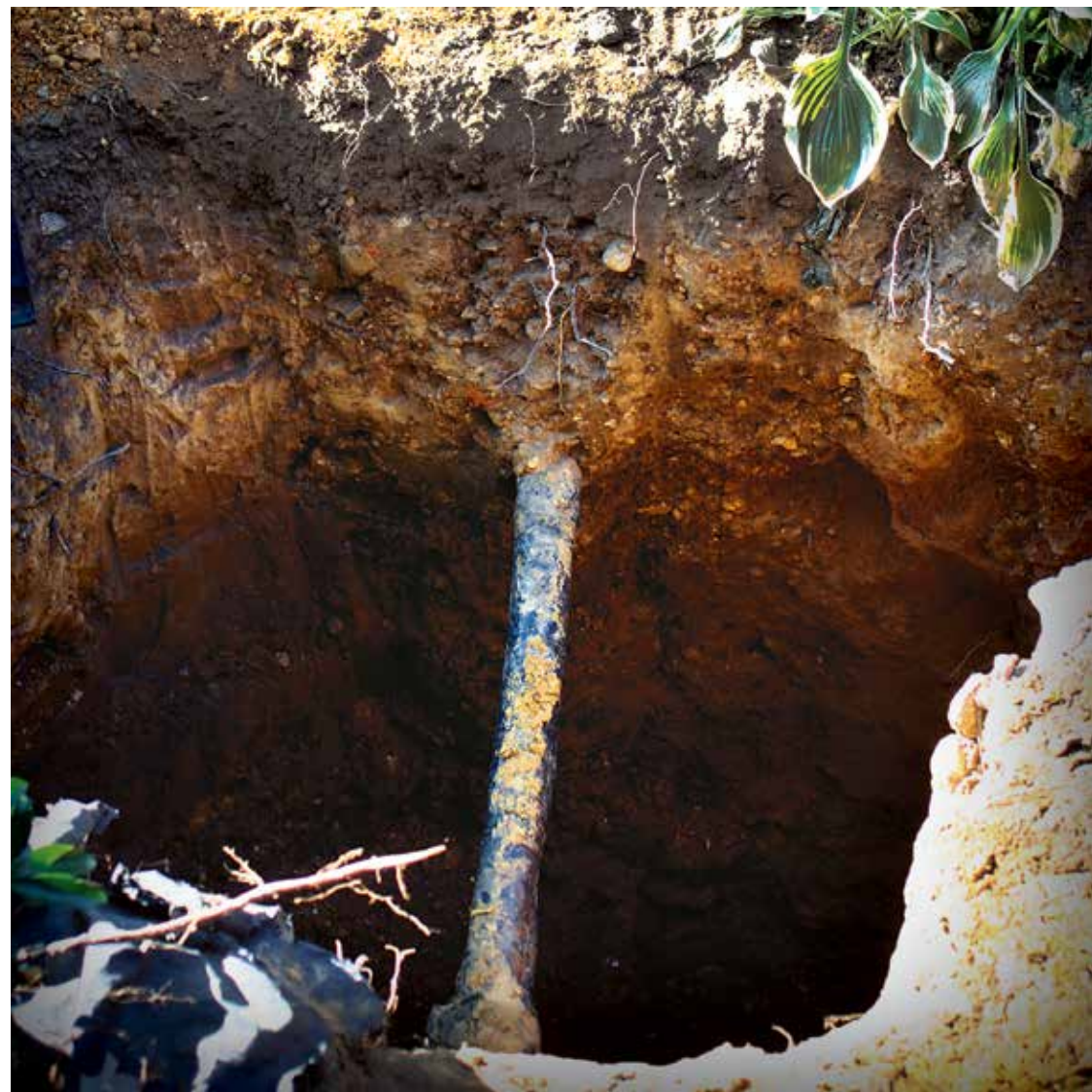


# Preventing Future Crisis



By Nick Nicholas

## Addressing Flint's water contamination at home

**P**oisoning conjures up images of evil men sneaking away as unsuspecting victims clutch their throats and fall over dead at the dinner table. The reality of poisoning is much more sinister, and its potential sits on a larger scale than most municipalities and states are willing to acknowledge.

Lead, bacteria, copper and other contaminants are drifting in the pipe of Flint, Mich., and resting in the bodies of many of its residents. If industry and municipalities do not start paying attention, other cities across the U.S. could soon face problems with alarming similarity.

The American Society of Civil Engineers gives the nation's drinking water, wastewater and dams a "D" rating, noting that they put us all at risk. Discolored water, flammable gas and illness have been reported in many cities across the U.S., and should be prompting us to take measures from switching water sources to creating final barrier treatments.

Aging infrastructure, a generally slow economic

recovery and water quality that shifts due to pollution, demand and weather changes all are creating health ramifications.

Industrial partners need to lead the charge in presenting solutions, or they face being held accountable for decisions that may be beyond their control. It is easy to determine what went wrong in Flint, but prevention requires getting many things right, starting with what is being said about Flint.

### Getting the Conversation Wrong

The most disconcerting thing about the Flint water crisis is that it likely will be repeated in other cities, even though it is avoidable.

It is easy to paint the situation with a broad brush, blaming older pipe failing or government officials not caring. Unfortunately, both of those explanations skip over the importance of proper checking and filtration that are dependent on the individual situation.

As officials in Flint adopted a new water source in April 2014, they performed a cost-saving equation. The Flint River was a less expensive source and was adopted with existing infrastructure, but without any needed adjustments.

