TESTIMONY OF
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"THE FEDERAL ROLE IN KEEPING WATER
AND WASTEWATER INFRASTRUCTURE AFFORDABLE"
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Good morning Chairman Inhofe, Ranking Member Boxer, and members of the Committee. I am Erik D. Olson, Director of the Health Program at the Natural Resources Defense Council (NRDC). I have been fighting to improve our drinking water, clean water, and water infrastructure while working for NRDC, EPA, other nonprofits, and as a staffer for this Committee, for more than 30 years. I was deeply involved in the enactment of the 1996 Safe Drinking Water Act Amendments, and was an active participant in the debate over the 1986 Amendments to the Act. I appreciate the opportunity to testify today.

Deferred maintenance and the steady deterioration of the nation's water and wastewater infrastructure has been known to be a serious challenge for decades.[1] Calls have been made for well over two decades for modernization of the nation's often-aging and outdated drinking water treatment plants and distribution systems.[2] Similarly, we have long known that our wastewater and storm water treatment and collection systems are badly in need of updating. But the chickens are now coming home to roost.

As the drinking water crisis in Flint, Michigan has now brought into national focus, the safe drinking water that we all take for granted in the United States can no longer be considered a given. There are major public health and economic impacts flowing from our failure to make appropriate decisions and failure to invest in infrastructure.

In Flint, state-appointed officials decided to save a few million dollars by switching from Lake Huron-suppled Detroit city water, to the polluted and corrosive water of the Flint

River that wasn't treated to control corrosion. The results have been widely reported: serious corrosion damage to the city's already-challenged water pipes and infrastructure, and a string of public health crises including first bacterial contamination, followed by a violation of the standard for cancer-causing disinfection byproducts due to inappropriate disinfection practices, and a serious problem with lead contamination leaching from thousands of lead service lines because of the corrosive water.

Flint reminds us that penny-wise, pound-foolish decisions to save a few bucks can have huge costs to public health, enormous economic costs, and a corrosive impact on public trust of government.

The Human Dimension

We should make no mistake: while these infrastructure problems are usually out of sight and out of mind, they can have very real impacts on people. This has come home to me as we have been legally representing local citizens from Flint who are directly affected by that disaster.

As an example, let me briefly tell you what happened to Maryum, a mother in Flint whose family's water was seriously contaminated. She, her husband, and two children noticed in 2014 that their water "smelled like rotten eggs," tasted bad, and was brown. They switched to bottled water. But after a month of hearing reassurances of the water's safety from government officials, and because using bottled water was expensive and inconvenient, they went back to tap water.

During this time, Maryum's family suffered from a number of health effects. In June 2014, she had a miscarriage; she had no history of miscarriages. She developed a skin rash, began to get headaches, and "clumps of my hair began to fall out." Her doctor prescribed treatments which helped with hair loss somewhat, but she continues to be unable to get rid of a skin rash. Her husband also experienced skin rash and hair loss. Her son had a bad outbreak of eczema sores on his back after the water change, worse than he had ever had. When they stopped using Flint water for bathing, his skin improved.

Maryum says she has read that lead contamination can cause pregnancy complications including miscarriages, and that "just not knowing whether lead exposure may have caused my miscarriage is painful." She worries about the possible effects of lead contamination on her kids. Since December 2015, her family has only used bottled water. For a long time, there were lines and waits for water at distribution point at the fire station. Obviously, picking up and having to rely on bottled water also is very inconvenient. She takes her kids to her parents' house for bathing, which is on a different water system. She says the water crisis has "taken an emotional toll" on her and her family.

Widespread Health & Environmental Risks from Inadequate Water Infrastructure

Maryum's story is just one of thousands of similar stories in Flint. Her experience and that of other Flint residents illustrate the perils of focusing just on cutting costs and failing to focus on public health and on updating water infrastructure.

They also highlight that EPA cannot shrink from its oversight responsibilities under the Safe Drinking Water Act. When a primacy state is failing to ensure that the health of citizens is being protected from tap water contamination, it is EPA's obligation to use its oversight authority. While certainly EPA ideally should maintain a cooperative relationship with states, the agency's paramount obligation is to safeguard the public's health. If a state is not doing its job to swiftly address issues that are causing violations or threatening public health, EPA must promptly intervene and take enforcement action, rather than simply deferring to the state as a "partner" when the public is at risk.

