

During an inspection of the Sewerage and Water Board's (S&WB) water quality testing practices, the OIG became aware of an imminent risk to public health. The OIG produced this report for the purpose of informing city officials, S&WB managers, and the public of this risk.¹

The City of New Orleans and the S&WB have embarked on \$2.4 billion of infrastructure reconstruction projects. In addition, numerous ongoing road construction projects have been completed or are currently underway. Many of these projects involve repairing and/or replacing components of the water supply system. These water supply system components may include pipes (service lines) that carry water from the water main to a residence/property.²

In New Orleans an undetermined number of homes have service lines made of lead (Pb). Lead is a dangerous neurotoxin and ***no level of lead exposure is deemed safe***. Lead service lines are the main contributor of lead in water at the tap. The S&WB does not have complete or accurate records of where lead service lines are located, and many older New Orleans homes may be serviced by lead service lines (LSLs).

S&WB and city contractors replace the portion of service lines owned by the S&WB (from the water main to the meter or the property line) routinely when replacing water mains. The S&WB may also replace the publicly-owned portion of LSLs when it encounters them in the course of other maintenance work or when there is a leak in the line. In both of these scenarios, the privately-owned portion of the service line is left in place, even if it is made of lead, because it is the responsibility of the property owner.

According to the Environmental Protection Agency (EPA) Science Advisory Board, replacing only a portion of an LSL may elevate the risk of exposure to lead for weeks or months following the replacement, and intermittent high spikes in lead

¹ The results of the OIG inspection of S&WB's water quality testing procedures will be released in a forthcoming report.

² The City's RoadWork NOLA website provides a list, timeline, and map of the more than 200 slated projects. Project categories are Full Depth Reconstruction; Patch, Mill and Overlay; Patch Concrete; Incidental Road Repairs; Bridges; Non-Paving Incidentals; and Streetscapes. See "RoadWork NOLA: Types of Repairs," City of New Orleans, <https://roadwork.nola.gov/types-of-repairs/>.

levels may occur.³ Other infrastructure work that mechanically or hydraulically disturbs LSLs can also cause spikes in lead levels at the tap.

Water systems that fail to meet EPA water quality standards during federally-required water testing may be required to replace the public portion of LSLs (involuntary replacement).⁴ In that event, the systems must notify affected residents in advance of the increased risk of lead exposure, implement an extensive public education protocol that highlights the potential risk, and conduct post-construction water quality testing at those locations.

However, when water systems voluntarily replace lead services lines or engage in other activities that may disrupt service lines in the course of planned infrastructure projects or ongoing maintenance, they are not currently legally required to notify affected residents, implement a public education program, or conduct water quality testing.⁵

Whether the construction work is voluntary or involuntary, ***the potential public health and water quality implications of a partial LSL replacement or disturbances to LSLs are the same.***

The OIG found that the City and the S&WB have not alerted residents to the risk of increased exposure to lead in water caused by the partial replacement or disturbance of LSLs. Nor have they complied with industry best practices by providing citizens with ways to reduce the risk of increased lead exposure.⁶

³ EPA Science Advisory Board, *Evaluation of the Effectiveness of Partial Lead Service Line Replacement* (Washington, D.C.: EPA Science Advisory Board, 2011), 11, https://www.epa.gov/sites/production/files/2015-09/documents/sab_evaluation_partial_lead_service_lines_epa-sab-11-015.pdf.

⁴ 40 CFR §141.80 et seq. The 1991 Lead and Copper Rule (LCR) set goals and action levels (AL) for lead and copper, regulating the amount of lead and copper that can be present in drinking water. "Control of Lead and Copper," U.S. Government Publishing Office, current as of March 23, 2017, <http://www.ecfr.gov/cgi-bin/text-idx?SID=531617f923c3de2cbf5d12ae4663f56d&mc=true&node=sp40.23.141.i&rgn=div6>

For a history and discussion of the EPA's Safe Drinking Water Act as a response to water quality safety concerns, see Environmental Protection Agency, *25 Years of the Safe Drinking Water Act: History and Trends* (Atlanta, GA: EPA, 1999), <https://nepis.epa.gov/Exe/ZyPDF.cgi/200027R1.PDF?Dockkey=200027R1.PDF>.

⁵ For a summary of the LCR regulations, see U.S. Environmental Protection Agency National Drinking Water Advisory Council, *Lead and Copper Rule Revisions White Paper* (Washington, D.C.: EPA Office of Water, 2016), A3-A4, https://www.epa.gov/sites/production/files/2016-10/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf.

⁶ Evaluators met with the S&WB Executive Director in late April 2017 and were invited to attend a mid-May meeting with city and S&WB representatives. At the May meeting the City's Director of

As a result, ***New Orleans residents living where infrastructure construction projects occur may be—or may have been—unknowingly exposed to elevated levels of lead in drinking water.***

The American Water Works Association (AWWA), the EPA, the Centers for Disease Control (CDC), the scientific literature, and numerous other municipalities recommend additional public health safety measures including intensive communications and educational efforts when water systems contemplate LSL replacement. These recommendations reflect an emerging consensus about the risks associated with partial LSL replacement and disturbances to LSLs.

Based on the best practices and guidance set forth by industry, scientific, and public health experts, the OIG recommends that the City and the S&WB develop a strategic public health initiative that includes (1) communication strategies for educating residents about the potential for increased lead exposure, and (2) immediate steps to mitigate residents' ongoing risk of elevated lead exposure. At a minimum the plan should include the following short- and intermediate-term actions:

- Alert residents about the significant public health risks associated with partial LSL replacement and other infrastructure work that may disturb LSLs.
- Notify residents in advance of partial LSL replacement or activities that may disturb LSLs.
- Provide residents with detailed instructions on how to flush exterior service and interior plumbing lines after a partial LSL replacement or LSL disturbance.
- Distribute water filter kits and refills to residents who may be—or may have been—recently exposed to elevated lead levels as a result of partial LSL replacement or LSL disturbance.
- Perform water quality testing at locations affected by partial LSL replacements or LSL disturbances until there is sufficient evidence that temporary lead increases have subsided.

The steps listed above consist of practical, short-term strategies designed to alert residents to and provide them with the means to mitigate exposure to lead caused

Special Projects and Strategic Engagement provided evaluators with informational flyers about LSL replacement developed in “the last month or so.” The City/S&WB have developed additional materials since that meeting. See [Additional Resources: City and S&WB Notifications](#) on the OIG website.

by partial LSL replacement or LSL disturbance. However, the only long-term solution is to remove all existing LSLs, and the OIG found no evidence that the City and S&WB have engaged residents in a collaborative effort to facilitate the full removal of all LSLs.

Water systems across the country have encountered obstacles when faced with the challenge of removing all LSLs, and many have implemented creative solutions. The City and the S&WB should examine the approaches employed by other municipalities and implement strategies that increase property-owners' ability to participate in full LSL replacement.

The magnitude of ongoing and upcoming reconstruction work requires the City and the S&WB to mobilize resources quickly to develop a comprehensive, strategic public health education initiative. The S&WB should engage the City of New Orleans Health Department, subject matter experts, and public health experts to overcome the "substantial economic, legal, technical and environmental justice challenges" presented by partial LSL replacement and disturbances to LSLs.⁷

⁷ EPA, *Lead and Copper Rule Revisions White Paper*, 9.