clear instructions should be given as to when the consumer should begin using the filter certified to remove lead.

Non-Residential Buildings

As discussed in Sections 5 and 6, it may be impractical to offer filters to non-residential buildings. In these situations, it is the water system's responsibility to contact the building administrators to establish methods to reduce the risk of lead exposure. Methods that could be implemented by building administrators include: flushing, cleaning aerators, finding alternative water supplies, or in some cases, providing filters for specific at-risk populations. PWSs should work with the building administrator to determine an effective lead mitigation strategy.

7.2 Examples of Filter Distribution and Notification

Each water system may choose to implement their own procedure for offering and providing lead filters following partial LSL replacements and during water main projects in areas with LSLs. Below are examples of how utilities could implement the lead filter provision.

Utility A – In Utility A’s program, the water system has distributed lead notifications in their pre-construction notice to consumers in the impacted area 45 days in advance of the beginning of the water main replacement project. In their notification, the utility provided a phone number to call to receive a filter. Utility A has elected to deliver the filters to the consumers who have requested one. In water main replacement projects, it is standard protocol for Utility A to have the contractor doing the water main work to post a notice 24-hours in advance to all customers before their service line is interrupted. Since the contractor will be posting these notices, Utility A has the water main contractor deliver the filters and cartridges to the consumers who have requested one at the same time as the 24-hour posting.

Utility B – In Utility B’s program, the water system provided notice to the customers instructing them to go to City Hall for a water filter and the cartridges. Since the filter cartridges have a limited life, the customer is instructed in both the 45-day notice and at the time of pickup, to wait to use the filter until told to do so. The notice to begin using the filter is provided in the pre- work notice that is supplied 24 hours before the service line work is to begin.

Utility C – Utility C uses a direct delivery method. Notification is sent 45 days prior to the construction; then during both LSL and main replacements, Utility C’s contractor delivers filters certified to remove lead directly to customers’ doorsteps when the water service is restored.

Utility D – In Utility D’s program, the water system has distributed lead notifications in their pre-construction notice to consumers in the impacted area 45 days in advance of the beginning of the water main replacement project. Utility D has elected to directly distribute filters to all consumers on the project. This Utility has their construction inspector deliver the filter and replacement cartridges when the customers are tied into the new main.

8. Simultaneous Compliance Examples

Because LSLs are generally replaced as a part of planned main replacement projects or during emergency repairs or replacements, utilities may be required to meet the requirements outlined in [Section 4](#) or [Section 5](#) in conjunction with the LSL replacement requirements outlined in [Section 6](#). This section outlines several examples to ensure simultaneous compliance.

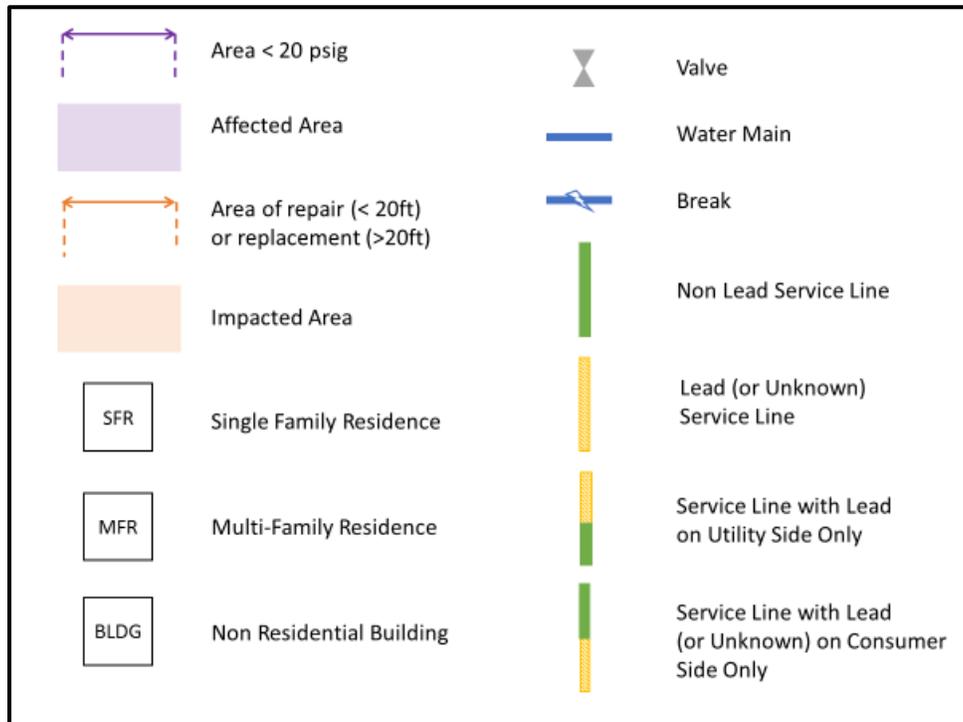


Figure 2: Symbol and Abbreviation Key for Figures 3-XX

8.1 Planned Water Main Replacement

If LSLs are replaced during a water main replacement project, the requirements outlined in [Section 5](#) of this document may be combined with the requirements in [Section 6](#). Systems should note, however, that the requirements of [Section 6](#) supersede the requirements in [Section 5](#) for consumers receiving a partial LSL replacement.

Systems may choose to send a pre-construction notice to all consumers in the impacted area that includes the lead notice language and the offer to provide drinking water treatment unit filters and send a separate notice to owners of LSLs indicating the PWS's intent to replace the line and offer to replace the consumer-owner portion of the line. Alternatively, systems could choose to send separate notifications to those that do not own an LSL but are in the impacted area and to those that own an LSL. Utilities may also choose to provide a separate notification containing the required information that is tailored to the specific situation.

Figure 3 depicts examples of what constitutes an impacted area with and without LSLs; if LSLs are not in the impacted area of the water main replacement, then the requirements of OAC Rule 3745-81-84 do not apply. Figure 4 depicts examples of different LSL configurations for a main replacement project; in all of these examples, the utility must provide a 45-day pre-construction notice to all users in the impacted area as well as meet additional requirements denoted in the figure.