Unfortunately, stories of contaminated water are not limited to Flint, although that may be an extreme example. Drinking water contamination incidents from lead, and from many other contaminants, are all too common. For example, according to EPA's most recent annual compliance report for public water systems, there were 16,802 "significant violations" of EPA's drinking water standards.[3] The most common of these more than 16,000 violations were:

- Total coliform bacteria contamination, representing 48 percent of the significant health standard violations;
- Chemical contamination with synthetic organic, volatile organic, inorganic (except lead and copper) and radioactive contaminants, representing 22 percent of significant health standard violations;
- Lead and copper treatment technique violations, representing 5 percent of the significant violations;
- Disinfection byproduct contamination, representing 13 percent of the significant violations;
- Surface water treatment requirements (to control pathogens like *Cryptosporidium* and *Giardia*), representing 7 percent of the significant violations; and
- Ground water treatment requirements (to control for pathogens and fecal contaminants such as certain bacteria and viruses), which comprise 6 percent of the significant violations.[4]

Thus, although many water utilities certainly have made substantial progress in recent years in improving treatment, in too many cases the public is drinking water containing contaminants that are posing serious health risks. The public health threat from our failure to invest in our water infrastructure is enormous, including from lead, arsenic, bacteria and other pathogens, cancer-causing disinfection byproducts, the rocket fuel component perchlorate (which EPA has said contaminates as many as 16 million Americans' drinking

water systems, but which the agency still has not regulated), and many other contaminants, regulated and unregulated.

Moreover, our wastewater and storm water collection and treatment systems also are too often not up to the task. Combined sewer overflows (CSOs) are common, when domestic sewage mixes with collected storm water in combined sewers and during precipitation events, causes raw or minimally treated sewage to flow into lakes and streams. CSOs are, according to EPA, "a major water pollution concern for the approximately 772 cities in the U.S. that have combined sewer systems."[5] These CSOs and other shortcomings in our wastewater and storm water systems are often causing sewage contamination of drinking water source waters, beaches, and sensitive ecosystems.

Disproportionate Impacts of Infrastructure Inadequacies in Low-Income Communities, and Communities of Color

As is well-known, the Flint community is predominantly African American (57%) and has a high percentage of residents living at or below the poverty line (over 40%), or who are working but struggling to make ends meet. State officials were "callous and dismissive" of the concerns these citizens raised about the water, according to the governor's independent Task Force on Flint.[6]

The obfuscation by government officials, and the denigration of community members and experts who raised concerns, illustrates a pressing nationwide problem. Communities of color all over this country often bear the burden of environmental contamination and the resulting health problems.

In recent years a series of peer-reviewed studies also have documented that unsafe drinking water often is disproportionately associated with lower-income communities of color.[7] Examples include nitrate and other contaminants in drinking water in California's San Joaquin Valley, contamination and substandard water infrastructure in U.S.–Mexico border *colonias* and some minority communities in certain Southern rural areas, and bacteriological and chemical contamination on some Native American lands.[8] Balazs et al. have established that in areas of California "race/ethnicity and socioeconomic class were correlated with exposure to nitrate and arsenic contamination and noncompliance with federal standards in community water systems."[9]

The Flint case is not an anomaly. There is a wide array of factors, including lack of access of lower income communities of color to resources and government political attention, that help to create a disproportionate and "persistent drinking water burden" in these communities.[10] In sum, researchers have found that "unequal access to infrastructure drives unequal access to safe drinking water."[11]

No Two-Tiered Drinking Water System: Every American Deserves Safe Water

As Flint and many other examples highlight, there are clear challenges to ensuring that every American gets safe drinking water. We don't want to create a two-tiered system where the wealthy get water that is clean and safe for their families, and the less well-to-do get second-class water that poses risks to their health.

