



## *A Half Century on, Challenges Remain in Supplying Safe Drinking Water to All*

**O**n December 16, we celebrate the 50th anniversary of the Safe Drinking Water Act. The United States can chalk up many successes under the statute. Thanks to the SDWA, Americans tend to take for granted that tap water in homes, restaurants, workplaces, and schools is potable.

But the SDWA's unquestioned success does not mean the work of water safety is done. For many, the crisis from lead-pipe contamination in Flint, Michigan, a decade ago continues to stand out as an SDWA failure. Inadequate funding has long been cited as hampering efforts directed at supplying uniformly safe drinking water, especially when expensive treatment techniques are needed. EPA notes, however, that the 2021 Bipartisan Infrastructure Law provides over \$35 billion

in dedicated safe drinking water funding to replace lead service lines and address PFAS.

The new funding is welcome, but will more money address the remaining and emerging drinking water issues? How far will EPA's national standards announced in April for PFAS in drinking water go in ensuring drinking water is safe from these widespread contaminants—especially given concerns expressed by city and county officials who say they need longer compliance timeframes? Will EPA's improvements to the 2021 lead and copper rule, due in October, be enough to be rid of this scourge? Plus, climate change, cybersecurity, and other issues are creating new sources of concern. Can technological breakthroughs address both enhanced drinking water safety and affordability?



*“We need to ensure that every household has access to clean and safe water, while keeping affordability in mind”*

**Carolyn Berndt**

Legislative Director for Sustainability  
National League of Cities



*“Our team at EPA will continue toward a future where every town and every person has safe drinking water every day”*

**Jennifer McLain**

Director, Office of Ground Water  
and Drinking Water  
Environmental Protection Agency



*“Every American should be able to turn on their kitchen tap and feel secure that they can trust that their water is safe. It’s a basic human right”*

**Erik D. Olson**

Senior Strategic Director for Health  
Natural Resources Defense  
Council



*“With the right leaders and workers, we can solve the challenges in providing safe drinking water over the next 50 years”*

**J. Alan Roberson**

Executive Director  
Association of State Drinking  
Water Administrators



*“Collective commitment and resources are key to improving the statute and the nation’s drinking water systems”*

**Lynn Thorp**

National Campaigns Director  
Clean Water Action  
Clean Water Fund



*“Since resources are limited, we should focus on effectively implementing the principles that underpin the statute”*

**Steve Via**

Director of Federal Relations  
American Water Works  
Association

# Questions of Affordability and Equity

By Carolyn Berndt

Local leaders are charged with protecting the health, safety, and welfare of their residents and communities. As owners and operators of drinking water, wastewater, and stormwater systems, they take this responsibility seriously. The Safe Drinking Water Act has been vital in helping them furnish one of the most basic requirements for life: clean and safe drinking water delivered to households and businesses.

As we are celebrating the 50th anniversary of the SDWA, the National League of Cities is celebrating its 100th birthday. Looking back on the impact that local leaders have had in growing our nation's cities, towns, and villages, we find that they were at the forefront of building our nation's infrastructure—including our water infrastructure.

Cities were also at the forefront of the environmental movement to clean up pollution in our nation's water resources. The burning of the Cuyahoga River in June 1969—the last time the river caught on fire—and an oil spill off the coast of Santa Barbara earlier that year were two of several catalysts for the first Earth Day in 1970 and the wave of activism that followed, including actions undertaken by local leaders.

While passage of environmental statutes such as the Clean Water Act and the health-based SDWA have been instrumental in helping communities provide clean and safe water for residents, they also led to a new mantra from local leaders: no unfunded mandates.

As early as 1972, NLC and local leaders were asking the U.S. Environmental Protection Agency

to revise deadlines for compliance if federal funds were not going to be provided. In the 1990s the local government campaign against unfunded mandates ramped up. During this time, Congress was debating changes to the SDWA as reflected in the 1996 amendments and, a year earlier, by the Unfunded Mandates Reform Act.

NLC leadership testified in 1993, 1994, 1995, and 1996 about the concerns from cities over the cost of compliance and the extremely conservative levels of testing necessary to comply with the SDWA.

Unfortunately, not much has changed today when it comes to cost and compliance challenges for local governments. Recent and forthcoming changes around the Lead and Copper Rule and the National Primary Drinking Water Regulation for PFAS are just two of the many drinking water requirements facing local governments (not to mention Clean Water Act requirements). These regulations, while important, carry hefty price tags for municipal water systems around testing, notification, reporting, capital improvements, and more.

