



2019 Quarterly Lead Service Line Identification and Replacement Webinar Series

Hosted by EPA's Office of Water (OW)

December 5, 2019 2:00-3:30 pm ET

**Webinar #4: Focus on
Small Utilities**



Webinar Support Phone Number: 1-800-263-6317

Audio Controls: Your audio is muted by the organizer.

Webinar Slides: The webinar presentations can be downloaded under “Handouts” located in the right navigation bar of your screen.

To Ask a Question: Type a question in the “Questions” box located in right navigation bar of your screen.



All webinar recordings and slides can be found here:

<https://www.epa.gov/dwreginfo/lead-service-line-identification-and-replacement-webinars>



DISCLAIMER

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In 2019 quarterly webinars will be held to highlight challenges and successes associated with lead service line identification and replacement through case studies from water systems and state primacy agencies.

- Webinar #1: March 7, 2019 2-3:30 pm ET “Introduction to the Series”
 - DC Water and Washington State DOH
- Webinar #2: June 6, 2019 2-3:30 pm ET “Focus on State Programs”
 - Massachusetts DEP and New Jersey DEP
- Webinar #3: September 5, 2019 2-3:30 pm ET “Focus on Large Water Systems”
 - EPA Office of Research and Development, Central Arkansas Water, Louisville Water
- **Webinar #4: December 5, 2019 2-3:30 pm ET “Focus on Small Water Systems”**
 - **EPA Office of Ground Water and Drinking Water, Vermont DEC, City of Lake Mills, WI**

Walkthrough of EPA's LSL Replacement Website

Presented by Michael Goldberg, US EPA Office of Ground Water and Drinking Water

Michael Goldberg is an environmental engineer at USEPA and has worked on the Lead and Copper Rule Long-Term Revisions for five years. Michael earned a BS and MS in environmental engineering at Northwestern University. He is based out of Washington, D.C.

EPA RESOURCES RELATED TO LSL REPLACEMENT

Main page

The screenshot shows the EPA website page for Lead Service Line Replacement. The header includes the EPA logo and navigation links for Environmental Topics, Laws & Regulations, and About EPA. The main content area is titled "Lead Service Line Replacement" and includes a sidebar with links to Ground Water and Drinking Water, Basic Information, Private Wells, Consumer Confidence Reports, Regulatory Requirements, Standards and Regulations, All Drinking Water Topics, Safe Drinking Water Information System, and For Students and Teachers. The main text explains that EPA established the Lead and Copper Rule (LCR) to protect public health and reduce exposure to lead and copper in drinking water. It also mentions that EPA and HUD encourage and support communities to prioritize infrastructure improvement projects. A green callout box titled "Proposed Lead and Copper Rule" contains a link to "Read EPA's proposed Lead and Copper Rule and learn how you can provide comments." Below the main text, there are links to "Read EPA and HUD's letter to State Governors" and "Read EPA and HUD's letter to Navajo Nation". At the bottom, it states that EPA has compiled information about federal funding, case studies, and other additional resources to assist states and water utilities with these efforts.

<https://www.epa.gov/ground-water-and-drinking-water/lead-service-line-replacement>

Funding Resources

The screenshot shows the EPA website page for Funding for Lead Service Line Replacement. The header includes the EPA logo and navigation links for Environmental Topics, Laws & Regulations, and About EPA. The main content area is titled "Funding for Lead Service Line Replacement" and includes a paragraph explaining that improving America's water infrastructure is vital to protecting public health and reducing lead in drinking water. It also mentions that federal and non-federal funding sources are available to assist states and water utilities with these efforts, including lead service line replacement (LSLR). Below this, there is a section titled "On this page:" with a list of links to various funding sources: Drinking Water State Revolving Fund (DWSRF), HUD Community Development Block Grant (CDBG), Assistance for Small and Disadvantaged Communities Grant, Lead Testing in School and Child Care Drinking Water Grant, Reducing Lead in Drinking Water Grant, Water Infrastructure Finance and Innovation Act (WIFIA), and Additional Lead in Drinking Water Funding. A section titled "Drinking Water State Revolving Fund" explains that the DWSRF has provided loans that directly supported lead pipe replacement projects in cities across the United States. A green callout box titled "DWSRF Lead Factsheet" contains a link to "View DWSRF eligibilities and case studies to remove lead."