Thus, we need to create an infrastructure investment and structuring system that ensures that communities that cannot afford to upgrade their water infrastructure get a helping hand. Below, I discuss some of the recommendations of the National Drinking Water Advisory Council's Affordability Work Group, which toiled for many months to develop ideas for how to address affordability concerns. [12] Among other ideas, the Work Group recommended the creation of Low Income Water Assistance Program (LIWAP), modeled after the Low Income Heating and Energy Assistance Program (LIHEAP), which would help lower-income people afford their water bills if needed. Thus, rather than providing substandard water, all consumers should get top quality tap water, with some assistance to low income people if necessary. At bottom, the question is not how do we make water cheap, but how do we make it so everyone can afford clean, safe water for their families?

The Backlog of Overdue Investments in Infrastructure

There is a huge backlog of overdue investments in the nation's water infrastructure. The American Society of Civil Engineers (ASCE) has been ringing the alarm bell about our water infrastructure since at least 2001[13], with its troubling report cards giving our water and wastewater infrastructure a grade of "D" or worse every four years.[14] The engineers highlight serious problems that result from the lack of investment in our water infrastructure, noting that pipes and mains are often 100 years old and nearing the end of their useful life, causing frequent pipe failures and other problems.

The evidence of these problems is widespread. For example, there are about 240,000 water main breaks per year due to deteriorating and poorly-maintained underground drinking water pipes.[15] Even more water is lost to unseen leaks and breaks that never reach the surface. Water losses waste not only enormous amounts of this precious resource, but they also can cause serious damage to roads and property, they can pose significant public health risks. For example, particularly when water mains are close in proximity to sewer lines, fecal contamination can get into the drinking water after a rupture or pressure loss, posing a threat of causing a waterborne disease outbreak.

In many cities, underground pipes are often a century old or more, and in too many cases municipalities are on track to take 200 years to replace their aging pipes.

We routinely lose an average of 14 to 18 percent of our drinking water to leaking underground pipes,[16] although this is just an estimate, since standardized auditing and reporting of water loses is not required in most states.[17] In some cases, such as Flint, water loss rates of 40 percent or more have been estimated. These leaks represent an enormous waste of water, energy, treatment chemicals, and money used to collect, treat, and pump the water. Moreover, points of leakage of any size can provide pathways for contaminants to enter the water system during short-term pressure fluctuations, known as "transients." Thus, leaks can cause water pressure losses, which can, much like catastrophic pressure failures from water main breaks, allow pathogens to get into the drinking water, posing health risks. Improved pressure management is an important component of both infrastructure stewardship and public health protection.

Of course, as Flint also highlights, lead service lines are a significant remaining problem. Water industry experts recently published an estimate that there are over 6 million lead service lines still in use in the United States, serving 15 to 22 million people.[18] While innovative techniques such as those being used in Lansing, Michigan have shown us ways to cut the cost of replacing these lead service lines, millions of them remain in the ground, posing a risk that at any time lead may leach from them into the water.

We applaud the American Water Works Association (AWWA), the nation's largest drinking water utility trade association, for their support for complete removal of lead service lines across the country, recently announced by their Board of Directors.[19] We agree that such replacement is needed as soon as possible, to mitigate or avoid more lead contamination incidents across the country. We have not derived a national cost estimate for such replacements, though recent lower-cost techniques for lead service line replacement such as those used in Lansing and elsewhere demonstrate that innovative approaches are bringing costs down.

The American Water Works Association estimates that it will cost $1 trillion dollars to upgrade, repair and maintain our drinking water infrastructure to serve the population as it grows over the next 25 years.[20] Unfortunately, funding for drinking water infrastructure is not keeping pace with the needs. In recent years, Congress has appropriated about $2.37 billion a year for water and wastewater infrastructure combined, funding a tiny fraction of the work needed.[21] While states and localities will need to bear much of the water infrastructure costs as they have for generations, the current federal investment is not making a dent in the problem.

Infrastructure Investment Creates Good Jobs

The good news is that investing in our water infrastructure not only helps to rebuild the base of the nation's economy, which is highly dependent upon reliable, safe drinking water and wastewater service. But major investment in water infrastructure also will create hundreds of thousands or even millions of good-paying jobs.

