Lead water pipes still a concern in Boston area

DAVE WASINGER/LANSING STATE JOURNAL/AP/FILE

A piece of an old lead water pipe sat next to a new copper pipe on a Lansing, Mich., street.

By Matt Rocheleau

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Despite drastic improvements in the quality of drinking water over the last few decades, lead is still a concern in thousands of Boston-area homes where water is running through older pipes, officials said.

More than 20,000 buildings in the area — many built before 1940, when the older service lines were phased out — are fed by lead service lines that run from the main municipal water line into a house.

Malden is the community with the highest percentage of service lines made of lead; 47 percent of the city's 11,682 service lines are lead, according to the Massachusetts Water Resources Authority's best estimates. The next highest rates are in Medford (28 percent), Somerville (22 percent), Marlborough (19 percent), and Winthrop (11 percent).

Concerns over the amount of lead in water have been reignited in the wake of the water crisis in Flint, Mich., where dangerous lead levels were recently discovered in the water.

"We've been working at this problem as a society for many years, and we've actually made a great deal of progress. But there's certainly more work to be done, which is why we take this so seriously," said Stephen Estes-Smargiassi, planning and sustainability director at the MWRA.

Advice for using water from lead pipes, plumbing

Here are some tips on how to avoid having lead in your water.

What parents need to know about lead exposure

The MWRA sends water to 51 cities and towns, including Boston, reaching about 2.2 million people and 5,500 industrial users primarily in Eastern Massachusetts.

The MWRA says that its water is virtually lead-free when it leaves reservoirs on its way into communities. Water mains, the large pipes that carry water through each town and city, also do not add lead to the water, the authority said. Those mains are made of concrete, iron, or steel.

In Massachusetts, the installation of lead service lines — narrower pipes that connect mains to individual properties — stopped largely by the 1940s, officials believe.

It is also possible that homes built before 1986 may have lead solder in their interior plumbing and that faucets made through 2013 may contain enough lead to contribute to elevated lead levels in water.

The MWRA estimates only about 5 percent of service lines it sends water to are made of lead.

However, MWRA officials said their records may not be accurate. For example, their records show only about 100 lead service connections in Boston. But the Boston Water and Sewer Commission says there are about 3,500.

Steps have been taken in recent years to replace lead service lines. But there are obstacles. Replacing them can be expensive for homeowners.

Joseph Wood, owner of Boston Standard Plumbing, said he does about one lead service line replacement every other month, compared with about two per month 15 years ago.

He said that the average project costs between $3,500 and $5,000, but the city of Boston offers subsidies and financing that can make such project more affordable for homeowners.

Lynn Thorp, national campaigns director at Clean Water Action, said more should be done to replace

the lines.

She said that water utilities have not made replacement a priority because there are no regulations requiring them to.

“We need water systems to do an inventory of lead service lines and come up with a comprehensive plan for how to get lead service lines out of their systems,” Thorp said.

She advised all residents to have their water tested.

Philippe Grandjean, a Harvard environmental health professor who has studied lead toxicity, said that while progress has been made to reduce lead levels in water nationwide, residents should remain cautious.

“It doesn’t mean that we’re safe and that we’ve done enough,” he said. “Every community in this country should be aware that there is a very strong likelihood that there is lead somewhere in the water system.”

Inside buildings, lead pipes are rare, but pipes made of other materials may be held together with lead solder (which was commonly used before 1986). Brass pipes, fittings, and faucets can contain lead, too.

One simple but effective measure to reduce the risk: Run cold water for 15 to 30 seconds if the pipes have been unused for a while to clear lead buildup. Experts also advise avoiding the use of more-corrosive hot water from the tap.

The MWRA, for its part, alters the chemistry of its water, a practice that began in 1996, to make it less corrosive and less likely to cause lead to leach into the water.

Lead poisoning can cause serious damage to the brain, kidneys, nervous system, and red blood cells, potentially affecting physical development and the ability to learn.

Small amounts of lead in adults are not thought to be harmful, but even low levels of lead can be dangerous to infants and children.

“If the lead causes brain damage, that is going to stay for the rest of the child's life,” Grandjean said. “You only get one chance to develop the brain.”

Lead poisoning can also be caused by exposure to lead in soil, paint, household dust, food, and certain types of pottery, porcelain, and pewter.

While standards exist for what is considered a safe level of lead in the blood as well as in drinking water, experts in recent years have stressed that no level is truly safe.

