

State of Illinois

Illinois Environmental Protection Agency
Illinois Department of Public Health



FINAL REPORT ON LEAD IN PUBLIC WATER SYSTEMS

January 2017



Purpose of this Report: The Illinois Environmental Protection Agency (Illinois EPA) and Illinois Department of Public Health (IDPH) respectfully submit this report to comply with the 99th General Assembly’s request in House Joint Resolution 153 to make a final report on lead in Illinois public water systems (PWSs) by January 1, 2017. This report makes policy recommendations regarding protecting the public from lead in drinking water and summarizes the test results and other findings in the attached preliminary report that was issued by the Illinois EPA and IDPH in September 2016.

Summary of the Test Results and Other Findings in the September 2016 Preliminary Report: In Illinois, Illinois EPA and IDPH share regulatory oversight of public water systems.¹ In total, the Illinois EPA and IDPH collectively oversee more than 5,500 facilities that serve a population of more than 12.5 million individuals. One of the regulatory programs administered by IDPH and the Illinois EPA is implementation of the Federal “Lead and Copper Rule.”

This rule requires all public water systems to provide public education materials to their customers about lead in drinking water when the systems exceed, in their most recent monitoring, the lead action level

Currently, the regulations that require public water systems to sample for lead do not require monitoring of specific facilities (e.g., day cares or schools). Further, exceedances of the lead action level do not require replacement of lead service lines or other plumbing not owned by the public water system.

established under federal law. Approximately 99.5 percent of the public water systems regulated by the Illinois EPA (*i.e.*, community water systems²) did not exceed the lead action level and were not, as a result, required to provide additional public education materials concerning lead. During 2015, only one public education violation was issued. Of the 1,740 community water systems in Illinois, 343 (approximately 20 percent) have reported that they have lead service lines. Additionally, 259 of Illinois’ public water systems add a corrosion inhibitor to the treated water to, among other things, prevent exposure to lead.

Policy Recommendations: To improve existing programs to protect the public from lead in drinking water, IDPH and Illinois EPA should:

- continue to raise awareness concerning lead in drinking water by increasing public education and outreach efforts;
- continue to improve data sharing between State agencies;
- continue to develop a cooperative response to potential lead exposure scenarios from drinking water; and
- implement appropriate mitigation activities to eliminate lead exposure.

Raising awareness of potential exposure to lead in drinking water will require increased educational efforts by Illinois EPA and IDPH. These State agencies should:

¹ PWS serve 15 service connections or 25 residents.

² Information concerning community water systems, including all lead sampling test results, can be found at the Illinois EPA public website at: <http://epa.illinois.gov/topics/drinking-water/index>. Information concerning non-community water systems, including all lead sampling test results, can be found at IDPH’s website: <http://www.dph.illinois.gov/topics-services/environmental-health-protection/non-community-public-water-systems>.

- review information currently provided to the public regarding the significance of lead test results;
- describe actions that can be taken to reduce the risks associated with lead in drinking water;
- provide appropriate links to Illinois EPA’s Drinking Water Watch website and IDPH’s Lead Poisoning Prevention Program (LPPP) website; and
- review the LPPP website to ensure educational materials include information about exposure to lead in drinking water.

Further, Illinois EPA and IDPH should continue to seek opportunities to heighten communication and collaboration efforts, like the following example. Illinois EPA now notifies IDPH when a community water system exceeds the lead action level (which occurs when a 90th percentile sample has a lead concentration that is greater than 15 micrograms per liter ($\mu\text{g/L}$)). This notification allows IDPH to contact local health departments, allows for a coordinated response by IDPH, and helps focus IDPH’s public health surveillance activities. Likewise, IDPH’s non-community public water system program provides notification to the LPPP when it becomes aware of a test result with a lead concentration that exceeds 15 $\mu\text{g/L}$.

IDPH should evaluate lead surveillance data that might implicate drinking water as an environmental lead source and increase monitoring efforts during surveillance activities to allow for future trend analysis. Based upon review of the data, IDPH may need to develop additional public health response measures. These measures may include communicating with Illinois EPA that drinking water may be a potential source of elevated blood-lead levels. Illinois EPA may then require additional corrosion control measures or enhanced treatment by the responsible public water system.

Illinois EPA and IDPH should initiate mitigation efforts beyond existing regulatory programs. Specifically, Illinois EPA should:

- create a form to evaluate source- and treatment-related changes in corrosivity and require that form to be submitted with applications for construction permits that involve a change in either the water source or treatment at community water supplies*;
- include a special condition on all water main replacement permits that requires notice of the potential risks of lead exposure to be provided to each potentially impacted service connection*;
- review large systems corrosion control treatment practices;
- require water systems to follow up on all individual user test results having a lead concentration greater than 15 $\mu\text{g/L}$ *;
- require water systems to notify residents and provide lead-related educational materials as soon as possible*;
- seek legislative changes to ensure financial assistance can be provided to allow lead service line replacement using money allocated through the Public Water Supply Loan Program (*i.e.*, the State’s Drinking Water State Revolving Loan Fund)*;
- encourage community water suppliers to develop and maintain an inventory of service line materials*;
- review sampling instructions for lead and delete any mention of “pre-flushing” lead service lines the night before sample collection*;

- require three, six-month rounds of initial lead and copper monitoring following an operating permit change that involves any alteration in the water source or significant change in treatment*;
- document that the water quality parameter ranges are being met on a daily basis as part of routine engineering evaluations/sanitary surveys of water systems (once additional staff resources are available to complete the activity); and
- use a geographic information system to randomly verify that community water system sample locations meet the requirements of the Lead and Copper Rule.

** Item has been or is being implemented by the Illinois EPA.*

IDPH should:

- add a special condition to construction permit approvals for non-transient public water systems that are changing the water source or treatment to ensure that the responsible parties are aware of requirements for baseline lead and copper sampling;
- require schools and daycares that have produced water samples with lead concentrations greater than 15 µg/L to address exceedances by implementing strategies such as flushing, point of use treatment, and replacing fixtures and plumbing as needed;
- review instructions for lead sampling to ensure lapses do not occur in proper first draw sampling; and
- review, upon being provided with necessary resources, sample site selection procedures to ensure monitoring locations meet the requirements of the Lead and Copper Rule.

Conclusion: While this report includes policy recommendations regarding protecting the public from lead in drinking water, it should be noted that a number of the recommendations have been or are being implemented by the Illinois EPA. Further, regardless of the actions taken by state government, local government, or public water systems, concerns about lead in Illinois' drinking water cannot be addressed without acknowledging that drinking water is a perishable commodity that is affected by both the materials it comes in contact with and the length of contact time. While public water systems are responsible for producing drinking water in compliance with the regulations, property owners become responsible for this perishable commodity once it enters their plumbing systems. At the point where water begins interacting with plumbing systems, water quality management becomes the single most important and cost-effective tool in reducing consumer risk of lead exposure from drinking water. Owners and operators of high-risk facilities (e.g., those that serve water to children age six years or under and that were constructed in whole or part before 1987) should, as soon as practicable, develop a water quality management plan.

This plan should, at a minimum:

- identify lead-containing portions of the facility's plumbing systems used to supply water for human consumption;
- identify and assess health risks posed by those portions of the facility's plumbing systems;
- specify practices to be employed, whenever possible, to minimize the identified risks; and
- ensure, through monitoring and other practices, that the plan remains current, continues operating as designed, and is effective.