A recent study found that an investment of $188.4 billion in water infrastructure (an EPA estimate of wastewater-related infrastructure needs) spread equally over five years would generate $265.6 billion in economic activity and create close to 1.9 million jobs.[22] The study found, based on the economics literature, that such infrastructure investments "create over 16 percent more jobs dollar-for-dollar than a payroll tax holiday, nearly 40 percent more jobs than an across-the-board tax cut, and over five times as many jobs as temporary business tax cuts."[23]

Protection of Water Sources Helps to Protect Health and Reduces Treatment Costs

We need a greater focus on source water protection. Ben Franklin's aphorism that "a penny saved is a penny earned" was never so true as it is in this case. Uncontrolled or poorly-controlled source water pollution from polluters remains a serious problem. Unregulated or poorly-controlled sources that can pose substantial pollution threats include agricultural runoff and factory farm pollution, groundwater and surface water pollution from oil and gas exploration and development, coal and mineral mining, certain industrial sources, and spills and leaks from above-ground hazardous substance tanks. State authorities and EPA could substantially reduce the public health and environmental threats from such polluters, and could reduce the costs of drinking water treatment, by better controlling these pollution sources.

The experience of Des Moines Water Works, which serves 500,000 Iowans with their tap water, is illustrative of how state or EPA intervention to ensure that source water is protected from upstream agricultural pollution could help to keep rates more affordable. As a recent statement from Des Moines Water Works notes,

> Des Moines Water Works meets or exceeds regulatory requirements for drinking water established by the United States Environmental Protection Agency…. However, the costs and risks in doing so are increasingly high as Iowa's surface waters demonstrate dangers levels of pollutants.
>
> The increase in river nitrate levels is attributable to upstream agricultural land uses, with the largest contribution made by application of fertilizer to row crops,

> intensified by unregulated discharge of nitrate into the rivers through artificial subsurface drainage systems.
>
> "Iowa's political leadership, with influence from industrial agriculture and commodity groups, continue to deny Iowa's water quality crisis," said Bill Stowe, CEO and General Manager, Des Moines Water Works. "Defending the status quo, avoiding regulation of any form, and offering the illusion of progress and collaboration, places the public health of our water consumers at the mercy of upstream agriculture and continues to cost our customers millions of dollars."
>
> Des Moines Water Works seeks relief against upstream polluters and agricultural accountability for passing production costs downstream and endangering drinking water sources. In addition, Des Moines Water Works is actively planning for capital investments of $80 million, a cost funded by ratepayers, for new denitrification technology in order to remove nitrate and continue to provide safe drinking water to a growing central Iowa.[24]

While Des Moines may be unusual for its candor, its problems with unregulated or poorly-regulated upstream pollution are hardly so. Problems ranging from routine spills of industrial pollutants on the Ohio River that have led Cincinnati and Louisville to install advanced water treatment facilities at significant expense to ratepayers, are also illustrative.

Similarly, EPA has failed to effectively regulate runoff of the widely-used herbicide atrazine which has caused drinking water systems across the country to find the chemical in their water, often at levels in excess of EPA's standard during peak runoff season.[25] In light of EPA's and states' failure to control this problem, a large group of water suppliers sued Syngenta, the manufacturer of atrazine, because they were routinely being required to spend significant amounts to remove the chemical from their tap water.[26] They reportedly settled the case for $105 million dollars, and according to lawyers involved as many as 3,000 water utilities may be eligible to recoup at least some of their treatment costs.[27]

Another example, upon which this Committee held a hearing on February 4, 2014, was the spill/leak of toxic chemicals from a huge above-ground tank at Freedom Industries that contaminated the drinking water of 300,000 people in Charleston, West Virginia in January of that year.[28] EPA had been charged in the 1972 Clean Water Act with issuing rules to prevent spills and leaks from above-ground tanks storing hazardous substances, but has still not done so. Citizen organizations and NRDC recently entered into a consent decree with EPA to have the agency finally issue those long-overdue rules[29], though the list of hazardous substances required to be covered by such rules still has not been updated to include the chemicals that caused the Charleston disaster.