<https://www.epa.gov/ground-water-and-drinking-water/funding-lead-service-line-replacement>

Financing Case Studies

The screenshot shows the EPA website page for LSLR Financing Case Studies. The header includes the EPA logo and navigation links for Environmental Topics, Laws & Regulations, and About EPA. The main content area is titled "LSLR Financing Case Studies" and includes a paragraph explaining that it is estimated that there are between 6 to 10 million lead service lines in the country. The case studies below highlight proactive actions being taken by cities across the country to finance projects that identify and remove these lead service lines. Below this, there is a table with four rows and two columns. Each row contains a map of a state, a link to a case study, and the funding source. The case studies are: Georgetown, DE (funding source: DWSRF), Galesburg, IL (funding source: DWSRF), Quincy, MA (funding sources: Rate revenue, local loan program), Claremont, NH (funding source: DWSRF), North Providence, RI (funding source: DWSRF), and Spokane, WA (funding source: DWSRF).

<https://www.epa.gov/ground-water-and-drinking-water/lslr-financing-case-studies>

Implementation of Vermont's Lead Reduction Strategies Grant

Presented by Megan Young, Vermont Department of Environmental Conservation, Drinking Water and Groundwater Protection Division

Megan Young received her Master's Degree from the University of South Carolina in Earth and Environmental Resource Management in 2004 and has been working for the Vermont Drinking Water and Groundwater Protection Division for 13 years. During this time Megan has personally inspected over 1000 of the 1400 water systems in the State of Vermont, from the smallest TNCs to the largest Community Water Systems. Megan has firsthand experience with the unique challenges that Vermont's Water Systems face and is using that experience to help these water systems improve their technical, financial and managerial capacity.

IMPLEMENTATION OF VERMONT'S LEAD REDUCTION STRATEGIES GRANT

<http://dec.vermont.gov/water/drinking-water/capacity-dev>

Drinking Water Capacity Development Program

Lead Reduction Strategies

Grant Opportunity - January 2017

Grant Overview

The Drinking Water Capacity Development Program is offering grants to help public community water systems reduce the risks of exposure to lead in drinking water. We will provide about \$100,000 in grants, with a minimum grant award of \$20,000 per system and a maximum of \$80,000. We expect grantees to develop and implement risk reduction strategies that other communities can use as a model, with an emphasis on finding and removing lead service lines. Grant funding may be used to:

- Find, map, and inventory water distribution and customer service lines;
- Establish a proactive, full lead service line replacement program;
- Educate the public about the risks of exposure to lead in drinking water and how to reduce risks; and
- Develop a Capital Needs Study, Capital Improvement Plan, and Funding Strategies to replace publicly and privately owned lead lines.

Grants will be awarded to the systems that demonstrate in their application the greatest potential to reduce exposure to lead in drinking water. Factors that will be considered include the corrosivity of the source and finished water, lead use in the drinking water infrastructure (e.g., lead joints), estimated number and length of lead service lines (publicly and privately owned), history of elevated lead in drinking water and customers' blood levels, and the proposed risk reduction strategies. *Grant applications are due by March 24th, 2017.*



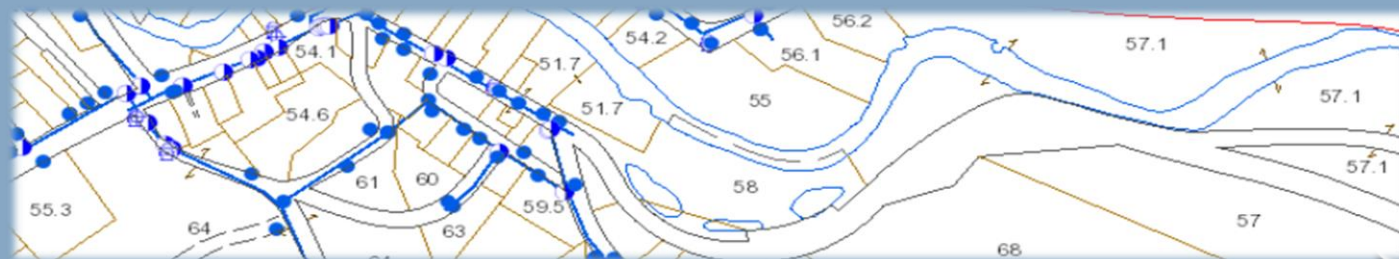


Photo courtesy of Irina Zhorov/WESA

Drinking Water Lead Reduction Grant 2016 1

Eligible Activities:

- Finding, mapping, and creating an inventory of water distribution lines and customer service lines;
- Establishing a proactive, full lead line replacement program;
- Educating the public; and
- Developing a Capital Needs Study, Capital Improvements Plan, and Funding Strategies to replace privately and publicly owned lead lines and other lead-containing infrastructure.