With local governments already funding 95-98 percent of all capital, operations, and maintenance investment in drinking water and wastewater infrastructure, spending over \$148 billion in 2021 alone, according to the U.S. Census Bureau, questions of affordability and equity need to be addressed.

Many low- and fixed-income households across the country are already paying a disproportionate amount of their income toward their water bills. Municipal water system operation, maintenance, and capital projects are typically funded through ratepayers—in the form of water rates or through loans or bonds. When costs increase for local water systems, they often must be made up in the form of increased costs to ratepayers, which can pose an economic and financial burden

on individuals and the community.

Local leaders are grateful for the additional and historic levels of funding for water infrastructure through the Bipartisan Infrastructure Law. Many local governments also dedicated a portion of their American Rescue Plan Act State and Local Fiscal Recovery Funds toward their needed water infrastructure projects.

But it is not enough to make all the necessary improvements to our nation's water infrastructure systems in every city, town, and village across the country. The American Society of Civil Engineers estimates that over the next 10 years, \$1 trillion of additional investment is needed to reach a state of good repair for drinking water, wastewater, and stormwater infrastructure, not including the cost of meeting new and forthcoming regulatory requirements. Moreover, the increase in State Revolving Funds from the BIL will run out before the new compliance deadlines of the Lead and Copper Rule and the National Primary Drinking Water Regulation for PFAS go into effect.

Local governments will be left to pick up that cost difference. Congress and the administration should continue to make significant investments in water infrastructure directly to local governments with grants, not loans, to avoid unfunded mandates on local governments. Setting realistic, implementable, and cost-effective standards and requirements can help ease regulatory and financial burdens on communities, while still protecting public health.

The SDWA is a milestone achievement, but within the regulatory framework we cannot lose sight of the need to ensure that every household has access to clean and safe water while keeping affordability for residents and communities in mind.

*Carolyn Berndt is legislative director for sustainability of the National League of Cities.*

# Until Every Town, Every Person Has Access to Water

By Jennifer McLain

All people deserve access to clean water. Not long ago, people could not trust the water coming out of their tap. Sewage, industrial waste, and trash clogged our waterways and contaminated our drinking water. There were no federal protections against bacteria, viruses, and dangerous chemicals in drinking water. Anyone who has experienced a boil-water notice understands how unsettling and difficult it is to lack safe drinking water.

National legislation was needed to safeguard the public from contaminated drinking water. In 1974, Congress signed the Safe Drinking Water Act into law, a historic law of public health protection. It empowered the Environmental Protection Agency to protect our nation's drinking water. The SDWA has been amended multiple times, most significantly through the 1996 amendments, and continues to be a powerful tool to protect public health.

The SDWA gives EPA the federal authority to regulate contaminants and recognized the states as partners in achieving those requirements. The SDWA framework for emerging contaminants provides a structure for researching and regulating newly discovered contaminants in drinking water. The 1996 SDWA amendments also require regular reviews of existing regulations to ensure they evolve as our scientific understanding evolves. Since 1974, EPA has restricted over 90 drinking water contaminants under the National Primary Drinking Water Regulations.

The 1996 amendments introduced new drinking water infrastructure investment via the Drinking Water State Revolving Fund.

Since 1996, over \$57 billion has been lent to communities across the country, improving their capacity to provide safe drinking water to their residents. A partnership between the federal government and states, the DWSRF supports state water programs and local water system capacity. The revolving fund prioritizes assistance to disadvantaged communities and is designed to grow over time as a sustained source of water infrastructure funding. Many additional SDWA grant programs beyond the DWSRF have been established over time to meet specific needs.

Despite our investments through the DWSRF and other grant programs, much more is needed. In the 7th Drinking Water Infrastructure Needs Survey and Assessment, EPA found that U.S. drinking water systems will need nearly \$630 billion over 20 years for pipe replacement, treatment plant upgrades, storage tanks, and other key assets. Addressing these funding shortfalls will be a significant challenge.

EPA's implementation of the SDWA over the past 50 years has led to fruitful collaboration between federal, state, and local government, water utilities, scientists, public health, environmental, and community advocacy organizations, and other stakeholders. When the law was enacted, chlorinating drinking water to kill bacteria and viruses was the priority. Today, aging infrastructure, legacy lead pipes, PFAS contamination, and cyber-attacks are just a few of our priorities. As the challenges to our drinking water and water infrastructure have evolved, EPA has relied on the tools of the SDWA to enhance public health protections.