Many other municipalities have been forced to quietly install treatment to remove or protect against potential contamination from other contaminants from upstream polluters, without recourse against the polluters. A far better approach would be for Congress, EPA and states to crack down on uncontrolled or poorly-regulated pollution sources such as agricultural runoff and factory farms, mining, and oil and gas activities, to save ratepayers the expense of cleaning up after the polluters.

Protecting Waters of the United States Will Help Control Infrastructure Costs

As a result of confusing court decisions, millions of miles of streams and tens of millions of acres of wetlands lacked clear protection under the Clean Water Act. As a result, water sources that feed drinking water supplies for 117 million Americans were vulnerable to pollution. So were wetlands that filter contaminants and recharge groundwater supplies, while also providing important flood protection and wildlife habitat. If these waters are not protected against pollution by the Clean Water Act, downstream drinking water systems will have a very heavy burden of cleaning up the water to remove the contaminants, costs that—as in the case of Des Moines and so many other utilities—will be borne by ratepayers rather than the polluters.

EPA and Army Corps of Engineers finalized the "Clean Water Rule" in May 2015, which helps to clarify which waters were protected under the act—about 60 percent of the nation's bodies of water. The new rule helps to protect a variety of streams, ponds, and wetlands, including those streams that one in three Americans relies on for drinking water. It is important that we continue to protect these waters for current and future generations.

Restructuring and Encouraging Cooperation Among Small Systems Cuts Costs

Some states, including Kentucky and Connecticut, have made a major effort to encourage cooperation, regionalization, and in some cases physical or managerial consolidation, of small water systems.[30] Basically, this involves a broad range of approaches including:

- Ensuring that managers and staff from small water systems are in regular communication and cooperating with other utilities in order to learn ways to address compliance and infrastructure challenges as efficiently and effectively as possible; or
- Regionalizing management of multiple small systems so that overhead is reduced, expertise can be shared, and duplication of functions minimized; or
- Actual physical interconnection and consolidation of the pipes of multiple small systems to make them into a single system. These approaches can take advantage of

the economies of scale, and reduce costs and often improve compliance and water quality and reliability for customers served by small systems.[31]

EPA has studied this approach extensively. In many cases it is highly effective at improving compliance and reducing costs.

Increasing Challenges to Water Infrastructure from Extreme Weather, Droughts

With increasing challenges from extreme precipitation events, droughts, groundwater depletion, and saltwater intrusion in many coastal areas, our water infrastructure faces new and often unprecedented risks. We see this in the impacts of the California and Midwestern droughts, the steady depletion of the Ogallala Aquifer, and the intrusion of saltwater into the wells used for drinking water in many coastal areas in Florida and California, for example.

It has become crucial for water utilities to plan for these challenges by integrating their water and wastewater planning through approaches such as using "integrated water resources management" or IWRM. Some have referred to this approach as "sustainable integrated water management." IWRM is "a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems."[32] Such integrated planning will become crucial as the impacts of climate change and other challenges become increasingly serious.

The National Drinking Water Advisory Council Affordability Recommendations

I had the honor to participate in an extensive and exhaustive process of discussing the best ways of ensuring that water bills are affordable, while not compromising public health. The National Drinking Water Advisory Council's Affordability Work Group, which included state and local officials, drinking water utilities, NGOs, financing experts, and others, made extensive recommendations which we do not have time to go into here, but which I commend to members of the Committee.[33] Among the key recommendations[34] were:

- **Affordability Rates.** "EPA should provide information and examples pertaining to the use of affordability rates [for low-income customers] for systems to help make water affordable to low-income households…. [A]ffordability rates can be an effective tool for many systems, both large and small, to allow for infrastructure improvements needed to meet regulatory requirements without the need for variance technologies. By EPA providing information and examples of such rate-making ideas to water systems, more systems may take advantage of this tool." ·