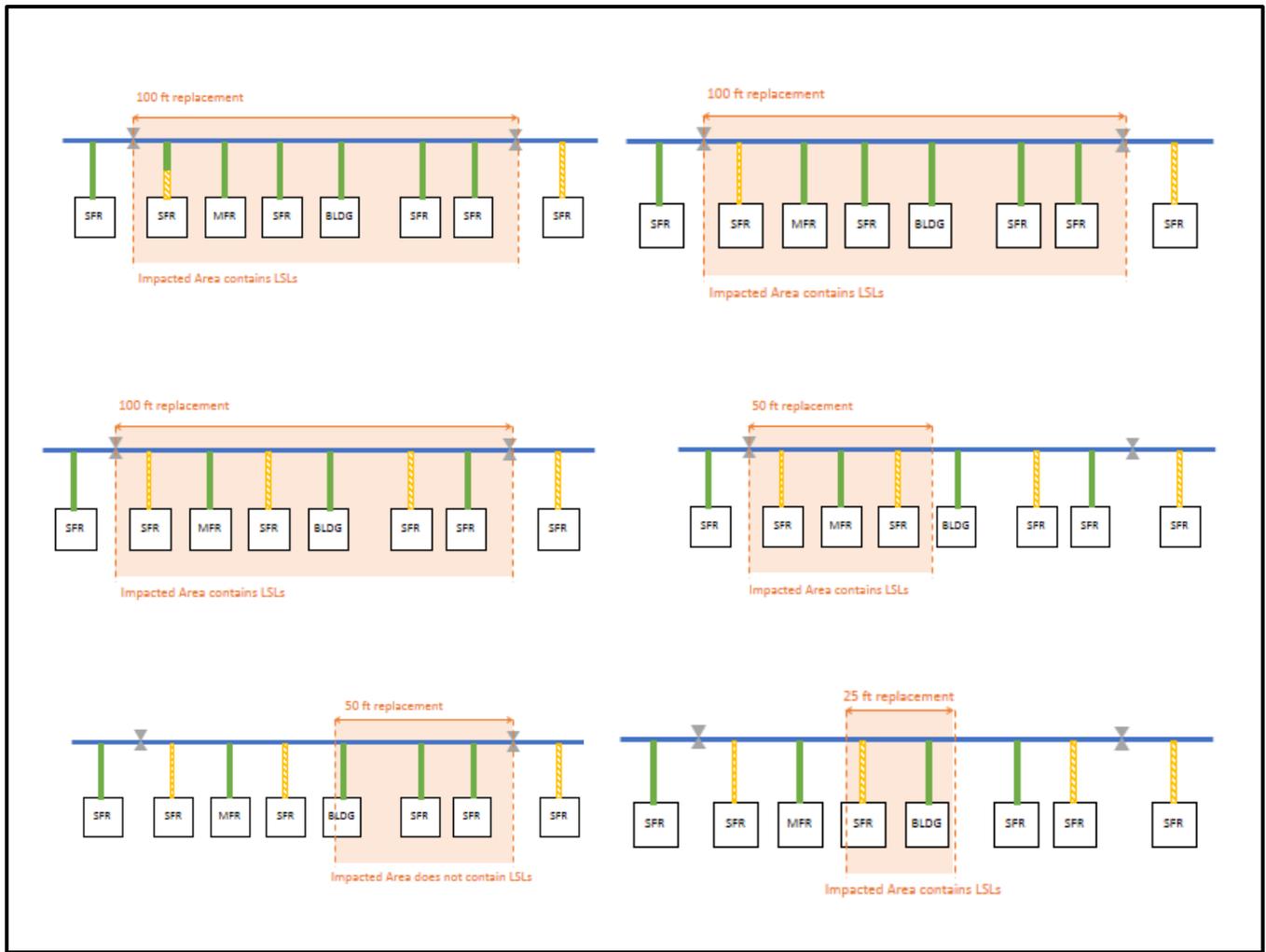


Figure 3: Area Impacted by a Water Main Replacement

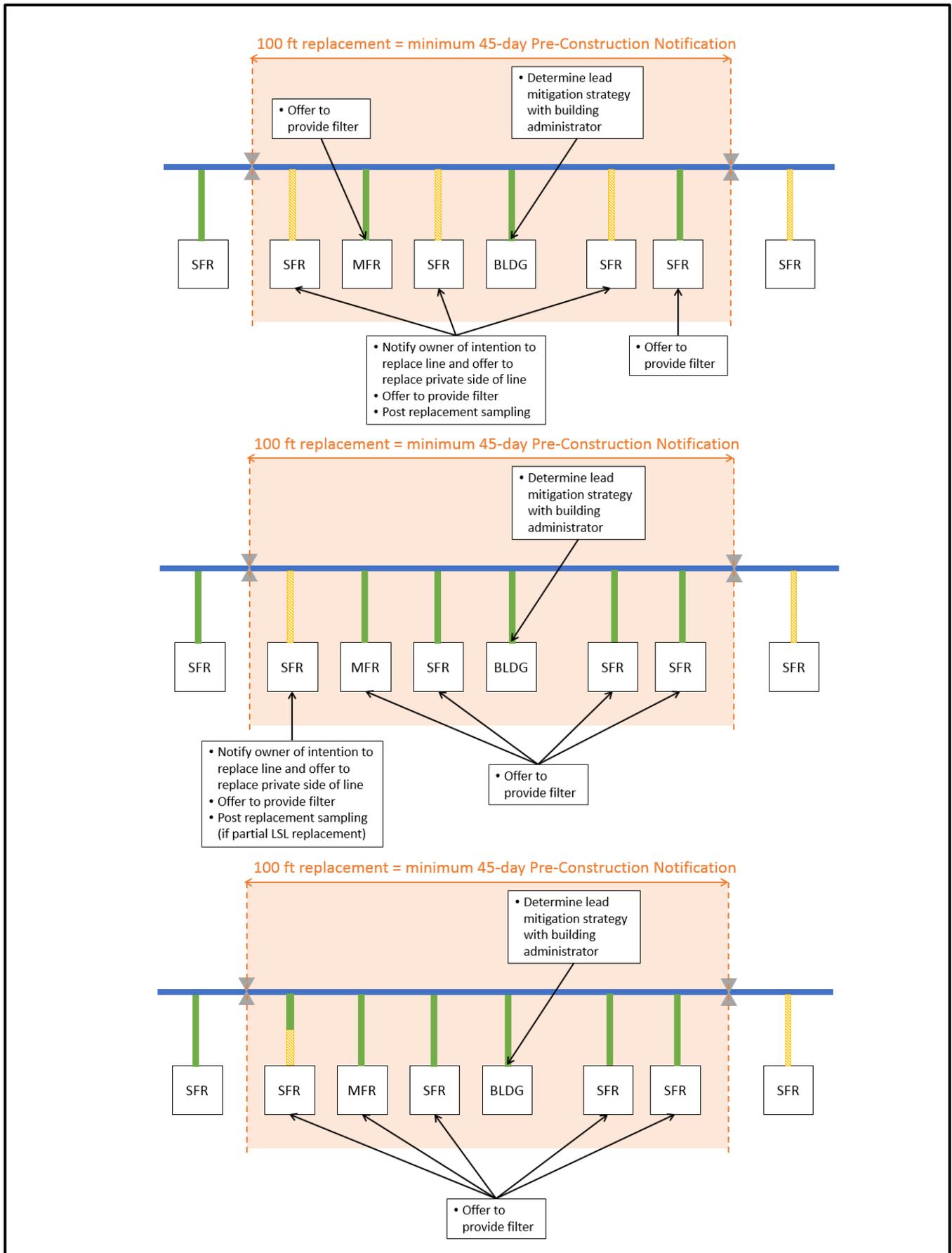


Figure 4: Minimum requirements for a water main replacement in an area of LSLs

Complete Lead Service Line Removal in the Impacted Area

If complete LSL removal is accomplished in the impacted area, the requirement to provide filters and prior notification does not apply. Some utilities may have local ordinances requiring or allowing full LSL removal even if the consumer does not give prior permission, allowing the utility to accomplish complete LSL removal in the impacted area. Some systems may find it beneficial to engage consumers who own LSLs prior to the 45-day notification requirement to discuss replacing their portion of the LSL. For example, if the consumers in Figure 4 give the utility permission to complete a full LSL replacement *prior to the 45-day minimum notification requirement*, then the impacted area will not contain LSLs following the replacements and the utility would not be required to complete lead notification and offer to provide filters. Similarly, if a utility has documented that lead is **only** in use on the utility-owned side in the impacted area and the utility plans to complete full LSL replacements, then the utility would not be required to meet the requirements.

Note: Unknown service line materials are considered to be lead until documented otherwise.

8.2 Disruption of Service Requiring a Water Main Repair

As discussed in [Section 4](#), a lead notice may be required during a disruption of service event if the affected area contains or is likely to contain LSLs. Figure 4 depicts examples of a Type 3 disruption of service requiring a water main repair. In all of these examples, the utility must provide a boil advisory including lead notification language to all users in the affected area.

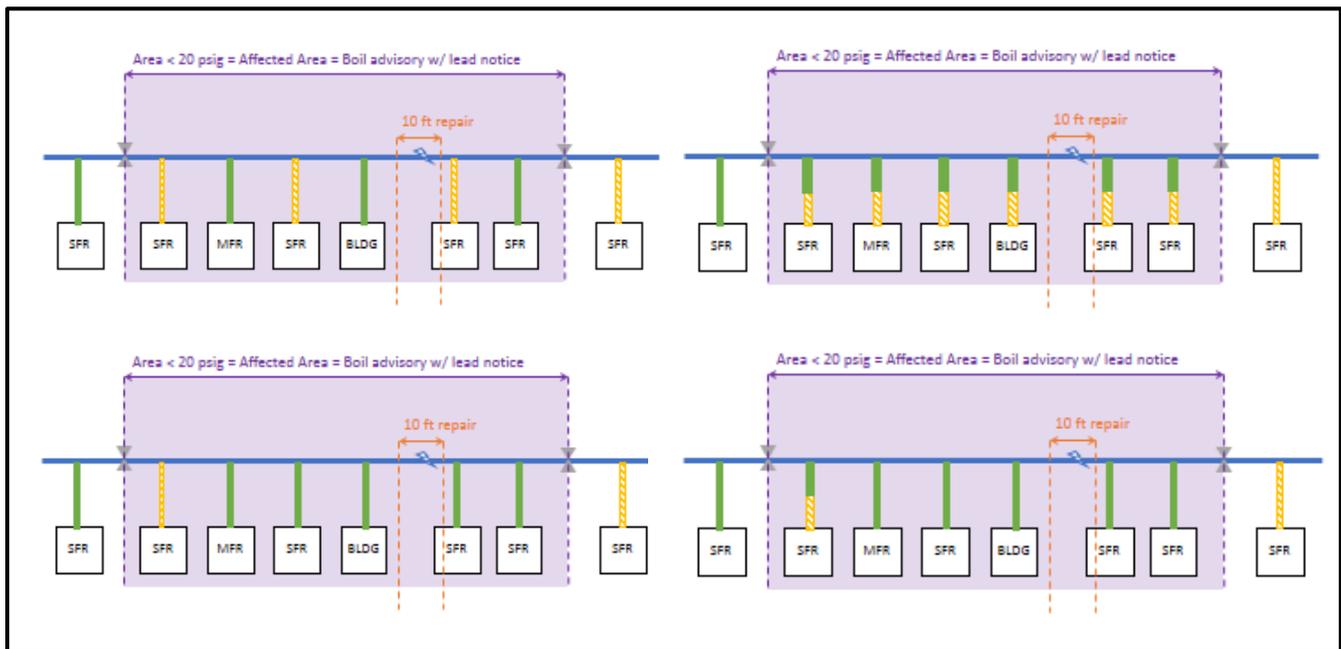


Figure 5: Disruption of service requiring a water main repair

Should an LSL replacement be required in conjunction with a disruption of service requiring a water main repair, the system would be required to complete the requirements for the specific disruption of service event type, including lead notification to the affected area, if applicable. Additionally, for those served by the service line being replaced, utilities are required to complete the LSL replacements requirements outlined in [Section 6](#). Figure 6 outlines the requirements for both a full and a partial LSL replacement in conjunction with a disruption in service.