On April 11, the agency issued the first-ever national standard to protect people from exposure to harmful PFAS in drinking water. This significant regulation will reduce exposure for approximately 100 million people, prevent deaths,

and reduce serious illnesses from these persistent contaminants. Just prior to the anniversary of the act, EPA will issue the Lead and Copper Rule Improvements, a regulatory revision to strengthen protections from this dangerous heavy metal.

The agency has delivered billions of dollars to help communities replace lead pipes, upgrade their aging infrastructure, and enhance treatment to remove contaminants like PFAS. To guarantee communities in need have access to these funds, the agency is extending our reach into communities. We launched the Water Technical Assistance (WaterTA) initiative to provide hands-on support for communities to assess their challenges and needs, identify potential solutions, and prepare applications for water infrastructure funding. One WaterTA program, called Get the Lead Out, guides communities through the process of lead service line replacements from start to finish, expediting this critical public health action.

We envision a future where our water systems are resilient against the growing threats posed by increasingly severe weather and cyber-attacks. Accordingly, the agency is investing in cybersecurity technical assistance and water infrastructure resilience initiatives to support the water sector with tools, training, and technical assistance to adapt to and harden against climate-driven disasters and malicious actors.

Ensuring public access to safe drinking water is a critical mission of the agency, and the Safe Drinking Water Act gives us the tools needed. The dedication of the employees I work alongside is unmatched. Guided by the SDWA, our team at EPA will continue toward a future where the mission of the Safe Drinking Water Act is truly fulfilled, and every town and every person has safe drinking water every day.

*Jennifer McLain is director of EPA's Office of Ground Water and Drinking Water.*

# We Need an Act for the 21st Century

By Erik D. Olson

**F**ifty years ago, President Ford signed the Safe Drinking Water Act amid reports of scores of waterborne disease outbreaks, widespread microbial contamination, and a public outcry about the chemical contamination of tap water in New Orleans and nationwide.

Substantial progress has been made since then. EPA issued about 100 standards over the years and recently adopted standards for six toxic PFAS “forever chemicals.” The SDWA and the Bipartisan Infrastructure Law have invested tens of billions of dollars in water infrastructure. Some EPA standards have yielded big health benefits. After the arsenic standard was strengthened in 2001, tap water levels dropped, preventing thousands of cancers.

However, at bottom, the promise of safe drinking water for all remains unfulfilled. Too often public health protection has not been the top priority. Old contaminants like nitrates and lead remain weakly controlled, and emerging threats like *Legionella* and thousands of chemical concoctions including most PFAS remain unregulated. Even when a court ordered EPA to regulate the toxic contaminant perchlorate, the agency failed. The SDWA’s standard-setting provisions, weakened in 1996, are not up to the task of protecting public health. Utility associations and the chemical industry’s resistance, lobbying, and litigation often have blocked or delayed important new standards.

Moreover, noncompliance is widespread. Utilities serving tens of millions of Americans commit tens of thousands of violations annually, ranging from serious health standard violations to failures to test. Only about one in ten violations face for-

mal enforcement and fewer receive penalties. Despite right-to-know requirements, the public is rarely aware of contamination. In Flint and other cases, threats were long allowed to fester, with false safety assurances.

While water in many better-off communities is relatively safe, contamination can occur anywhere and is more likely to afflict low-income communities and communities of color. Black communities and small rural communities are at disproportionate risk. Two million Americans lack running water and sanitation, especially Indigenous people. Although the Bipartisan Infrastructure Law importantly targets funding to disadvantaged communities, it will take many years and many additional billions to fully address this threat. And low-income people often cannot afford their water bills.

But we can fix this. We have a vision for the future.

Much as our grandparents and great grandparents did when water systems were built, we must again make investing in public health and modernizing our water systems a top priority. We can use state-of-the-art technologies that address a full suite of contaminants to avoid the “contaminant of the month club.” We can target investments to those communities most in need. Systems struggling to comply should be helped with funding and, with full community input, restructuring if needed. Safe tap water is far more efficient, climate- and environment-friendly, and cheaper than bottled water, which has become a go-to response for people concerned about water safety.

We also must ensure the right-to-know and honest public education. Utilities, states, and EPA must be forthright. People constantly reassured that their water is perfectly safe won’t want to pay for new investments. And since most improvements will still be funded by rate revenue, we need equitable rate

design and direct assistance for low-income households.

