COALITION REPORT

Correcting PFAS Myths: Misperceptions Risk Higher Clean-up Costs for Water Ratepayers

American Water Works Association | Association of Metropolitan Water Agencies | NACWA The Voice of Clean Water Utilities | NRWA National Rural Water Association America's Largest Utility Membership | NAWC National Association of Water Companies | Water Environment Federation the water quality people

Regulating forever chemicals, also known as per- and polyfluoroalkyl substances (PFAS), presents enormous challenges for lawmakers and regulators due to their unique characteristics.

In the stampede to address this complex issue, Congress and EPA have often applied faulty cost projections to remediation, ignored or downplayed input from the water sector, and created policies that hamper accountability as part of regulations that will inevitably determine who pays for the clean-up of harmful PFAS pollution. New, fact-based regulations that trace back the history of PFAS must be crafted to hold the real polluters accountable.

Forever chemicals have been used in various industrial and consumer products for decades. They are resistant to heat, water, and oil, making them ideal for applications such as firefighting foam, non-stick coatings, waterproofing materials, and more. The extensive use of PFAS in numerous industries makes it difficult to control their release and prevent further contamination.

Complex regulatory landscape – Regulating forever chemicals is complicated due to the wide range of PFAS compounds with different properties and potential risks. US EPA is on a path to implement regulations and guidelines for specific PFAS compounds, instead of taking a more comprehensive approach. Many states are also moving ahead with different PFAS regulations that are separate from what is happening at the federal level. This lack of harmonized regulations will lead to inconsistencies in holding PFAS polluters accountable and enforcing effective control measures.

Treatment and remediation – Removing PFAS from drinking water sources and as part of the wastewater treatment and stormwater management process is technically challenging and costly. Conventional treatment methods like filtration and activated carbon adsorption are not always effective in completely removing PFAS from water. Developing efficient and scalable treatment technologies is crucial to mitigate the ongoing contamination and ensure safe drinking water supplies.

Given the persistence, bioaccumulation and potential health risks associated with forever chemicals, the Water Coalition Against PFAS – a group of leading associations representing every corner of the water sector (drinking water, wastewater, stormwater, and rural utilities) believes that correcting the myths of PFAS and addressing the regulatory challenges is vital to protecting human health and the environment effectively.

PFAS Myth #1

The cost to clean up forever chemicals can be easily borne by water sector utilities and their customers

New research from the water sector and state regulators indicate that the costs to address PFAS will be much higher than Congress and EPA anticipate. These figures represent new estimates, which show that PFAS clean-up costs are actually much higher than current EPA projections being used to inform PFAS regulation in the pipeline. If nothing is done, these costs will ultimately be paid for by drinking water, clean water, and rural water utility providers and their customers – meaning that the American public will essentially be subsidizing the private, for-profit companies that made and profited from PFAS chemicals.

Drinking Water – According to a report commissioned by the American Water Works Association (AWWA) and prepared by Black & Veatch, **drinking water utilities will need to invest more than $50 billion to install and operate treatment technology over the next 20 years in order to comply with new PFAS standards.** Additional analysis by Hazen & Sawyer estimates that a hazardous substance designation for PFOA and PFOS under CERCLA could add another $3.5 billion per year in disposal costs for the water sector.

Wastewater – New information from a survey conducted by the National Association of Clean Water Agencies (NACWA) suggests that **operational costs for individual clean water utilities will increase by up to 60% as a direct result of new PFAS regulations.** Total amounts can vary from utility to utility and depend on the specific regulations implemented. Additionally, a recent study from Minnesota showed total wastewater costs to remove PFAS to be between $14 and $28 billion over 20 years in that state alone. Extrapolating this number to a national level, it is clear that wastewater utilities alone are looking at tens of billions of dollars a year in additional costs to address PFAS – all of which must be passed on to ratepayers.

Various technologies can be employed for PFAS remediation, and once the remediation technology is chosen, the design and construction of treatment systems come into play. This includes designing the system layout, purchasing necessary equipment, and constructing the infrastructure required for the treatment process. The complexity and scale of the treatment system can significantly influence the overall costs.

PFAS remediation will also require long-term operation and maintenance of drinking water and wastewater treatment systems to ensure effective and continuous treatment. This will involve regular monitoring, system maintenance, replacement of consumables (such

as activated carbon filters), and disposal of waste generated during the treatment process. The costs associated with ongoing operation and maintenance can be substantial, particularly for large-scale and long-term remediation projects.

The disposal of PFAS-contaminated waste posed a much larger cost consideration. The generated waste during remediation needs to be properly managed and disposed of in accordance with applicable regulations. Also, the treatment and disposal of PFAS-contaminated waste can be expensive due to the specialized processes and facilities required.