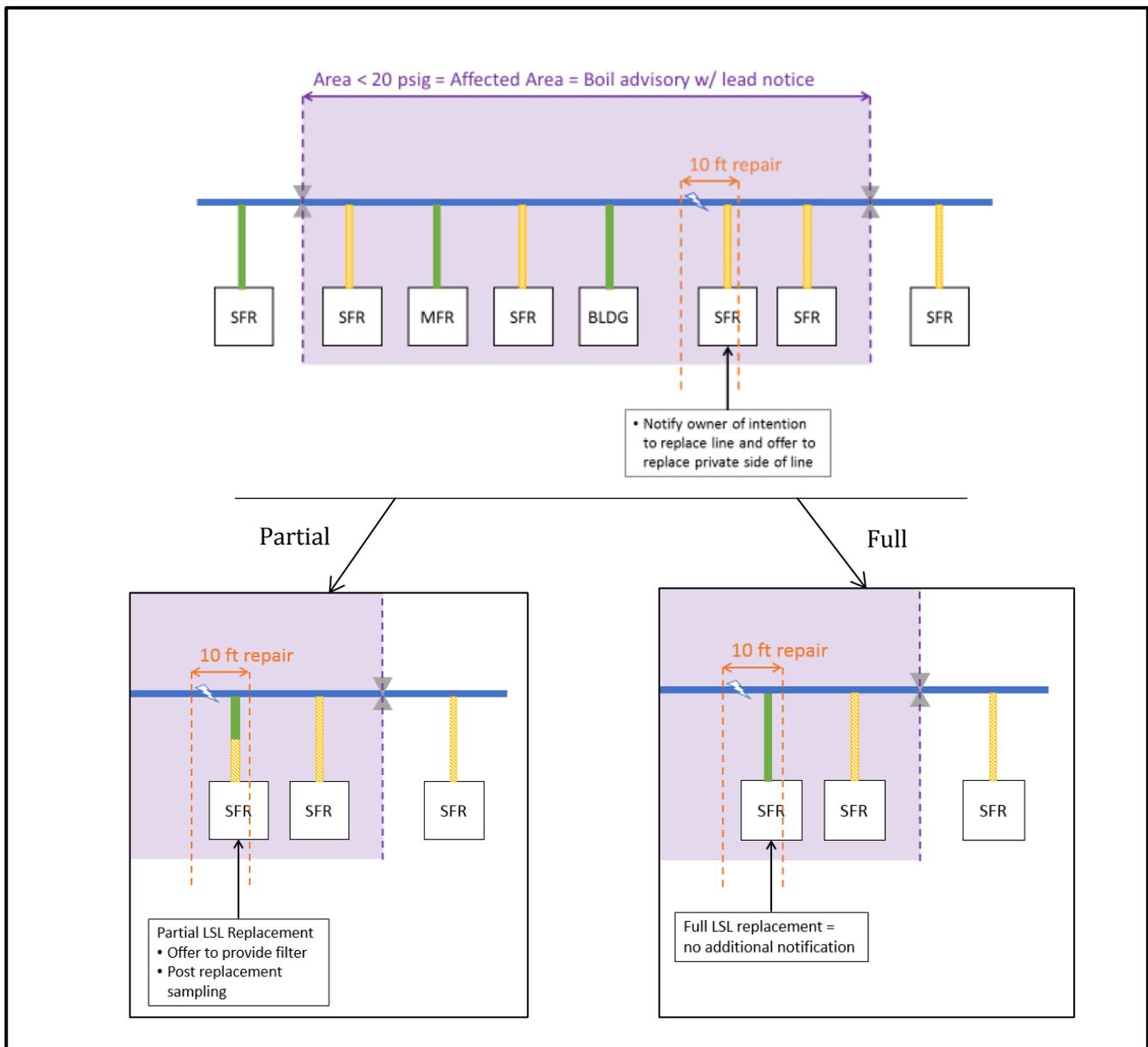


Figure 6: Disruption of service requiring a water main repair in conjunction with a partial and full LSL replacement

8.3 Disruption of Service Requiring a Water Main Replacement

Should a main replacement be required to fix a Type 3 or 4 disruption of service in an area of LSLs, utilities need to understand the definitions of the affected area and the impacted area in order to ensure notifications are delivered correctly. For the affected area (portions of the distribution system that drop below 20 psig), lead notification language is required to be incorporated into the boil water/water use advisory. For the area impacted by the replacement (service lines that are moved, replaced, or reconnected to the main during the main replacement) lead notification language is also required to be incorporated into the boil water/water use advisory, but the notification must include the offer to provide filters.

Additionally, if an LSL replacement is required in conjunction with a disruption of service requiring a water main replacement, the system would be required to complete LSL replacement requirements: lead notification language is incorporated into the boil water/water use advisory (including the offer to provide

filters if applicable), the PWS must offer to replace the owners' portion of the line, and take a service line sample following a partial replacement, if applicable.

Figures 5 and 6 outline examples of a disruption of service in an area of LSLs that will require a water main replacement. These scenarios combine the requirements of previous sections of this guidance. Users in the affected area will receive boil/water use advisories that include lead language. The user of the lead line should be notified of their lead line and the system is required to offer to replace the private portion. If the user declines, then the impacted area is an area that contains LSLs and filters must be offered to all those in the impacted area. However, if the user accepts and complete removal of lead is accomplished in the impacted area, then filters are not required.