Grantee #1 - Springfield Water Department:

- No known lead service lines
- Known lead goosenecks;
- Some suspected lead appurtenances;
- Groundwater;
- No corrosion control treatment

Grantee #2- Bennington Water Department:

- Some known lead service lines (full and partial);
- Some suspected lead service lines;
- Multiple sources, including surface water;
- Corrosion control treatment

LEAD REDUCTION GRANT- SPRINGFIELD RESULTS



LEAD REDUCTION GRANT- SPRINGFIELD RESULTS

Street Name	Address	Lead Gooseneck Suspected?	Sample Taken?	Highest Lead Concentration	Lead Concentration at Gooseneck	Sample Date	Service Line Material	Visual Inspection	Lead Gooseneck Replaced?	Date Lead Gooseneck Replaced	Visual Inspection Notes
COMMONWEALTH AVE	20		X	< 2 ug/L	< 2 ug/L	8/9/2018	Copper				
COMMONWEALTH AVE	21										
COMMONWEALTH AVE	31	X	X	4 ug/L	4 ug/L	7/25/2018	Copper	X	X	9/12/2018	Lead Gooseneck
COMMONWEALTH AVE	41	X	X	3 ug/L	3 ug/L	7/26/2018	Copper				Copper service found
COMMONWEALTH AVE	50										
COMMONWEALTH AVE	54	X	X	2 ug/L	2 ug/L	7/30/2018	Copper	X	X	8/10/2018	Lead gooseneck
COMMONWEALTH AVE	58		X	< 2 ug/L	< 2 ug/L	8/1/2018	Copper				
COMMONWEALTH AVE	85	X						X	X	7/7/2018	Lead gooseneck found during leak repair
COMMONWEALTH AVE	89		X	< 2 ug/L	< 2 ug/L	5/16/2018	Galv.				

TOWN OF SPRINGFIELD, VERMONT LEAD REPLACEMENT PROGRAM STANDARD OPERATING PROCEDURE

A. Outreach

Goal: Complete sampling and replacement of known lead gooseneck within 10-years (approximately 16 services per year).

How:

1. Town will distribute door hangers to selected street and properties. Streets will be grouped together based on location, proximity, number of suspected properties etc. Goal 16 services per year. Property owners will have approximately 60 days to respond to the Town.
2. One (1) public meeting will be held each year during the outreach session to promote public dialogue on the Town's efforts and encourage residents to respond to the Town's inquiry.
3. An announcement, about the corresponding fiscal year's public outreach, will be posted on the Town's website during the public outreach (February – March). This announcement will supplement the public informational literature posted on the Town's website 24/7/365 about the risks associated with exposure to lead in drinking water and how to reduce those risks.
4. The door hanger will be re-distributed in March water bills to property owners who have yet to respond to the Town.
5. In-person follow-up will be completed by Town after expiration of 60 days.
6. For property owners who have failed to respond following Steps #1-5, the Town will decide whether to reach out to the property owner at a later date (i.e. year) OR move forward with exploratory excavation, either in-house or by an independent contractor, to visually confirm the service line material. This decision will be at the Town's discretion. Any exploratory excavation will be scheduled with advance notice. A second door hanger will be left at the property prior to, during and after excavation.

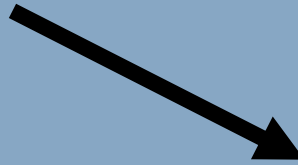
Schedule:

- February – March: Outreach

Outreach Plan by Year

FY	Street	# Services
19	Olive & Furnace Street	19
20	South & Union Street	21
21	Park, Pearl, Pine & Prospect Street	16
22	Hillcrest, Hill & Ellis Street	10
23	Front, Orchard & Pleasant Street	16
24	Summer Hill, Summer & Wall Street	15
25	Main & River Street	14
26	Clinton Street	15
27	Commonwealth Avenue	17
28	Bridge, Craigie Hill, Essex, Franklin & Walnut	16
	Total	159

Town Website



Lead Health Effects

No amount of lead is safe! Lead can cause serious health effects, both mental and physical. The greatest risk of lead exposure is to infants, young children, and pregnant women. For more information on the health effects of lead visit <https://www.epa.gov/lead/learn-about-lead>.