Another way to reduce costs to ratepayers and to minimize health threats is to require effective source water protection. We must strictly limit or eliminate the manufacture, use, and discharge of dangerous chemicals like PFAS, and crack down on inadequate industrial and commercial pretreatment and poor control of surface and groundwater pollution.

In sum, we need a 21st century Safe Drinking Water Act. Strong protections and investments in protecting our drinking water are wildly popular, supported by voters of all political stripes. We could enter a new era of safer water for all by investing at least \$20 billion per year federally in our water infrastructure (since over \$1 trillion is needed), and establishing strong, enforceable source-water protection and polluter-pays provisions.

The new law also should overhaul the broken standard-setting provisions. If the lead rule expected in October doesn’t fix the problem, a new act should. And we need effective affordability provisions, including a national low-income water assistance program and provisions to authorize and encourage equitable rate designs. There are other crucial improvements needed as well, such as strengthened citizen suit provisions and technical assistance grants to the public in communities with significant noncompliance.

With a strong new law, a robust new commitment by utilities and regulators to protecting the public, and real public engagement, finally every American will be able to turn on their kitchen tap and feel secure that they can trust that their water is safe. It’s a basic human right.

*Erik D. Olson is the senior strategic director for health at the Natural Resources Defense Council and has worked on drinking water issues since starting in EPA’s Office of General Counsel in 1984.*

## Still Challenges While Money, Workers Scarcer

By J. Alan Roberson

Passage a half century ago of the Safe Drinking Water Act is an anniversary worth celebrating—as this legislation today is marking the onset of another stellar era in improving public health. Drinking water in the United States is safer than ever; however, challenges to drinking water are increasing. Thoughtful investments are necessary to continue to ensure safe, reliable, and affordable drinking water for the next 50 years. Let's take a quick look at the SDWA achievements for the first 50 years.

First, the shift from the 1920s-1974 system of voluntary implementation of the Public Health Service guidelines to uniform, enforceable standards developed by the Environmental Protection Agency raised the regulatory floor to foster increased public health protection. State and territories developed their own standards that were at least as strict as EPA's standards, to maintain primary enforcement authority. As a result, the delegated state agencies, as well as EPA, developed substantive drinking water programs, with over 3,000 dedicated drinking water professionals scattered throughout the country.

Second, security at water systems improved from the regulatory requirements of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. Systems across the country installed fences, improved access control, and made other security improvements. This legislation started the evolution of preparing for all hazards that the water sector is using to protect against any threat, ranging from terrorism and cyber threats to extreme weather events.

Third, many infrastructure projects to improve water systems were built through the Drinking Water State Revolving Fund, by providing low-cost financing for construction that resulted in over \$12.5 billion saved in financing costs. State funding actions and appropriations have been leveraged to over \$53 billion in construction through over 18,000 assistance agreements. Over 35 percent of assistance agreements have gone to disadvantaged communities, and that is an impressive fraction.

Finally, national compliance with the regulations increased from 79 percent in 1993 to 93 percent today. Increasing compliance will be challenging, given that approximately 54 percent of the over 50,000 Community Water Systems serve less than 500 people. Over 150,000 Public Water Systems must comply with 21 drinking water regulations for 97 contaminants, as well as other regulations not tied to specific contaminants. That makes compliance complicated. Compare the SDWA to the Clean Air Act, with six common air pollutants regulated by EPA and the air pollution control agencies.

Significant challenges remain, even with these achievements. Infrastructure funding and affordability are inextricably linked. The billions of dollars in federal funding from the Infrastructure Investment and Jobs Act is a step in the right direction but cannot meet the drinking water infrastructure needs. EPA's drinking water and wastewater needs surveys estimated investments at \$1.255 trillion, or \$62.8 billion annually, for the next 20 years. When compared to current IJJA funding, \$8.69 billion annually in a five-year window, the funding gap is expansive, and still leaves needs for the next 15 years at \$1.211 trillion.

The immense infrastructure needs are creating affordability problems across the country, because without additional federal funding, utilities must raise rates to fund infrastructure improvements. Increased water

bills will exacerbate the already-existing affordability challenges for low-income households. Water systems will then have to determine how to appropriately minimize shutoffs, which are disruptive from a societal perspective.

It's not just the water systems and infrastructure that are suffering from a lack of resources. With flat or decreased resources running into the increased number of regulations and infrastructure requirements, primacy agency workers are struggling to keep up, which jeopardizes drinking water and public health protection.