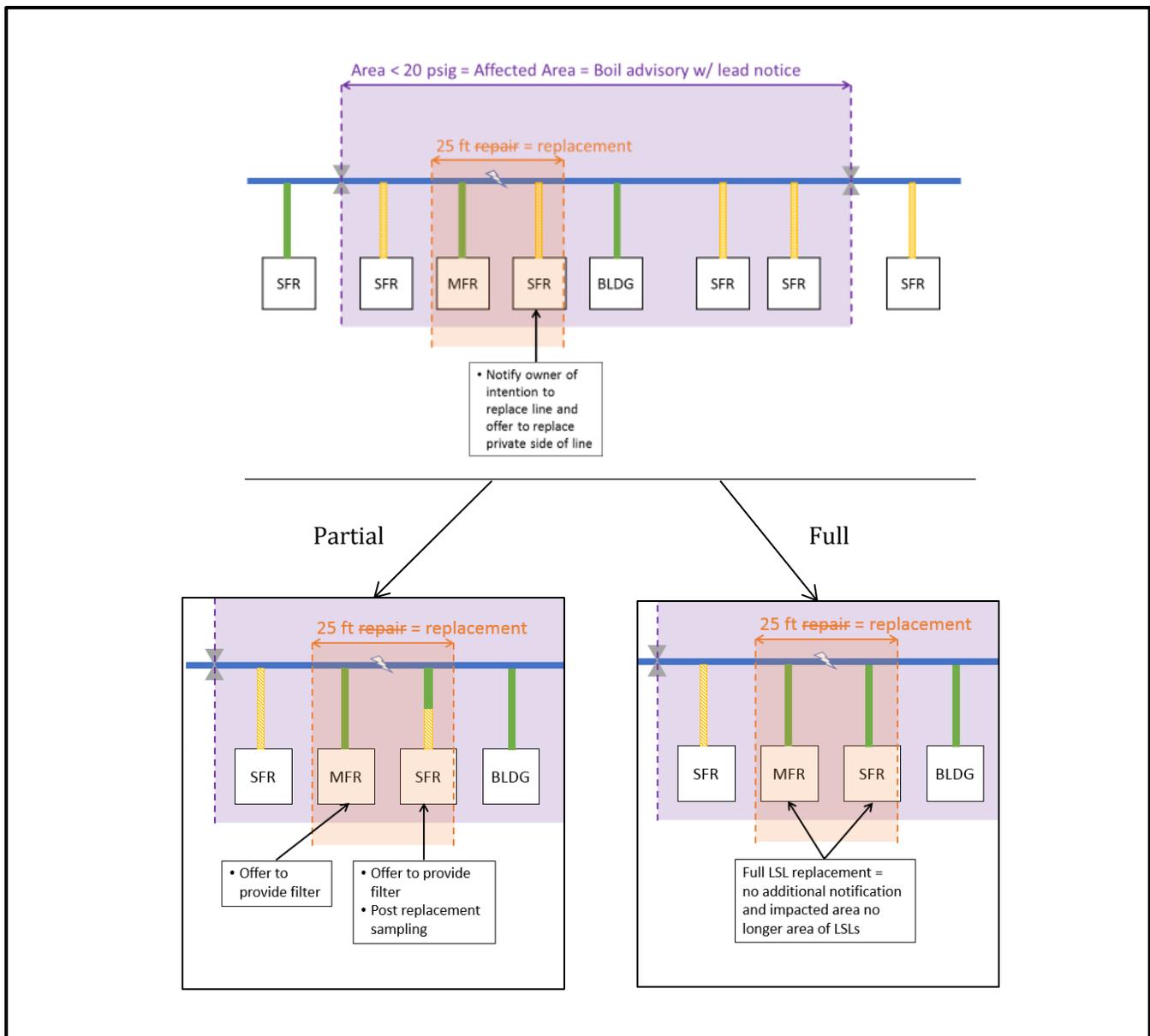


Figure 5: Disruption of service requiring a water main replacement

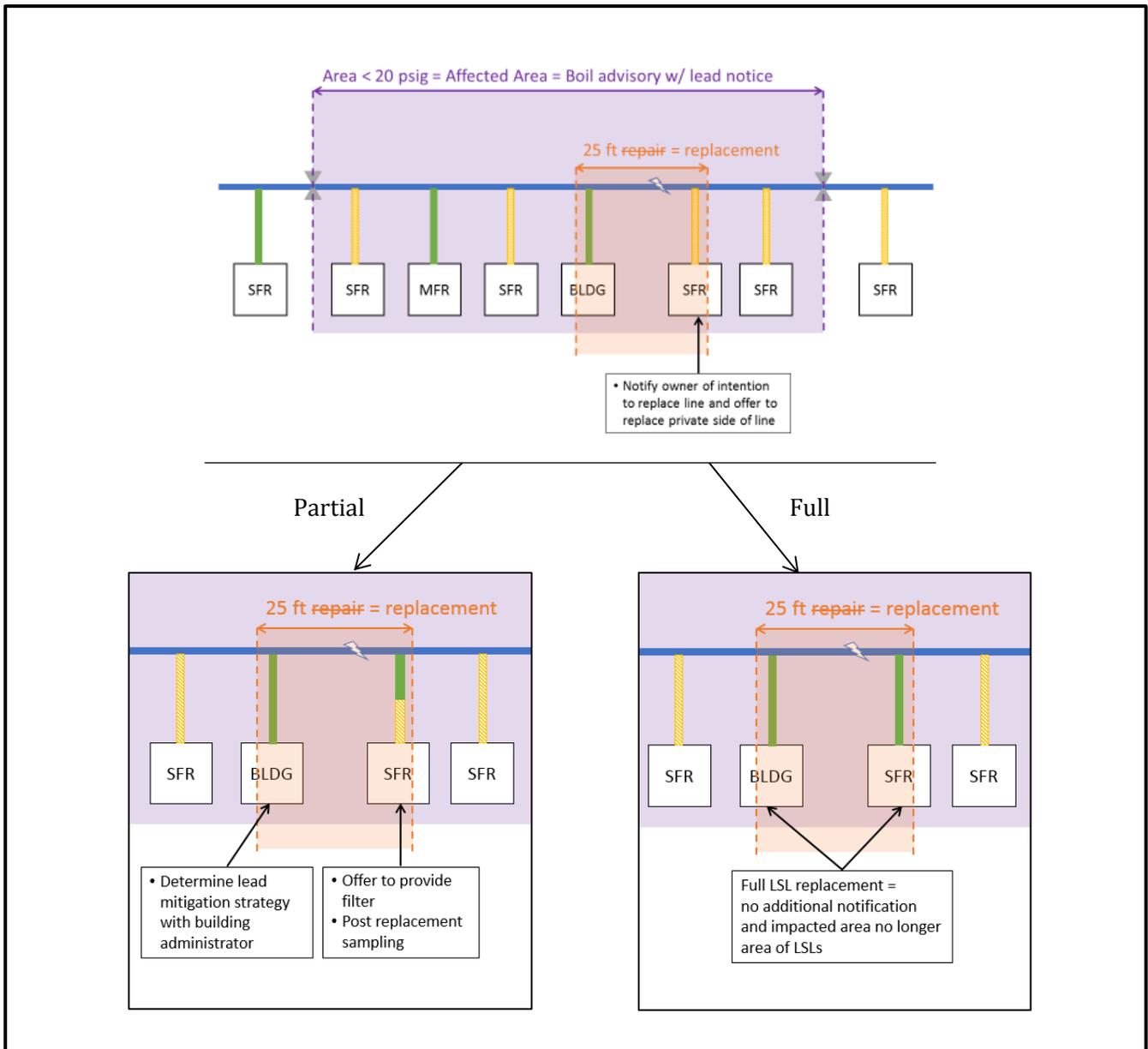


Figure 6: Disruption of service requiring a water main replacement affecting a non-residential building

Appendix A: Approved Lead Language

This appendix outlines the pre-approved lead language that PWSs may use in notices without prior consultation with Ohio EPA. Should a utility wish to change the approved language, the system must receive approval from their respective district office prior to issuing the notification.

A.1 Partial LSL and Main Replacement Lead Language

The following language has been approved by Ohio EPA for use in the notice provided to impacted consumers 45 days prior to a planned partial LSL replacement or a planned water main replacement conducted in areas that contain or are likely to contain LSLs. This language is highlighted in the corresponding templates in [Appendix D](#).

Lead Information

[The construction activities (i.e. LSL replacement, main replacement project)] may cause changes in water quality, including the possibility of a temporary increase in lead levels in the drinking water. As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use.

When water service is restored, perform a full-house flush by letting the cold water run on all the taps in your house run for 30 minutes to flush out any lead and/or sediment from your line. Then begin using your water filters certified to remove lead for all water used for drinking and cooking.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

A.2 Disruption of Service Lead Language

The following language has been approved by Ohio EPA for use in a Type 2, Type 3, and Type 4 disruption of service event that occurs in an area that contains or is likely to contain LSLs. This language may also be used during emergency water main replacements or emergency LSL replacements. The language should be incorporated into boil advisory or water use advisory notification, if applicable. For PWSs with an optional lead public awareness campaign, systems must include this language in the print material with a high education impact (see [Appendix B](#) for more information). This language is highlighted in the corresponding templates in [Appendix C](#).

[Describe event] may also cause additional disruptions in water quality including discolored water and/or potentially a temporary increase in lead levels in the drinking water. {INCLUDE FOR WATER MAIN/LSL REPLACEMENTS ONLY: As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use.}

As a standard practice the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush water that may have contained lead that may have leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.**

For additional information visit drinktapp.org or www.epa.gov/safewater/lead.

Appendix B: Optional Lead Awareness Campaign

In lieu of performing direct consumer notification during **Type 2** disruption of service events, PWSs may choose to implement a Lead Awareness Campaign; the goal of the program is to eliminate the need for special individual notices in these lower risk disruptions by actively educating consumers on how to reduce their risk to lead in drinking water. An effective campaign is one in which adequate information is provided in an easily understood format to help customers make informed decisions for themselves and those using water at their address. Transparency is of paramount importance in an effective outreach effort.

To effectively reach as many people as possible, multiple platforms for disseminating information should be considered. These are detailed in [Section B.2](#) of this appendix and include written letters, door hangers, email, reverse phone calls, visual displays, website content, mainstream media, social media and instructional videos. **Table B.1: Consumer Education Activities** outlines various methods of communication and various messages to communicate, but the table is not an exhaustive list. The table ranks the effectiveness of the message in achieving the overall goal of lead awareness and actions consumers should take should a repair or replacement impact their water service.

There are various water system scenarios that may need to be specifically addressed through educational materials. For instance, customers with known LSLs will need specific information about actions they should take before, during and after a water main replacement project. Some of this information may also apply to customers during an emergency water main repair in an area known to have LSLs. Other customers will be served by information that assists them in determining whether or not they have an LSL and actions they can take to reduce their exposure risk if any portion of the service line or in-home plumbing is made from lead.

To ensure your PWS has appropriate awareness materials to cover both general information about the possibilities of lead in drinking water and water-system specific situations, a tool box approach is suggested.

Materials in a PWS toolbox should:

- Convey specific actions customers in specific situations should take without overwhelming the customer with too much information that results in the customer taking no action.
- Be developed with the idea that the risk of lead exposure varies depending upon numerous factors primarily related to the customer's service line, plumbing, faucets and fixtures.
- Include ways to convey the same information in multiple formats so the media used to convey the message matches the target audience. For instance, lead exposure risk reduction information that would best reach an elderly audience may be printed material whereas expectant mothers in their 20s may prefer short online videos.
- Be able to be distributed by numerous non-traditional partners in order to reach critical audiences. For instance, medical professionals, child care workers and early childhood education facilities can all serve as distribution points of lead exposure risk reduction materials.

Not all tools detailed in this appendix will be appropriate for all situations or for all PWSs. Therefore, tools in this appendix are offered as guides for each PWS to consider, use and/or modify as appropriate to their system. [Section 4.4: Optional Lead Awareness Campaign Requirements](#) outlines Ohio EPA's minimum requirements for PWSs to use a lead awareness campaign to meet the notification requirements of OAC 3745-83-02 for Type 2 disruptions in service; these requirements are also included in [Section B.3](#) of this appendix.

B.1 Toolbox Tools – Messages that can be Conveyed

This section outlines the messages that can be conveyed through an Optional Lead Awareness Campaign. Information shared should be consistent across different platforms.