Lead in Drinking Water

There are several ways people can be exposed to lead. Drinking water is one possible source of lead exposure. Lead is not typically found in water sources; however, lead in drinking water can be a result of the following:

- Lead Pipes & Service Lines
- Pipe Connectors
- Soldered Pipe Joints
- Water Fountains & Coolers
- Brass Faucets
- Other Fixtures

If you have concerns or questions, we strongly encourage you to call the Vermont Department of Health (VDH) at 800-863-7200 or visit their website at <http://www.healthvermont.gov/>.

Springfield Water System - Lead

The Town of Springfield drinking water system has limited experience encountering and replacing lead service lines. However, through recent research the Town has found that services on original cast iron waterlines (pre-1950's) may have lead goosenecks.

Areas of Concern

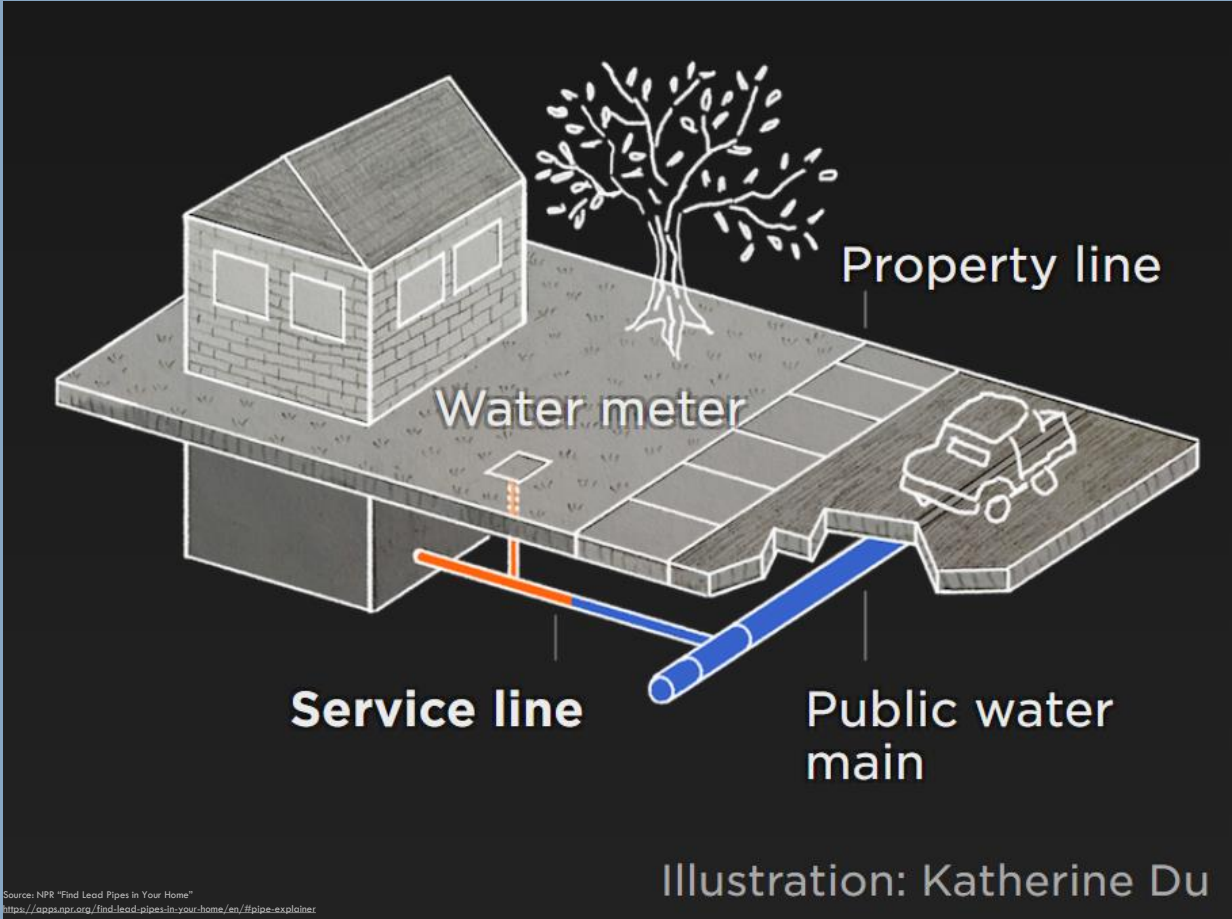
Residents on the following downtown streets may have lead goosenecks:

