In the wake of the water crisis in Flint, Michigan, cities, states and the federal government are taking a closer look at the status of water infrastructure in the United States and its ability to deliver healthy and safe drinking water to residents.

A recent USA Today report analyzing data from the U.S. Environmental Protection Agency, or EPA, found that over the past four years, close to 2,000 water systems in all 50 states showed excessive levels of lead in water testing results. Some of the highest levels of lead were found at schools and day cares.

In order to prevent lead contained in these pipes and fixtures from leaching into drinking water, water system operators are required by the EPA’s Lead and Copper Rule to treat the finished water to ensure that when the water leaves a treatment plant it is not corrosive.

“What happened in Flint is when they switched to the Flint River as their source, it was a much more corrosive water and they didn’t apply the proper corrosion control for the leaching of lead in the distribution system,” said Peter Grevatt, director of the EPA’s Office of Groundwater and Drinking Water. “That’s what caused the elevated levels of lead in the community.”

According to Jim Taft, executive director of the Association of State Drinking Water Administrators, getting the lead out of the nation’s drinking water infrastructure is the ultimate solution.

“I don’t think anybody that’s looked at the problem for any length of time has come to any other conclusion,” he said. “You can apply corrosion control, but obviously there are things that can go wrong. In Flint, you have what many would probably consider to be a perfect storm of bad stars aligning that caused the problem. You can optimize and do the best job possible, but we need to be working to get the lead out.”
But ridding the country’s drinking water infrastructure of lead is no small task.

The biggest obstacle is that lead service lines run from the water main in the street to the home. Typically, these lines are privately owned where the property line begins and the responsibility for replacing them resides with the property owner, said both Taft and Grevatt.

“There are millions, we aren’t sure how many, (of) service lines that are pure lead,” said Grevatt. In addition, said Taft, plumbing fittings and fixtures installed in homes prior to 2014 were allowed to contain up to 8 percent lead.

And updating water infrastructure is costly. According to the EPA, over the next 20 years it will cost approximately $384 billion to upgrade the nation’s drinking water system. While this number includes replacing aging treatment plants and older water lines that do not contain lead, removing lead service lines from the nation’s water system will be expensive.

Addressing these challenges is “a big task,” said Taft—one that cannot be accomplished by any one agency or government. “It’s a federal, state and local partnership. It’s a shared responsibility.”

On the federal level, Congress makes funds available to the EPA through the Drinking Water State Revolving Fund ($863 million in fiscal year 2016), a program created by the 1996 amendments to the Safe Drinking Water Act. Grevatt’s office administers the fund by awarding capitalization grants to states based on need; the states in turn provide loans and other financial assistance to local communities or water systems for infrastructure projects.

Taft said that Michigan has made some of its surplus state funding available to replace lead service lines on private property in Flint. A recent letter from EPA Region 5 to Michigan explained how the Drinking Water State Revolving Fund also can be used in this manner—an option for other states, as well. Similarly, the state of Wisconsin recently announced the Lead Service Line Replacement Funding program, which would provide $11.8 million to municipalities to replace lead service lines running to homes, schools and daycares.

Communities can also make funds available for lead service line replacement through rate structures, sinking funds and other creative financing, said Taft. Madison, Wisconsin, launched one of the first lead service replacement programs in the country in 2001 and has largely completed the replacement of the more than 8,000 known lead service lines in the city.

In light of Flint, the federal government, states and other organizations have redoubled their efforts to ensure safe drinking water.

“EPA is working with all of the states to make sure they are taking all the proper steps that they need to be taking to work with local communities to ensure that the Lead and Copper Rule is being properly implemented,” said Taft.

The EPA is working on revisions to the rule and states are working to explore innovative solutions. Ultimately, said Taft, “I think the faster we can get the lead out, I think the better we will all be from a public health standpoint.”

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