General Information

- What lead is and the health effects of lead.
 - Information on blood lead level testing.
 - How lead enters drinking water.
 - Other sources of lead (paint, soil, etc.).
- Possible sources of lead:
 - Possible locations of lead in the water system (services lines, plumbing, faucets).
 - How to ID types of pipes (lead, copper, steel).
 - Service Lines: city-owned vs. customer owned responsibilities
 - Inquiry tool/map for customers to look up their address for the type of material their cityside connection is made from.
 - Means for customers to provide customer side service line information.
- What people should do to reduce their lead exposure risk.
 - Flush after 6 hours; only cook, drink and make baby formula with cold, clean faucet aerators at least twice a year, maintain water heater, replace filters, etc.
 - Drinking water treatment unit filters.
 - How to know if a filter meets NSF/ANSI standard 53.
 - How to know what a filter can remove.
 - Where filters can be obtained.
- Questions and Answer or Frequently Asked Questions Section
- Community Meetings About Lead
 - List contact information to schedule meetings

Actions the PWS is taking to reduce potential of lead exposure

- What the PWS is doing reduce the potential for lead exposure through drinking water.
 - Corrosion control explanation and methods.
 - Orthophosphate
 - pH Control
 - Graphics that illustrate how corrosion control has impacted Lead and Copper Monitoring results for the PWS (see also water quality data).
- Inventory of cityside lead service lines, customer side if known, and applicable map(s).
- Historical timeline for PWS including when the system stopped using lead cityside connections.
 - LSL replacement history and schedule.
 - LSL replacement goals.
- Information on main replacement projects
 - What customers should do before, during and after construction (see details below).
- Information on LSL replacement
 - Graphics that show that both the city-owned and customer-owned portions of the service line may be made of the same or different materials.
 - Encouragement of LSL replacement by owners of LSLs.
 - Hazards of partial LSL replacement.

PWS Water Quality Data

- Information on when the PWS performs testing for lead and copper.
 - Listing of historical lead and copper monitoring results.

- Minimally, a link to the PDF of water system's most recent CCR and/or most recent Lead & Copper Monitoring results.
- Information on when PWS performs testing for water quality parameters (WQP).
 - Explanation of WQPs
 - Listing of historical optimal WQP monitoring results.
- Information for customers who want their water tested
 - Consumers may pay for it themselves or it could be provided by the PWS
 - Acknowledgement that every home's test results may differ.
- Drinking Water Watch

Partners listing and links to others lead information

- Links to local/county health departments lead information page.
 - Information on how/where to get children's blood tested.
- Link to Ohio EPA lead website
 - www.epa.ohio.gov/pic/lead
- Link to Ohio EPA Certified labs that test for lead.
 - www.epa.ohio.gov/ddagw/labcert
- Links to USEPA's lead websites
 - www.epa.gov/lead/protect-your-family-exposures-lead#water
 - www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water
- Link to National Lead Poisoning Prevention Week
- Link to CDC Information about lead
 - www.cdc.gov/nceh/lead/default
- Link to AWWA information about lead
 - drinktap.org/Water-Info/Whats-in-My-Water/Lead-In-Water
- National Lead Information Center: 1-800-424-LEAD
- EPA's Safe Drinking Water Hotline 1-800-426-4791

Planned Water Line Replacements

As this guidance outlines, during LSL replacements and water main replacements or repairs, Ohio EPA has established minimum requirements for notification to the consumers affected by the work being performed. Systems that go above and beyond these requirements may consider the additional activities as a part of their lead awareness campaign. For planned water main replacements and LSL replacements, systems can plan their campaign around construction activities.

Preconstruction:

- Public meetings to announce the water main replacement project, how it will impact customers on the water line, and what actions they should take to reduce their lead exposure risks.
 - Information from meeting could also be shared via letters or on the PWS's website.
- Evaluation of LSL records within project limits.
 - Communication of these results to consumers.
- Short survey for homeowners on their private side service line information.
 - Could be submitted via web, email, print or other means.
- Conveying the required information (lead language, filter information, etc.) using multiple methods
- Online information dedicated to the construction timeline.

- Typical questions and answers posted online and available in print form.

During Construction:

- What to expect letters about the construction process.
- Online information dedicated to the construction timeline.
 - Daily progress updates once construction starts.
- Construction crews that will be on site and may be approached by residents should be provided with printed copies of information (i.e. letters, Q&A sheet, references to website, general lead information, etc.) so consistent messaging can be conveyed to residents.
- Printed material with flushing instructions
 - Could reference a video explaining the process.
- Explanation of temporary water use versus final/new water main use, if applicable.
- Typical questions and answers posted online and available in print form.

Post Construction:

- Flushing instructions (AWWA C810-17 procedure simplified)
- Door hangers, stickers, or letters indicating construction is complete
- Lead filter use instructions (beyond that of the manufacturer)
- Instructional video for post LSL replacement sampling.
- Information on how consumers can get their home sampled for lead.
- Posting of lead sample results for replaced water lines.

Emergency Water Line Repairs or Replacements

- Dissemination of printed material (door hangers/stickers) in affected area directing customer to website.
- Social media posts or website updates including the affected area and how to get more information.
- A rolling spreadsheet of breaks and status of repair.
 - Posted online and updated regularly.
- Typical Q/A on website for breaks.
- How to know what your filter is certified to remove, where filters can be obtained, etc.
- “Reverse 911” or “All Calls” to affected customers (could be tied to address, meter information and lead inventory maps/database). Verbiage should be written for each type of event in advance, with the only type of information that changes is the impacted customers.
- Critical user information

Contact Information

Contact information for the PWS should be included on all forms of lead education materials. Systems may wish to establish a direct line or email for customers with lead inquires or issues of concern to the attention of the PWS.

B.2 Toolbox Tools – Methods to Reach Audiences

This section will outline various methods water systems can use to reach their targeted audience. The messages from [Section B.1](#) should be integrated into the methods of outreach outlined in this section. **Table B.1** outlines the effectiveness of these different methods of communication for reaching the targeted audience. The effectiveness of the methods will be used by Ohio EPA to determine if the campaign meets the minimum requirements, discussed further in [Section B.3](#).

Talking Points

Talking points on lead topics should be developed by the PWS. These talking points should be used by all PWS staff answering customers' lead-related questions in a consistent and effective manner. They should be reviewed periodically to ensure they reflect the PWS's most recent Lead & Copper Compliance Monitoring results, and state and federal laws. Consult AWWA's guidance: *Communicating about Lead Service Lines: A Guide for Water Systems Addressing Service Line Repair and Replacement* for sample messaging points for LSLs.

Print Materials

Print materials can be developed for nearly every topic related to lead information. Short, simple, messages with high visual content may be more impactful than extended verbiage in documents. Printed materials can, and sometimes should, be audience specific (i.e. lead service line replacement, expectant parents, etc.) Types of printed materials include:

- Rack cards
- Brochures
- Door hangers
- Fact Sheets
- Letters mailed to customers
- Bill inserts
- Information in CCRs

If a PWS has a webpage, print materials should be available online. While a PWS may choose to print and distribute full-color material for greater impact, documents posted online for printing at home should print legibly in black and white or grey scale ink used by most people's home printers.

Webpage dedicated exclusively to lead information

By putting PWS information online, and making it easily findable, readily available, accessible, understandable, and usable, customers can learn on demand about their PWS and actions that they should take at home to maintain water quality and reduce the potential for lead exposure through drinking water.

Websites can serve as a display cabinet – both showcasing featured information and storing all forms of current information that the PWS provides to customers. Websites can provide content, images, videos, links to PDFs of printed materials distributed to customers and contact information for the PWS.

While there may be costs associated with initial webpage design and training of a staff member on how to regularly update online information, websites allow PWS to provide timely, unlimited and continuous updates to information. Websites allow customers to access information at a time and location that is convenient for them. Many people will be more likely to visit your website, rather than drive a car to your physical location and browse through your printed brochures

There are a few downsides to an online presence. While online analytics can provide data on the number of people who view your site, it is hard to know if the number of people viewing represents the audience you desire to reach. The other downside is that if a customer is unhappy with your service then they may feel the need to vent their frustrations online and reference your website in their review/comments. Finally, some customers do not have means to access online information. However, the people who cannot access online information are likely a fraction of the percentage of people who feel that if an organization does not have information online, then that information does not exist. This is especially true for people born in the mid-1990s and more recent.

Lead Service Line Inventory

An accurate and specific LSL inventory can give consumers information about the service line at their residence. All utilities were required to submit maps of their distribution outlining areas that contained or were likely to contain LSLs. Some of these maps provide enough specificity that a consumer can determine if they are served by a lead line. Other utilities have LSL lookup tools on their website or have a hotline that consumers can call for address-specific LSL information.

Social Media Platforms

Social media channels are a valuable tool to reach customers during water system emergencies including repairs to water main breaks, boil advisories, loss of water events, etc. During system-wide emergencies, PWSs may discover that their website will be overwhelmed with people trying to access the site. Social media channels provide redundancy in that they allow the PWS to share the same information and update that information from nearly any place in the world, in addition to feeding the information on their standard website. In addition to allowing PWSs to relay information to the public, social media outlets can serve as a customer service tool for responding to customers' water inquiries. Systems should ensure staff member(s) are trained on how to post and respond to the social media platforms being used by the PWS.