To monitor lead levels in water, the MWRA conducts tests in about 450 homes across its system annually. Each must meet criteria that makes them likely to have high levels of lead.

The US Environmental Protection Agency requires that no more than 10 percent of the samples contain levels of lead above 15 parts per billion or corrective measures will be mandated. In 2015, only 2.3 percent of MWRA samples were above the threshold.

That's a dramatic reduction from when testing began in 1992. At that time, more than 40 percent of samples had lead levels above the threshold.

Communities with at least one home that tested above the standard in 2015 were: Boston, Malden, Melrose, Milton, Newton, Somerville, Stoneham, and Winthrop.

One Malden home had lead levels of 584 parts per billion, by far the worst found.

"While system-wide results have shown remarkable reductions, MWRA continues to stress that elevated lead levels in any home deserve attention," the authority wrote in a letter sent last month to local officials to allay fears about the Flint crisis.

Experts say that a scenario as dire as what unfolded in Flint is unlikely to occur elsewhere because Flint's problems were caused by a long list of unusual and avoidable failures.

Thorp said she hoped the Flint case would spur greater awareness of how water systems around the country still need improvement.

"We do tend to get complacent around many drinking water issues because we've made so much progress in this country," she said.

"We tend to only react when there's a crisis revealed. We need to be much more proactive . . . and not just react when there's a crisis."

Read the MWRA letter

DOCUMENT PAGES Zoom

What's Happening in Flint's Water System and How is MWRA Different

The news has been full of coverage of the problems with drinking water in Flint, Michigan. The current situation in Flint has developed due to a sudden, unacknowledged increase in lead levels at the tap, inaction and stonewalling by local and state health and water officials, and the resulting increase in lead exposures and loss of public confidence. Contributing to that loss of confidence was also the discolored and foul smelling and tasting water, high levels of bacteria, levels of disinfection byproducts above national standards and, most recently, reports of increased levels of legionnaire's disease in the community.

What happened in Flint was wrong, and tragic, and based on the news coverage MWRA customers may have questions about the safety of their water.

The Lead Issue

Lead in drinking water typically comes from having lead bearing materials in contact with water. These can include a lead service line (the pipe connecting the home to the water main in the street), leaded solder and some brass fixtures. If the water is corrosive and is left in contact with lead bearing material, lead can leach out.

- MWRA's water does not contain lead, and the MWRA and community pipes carrying that water are made of concrete, iron or steel and do not add lead to the water.
- MWRA water is treated to reduce its corrosivity.

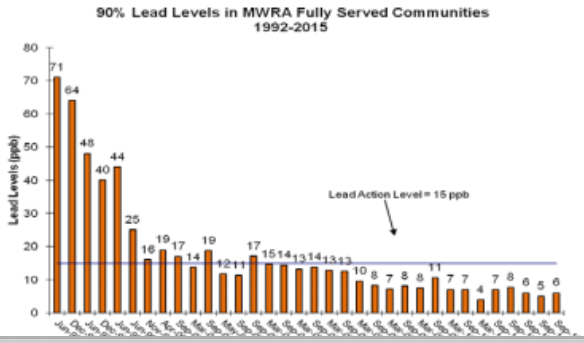
The increase in lead levels in water in Flint was due to a change in source and treatment – from a long standing use of Detroit's water – to use of Flint's back up supply (the Flint River) and treatment plant.

- MWRA uses its well-protected, stable sources: the Wachusett and Quabbin reservoirs.
- MWRA has been extremely thorough each time treatment changes have occurred to review how the changes might affect lead corrosion, including bench and pilot scale testing, consultation with a panel of the national experts in lead corrosion, and careful review of the data when the new treatment was put on-line.
- Massachusetts Department of Environmental Protection and EPA have always been actively involved in reviewing and approving any change in MWRA treatment.

Flint did not install corrosion control treatment when they made the switch to Flint River water.

- MWRA installed corrosion control treatment in 1996, using one of the two successful techniques, and is meticulous in operating it stably. MWRA's well-trained, licensed operators carefully adjust the pH and alkalinity of the water to make it non-corrosive, continuously monitoring the results. Water is adjusted from its natural, slightly acidic, and corrosive raw pH level of between 6.5 and 7 to a non-corrosive 9.3 to 9.5, and stabilized with the addition of alkalinity with sodium carbonate.

The data shows MWRA's success – a better than 90 percent reduction in lead levels in high risk homes:



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