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# Lead in Flint, Michigan's Drinking Water: Federal Regulatory Role

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Lead exposure is a major public health concern, particularly because low-level exposures can impair the neurodevelopment of children. The main source of lead in drinking water is the corrosion of plumbing materials in the distribution system. Corrosion control can prevent lead and other metals in water lines, pipes, plumbing, and fixtures from leaching into drinking water.

In April 2014, the city of Flint, Michigan, stopped purchasing treated water from the city of Detroit and began using the Flint River as its water source without providing corrosion control treatment. While water quality changes were quickly apparent, elevated lead concentrations were detected over a longer period through monitoring conducted by the city and others and detections of elevated blood lead levels in children. On October 1, 2015, Flint city officials urged residents to stop drinking the water. On October 16, Flint reconnected to Detroit's water and advised residents not to use unfiltered tap water. The city of Flint and the governor of Michigan have each declared a state of emergency. President Obama issued an emergency declaration on January 16, 2016. On January 21, 2016, the Environmental Protection Agency (EPA) issued an emergency order to the city and state, directing them to take immediate actions to address concerns over the safety of the city's water system.

Regulatory implementation, monitoring protocols, compliance, oversight issues, and the lead regulation itself have been identified as contributing factors in the failure to effectively prevent, identify, and respond to high lead levels in Flint's drinking water.

Federal Regulatory Role

The Safe Drinking Water Act (SDWA) authorizes EPA to regulate contaminants in water supplies and requires EPA to review each regulation at least once every six years. SDWA regulations establish compliance obligations for public water systems (PWSs) and state agencies to which EPA has delegated primary enforcement responsibility for the PWS supervision program. Forty-nine states have this responsibility. In Michigan, the Department of Environmental Quality (MDEQ) is the implementing agency.

States have first-line enforcement responsibilities to compel systems to comply with SDWA regulations. However, SDWA Section 1414 provides that, when EPA finds that a water system is not in compliance, EPA must notify the state and system and provide assistance to both in order to bring the system into compliance. After 30 days, if the state has not initiated enforcement action, EPA must do so. EPA has not used this authority in Flint.

SDWA's emergency powers provisions (Section 1431) authorize EPA to "take such actions as [the Administrator] may deem necessary" to protect human health when a contaminant in a water system "may present an imminent and substantial endangerment to the health of persons" and state and local authorities have not acted. EPA used this authority to issue the emergency order in January 2016.

Lead and Copper Rule

EPA regulates lead in drinking water through the 1991 Lead and Copper Rule (LCR), which established a treatment technique (corrosion control) to prevent lead and copper from leaching into drinking water. The rule includes a lead "action level" of 15 parts per billion. If more than 10% of tap water samples exceed the action level, the PWS has not violated the rule, but other requirements—corrosion control, public education, additional water monitoring, and lead service line replacement—can be triggered. If a system plans to change its water source, the state must give prior approval.

In October 2015, the MDEQ director announced that it had followed the wrong monitoring protocol for Flint. Reportedly, the city conducted water testing incorrectly. In November, 2015, EPA clarified applicable corrosion control requirements.

The LCR is widely considered flawed. EPA initiated an extensive review of the LCR in 2004 after widespread increases in lead levels were detected in the District of Columbia's water following a water treatment change. EPA promulgated short-term revisions and clarifications in 2007 and has continued working on comprehensive revisions. In December 2015, EPA's National Drinking Water Advisory Council presented recommendations for LCR revisions. EPA plans to propose a revised rule in 2017. Topics being evaluated include sampling protocols, corrosion control practices, and risk communication. Another issue concerns whether EPA may require full lead service line replacement (including the homeowner's portion), as studies have shown that partial replacement can increase lead exposures.

Congressional Responses

The events in Flint have generated scrutiny of LCR provisions governing corrosion control, public notification, lead service line replacement, and monitoring protocols. Additionally, EPA enforcement and notification authorities under SDWA are being examined following concerns that EPA did not quickly intervene and notify the public.

More broadly, these events have focused attention on the state of water infrastructure nationwide and the maintenance and repair challenges many communities face. The Drinking Water State Revolving Fund (DWSRF) program provides assistance to water systems for projects needed to comply with SDWA regulations and protect public health. The Consolidated Appropriations Act, FY2016 (P.L. 114-113) includes $863.2 million for this program. The President has requested $1.02 billion for FY2017. (See CRS Report RS22037, *Drinking Water State Revolving Fund (DWSRF): Program Overview and Issues*, by Mary Tiemann.)

Legislation has been introduced in response to the Flint crisis. On February 10, 2015, the House of Representatives passed H.R. 4470 to require systems to notify customers, the state, and EPA of any lead action level exceedance and require EPA to notify the public if the system or state has not done so within 24 hours after EPA receives notification. EPA would be required to develop a strategic plan for improving information sharing and public communication. S. 2466 would similarly authorize EPA to notify the public of action level exceedances. H.R. 4438 seeks $1 billion in emergency supplemental appropriations for a grant to Michigan to replace water infrastructure. To aid Flint residents, H.R. 4479 would authorize infrastructure grants; increase DWSRF loan forgiveness; provide grants under federal health, education, and nutrition programs; and establish the Center on Excellence on Lead Exposure. Related amendments to S. 2012 have been introduced in the Senate.