Massachusetts Water Resources Authority

Massachusetts Environmental Health Association

Marlborough – December 13, 2018

Tackling Lead Service Lines
We Can Work Together

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MWRA Partners with 61 Communities to Serve 2.9 Million People

- MWRA provides wholesale water and wastewater services to over 2.9 million customers in 61 communities
- On average, MWRA delivers about 200 million gallons per day to its water customers
- MWRA collects and treats an average of 350 million gallons of wastewater per day, with a peak capacity of 1.2 billion gallons
Flint Has Changed How We Need to Do Business

- Public is more sensitive than ever to changes in water quality
- Need to take complaints seriously
  - Respond quickly
  - Provide good customer service
- Maintain customer’s confidence in the safety of the water we provide
- Work Cooperatively to Reduce the Real Risks
Some Background on the Lead in Water Issue

- Water is the “universal solvent”
- There is typically no lead in source water or local water mains
- Lead can leach from lead service lines, lead solder, brass pipes and fixtures
- Key issues:
  - Lead Service Lines
  - Stagnant Water

- Simple message to public on shared responsibility:
  - We treat the water to reduce leaching.
  - You should flush your tap before using.
  - If you have any lead: Get it replaced
Lead helps to guard your health

You wouldn’t live today in a house without an adequate plumbing system. For without modern plumbing, sickness might endanger your life.

Lead concealed in the walls and under the floors of many modern buildings helps to give the best sanitation.

In some cities today the law specifies that lead pipe alone may be used to bring water from street mains into the building.

Edited From Ad in National Geographic 11/1923
Effective corrosion control can reduce lead leaching

- MWRA has seen about 90% Reduction In Lead Levels
- Similar Results or Better Seen In Many Communities

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>New EPA Rule</td>
</tr>
<tr>
<td>1996</td>
<td>Corrosion Control Complete</td>
</tr>
<tr>
<td>1996-1998</td>
<td>Initial Start-up</td>
</tr>
<tr>
<td>1999-2005</td>
<td>Stepwise Optimization</td>
</tr>
<tr>
<td>2005 - on</td>
<td>Carroll WTP in operation with Optimum Water Quality Parameters</td>
</tr>
</tbody>
</table>
When Present, a Lead Service Line Can Contribute Substantial Lead Mass

3.4 – 125 ug

0.8 – 1.7 ug

31 – 139 ug

Data: Water Research Foundation
Ownership is typically split between system and property owner
Who Pays (or is Allowed To Pay) Matters
Partial replacement (i.e. only public portion) can result in increased lead levels
Partial Lead Service Replacement Provides No Benefit, Can Increase Risk

- Levels rise for days to weeks; level off similar to before

![Graph showing lead levels before, next day, and 2 months after partial lead service replacement.](image-url)
Lead and Lead-Lined Steel Service Pipes
Lead Goosenecks and Galvanized Pipe Can Also be a Source

Sketch: Quincy DPW
• Records can be 150 years old
• Inconsistency in record keeping with repairs and replacements
• Split between public side and private side
• Even great records may just be paper card files

• But Our Customers Expect Us to Have this Info
• We and They Need this Data to Plan and Take Action
Newton Massachusetts Inventory Process

- City reviewed all existing water service tie cards
- Criteria
  - Any mention of lead
  - Installed between 1875-1915, with no mention of material
Other Inventory Enhancement Techniques

- Use Every Opportunity to Inspect the Service Line – Meter Installs, Complaint Investigations, Water or Sewer Repairs, Sump Pump Checks
- Encourage Homeowner Scratch Test with Reporting System
- Actual Confirmatory Excavation

Old galvanized water service pipe >
To view a list of the buildings in the current map extent with lead service, click the “open table” button at the bottom center of the map.

To export the data in the Lead Buildings table to a CSV excel file, click the ‘Options’ button to open a drop down list. Click ‘Select Records in All Pages’ to select all records, or choose your own selection. Next, click the ‘Options’ button again to open the drop down list, and click ‘Export to CSV’ at the bottom of the list. Click Ok to generate the CSV file.

For more information on the health risks of lead, see our Lead in Drinking Water brochure.

DID YOU KNOW?
- A tributary is a small stream that flows into a larger stream.

RELATED LINKS
- Steps to Reduce Exposure
- Lead Pipe Replacement Program
- Lead Testing Centers
- Other Lead Sources
DISCLAIMER: The maps provided by the Boston Water and Sewer Commission (BWSC) are based on property surveys conducted during the installation of the Automated Meter Reading system, as well as information directly provided by customers and acquired during physical inspections. BWSC does not guarantee the accuracy of these records and maps, which shall be used for the sole purpose of providing property owners and residents with information regarding their private water services, and not for any commercial, legal or other use. These records will be updated on a monthly basis, or at such alternate times as BWSC designates. BWSC reserves the right to alter, amend or terminate at any time the display of these maps and records.
EPA Urging More Transparency With Lead Sample Results --
We’re Setting an Example -- www.mwra.com
Linkled to this page are individual results going back to 1992, when lead levels had already dropped by about 50%.

1992-2009 (PDF) | 2010-2015 (PDF)

The results are presented with addresses eliminated to protect the individuals' privacy. Each volunteer who participated in the sampling program received his or her own individual results.

These individual results provide a snapshot of what is happening in a specific house when the water has sat stagnant. Because the sampling protocol is designed to evaluate the effectiveness of corrosion control, the results do not provide real information about the water a typical customer would typically drink.

We sample only the homes most likely to have any lead, and then sample that stagnant water most likely to have leached any lead. Most consumers do not actually consume that stagnant water.

To remove stagnant water from your home's system, and to reduce the potential of lead leaching into your tap water, run the faucet for about one minute, until the water turns noticeably colder. Visit our What You Need to Know about Lead in Drinking Water page for more information.

If you have questions or would like more information about lead in drinking water, please call our Water Quality Hotline: 617-242-5323, or email Joshua Das, Project Manager, Public Health: Joshua.das@mwrma.com

Updated December 18, 2015
Replacement Construction - $5,000 to $10,000

Meter Photo: Tata and Howard
Sketch: Quincy MA
Sometimes a bigger excavation is needed
Of course it’s not always easy...

Photos: Tata and Howard
How to Deal with the Cost?

- As Part of Routine Pipe Rehab Projects
- Special LSL Replacement Efforts
- Operating Funds, Bonds, SRF Funds, Special State Programs

- Biggest Hurdle is the Cost of Replacements on Private Property
  - System Pays for it All (Quincy, and several others)
  - System Pays All But $1000 (Newark)
  - System Pays First $2000, Zero Interest over 4 years (Boston)
  - Homeowner, with Zero Interest over 10 Years (Newton)
  - Homeowner Pays for All of Private Portion

- Who Hires the Contractor?
Questions or Comments?

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This presentation represents the opinions of the author and not necessarily those of the MWRA or the LSLR Collaborative.