Utilities should develop ready-to-use social media messaging to convey actions customers should take to prevent the risk of lead exposure in their drinking water as well as information about planned replacements and emergency repairs. Additionally, systems should develop a ready-to-use image database as social media posts with images and videos get significantly more views and exposure.

Instructional Videos, Photos and Graphics

Instructional videos can be developed for nearly every topic related to lead information. While all PWSs can use nearly identical language to explain things such as how to test your pipes for lead, if possible, systems should attempt to make their video(s) representative of the community they serve. Videos can cover topics including:

- How to Test Your Pipes
- 30-minute Full House Flush for Lead Service Line Replacement
- First Draw Water Sample Instructional
- Second Draw Water Sample Instructional
- Filtered Water Pitcher How to Use It/How It Works
- How to Remove and Clean Aerators: Standard and Cache
- 8 Easy Actions to Keep Maintain Water Quality in Your Home

YouTube is a social media platform that is ideal to post instructional videos in a high-resolution format. YouTube allows viewers to watch the videos from the YouTube app, from web browsers compatible with laptops, desk tops, tablets and smartphones. YouTube also allows you to imbed videos into your webpages and share the video on other social media platforms.

Print material (fact sheet or brochure) should mirror the instructions presented in each video. This will ensure video and print messaging is consistent and that the PWS can reach diverse audiences in a method the audience is comfortable receiving.

Graphics or images that show what lead plumbing looks like and diagrams about where lead may be found in your PWS or their home plumbing system should be developed and integrated to other forms of outreach materials including webpages, videos, print materials, social media posts, etc.

News Releases/Blog Posts

PWS should prepare in advance news releases and/or blog posts to be released throughout the course of the year (i.e. monthly, quarterly, etc.) that remind customers actions they should take to ensure good water quality within their home and how to reduce their risk of lead exposure. Additionally, systems should prepare in advance news releases/blog posts to coincide with events impacting the PWS such as water main replacement in an area known to have a high number of LSLs that will be replaced, public meetings on the topic of lead, water emergencies, and monitoring results.

PWSs should prepare at least one news release or blog post per year on actions the PWS is taking to reduce customers' potential to lead exposure through drinking water. If possible, this should be issued during National Lead Poisoning Prevention Week in October or during National Drinking Water Week in May.

News releases can be sent, typically via email, directly to local news media contacts, customers or they can be shared in online forums including blog or social media posts.

Public Outreach

Hosting public information sessions/presentations is an effective way to reach target audiences.

Short PowerPoints should be developed for each type of target audience that the PWS is trying to reach. Presentations should use common, everyday language and focus on actions that the PWS wants the customers to take. A hands-on display that shows customers how to identify lead within their plumbing system can also be effective. Displays and print materials can be available during these presentations and to customers at service locations. These materials can also be distributed to consumers if the PWS participates in community outreach (e.g. during fairs and festivals). Partnering with other organizations may give utilities the opportunity to have direct contact with affected consumers or those organizations may be willing to share the PWS's message themselves. Opportunities to share your PWS's lead message include:

- Drinking Water Treatment Plant tours
- School presentations – to administration, to teachers, to parents and to students who can take information home with them to parents.
- During National Drinking Water Week and National Lead Poisoning Prevention Week
- When partnering with other health care groups (health departments, hospitals, etc.)
- When partnering with at-risk populations due to age of homes/schools/businesses.
- To realtors and realty companies who may be selling homes that are served by LSLs

These nontraditional partners can both share in the components of the PWS's campaign and offer services that help customers address in-home plumbing, faucets and fixtures that increase the risk of lead exposure in drinking water. Example ways to engage non-traditional partners include:

- Include language such as "If you are a medical professional, day-care provider, school or other professional who would like to serve as an outlet for lead information, please contact us at..." in general outreach materials.
- Engage businesses about the possibility of offering discounts for faucets and filters and list them on materials.
- Engage plumbers about the possibility of offering discounts for lead plumbing inspections and instillation of lead-free faucets.

Table B.1: Consumer Awareness Activities

Type of Activity	Low Consumer Awareness Impact <i>(Provides minimal lead information to portions of the population.)</i>	Moderate Consumer Awareness Impact <i>(Provides detailed lead information to the whole population or a portion of the population.)</i>	High Consumer Awareness Impact <i>(Provides detailed or targeted information to at-risk consumers.)</i>
Print Materials		-General print materials delivered to all accounts yearly (not including CCR) -Print materials direct consumers to website	-Print materials delivered to consumers with LSLs on LSL flushing/removal -Print materials delivered to pregnant mothers/parents of small children on health effects
*Electronic delivery of print materials is acceptable consumers who have opted to receive all communications from the PWS electronically.			
Website	-Lead information on website	-Portion of website dedicated entirely to lead information	-Portion of website dedicated entirely to lead information; includes specific PWS actions taken to address lead in the system
LSL Inventory	-Link/directions to map on Ohio EPA's website	-Map on PWS website/print version available to consumers; map updated more than once every 5 years	-LSL lookup tool or hotline -Address-specific or geographically accurate lead maps available to public
Social Media	-General lead prevention posts	-Posts including a relevant link -Posts including a relevant photo -Posts during National Lead Prevention Week or Drinking Water Week -Posts detailing specific lead prevention actions taken by PWS -Posts for targeted audiences (i.e. expectant mothers/parents of young children)	-A social media post combining 2 or more aspects from the moderately impactful column
Instructional Videos, Photos and Graphics	-Digital materials developed by PWS	-Digital materials included on website, social media or in print materials	- Digital materials shared by partners including linked from their websites/social media accounts, aired on local TV channels/cabal systems, or played on closed-circuit TV channels reaching target audiences.
News Releases/ Blog Posts	-General lead information article/PSA	-News releases that include actions PWS is taking to address lead	-News releases that include actions consumers can take to address lead
Public Outreach	Raising lead awareness and gaining information on lead strategy through: -Water organizations -Environmental organizations	Partnerships with: -School boards -Daycare facility owners -Healthcare organizations -Local Health Department -Family planning organizations -Realty companies	-Partnerships in which lead hazard information is disseminated directly to target audiences

Revised 11/01/2018

B.3 Optional Lead Awareness Campaign Minimum Requirements

If a PWS wants to use this voluntary program in lieu of completing direct consumer notification during Type 2 disruption of service events, the system will be required to implement an optional lead awareness campaign. More information on creating and implementing an optional lead awareness campaign can be found in Appendix B. At a minimum, systems must:

- Implement at least 3 types of consumer awareness activities.
 - 1 high impact print material that includes Type 2 notification language ([Appendix A.2](#)).
 - 1 other type of activity with high consumer education impact.
 - 1 other activity from **Table B.1: Consumer Awareness Activities**.
- Submit a Lead Awareness Campaign Certification Form ([Appendix B.4](#)) to Ohio EPA yearly with the PWS's Consumer Confidence Report (CCR).
- Include an explanation of the campaign annually in the CCR.
 - Include information as to where consumers can find the materials.
 - Include a statement that the campaign is being used to meet a portion of the notification requirements in OAC Rule 3745-83-02.

B.4 Optional Lead Awareness Campaign Certification Form

PWS ID: _____

CERTIFICATION OF OPTIONAL LEAD AWARENESS CAMPAIGN

ATTACH THIS FORM TO YOUR ANNUAL CCR CERTIFICATION FORM IF YOUR PWS HAS IMPLEMENTED AN OPTIONAL LEAD AWARENESS CAMPAIGN TO MEET THE TYPE 2 DISRUPTION OF SERVICE NOTIFICATION REQUIREMENTS IN OHIO ADMINISTRATIVE CODE RULE 3745-83-02

I hereby certify that this public water system implemented an optional lead awareness campaign during the year covered by the attached CCR and that the campaign meets the minimum requirements in the table below.

1. Implement at least 3 types of Consumer Awareness Activities that meet the following. (Fill in all appropriate boxes)

<p>A print material with a high consumer awareness impact that includes Type 2 Disruption of Service lead notification language.</p>	<p><i>Description of Activity (including date(s) of mail, electronic, and/or hand delivery, if applicable):</i></p>
<p>A second consumer awareness activity with a high consumer awareness impact.</p>	<p><i>Description of Activity (including date(s) of delivery, if applicable):</i></p>
<p>A third consumer awareness activity.</p>	<p><i>Description of Activity (including date(s) of delivery, if applicable):</i></p>

2. Include an explanation of the optional lead awareness campaign annually in the CCR. The explanation must include information as to where consumers can find lead awareness campaign materials and a statement that the campaign is being used to meet a portion of the notification requirements in OAC Rule 3745-83-02. (Check the box below)

The attached CCR includes an explanation of this PWS's optional lead awareness campaign.

Signature of Responsible Official

Name of Public Water System

Printed Name and Title of Responsible Official

PWS ID.