While making progress in physical security, cybersecurity has emerged as a significant threat to water quality, given the water sector's scattered facilities. Bad actors can attack the control or business systems from anywhere in the world, as opposed to being physically present to break into a treatment plant. There is not a clear path to building the appropriate cybersecurity expertise across the over 150,000 public water systems, but this new threat poses additional concerns and financial investment.

In addition to cyber threats, water systems must think broadly about resilience and protection against all hazards, ranging from supply chain issues to cybersecurity to extreme weather. Most of these problems can be mitigated with more money, assuming that some of the funding and affordability challenges can be resolved.

People are key to tackling these challenges with creative solutions—creative financing, innovative technologies, connecting with customers, and developing answers to our collective drinking water challenges. The complexities of treatment and distribution requires a wide range of expertise, but with the right leaders and workers, we can solve these challenges over the next 50 years.

*J. Alan Roberson is executive director of the Association of State Drinking Water Administrators.*

## Success Needs More Than Extra Funding

By Lynn Thorp

Passed half a century ago and twice amended along the way, the 1974 Safe Drinking Water Act has resulted in enormous strides in reducing public health risk—the stated goal of the law. Enforceable limits on contaminants in water provided by regulated public water systems have led to improvements, modernization, and technical innovation in drinking water treatment and distribution.

However, longstanding and “emerging” contaminants continue to pose public health risks in drinking water. Regulated public water systems in the United States also face challenges around aging infrastructure and increasing demands on financial, management, and technical capacity.

The historic water infrastructure funding in the 2021 Bipartisan Infrastructure Law, much of it targeted to disadvantaged communities who have not benefitted from existing programs, will make a difference. But the work of maintaining infrastructure and modernizing drinking water systems is never finished. Clean Water Action has joined other organizations in calling for \$5 billion in ongoing annual funding. Investment is also needed to support state agencies that implement SDWA and a more robust research agenda. Ongoing increased Drinking Water State Revolving Fund investments, which are popular and have enjoyed bipartisan support, would bring more public health protection and economic benefits, as would continued assistance to help low-income households pay for water service.

Money alone rarely solves complex problems, and drinking water is

no exception. The statutory requirements and implementation processes for setting contaminant limits and how these have been implemented warrant review. While funding will help, as will technological innovation, they will not on their own solve the problem of improving the capacity of regulated public water systems to meet modern challenges, updated regulations, and consumer expectations. A recent U.S. Environmental Protection Agency proposal around restructuring and other approaches to address drinking water systems with repeated violations of health-based SDWA standards demonstrates both the need to act and the complications around doing so.

Uniquely among environmental statutes, SDWA cannot be successful without robust implementation of other laws and regulations. The “forever” PFAS chemicals, found in drinking water nationwide, are a case in point. While welcomed as a positive first step, the April 2024 SDWA limits on some of these chemicals are insufficient to protect people’s health in the long term. Thousands of these chemicals are used in products and processes throughout the economy.

The effective and efficient solution is to keep PFAS, which are linked to a wide range of troubling health effects, even at low doses, out of the environment in the first place. Instead, Toxic Substances Control Act programs have approved new chemicals and new uses long after PFAS risks were known; and Clean Water Act programs have only just begun to address industrial wastewater discharges into waterbodies, including those that serve as drinking water sources.

Other contaminants illustrate this dynamic. Health risks from nutrient pollution are not new. It causes harmful nitrates and also contributes to algal blooms, which force water systems to monitor for the resulting toxins. Yet nutrient pollution from agriculture remains poorly controlled.

SDWA will almost certainly need to address microplastics, tiny particles found throughout the environment. Yet they have proliferated seemingly free of any upstream controls, leaving drinking water systems and their consumers to face potential public health risks and bear the burden of future removal requirements.

Surprisingly, SDWA itself does not include provisions that would empower EPA, water systems, or communities to keep contaminants out of drinking water. The agency has identified better integration of SDWA and implementation of other statutes, including TSCA and the Clean Water Act, as a strategy for protecting drinking water. These efforts need to be more concrete. For example, decisions about new chemicals, new uses of chemicals, and industrial wastewater discharges that appear on SDWA lists of contaminants of concern could trigger additional scrutiny.

EPA is expected to finalize a new round of updates to the SDWA Lead and Copper Rule soon. Clean Water Action has long advocated for a requirement to fully replace the lead pipes that bring water from the water main to the house or other building to eliminate this largest source of lead in drinking water.