- **Low Income Water Assistance Program.** Congress should adopt a "Low Income Water Assistance Program (LIWAP) as a means to assist low income households facing high drinking water costs, funded with Congressional appropriations similar to the funding for LIHEAP."
- **Increased SRF Funding. "**DWSRF funding should be increased, with special consideration given to assisting small systems. In order to lessen the need for variance technologies, additional funding for the DWSRF, targeted to small systems, would be effective."
- **State Disadvantaged Community Programs. "**EPA should encourage States that have not already done so, to establish a disadvantaged community program to address small system affordability issues. Such funding should be consistent with the principles in the DWSRF to encourage restructuring where viable."
- **Targeted Compliance Assistance Funding. "**To ensure the most effective use of grant funding to help achieve affordable safe drinking water, targeting compliance assistance funding to the systems most in need should be a priority. It is important, however, that grants not be given to disadvantaged systems that, after the grant, will not have managerial, technical, and financial capacity to operate over the long term. Since restructuring can be the most effective tool in ensuring such long-term capacity, priority should be given to using the funds for such restructuring purposes."
- **Funding Beyond SRFs. "**Provide additional funding beyond the current DWSRF funding for small systems to adopt cooperative strategies as broadly defined…. Cooperation between small systems can take many forms. It is one of the best methods for allowing small systems to achieve financial, managerial, and technical capacity for long-term sustainability as well as to meet compliance requirements without the need to use variance technologies."
- **Other Federal Agency Funding. "**Explore and consider the use of other state and federal agencies, such as the U.S. Army Corps of Engineers and the Bureau of Reclamation, to assist small drinking water-related projects."
- **State leadership to promote cooperation among small systems to cut costs**. "Cooperative efforts designed for an area or regions are essential if the cost of compliance is to be reduced. These efforts should be funded through new appropriations or through re-allocation of a portion of DWSRF funds…."
- **"Offering meaningful incentives for assessing whether cooperative efforts are feasible** and limiting financial and technical support for individual system compliance solutions to small systems that have assessed cooperative options and found them to be infeasible or not cost-effective."

EPA's "Four Pillars" to Promoting Sustainable Water Infrastructure

Under the George W. Bush Administration, in 2007 EPA developed what it called a "Four Pillars" approach to promoting sustainable water infrastructure, which generally is consistent with the principles espoused in this testimony. This approach includes:

1. **Better management**: "Widespread adoption of better management practices offers great promise to reduce costs and direct system investments using a risk-based approach."
2. **Full cost pricing: "**Pricing that recovers the costs of building, operating, and maintaining a system is absolutely essential to achieving sustainability. Drinking water and wastewater utilities must be able to price water to reflect the full costs of treatment and delivery."
3. **Water efficiency:** "EPA is focused on developing a program that takes a broad approach by setting water efficiency levels for products, in conjunction with manufacturers, utilities and other stakeholders; building partnerships with manufacturers, distributors, utilities and others to promote water efficient products; and promoting an ethic of water efficiency through promotional activities."
4. **Watershed approaches:** "One of EPA's highest priorities is using a watershed approach to address our impaired waters…. The focus is on making sound infrastructure and growth decisions within the context of how water flows through a watershed. Our success at restoring and protecting impaired waters requires strong partnerships between federal, state, and local governments. "

EPA emphasized that the tools available to assist communities in affording infrastructure include grants, loans, state financial assistance programs, institutional arrangements, electronic services, fees, and bonds.

Recommendations

There is an emerging bipartisan consensus that we need to increase our investment in infrastructure. NRDC has several recommendations for improving federal water infrastructure investments and controlling costs of such investments:

1. **Fix Flint.** Flint's water infrastructure must be immediately repaired and replaced, and safe, reliable water (i.e. bottled water delivered to residents until tap water is fully confirmed as reliably safe) must be supplied in the meantime. In addition, we support the recommendations of the independent Flint Water Advisory Task Force, including the recommendation that there be a tracking system to ensure ongoing health protection for those exposed, and follow-up studies, treatment, and educational and nutritional intervention, among other important steps.[35] We also support the package of proposals included in Senator Stabenow and colleagues in the Drinking Water Safety and Infrastructure Act (S. 2579), including provision of urgently-needed resources for infrastructure improvements.