Many cities across the U.S. continue to deal with budget shortfalls and increased demand, so it is a situation we are likely to see repeat even in areas more economically vibrant than Flint. Cost considerations will trump the complex chemistry conversation that any industry has when it looks for a new water source.

Business does this, and it is time it helps municipalities do the same.

As Flint switched water supplies, it failed to account for interactions and chemical changes that increased lead leaching. The Flint River has been known to be more corrosive than Lake Huron, and reactions after the switch were a much more hospitable home for pathogens such as *Legionella*.

### Treating After Discovery

One thing few of us in the water treatment business can understand is why Flint chose not to look at the makeup of its new water source and consider the problems that occurred shortly after the switch.

Even ignoring that this change was for the worse in terms of pipe health, problems could have been avoided with an appropriate treatment solution as soon as any danger was discovered—and proper testing would have flagged this right away.

Chemical additives like soda ash or specialized electrocoagulation water treatment could have helped Flint largely to avoid these issues by reducing the corrosiveness of the water through pH adjustment and significant reduction of source water contaminants such as lead and *Legionella*. These solutions implemented at the point of introduction into the water system or at points closer to homes and businesses would have allowed the city to affordably protect the health of its residents.

Genesis Water Technologies' (GWT) electrocoagulation water treatment solutions are used in industrial applications because they cost-effectively provide removal of source water contaminants while enabling the company to work within the boundaries of existing aging infrastructure. The lead pipe running underneath major American cities does not have to be as high a concern when proper treatment is utilized. Specialized filtration systems utilizing specific filtration media such as GWT zeolite provide protection by helping to filter out organics and trace heavy metals to assist in keeping water safe.

Unfortunately for Flint, the harm is done and the pipe is bleeding lead in enough places that filtration and additives will not resolve everything. Much of the city will need its pipe ripped out and replaced in order to move past fears of continued contamination.

That is the lesson of the day: Tackle these problems before they reach a tipping point and spread.

### Aging Infrastructure Across the U.S.

Flint is looking at a 25-year process to replace its distribution system and enough infrastructure that the majority of its citizens can return to a normal life. Major cities across the U.S. should heed that timetable because they are built on a foundation of lead pipe laid near the turn of the 20<sup>th</sup> century.

According to the American Water Works Assn., the U.S. has 6.5 million lead pipes transporting water to homes each day, with additional exposure opportunities in some old faucets and solder in piping joints.

Replacing all of this pipe easily would cost billions of dollars if the problem was lead alone. That "best case" scenario is far from reality. Los Angeles alone will need to spend \$1.3 billion over the next 10 years to replace crumbling pipe that makes headlines as it bursts all over the city. It will be a test case for other cities with older infrastructure that is deteriorating, though they suffer fewer disturbances as they move farther from fault lines.

Emergency situations push municipalities to make hasty decisions, including changing water supplies in the event of significant contamination like an oil spill. Lead pipe that is moving past its useful life is more susceptible to leaks and leaching,

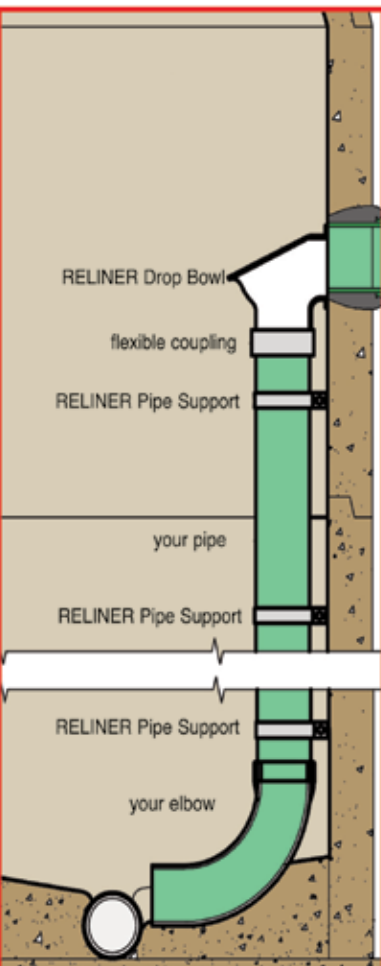
making it a hazard that is not at the top of the mind when another disaster strikes.

Today, it is unclear how cities will pay for the infrastructure improvements needed and the testing services that must come before any water or service changes. In that regard, the numerous illnesses caused by Flint's water crisis have a much more serious message: The cost of prevention will always be less than the cost of reacting to a crisis. **W&W**

Nick Nicholas is technical sales manager for Genesis Water Technologies. Nicholas can be reached at [nick@genesishwatertech.com](mailto:nick@genesishwatertech.com) or 321.280.2742.

**INSIDE DROP SYSTEM**

U.S. Patent 6074130  
Made in the U.S.A.



**Drop Bowl & Pipe Supports**  
by RELINER®/Duran Inc.

Eliminate Outside Drops  
Reduce Maintenance  
Simplify Inspection  
Clean from Above  
Stop Corrosion  
Install Quickly  
Ideal for Wet Wells

**800-508-6001**  
[www.reliner.com](http://www.reliner.com)

WRITE IN 115



**Pollardwater**

## LONGEVITY

Standing the test of time.

From the original tools forged by our New York blacksmith, to specialty tools made today, Pollardwater has been the trusted source for waterworks products for over 100 years. While our product line has evolved, our commitment to serving you remains unchanged.

(800) 437-1146  
[pollardwater.com](http://pollardwater.com)

See us at  
**ACE16 Booth# 1241**

©2016 Ferguson Enterprises, Inc. 0316 149995

WRITE IN 116