- Bridge Street
- Clinton Street
- Commonwealth Avenue
- Craigie Hill Road
- Essex Street
- Ellis Street
- Franklin Street
- Furnace Street
- Hillcrest Road
- Hill Place
- Main Street
- Olive Street
- Orchard Street
- Park Street
- Pearl Street
- Pleasant Street
- Prospect Street
- River Street
- South Street
- Summer Hill Street
- Summer Street
- Union Street
- Wall Street
- Walnut Street

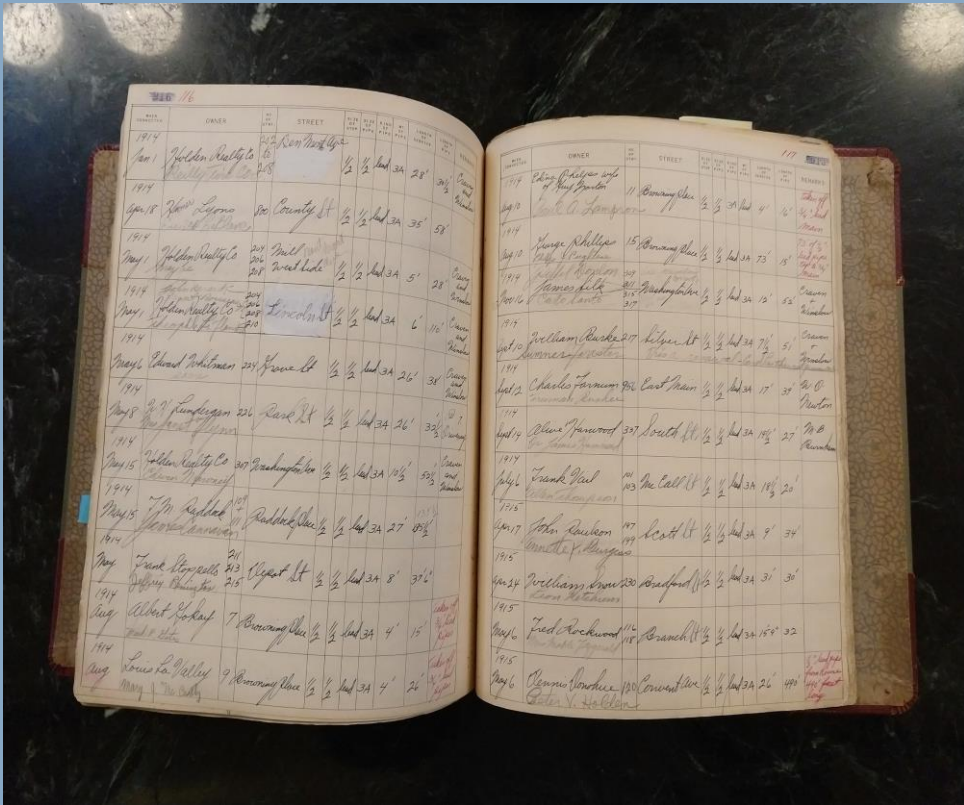
What is Being Done?

The Town Water Department has completed an inventory of all waterlines and goosenecks in the downtown area. Over the past year, the Town has solicited volunteers to have their water sampled and completed exploratory excavations to verify gooseneck materials. Once a lead gooseneck is identified, the Town notifies the property owner and diligently works to replace the gooseneck.

LEAD REDUCTION GRANT- BENNINGTON RESULTS



LEAD REDUCTION GRANT- BENNINGTON RESULTS



LEAD REDUCTION GRANT- BENNINGTON RESULTS



KEY	LEAD CATEGORY	COUNT	ESTIMATE
	Both Sides Lead	254	127-627
	Customer Side Lead	535	267-962
	Both Sides Unknown	373	
	Customer Sides Unknown	427	
	Both Sides Not Lead	2016	

PLEASE NOTE: These data are mapped in an attempt to update potentially out of date town records. We expect as many as 50% of private lead lines mapped here to have already been replaced.