Contact Phone

County

Email

Date

CCR For Calendar Year

11/01/2018

For OEPA Use Only	
Date Received	_____
Date Reviewed	_____
Reviewed By	_____

Appendix C: Disruption of Service Lead Notification Templates

Appendix C provides several templates for the various types of disruptions of service in areas of LSLs, including examples of how to incorporate lead language into boil advisories and water use advisories. The template in [C.1](#) is a sample notification for a Type 2 disruption of service for PWSs who do not have an optional lead awareness campaign. The template in [C.2](#) can be used as a boil advisory door hanger and the template in [C.3](#) can be used as a water use advisory letter or posting. The highlighted lead language has been pre-approved by Ohio EPA.

C.1 Example Type 2 Disruption of Service Lead Notification Door Hanger

To be distributed during a Type 2 disruption of service event if there are or may be LSLs in the affected area.

<p>[PWS NAME] [PWS PHONE #]</p> <p><u>WATER DISRUPTION NOTIFICATION</u></p> <p>Date: [DATE] To: [ALL AFFECTED AREAS] From: [UTILITIES SUPERINTENDANT NAME]</p> <p>Dear Water Customer:</p> <p>Your water service [was OR will be] disrupted today [DATE] to allow for the repair of a water line leak. The work should take [DURATION] hours to complete. We apologize for this inconvenience.</p> <p>[Describe event] may also cause additional disruptions in water quality including discolored water and/or potentially a temporary increase in lead levels in the drinking water.</p> <p>As a standard practice the USEPA recommends the following actions to reduce possible lead exposure in drinking water:</p> <ul style="list-style-type: none"> • If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking. This helps flush water that may have contained lead that may have leached from plumbing. • Use cold water for cooking, drinking, and preparing baby formula. Boiling the water will not reduce lead. • Clean your faucet aerator regularly. <p>For additional information visit drinktap.org or www.epa.gov/safewater/lead.</p> <p>Thank you for your cooperation. Please contact [PWS NAME] at [PHONE NUMBER] should you have any questions or visit our</p>

C.2 Example Boil-Water Advisory Door Hanger

To be distributed during Type 3 or Type 4 disruption of service events if there are or may be LSLs in the affected area.

[PWS NAME]
[PWS PHONE #]
WATER USE ADVISORY

Date: [DATE]
 To: [ALL AFFECTED AREAS]
 From: [UTILITIES SUPERINTENDANT NAME]

Dear Water Customer:

Your water service was disrupted today [DATE] to allow for the repair of a water line leak. The work should take [DURATION] hours to complete. We apologize for this inconvenience.

YOU ARE ADVISED TO BOIL YOUR WATER BEFORE CONSUMING OR USE AN ALTERNATIVE SOURCE OF DRINKING WATER SUCH AS BOTTLED WATER FROM THE TIME THE WATER IS TURNED BACK ON UNTIL [DAY] [DATE] at [TIME]. ONCE WATER SERVICE HAS BEEN RESTORED, FLUSH WATER FROM ALL TAPS USED FOR DRINKING AND COOKING FOR AT LEAST 3 MINUTES. WATER SHOULD BE BROUGHT TO A ROLLING BOIL AND BOILED FOR AT LEAST ONE MINUTE BEFORE CONSUMPTION. THIS IS ONLY A PRECAUTION. WATER SAMPLES WILL BE COLLECTED AND ANALYZED TO CONFIRM GOOD WATER QUALITY. SHOULD THIS ADVISORY BE EXTENDED, YOU WILL BE NOTIFIED.

[Describe event] may also cause additional disruptions in water quality including discolored water and/or potentially a temporary increase in lead levels in the drinking water. {INCLUDE FOR WATER MAIN/LSL REPLACEMENTS ONLY: As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use. }

As a standard practice the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush water that may have contained lead that may have leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.**

For additional information visit drinktaps.org or www.epa.gov/safewater/lead.

Thank you for your cooperation. Please contact [PWS NAME] at [PHONE NUMBER] should you have any questions or visit our website for updates: [INSERT WEB ADDRESS HERE]

C.3 Example Boil-Water Advisory

To be distributed during Type 3 or Type 4 disruption of service events if there are or may be LSLs in the affected area.

DRINKING WATER WARNING

Disease-causing organisms may have entered (PWS Name) water supply

BOIL YOUR WATER BEFORE USING OR USE BOTTLED WATER

Due to [describe problem, for example: a major line break], organisms that cause illness in people may have entered the water supply. People in [describe the affected area] should take the following precautions:

- **DO NOT DRINK THE WATER WITHOUT FLUSHING AND BOILING IT FIRST.** Flush all taps used for drinking and cooking for at least 3 minutes. Bring all water to a boil, let it boil for at least one minute, and let it cool before using, **or use bottled water.** Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice. Boiling kills bacteria and other organisms in the water.
- [Describe symptoms of the waterborne disease.] If you experience one or more of these symptoms and they persist, contact your doctor. People with severely compromised immune systems, infants, and some elderly people may be at increased risk. These people should seek advice about drinking water from their health care providers.

[PWS Name] has no evidence at this time that the water system is contaminated. The possibility, however, does exist that the water system is contaminated and is issuing this advisory as a precaution.

Additional Water Quality Advisory

[Describe event] may also cause additional disruptions in water quality including discolored water and/or potentially a temporary increase in lead levels in the drinking water. {INCLUDE FOR WATER MAIN/LSL REPLACEMENTS ONLY: As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use.}

As a standard practice the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush water that may have contained lead that may have leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.**

What is being done?

We are investigating and taking the necessary steps to correct the problem as soon as possible.

For more information, please contact [name of contact] at [phone number] or [mailing address].

For additional information general guidelines on ways to lessen the risk of infection by microbes or lead exposure are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791 or visit Drinktap.org and www.epa.gov/safewater.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Appendix D: Pre-Construction Notification Templates

Appendix D contains pre-construction notification templates for systems to use and adapt for their own main replacement projects or prior to LSL replacements. Sections 5 and 6 discuss delivery options for these templates, which can be developed into pre-construction letters, door hangers, etc. The highlighted language in these templates is already approved by Ohio EPA and should be used in its entirety. Red text should be replaced by system specific information. The rest of the language may be adapted by the system as needed.

Example D.1 is a preconstruction notice for an individual LSL replacement. The template includes the required lead notification and filter language as well as an offer to replace the customer's lead line. **Example D.2** is a preconstruction notice for a water main replacement in areas of LSLs and includes the required lead notification and filter language. **Example D.3** is a preconstruction notice for LSL replacements taking place in conjunction with a water main replacement project. **Example D.4** includes a sample pre-construction notice for large buildings.

Systems performing LSL replacements during a main replacement project must ensure the requirements for OAC Rule 3745-81-84(C) are met for those served by LSLs. To do so, PWSs may choose to send owners of LSLs the template in D.1 and send the template in D.2 to all other impacted consumers. Alternatively, systems could send the template in D.2 to all consumers and send the notice in D.3 to owners of LSLs.

D.1 Example Pre-Construction Notice – LSL Replacement Only

To be distributed to consumers served by the LSL at least 45 days prior to commencing replacement.

[Date]

Dear Property Owner,

[PWS Name] records indicate that the water service line that connects the water main to the plumbing system on your property may be made of lead. A lead service line can present the largest single source of lead in a property's plumbing system and replacement of the line is the only way to ensure that the line does not present a danger to people consuming water.

In the [indicate time period], [PWS Name] will be replacing the section of the water service line between the water main and your property. If the portion of the service line on your property is made of lead, [PWS Name] recommends that portion also be replaced at the same time to reduce the risk of lead exposure to water consumers at your property.

To help you replace the portion on your property, [PWS Name] is offering to replace the privately-owned portion of the lead line, at your expense.

[If your utility has already determined the cost of private side replacement for the property, state that cost here.]

[If your utility needs to obtain an estimate to provide a price, insert how the customer can contact the utility to begin the process of obtaining an estimate].

If you agree to have [PWS Name] replace the portion of the line that you own, please contact [PWS Contact Name], by [insert date] to make arrangements for the work to be performed.

Lead Information

[The construction activities (i.e. LSL replacement, main replacement project)] may cause changes in water quality, including the possibility of a temporary increase in lead levels in the drinking water. As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use.

When water service is restored, perform a full-house flush by letting the cold water run on all the taps in your house run for 30 minutes to flush out any lead and/or sediment from your line. Then begin using your water filters certified to remove lead for all water used for drinking and cooking.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

If you choose not to replace your portion of the service line and it is lead, [PWS Name] will still need to obtain a water sample within 72 hours after the publicly-owned portion of the service line is replaced. You will be contacted at the time of replacement for instructions on how to collect this sample.

Sincerely,

[Utility Manager/Superintendent]

D.2 Example Pre-Construction Notice – Main Replacement

To be distributed to system consumers in areas with known lead service lines or in an area that is likely to contain lead service lines at least 45 days prior to commencing main replacement.

[Date]

Dear Resident,

As part of the effort at continuous infrastructure improvement, and to provide the highest quality service to our customers, [PWS Name] has contracted with [Contractor Company] to install new water mains in the following street(s):

- [Describe impacted area, for example:
- Maple Avenue from Main St to Rebecca Ct
- Main St from Glenwood Rd to Emily St]

Construction Schedule:

The installation is expected to begin on or around [projected start date] and is expected to last until [projected end date]. [Insert construction information as applicable. For example: Construction is scheduled Monday through Fridays from 8:00 am until 6:00 pm.]

