

Commercial Water Systems in Crisis

From one pipe to the next, the nation's infrastructure continues to crumble

BY SUSAN WHITE

Aging infrastructure not only can lead to water contamination in residential drinking water, it also affects every school, restaurant and commercial building in the U.S. The problem is monumental and can be compounded by disinfection and other chemicals used in drinking water treatment. The corrosive nature of some chemicals can wreak havoc on lead service line, lead pipe in buildings, and leaded faucets.

According to new analysis published by the American Water Works Assn., approximately 6.1 million lead service lines remain in U.S. communities. In a press release, the association said the figure suggests progress has been made over the

past two decades, but an estimated \$30 billion challenge remains.

When the federal Lead and Copper Rule was instituted in 1991, the U.S. Environmental Protection Agency (EPA) estimated there were 10.2 million lead service lines nationwide. The latest analysis suggests the number of remaining lead service lines could be as high as 7.1 million and as low as 5.5 million. The water distribution systems in commercial structures are just as vulnerable from corrosion today as residential systems.

It seems that almost every day a new report surfaces about lead or other contaminants in drinking water in schools and other commercial buildings. As has been revealed through the

Flint, Mich., water crisis, political agendas have driven some of the decisions made to thwart the water pollution problems. Flint is an example of how everyone from the governor down to the local water agency ignored calls and failed to properly test the water. The corrosive nature of the water not only has affected residential water distribution systems, but also the drinking water fountains and pipe in schools, restaurants and other commercial properties.

In the Wake of Flint

It is not just about Flint anymore. Soon after that crisis made headlines in the national media, the village of Sebring, Ohio, announced its own water contamination crisis. According to a report by Business Insider Jan. 26, Sebring's schools were shut down Friday, Jan. 22, due to a water fountain testing positive for unsafe levels of lead. They remained closed as of the report Tuesday morning. Although Sebring's water system is smaller than Flint's, serving about 8,100 residential connections, it faces similar problems with aging infrastructure and lack of action by officials.

On March 28, TV stations KTAB and KRBC reported the water in the federal courthouse and post office in Abilene, Texas, was contaminated with elevated levels of lead, copper and iron.

On the same day, The Desert Sun reported on continuing problems in California with elevated levels of hexavalent chromium. In the report, the city manager of Coachella, Calif., questioned whether installing chromium-6 treatment technologies would be cost-effective considering current lawsuits challenging the state's regulations on the contaminant, calling it a "judgement call." Mayor Steve Hernandez said, "Our task is comply with the law, so until it changes, we need to comply with the law."

In addition to lead, emerging contaminants continue to be a problem affecting all drinking water systems in the U.S. These contaminants are of



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Lead contamination has forced some school districts to close drinking fountains and provide bottled water to protect students' health.

concern to EPA because they can affect aquatic life and drinking water sources. Emerging contaminants include pharmaceuticals and personal care products such as shampoo, body washes, lotions and hair care products, and perfluorinated compounds (PFCs). PFCs, which are considered endocrine disrupters, can be found in a variety of everyday products, from fast food wrappers to Teflon cookware. These contaminants are increasingly being found in bodies of water at low levels.

Clean Water for Schools

For years, school district officials throughout the country have delayed fixing aging lead faucets and pipe at schools, often due to budget struggles. Instead, some have circumvented repairs, turned off the drinking water fountains, and supplied bottled water. In addition, many schools using private water wells do not have any routine testing done, even though contaminants have shown up in wells across the country.

According to a report by The Desert Sun March 16, the Flint crisis brought renewed attention to the health risks of lead in California. "For two years, the students at Orange Center Elementary School outside of Fresno [Calif.] have been told not to drink the water," the report stated. "Drinking fountains are turned off and instead, children refill bottles from [5-gal] water coolers placed in every classroom."

The lead in the water means no cooking can take place on site, so prepared meals are brought in, or students bring lunches from home. According to the report, the school's water likely will not be made drinkable until next year at the earliest.

Laura Herzog, NJ Advance Media reporter for NJ.com, reported March 18 that 30 Newark, N.J., schools were found to have elevated lead levels in their water, according to a March 9 announcement from Newark school officials and the state Department of Environmental Protection. The staff and students now are drinking bottled water, officials said.

City officials announced lead levels have been elevated in some Newark schools since at least 2012.

The district superintendent explained any water tested with more than 15 ppb of lead is a red flag, and most schools had results of about 100 ppb, with one at 558 ppb, according to the report.

According to a March 16 NPR report, "In fact, across the country, it's hard to know whether there's lead in school water." The report cited Virginia Tech researcher and activist Yanna Lambrinidou, who said there is no requirement to test for lead in water at most schools, and if lead is found, there is no requirement to fix the problem or make parents aware.

"What we see again and again is that the people who first discovered the contamination were parents whose children were diagnosed with elevated blood lead levels," Lambrinidou said in the report. "Three times over the past decade ... Congress has declined to pass legislation that would have required schools to test for lead and make the results public."

On March 4, the New Jersey Herald reported students and staff at the Frelinghuysen Township [N.J.] School District were being offered bottled water during the school day after an industrial chemical was detected in the building's drinking water. A quarterly inspection of one drinking fountain in January revealed the school's water exceeded the maximum contaminant level for volatile organic compounds.

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The chemical found in the water is called 1,2-dichloroethane, a chlorinated hydrocarbon commonly used in the production of plastic and vinyl products.

The Department of Environmental Protection issued a non-emergency violation notice to the school Feb. 2 informing the district of the unacceptable levels of the contaminant in its drinking water. The district shut down all of the school's fountains as a precautionary measure, according to the district superintendent.

Short-Term Filtration Fixes

Although these crises will not be resolved quickly, there are many inexpensive systems available to remove the contaminants plaguing children at schools, patrons at restaurants and employees in commercial buildings.

Inline filters certified to NSF/ANSI Standard

53 from companies such as Omnipure Filter Co. that reduce lead, chloramines and other chemicals can be cost-effective solutions to combatting contaminants and providing safe drinking water for commercial applications. More complex solutions include specialized filters such as ULTRA-D submicron

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filters from United Filters Intl., which can be configured for point-of-use or point-of-entry systems. This filter series has been independently laboratory-certified to reduce up to 99.99% of many contaminants. Other inline water filtration systems certified to NSF/ANSI 53 from Aquasana Inc. and Multipure reduce lead and other heavy metals and chemicals.

The Safe Drinking Water Act

The Flint crisis is a lesson for all, and EPA has stepped up by enforcing and putting states on notice to comply with the Safe Drinking Water Act. A letter went out to all governors from EPA Administrator Gina McCarthy asking all involved to take action to strengthen protection of the nation's drinking water and to enhance public transparency and accountability in the implementation of the Lead and Copper Rule. In the interim, it is important for all parties involved to do their parts in providing clean, safe drinking water to everyone. The enforcement of these measures will ensure safe, healthy water for generations to come. **CW**

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