2. **Fix our National Water Infrastructure, Paying Special Attention to the Needs of Lower Income and Disproportionately-Affected Communities.** We need major investment in our water infrastructure, including:
    1. Replacement of the 6+ million lead service lines;
    2. Adoption of standardized water loss auditing and reporting methods, as developed and endorsed by the AWWA,[36] to provide the foundation for cost-effective loss reduction and repair strategies;
    3. Accelerated replacement of deteriorating water distribution piping;
    4. Support for restructuring or consolidation of small systems having trouble complying or difficulty affording infrastructure improvements, so they can be more efficient and enjoy the economies of scale;
    5. Improvements to the process for treating of our drinking water. Far too many drinking water treatment plants in the U.S. continue to rely solely upon outdated technologies for treatment such as coagulation, sand filtration and chlorination. These technologies can work well to remove some basic contaminants like certain microorganisms, but cannot remove many of the modern contaminants such as pesticides, industrial chemicals, pharmaceuticals, and other chemicals that are widespread in water.[37] We need to invest in modernizing our treatment plants, as some leaders in the industry have done.

3. **Increase Federal Water Infrastructure Funding.** Current Congressional funding of $2.37 billion dollars per year *combined* for Clean Water and Drinking Water infrastructure is paltry by comparison to the enormous need. As noted, we must invest in clean water infrastructure to better protect the source waters of our drinking water supplies, in addition to making investments in our drinking water infrastructure. These investments must be substantially increased, at least to the approximately $8 billion per year combine level funded under the American Recovery and Reinvestment Act of 2009. I note that Senator Cardin has proposed legislation (S. 2532) that would more than triple Drinking Water and Clean Water SRF funding, a move we strongly support. As part of the funding strategy, EPA and state agencies managing these investments should prioritize funding (including grants) for water infrastructure improvements in low-income communities and communities of color since they are so often most at risk and have the greatest problems affording new investments. In addition:
    - As part of this reinvigoration of the federal infrastructure investment, more flexibility (grants, loan forgiveness) in the SRF is needed for communities that don't have the ability to meet the criteria to pay back the loans but have serious health threats.
    - States and municipalities also must play a significant role and join in the investment.

4. **Protect Source Water to Reduce Infrastructure Costs.** The better we prevent source water pollution from a wide array of sources ranging from agricultural runoff, to factory farm pollution from manure, to oil and gas-related pollution, the less ratepayers will need to pay to clean up their drinking water. As we have seen

repeatedly in cases like Des Moines, the hundreds of water systems forced to sue the manufacturer of atrazine due to poor regulatory controls on runoff that caused widespread water contamination, and many other examples, an ounce of prevention is worth a pound of cure. A strong Clean Water Rule to protect waters of the United States is an important component of this strategy.

5. **Encourage Small Systems that are Having Affordability and/or Compliance Problems to Regionalize, Restructure, or Consolidate.** As discussed above, and as recommended by EPA and the National Drinking Water Advisory Council's Affordability Work Group, small drinking water systems can be inefficient and have difficulty complying and lack the economies of scale. Approaches to encourage cooperation, restructuring, regionalization or physical consolidation can often cut costs, improve compliance, and provide better drinking water to customers.

6. **Fix the Lead and Copper Rule.** Lead-contaminated drinking water remains a major problem around the country. The EPA's Lead and Copper Rule (LCR)—and the way states and EPA implement and enforce them—need a major overhaul. The LCR, at a minimum, should be fixed to: (a) require all lead service lines to be fully replaced; (b) more fully and fairly monitor problems, and prohibit gaming the system to avoid detecting or reporting lead contamination problems; and (c) require clear, ongoing, and culturally-appropriate public education and notification of lead problems.

7. **Let Citizens Act Immediately in Cases of Imminent & Substantial Endangerment to Health.** In cases such as Flint, citizens whose drinking water may present an imminent and substantial endangerment to health should be authorized under section 1431 of the Safe Drinking Water Act to immediately bring an action for relief when the government has failed them.

NOTES

[1] See for example American Society of Civil Engineers, 2001 Report Card for America's Infrastructure. Available online at http://ascelibrary.org/doi/pdf/10.1061/9780784478882
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[10] Ibid.
[11] Ibid.
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