During construction all efforts will be made to minimize traffic disruption, but periodic detours and delays can be expected.

Impacts on Water Service:

[PWS Name] will make all efforts to minimize any disruption to your water service. However, during the construction you may experience some disruption of your water service. [PWS Name] will advise you of any planned disruptions to your service as far in advance as possible.

Lead Information

This construction is taking place in an area which may have lead service lines. [The construction activities (i.e. LSL replacement, main replacement project)] may cause changes in water quality, including the possibility of a temporary increase in lead levels in the drinking water. As a precaution, [PWS Name] is offering water filters which are certified to remove lead. To obtain a filter [Insert information about how to get a filter]. Manufacturer's instructions on how to properly use the filter, including when the filter should be changed are included with the filter and should be read prior to use.

You will be notified when water service has been restored. When water service is restored, perform a full-house flush by letting the cold water run on all the taps in your house run for 30 minutes to flush out any lead and/or sediment from your line. Then begin using your water filters certified to remove lead for all water used for drinking and cooking.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

(Include if applicable: If [PWS Name] suspects that your home or building may be served by a lead line, you will be contacted with additional information.)

Please pardon any inconvenience caused resulting from this improvement and thank you for your patience during the installation. Additional project updates can be found [insert website or other contact information].

Sincerely,

[Utility Manager/Superintendent]

D.3 Example Pre-Construction Notice – LSL Replacement during Main Replacement

To be distributed to the owners of properties which are suspected of having lead service lines when a utility plans to replace LSLs as a part of a main replacement project. This can be distributed with the 45-day pre-construction notice or may be provided separately.

[Date]

Dear Property Owner,

[PWS Name] records indicate that the water service line that connects the water main to the plumbing system on your property may be made of lead. A lead service line can present the largest single source of lead in a property's plumbing system and replacement of the line is the only way to ensure that the line does not present a danger to people consuming water.

In the [indicate time period], [PWS Name] will be replacing the existing water main in your street, which will include installing a new water main and a new section of the water service line between the water main and your property. If the customer-owned portion of the service line on your property is made of lead, [PWS Name] recommends that portion also be replaced at the same time to reduce the risk of lead exposure for water consumers at your property.

To help you replace the portion on your property, [PWS Name] is offering to replace the privately-owned portion of the lead line, at your expense.

[If your utility has already determined the cost of private side replacement for the property, state that cost here.]

[If your utility needs to obtain an estimate to provide a price, insert how the customer can contact the utility to begin the process of obtaining an estimate.]

If you agree to have [PWS Name] replace the portion of the line that you own, please contact [contact information], by [insert date] to make arrangements for the work to be performed.

If you choose not to replace your portion of the service line and it is lead, [PWS Name] will still need to obtain a water sample within 72 hours after the publicly-owned portion of the service line is replaced. You will be contacted at the time of replacement for instructions on how to collect this sample.

Sincerely,

[Utility Manager/Superintendent]

D.4 Example Pre-Construction Notice for Large Buildings

To be distributed to building administrators of large buildings in areas with known lead service lines or in an area that is likely to contain lead service lines.

[Date]

Dear Facility Administrator,

As part of the effort at continuous infrastructure improvement, and to provide the most quality service to our customers, [PWS Name] will be replacing a water main that serves your facility beginning on or around [insert expected date of work]

Impacts on Water Service:

[PWS Name] will make all efforts to minimize any disruption to your water service. However, during the construction you may experience some disruption of your water service. [PWS Name] will advise you of any planned disruptions to your service as far in advance as possible.

Lead Information

This construction is taking place in an area which may have lead service lines. [The construction activities (i.e. LSL replacement main replacement project)] may cause changes in water quality, including the possibility of a temporary increase in lead levels in the drinking water.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

Please pardon any inconvenience caused resulting from this improvement and thank you for your patience during the installation. Additional project updates can be found at our website [insert web address here].

Sincerely,

[Utility Manager/Superintendent]

Appendix E: Lead Service Line Sample Request Templates

These templates can be used when requesting a service line sample following a partial LSL replacement. The template in [E.1](#) is geared for when consumers will take a sample while the template in [E.2](#) should be used when a service line sample must be taken by the PWS. Consult [Section 6.4](#) of this guidance for more information on post-replacement sampling.

While lead language is not required to be included in this request, systems should consider reiterating the methods for reducing lead following a partial LSL replacement. Additionally, systems may choose to request a service line sample using an alternative method (for example, face-to-face contact with the consumer during the replacement).

E.1 Example Instructions on Obtaining a Service Line Sample Within 72 Hours After a Partial Service Line Replacement – Customer Does Sampling

To be distributed to the residents of properties where a partial replacement is done and the utility is relying on customer to collect sample. This notice will typically be given with a 1-liter sample bottle the day that the partial service line replacement is performed.

[Date]

Dear Customer,

[PWS Name] is currently performing a [insert reason line must be partially replace (i.e. water main replacement project)] which requires us to replace the portion of the service line that we own. We have determined that the customer-owned portion of the service line that runs from the shut-off valve into your home is made of lead. Ohio EPA regulations require that we obtain a water sample within 72 hours from homes/buildings whenever part of a lead service line remains after construction work is complete.

To collect this sample, [PWS Name] is asking you for assistance. Sample collection needs to be done after the water has sat unused in the water pipes for a minimum of 6 hours. Many people find that early morning before any water has been used or evenings after returning from work are good times to collect the sample.

To perform the sampling, open the cold-water side of the faucet and place your fingers in the water flow. Once you feel a change in the water temperature, place the bottle under the water flow and fill the bottle up to the indicator mark. Once full, place the cap on the bottle tightly, fill out the information form [include bottle and sampling information form with this letter], and call [phone number] to arrange for us to pick it up. [PWS Name] will provide the results of this sample as soon as possible.

[PWS Name] also advises that once water service is restored, before you use **any** water in the house, perform a full-house flush by running all the cold water taps in your house for 30 minutes to flush out any lead or sediment from your line. Then begin using your water filter certified to remove lead.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

Sincerely,

[Utility Manager/Superintendent]

E.2 Example Instructions on Obtaining a Service Line Sample Within 72 Hours After a Partial Service Line Replacement – Water Utility Does Sampling

To be distributed to the residents of properties where a partial replacement is done and the utility will collect the sample. This notice will typically be given out several days or weeks prior to the service line work.

[Date]

Dear Customer,

[PWS Name] is currently performing a [insert reason line must be partially replace (i.e. water main replacement project)] project which requires us to replace the portion of the service line that we own. We have determined that the customer-owned portion of the service line that runs from the shut-off valve into your home is made of lead. Ohio EPA regulations require that we obtain a water sample within 72 hours from homes/buildings whenever part of a lead service line remains after construction work is complete.

To collect this sample, [PWS Name] is asking you for assistance. [PWS Name] will need to measure the plumbing inside of the building to allow us to collect the proper sample. [PWS Name] will contact you to arrange for us to enter your home, take these measurements and collect the sample.

[PWS Name] will provide the results of this sample as soon as possible.

[PWS Name] also advises that once water service is restored, before you use **any** water in the house, perform a full-house flush by running all the cold water taps in your house for 30 minutes to flush out any lead or sediment from your line. Then begin using your water filter certified to remove lead.

As a standard practice, the USEPA recommends the following actions to reduce possible lead exposure in drinking water:

- **If water has not been used for several hours, run the tap until there is a noticeable temperature drop. Then, run water for 30 seconds to 3 minutes before using it for drinking and cooking.** This helps flush out water that may have contained lead that may have been leached from plumbing.
- **Use cold water for cooking, drinking, and preparing baby formula.** Boiling the water will not reduce lead.
- **Clean your faucet aerator regularly.** Small particles of solder and other material can accumulate in faucet aerators and can release lead into the water in some circumstances. Cleaning the accumulated particles from the aerator will help eliminate this potential source of lead.
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

For more information about lead in drinking water, please contact [utility contact info] or visit the USEPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact [local health department contact info].

Sincerely,

[Utility Manager/Superintendent]

Appendix F: Ohio EPA Contact Information



Central Office

Lazarus Government Center
 50 W. Town St., Suite 700
 Columbus, OH 43215
 (614) 644-3020

Central District Office

Lazarus Government Center
 50 W. Town St., Suite 700
 Columbus, OH 43215
 (614) 728-3778
 (800) 686-2330

Northwest District Office

347 N. Dunbridge Rd.
 Bowling Green, OH 43402
 (419) 352-8461
 (800) 686-6930

Southeast District Office

2195 E. Front Street
 Logan, OH 43138
 (740) 385-8501
 (800) 686-7330

Northeast District Office

2110 E. Aurora Rd.
 Twinsburg, OH 44087
 (330) 963-1200
 (800) 686-6330

Southwest District Office

401 E. Fifth St.
 Dayton, OH 45402
 (937) 285-6357
 (800) 686-8930

*Toll-free numbers are for citizens with questions or concerns about environmental issues.
 The regulated community should use the business line for routine business.
 Spills and emergencies should be reported to (800) 282-9378.*