To view information about your home or business, explore the web map on the Town of Bennington website: <http://benningtonvt.org/lead-in-drinking-water-updating-town-records-and-removing-lead-pipe/#lead>





- More Sampling needed for verification
- Prepare and send out an initial mailing to all connections categorized as “lead” or “unknown” in the database



TOWN OF BENNINGTON

April 10, 2018

Dear Resident:

The Town of Bennington recently received a grant from the State of Vermont's Safe Drinking Water State Revolving Fund to develop lead reduction strategies for the community. The Town has identified up to 1,800 service lines within the municipal water system that are either known or presumed to be of partial lead construction. As a part of the work to be performed under this grant, the Town has contracted with MSK Engineering and Design to collect information at a number of private properties in order to assess baseline lead levels. The results of the lead tests performed at these properties will allow MSK to develop a strategic lead line service replacement program.

Your property has been chosen for the sampling program because it is suspected to have one of the following:

- A service line made of lead pipe; or,
- A service line containing a lead "gooseneck" or "pigtail" or other fitting.

A staff engineer will conduct a brief inspection of the internal plumbing in your home or business and then draw a water sample for testing. The inspection will take approximately 30 minutes and the engineer may require access to the basement of your building. The sampling performed will not affect your water quality or supply. You will receive a copy of the results of your lead test.

If you would like to volunteer for this important project, please contact Sean Cohen from MSK Engineering & Design at (609) 332-6439 for additional information.

Your cooperation is greatly appreciated.

Sincerely,

Stuart Hurd
Town Manager



Long term detailed replacement program

Outreach:

Funding:

Town of Bennington, Vermont
 Meetings ▾ Contact 802.442.1037
 Serving people through teamwork

Search this website ...

Home Government ▾ Departments ▾ Boards & Commissions ▾ Doing Business in Bennington ▾ Recreation ▾ Community Resources ▾

You are here: Home / Departments / Departments of Public Works / Water Resources Division / Lead in Drinking Water: Updating Town Records & Removing Lead Pipe

Lead in Drinking Water: Updating Town Records & Removing Lead Pipe

Contents:

- Lead Pipe in Bennington
- What is a Service Line?
- Reviewing Lead Service Line Records & Developing a Replacement Program
- My Home or Business Has a Lead Service Line
- The Map Says My Home or Business Has a Lead Service Line, But It Was Replaced
- Lead Service Line Records Web Map
- Submit an Update
- Getting Your Home or Business Inspected For Lead

Lead Pipe in Bennington

The Town of Bennington Water Department is performing a comprehensive review of water service line records to identify lead service lines and develop a replacement program.

Bennington's water mains are lead-free. But, many of the original lead service lines connecting individual homes and businesses still exist.

Regular testing of the Bennington water system has shown that lead levels continue to remain below thresholds at which Federal EPA and Vermont State Drinking Water standards require action. However, due to recent incidences in other communities across the country, it has become a federal, state and local goal to eliminate all public and private lead service lines from the water system.

IMPORTANT: Having a lead water line does not necessarily mean your water is contaminated or that you are at risk of lead poisoning. The Bennington Water Department treats the water supply, using a federally approved process, to significantly reduce the possibility of contamination.

If you believe your home or business has a lead service line, please call the Bennington Town Offices at (802) 447-9719 or email Linda Bermudez at lbermudez@benningtonvt.org to request an inspection and begin exploring replacement options.

If you would like to learn more or to find out information about your home or business, please review the information and [web-map](#) below.

CASE 1: GRANTS AVAILABLE	CASE 2: DWSRF FUNDING	CASE 3: NO FUNDING
<ul style="list-style-type: none"> • EPA grants cover some or all replacement costs 	<ul style="list-style-type: none"> • As part of a larger project, LSL replacement is 100% forgiven 	<ul style="list-style-type: none"> • Town Revolving Loan Funded loans: paid via water bill, to individual users to incentivize replacement

Questions?

Contact : Vermont Drinking Water and Groundwater Protection Division

Megan Young, Capacity Program Supervisor

megan.young@Vermont.gov 802-585-4903

City of Lake Mills, WI LSL Identification and Replacement Project

Presented by Paul Hermanson, Harold Dunkleberger, Duane Vandermause, and Justin Bilskemper

Paul Hermanson is the director of public works for Lake Mills, WI. In this role he is responsible managing the electric, wastewater and water utilities as well as the street department. Paul has worked for the city for more than 13 years, starting as the water and electric utilities superintendent. He has also worked for the statewide association of electric cooperatives and as editor of two small town newspapers.