Whether the updated regulations usher in a new era of lead-free drinking water will not only depend on the final requirements, but on how effectively water systems, local governments, states, and EPA implement them—and on resources being available for this difficult and necessary task. This same collective commitment and resources are key to improving SDWA and the nation’s drinking water systems and to ensuring continued progress and making safe drinking water accessible to all.

*Lynn Thorp is the national campaigns director for Clean Water Action and Clean Water Fund.*

# Nation Needs Meaningful Risk Reduction

By Steve Via

Fifty years after its passage, the Safe Drinking Water Act is by most reasonable assessments a tremendous success for public health. Despite some very high-profile exceptions, the vast majority of water systems reliably meet the standards set under the act. The process for identifying and regulating potentially harmful substances is fundamentally sound, if too slow for some critics.

EPA identifies contaminants that may pose health risks, collects data to make informed decisions, and promulgates new or improved rules when warranted. States provide oversight. Capacity development and enforcement strategies assist systems and, if necessary, require action from non-compliers. Before SDWA, none of these measures were reliably implemented across the United States.

Perhaps the question we need to ask is whether SDWA implementation has been successful enough to maintain public confidence in the nation's water supply. Americans experience daily news stories, social media posts, and advocacy reports about real or conceivable risks to drinking water quality, and failures in one community often cast dark shadows across all water systems. The consistent public health achievements from scores of other systems go largely unnoticed.

Nearly a decade after the lead crisis in Flint, Michigan, it is reasonable to conclude the incident was not a failure of the SDWA—it was a failure to faithfully follow existing regulations. It was a crisis of governance and a story of environmental injustice. The Flint incident

tarnished the image of water systems nationwide and obscured the country's dramatic progress in reducing blood lead levels over the past 50 years.

While the sector supports removing lead service lines, we should remember that nationwide, typical lead concentrations in tap water are low—1 part per billion or less. EPA's latest revisions to the Lead and Copper Rule are predicated on further reducing lead concentrations. This rule will require communities to invest \$3–4.9 billion annually for more than 30 years.

PFAS, per and polyfluoroalkyl substances, are a similar benefit-cost conundrum. The U.S. Centers for Disease Control and Prevention estimates that between 2000 and 2018, typical levels of perfluorooctanoic acid and perfluorooctanesulfonic acid in blood declined 70 and 85 percent. For further reductions, EPA has focused almost entirely on a single source of exposure—drinking water. The agency has not taken any steps to restrict PFAS use in commerce since 2007. It has not set any standards controlling release of PFOA, PFOS, or other PFAS into the environment, and no significant restrictions are anticipated for years.

Against that backdrop, the PFAS drinking water rule will require \$37.1 to \$48.3 billion in capital investment by communities over the next five years. The cost to comply will be borne by about one fifth of the nation's communities and will typically change PFOA and PFOS levels from less than 10 parts per trillion to levels below 4 parts per trillion. The burden of this rule relative to the benefits begs the question of whether current SDWA implementation is targeting truly meaningful health risk reduction.

Whether real risk reduction is occurring matters. While SDWA regulations impact communities of all sizes, the burden of the new PFAS rule will be acutely felt by small communities of less than 10,000

persons. These communities face extraordinary increases in household water bills. Annual state and federal financial assistance are not adequate to address the cost of the PFAS and LCR rulemakings, much less the cost of maintaining safe, sustainable, compliant water system infrastructure for the nation.

So, is more federal largess the solution? Adequate federal funding to address all unfunded mandates is not likely. Consequently, advocacy for infrastructure funding will by necessity focus on assisting viable, but economically challenged communities. Even that funding will not be enough to avoid rate shock in those communities. Regionalization of water systems to obtain economies of scale will occur not simply to address the latest regulations, but to address the larger threats to the nation's water supply, the need for sustained reinvestment, competition for workers, and renewal of existing infrastructure.

Technology and innovation will help the water sector, but we will still face the question of what are the meaningful opportunities for additional health risk reduction. Advances in artificial intelligence, sensors, and data analytics will arm water systems and their consumers with more data than ever before, but they do not assure a science-based, reasonable risk management approach.

Today, we can look back and see the accomplishments of the sector over the last 50 years. The future will require a more honest public discourse about risk and health benefits. Can we as a nation select sound opportunities to make meaningful, if incremental improvements in public health? Perhaps, recognizing that federal, state, community and household resources are limited, we should focus more squarely on effectively implementing the principles that underpin the statute.

*Steve Via is director of federal relations at the American Water Works Association.*