Finally, compliance with relevant legal and regulatory requirements can add to the overall clean-up costs. This includes obtaining necessary permits, complying with waste management regulations, and meeting reporting obligations.

The bottom line is that PFAS clean-up costs for water sector utilities – which never produced nor profited from PFAS in the first place – will be substantial, especially for large-scale or long-term remediation projects.

PFAS Myth #2

New EPA regulations will help clean water utilities to curtail costs associated with PFAS remediation

Instead of helping the water sector with the growing PFAS clean-up cost burden, a new rule proposal from EPA created to identify PFAS substances in drinking water may wind up shifting the financial burden even more onto clean water utilities and ratepayers.

EPA's new piecemeal approach will set new regulations for six PFAS compounds, including the two leading chemicals, perfluorooctanoic acid (PFOA) and perfluorobutane sulfonic acid (PFOS). With the new rule in place, water utilities will need to monitor for all six chemicals and treat water if concentrations exceed the maximum contaminant level (MCL). Water industry experts agree that implementing a new federal MCL will require additional treatment technology, which will result in added costs for utilities.

A broad-based cost projection by EPA, pegged to the new rule, estimates the annual cost for PFAS clean-up could be anywhere between $772 million to $1.2 billion, with economic benefits between $908 million and $1.2 billion. Even with such a wide-ranging estimate, leading water associations vehemently disagree with this assessment.

In March 2023, the American Water Works Association (AWWA) released new information showing the national cost for treatment systems to remove PFOA and PFOS to levels by the EPA rule would exceed $3.8 billion annually. The EPA rule as proposed would require more than 5,000 water systems to develop new water sources or install advanced treatment technologies. Another 2,500 water systems in states with established standards would need to adjust their existing PFAS treatment systems.

As for accountability, the Water Coalition Against PFAS believes the proposed hazardous substance designation of PFOS and PFOA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is intended to uphold a "polluter pays" principle, whereby those responsible for releasing hazardous substances into the environment are held liable for the cost of cleaning up contaminated sites. However, absent a statutory exemption from PFAS liability for water sector utilities, polluters will continue to pass these costs on to American households and families, effectively creating a "public pays" principle under CERCLA.

Experts from across the water sector have expressed concerns to EPA, but the Agency believes it does not have the authority to provide any formal legal shield, leaving water systems with potential protection from EPA that would be formalized through a policy memorandum, at best.

For this reason, the only viable option for water systems and ultimately the public is for Congress to provide a statutory exemption from PFAS liability for water sector utilities under CERCLA.

PFAS Myth #3

Drinking water, wastewater and stormwater utilities are sources or "polluters" of PFAS

The responsibility for cleaning up PFAS is currently being shared among various stakeholders, including government agencies, the water sector, and occasionally the private sector companies that created them, which often creates a misperception among policymakers and the public that utilities are point sources for PFAS. **Despite this shared responsibility and the optics of it for lawmakers and the public, drinking water and clean water utilities themselves do not produce forever chemicals.**

PFAS compounds are discharged into water bodies as part of industrial processes or from manufacturing facilities. They can also be discharged from industrial facilities into municipal sewer systems. Additionally, PFAS chemicals are discharged from homes, where they can be found in all kinds of domestic products, into sewer systems. Wastewater treatment facilities then become passive receivers of these chemicals, which they have no role in producing or profiting from. There is no current technology that can feasibly and affordably remove PFAS during the wastewater treatment process, and the chemicals are ultimately discharged from wastewater treatment plants to local receiving water bodies.

If these water bodies serve as sources of drinking water, the PFAS can be taken up by water utilities during the treatment process. In addition, PFAS can contaminate groundwater due to releases, accidental spills, or improper disposal practices. Water utilities that rely on groundwater sources may unintentionally extract water containing PFAS and subsequently distribute it to consumers.

For these reasons, water utilities strive to provide safe drinking water to consumers and are subject to new regulatory standards for water quality. As awareness about PFAS contamination increases, water utilities will be responsible for implementing more complex measures to detect, monitor, and treat PFAS in their water supplies to ensure compliance with regulations and minimize consumer exposure.

Bearing in mind the obligation of the water sector to ensure clean water and to protect public health and the environment, the industries that have historically used PFAS or are directly responsible for dangerous contamination must be expected to contribute to the clean-up costs. That's why industries that manufactured or used PFAS-containing products, such as chemical manufacturers, textile manufacturers, and manufacturers of firefighting foam, must be held financially responsible for clean-up efforts.

It's important to note that the allocation of clean-up costs can vary depending on the jurisdiction and specific circumstances of each PFAS contamination case. The legal and regulatory framework, along with the level of government involvement and the ability to identify responsible parties, can significantly impact the distribution of financial responsibility.