Harold Dunkleberger is the lead water operator for Lake Mills Light & Water. In November Harold marked 25 years working with the city in various roles. He took over as lead water operator in 2012. Harold has been directly involved in implementing many changes in the utility to comply with the various Consent Orders and requirements and to improve and maintain the city's water quality.

Presenters continued

Duane Vandermause (JDMAUSE LLC) is a contract Engineer/Assistant Director of Public Works for the City of Lake Mills. He is a professional civil engineer with membership in American Public Works Association (APWA) and the American Society of Civil Engineers (ASCE) with over 25 years of experience consulting on numerous municipal infrastructure projects in the State of Wisconsin. He provides assistance to City staff on many municipal maintenance, reconstruction, and construction projects in the City. He also provides input into capital improvement planning and maintenance for the City's municipal infrastructure and assists with data collection and analysis for various City departments. Duane has an interest in sports activities as a participant, youth coach, and fan.

Justin Bilskemper is a registered professional engineer in the state of Wisconsin and project manager at Strand Associates, Inc., where he has worked for more than 13 years in the municipal and drinking water departments. Justin received his bachelor's degree in Civil Engineering from the University of Wisconsin Platteville in 2006. He specializes in computerized water system modeling, distribution system master planning, water rate case evaluations, and State Revolving Fund implementation. He has worked on more than 35 full-scale water system studies and evaluations and dozens of other small modeling projects. Additionally, Justin provides on-demand hydraulic modeling to more than a dozen municipalities across Wisconsin and Illinois. Justin has been working with the City of Lake Mills since 2013.

CITY OF LAKE MILLS, WI

**LSL IDENTIFICATION AND
REPLACEMENT PROJECT**

**EPA WEBINAR –
DECEMBER 5, 2019**

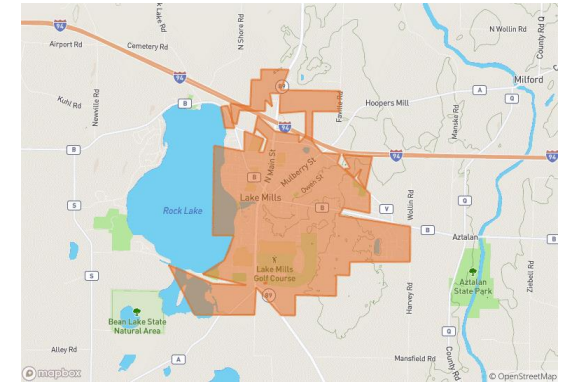


Presenters

- Paul Hermanson, director of public works
- Duane Vandermause, assistant director of public works
- Harold Dunkleberger, lead water operator
- Justin Bilskemper, consultant, Strand Associates

Our City

- Located in south-central Wisconsin
- Rock Lake (1,365 acres)
- Population: 5,800
- Total water customers: 2,539
Residential customers: 2,235





Our Water System

- System constructed in 1891
- Three pump stations/ reservoirs
 - Avg. 820' deep
 - 600,000 gallons of ground level storage
- 500,000 gallons of elevated storage
- 216,000 linear feet of water main
 - Approximately 25% pre-1940
 - Approximately 50% pre-1970
- Pumped 185 million gallons in 2018
- Peak - 18 million gallons in July, 2018

Our Staff, Budget and Regulation



- Three full-time employees
- 2018 Revenue: \$1.18 million
- 2018 Expenses: \$1.25 million
- Rates - Public Service Commission of Wisconsin (PSCW)
 - Resident/ utility split at curb stop (service control valve)
 - No resident-side funding
- Quality - Wisconsin Department of Natural Resources (WDNR) and Environmental Protection Agency (EPA)

Our Presentation

- Financial impact of LSL replacement and related projects
- WDNR Consent Orders and test results
- Value of education
- Value of inventory
- Recommendations



Brief History



- AquaMag started in 1993
- Limited pipe materials data pre-1960
- Previous staff reported knowing of approximately 50 LSLs
- Sampling issues
 - › Homeowners reluctant to participate
 - › Concerns about how samples taken
 - › Hired third-party
 - › Paid for participation
 - › Highly variable results

Our LSL-based Activities

- Residential water samples
- LSL inventory
- Corrosion control study
- Education



Water Sampling Program

- 40 samples, twice a year
- WDNR approved sites
- Residents took samples initially
- Wide swings in results
- Initiated third-party sampling
- Pay for participation