PFAS MYTH #4

Water utilities – and the communities they serve – will not be saddled with legal liability for PFAS cleanups

When it comes to PFAS cleanups, environmentalists, members of Congress, and the US EPA all say the same thing: polluters should pay to get these "forever chemicals" out of our water and off our lands. And, in theory, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – the federal statute designed to make responsible parties pay for cleanups of hazardous substances – is a good tool to achieve that goal. The reality of

CERCLA liability, however, is much more complicated. Clean water utilities collect, manage, treat, and sustainably reuse the billions of gallons of wastewater and stormwater and tons of biosolids generated throughout the country each day. These services are foundational for our modern society, but they also often fall within CERCLA's broad categorizations of "disposal" and "releases," and therefore can lead to clean water utilities being incongruously labeled as CERCLA "potentially responsible parties" (PRPs).

On the flip side, the chemical companies that created PFAS and profited from their sale often do not – in the legalese of CERCLA – ultimately "dispose" of them, but instead sell them as a "useful product." Ironically, this fact may allow the biggest "polluters" of them all – PFAS manufacturers – to escape paying for clean-ups conducted under CERCLA. In other words, CERCLA may lead to the very communities that have suffered from PFAS pollution paying for its clean-up through increased utility bills, while polluters with teams of lawyers skirt legal liability and get around paying their fair share.

EPA has indicated that it will use its CERCLA enforcement discretion to go after polluters and help shield utilities from this outcome. Public utilities appreciate this, and EPA can provide some relief under CERCLA using its discretion. But in spite of what environmentalists may say, these protections have holes big enough for PFAS manufacturers to drive trucks through, because CERCLA provides third parties – including polluters – with statutory rights to bring suits and foist cleanup costs on any PRP, like water utilities. In many cases, EPA can't do anything to stop it. And utilities make juicy targets. They are reliable sources of funding that polluters are more than willing to use to defray their own costs.

Bottom line: absent action from Congress to change the way CERCLA works in the context of PFAS, there is a significant risk that clean water utilities and the public they serve will be burdened with the costs of PFAS cleanups and legacy pollution, not polluters.

PFAS Myth #5

New technologies being developed will mitigate PFAS clean-up costs for the water sector in the future

While the field is still evolving, policymakers have started to focus on innovative technologies for PFAS remediation. To address PFAS in drinking water, the water sector is working to implement advanced treatment processes to remove or reduce PFAS concentrations, ensuring the provision of clean and safe drinking water to consumers. **However, new technologies are not a silver bullet for the utilities, and they can be very expensive. Also, the cost of remediation technologies can vary dramatically, depending on the extent of contamination, the selected remediation method, and the scale of the project.**

Advanced oxidation processes (AOPs) involve the use of chemical reactions to break down and destroy PFAS compounds. Techniques such as ultraviolet (UV) light, ozone, or hydrogen peroxide are applied to generate highly reactive radicals that can degrade PFAS molecules. AOPs have shown effectiveness in treating PFAS-contaminated water, although further research is needed to optimize the process and ensure complete degradation.

Electrochemical methods use an electric current to induce reactions that can degrade or remove PFAS compounds. Electrochemical oxidation and electrocoagulation are two approaches that have been investigated for PFAS remediation. These techniques can be effective in treating both water and soil contaminated with PFAS.

Researchers are developing novel adsorbent materials specifically designed to capture PFAS from water sources. These materials have high affinity and selectivity for PFAS, allowing for efficient removal. Examples include modified clays, activated carbon-based materials, and nanomaterials. Research efforts focus on enhancing adsorption capacity, stability, and cost-effectiveness of these materials.

Membrane-based separation processes, such as reverse osmosis (RO) and nanofiltration (NF), have been effective in removing PFAS from contaminated water. These technologies work by selectively rejecting PFAS compounds while allowing clean water to pass through. Advances in membrane materials and processes aim to improve PFAS removal efficiency and reduce energy consumption.

It's worth noting that while these technologies show promise, each has its own limitations, and their effectiveness may depend on the specific PFAS compounds, concentrations, and site conditions. Continued research and development are essential to optimize these technologies and make them commercially viable for large-scale PFAS clean-up efforts.

Other cost factors to consider include research and development efforts. Investing in innovation and improving the efficiency and effectiveness of existing technologies can could help reduce overall expenses. PFAS remediation also obviously requires perpetual operation and maintenance to ensure effective treatment. The costs associated with operating treatment systems, including energy, chemicals, consumables, and personnel, can be substantial, particularly for long-term remediation projects.

Lawmakers and media must work to debunk the common myths associated with PFAS so that Americans from all walks of life understand who is responsible and what must transpire to fix this massive problem. While the costs associated with PFAS remediation can be significant, it's important to weigh them against the potential risks of contamination to human health and the environment. That's why Congress and EPA must work together and listen to water industry experts to ensure that the American public is not forever on the hook for cleaning-up forever chemicals.