Our Test Results

- 2009-2016
 - 14 test cycles
 - 534 results
 - 20% (108) test exceedances (> 15 ug/L)
- 103 test sites
 - 43 sites with at least one exceedance
 - 60 sites with no exceedances



Variable Sample Example



Residence on Oak Street (.23 ug/L to 99 ug/L)

- 2009 _____
 - *Spring* – 15 ug/L *Fall* – 74 ug/L
- 2010 _____
 - *Spring* – 4.1 ug/L *Fall* – 17 ug/L
- 2011 _____
 - *Spring* – 33 ug/L *Fall* – 3.1 ug/L
- 2012 _____
 - *Spring* – .85 ug/L
- 2013 _____
 - *Spring* – .23 ug/L *Fall* – 33 ug/L
- 2015 _____
 - *Spring* – 99 ug/L *Fall* – 15 ug/L

Our LSL Inventory Project



- Researched water system history
- Hired part-time inspector (city)
- Established criteria for inspection area
 - Pre-1970 mains
- Inspect at meter
- Meters in house
 - Typically in basement
 - 4'-6' deep service lines
- Required accessing homes
 - Little resistance
 - Evening and weekend appointments

LSL Inventory Data

- Some lines both non-lead/ copper and lead
- Started in 2017 – final report in June 2019
 - Approximately \$50,000 effort
- 387 LSLs at 1,400 sites
 - All lead LSLs found at pre-1935 buildings



Our Corrosion Control Study



- Designed and built test rack – approximately \$17,000
- Samples taken directly at reservoir
- Tested both lead and copper LSLs
- Sampling
 - Lead and copper taken weekly
 - Hardness, chloride, sulfates, iron, manganese, pH, etc. taken monthly
 - Cost for testing, staff time – more than \$10,000
- Logged data for approximately one year



Corrosion Control Tests



- Tested four applications
 - 30% orthophosphate/ 70% polyphosphate (AquaMag)
 - 100% orthophosphate (CARUS 4200)
 - 70% orthophosphate/ 30% polyphosphate (CARUS 8600)
 - Soluble Silicates (28.7 SiO₂)
- Start up issues
 - What to test
 - Flow rates
 - Chemical concentration

Our LSL Replacement Project



- \$300,000 loan/grant
 - Ineligible for 2018 round of funding
- Replacements started before inventory project completed
- 75% reimbursement
 - Based on anticipated participation
- Earmarked funds for homes on street reconstruction projects
- Replacement activity at 165 sites between 2017-2019

Private Side LSL Replacement Project



- Average cost of replacement - \$3,475
- Average reimbursement - \$2,606
- Attitude
 - Only 23 residents replaced without funding
 - 35 declined after utility replacement
- Future Funding
 - Considering rate-recovered loan/ grant program

LSL Replacement Project – Utility Participation



- Utility replacements
 - With resident replacement
 - When discovered during construction
- Replaced approximately 139 utility LSLs since 2016
- More than \$680,000 in utility expense
- Replacement costs
 - Excavating and materials
 - Street repair (some newly resurfaced)
 - Pothole repair
 - Staff time

Our Outcomes



- Corrosion Control
 - Appears 100% orthophosphate shows long-term effectiveness
- LSL replacement
 - Activity at 165 sites between 2017-2019
 - Replaced approximately 128 residential LSL – 2017 to 2019
 - Replaced approximately 139 utility LSLs since 2016
- Water sampling
 - Testing 20 residential sites annually – 2019
- Water rate increases
 - 2017 – 17%
 - 2018 – 20%
 - 2020 – 8% (requested)

Conclusions and Recommendations



- Water quality and safety is paramount
- Require schools, day care, medical/ dental facilities to test and publicize results
- Replacement is expensive
 - LSL replacement cost – homeowners and utility
 - Street damage costs
 - Does not address in-home sources
- LSL inventory extremely valuable
 - Establish criteria for areas to inventory
 - Adding data to GIS system
- Enhance education approach and materials
 - Must be easy to understand

Conclusions and Recommendations



- Assist homeowners with replacement costs
 - Develop funding plans for all cities
- Assist cities to respond
 - Develop affordable replacement goals
 - Allow flexibility to develop a community program
 - Differentiate between system issues and LSLs (Flint)
- Consider requiring LSL identification as part of home sales
- Explore easy to use, affordable in-home filtration systems

Questions Comments Concerns

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Questions and Answers Session

To Ask a Question: Type a question in the “Questions” box located in right navigation bar of your screen.