States and communities across the country are faced with serious challenges of an aging and inadequate water infrastructure. The number of water main breaks across the country is staggering: at 240,000 per year [2], and wasting over two trillion gallons of treated drinking water. The direct cost of these leaks is estimated to be approximately $2.6 billion per year [3].

According to the American Water Works Association, upgrading existing water systems to meet the drinking water infrastructure needs of a growing population will require at least $1 trillion over the next 25 years [2]. Separately, EPA’s Clean Watershed Needs Survey [4] and Drinking Water Needs Survey [5] estimated that the United States will require $655 billion dollars in water infrastructure investment over the next 20 years to keep pace with projected investment needs.

This brings us to the critical question of funding. While it is clear that the nation’s water infrastructure needs an overhaul, what has been less clear (and often contentious) is where the money will come from.

Historically, state and local governments have consistently contributed the bulk of the spending on water infrastructure. Total public spending on water and transportation infrastructure was $416 billion in 2014 [6], of which 77 percent came from state and local governments. A resurgence in federal funding for water infrastructure appears unlikely in the near future, with significant uncertainty surrounding any potential federal infrastructure plan [7].

That is why states and local governments, rather than waiting for a promised federal plan to invest more in water and other public infrastructure, are taking the lead on water infrastructure investments. Investments in improving water infrastructure have the potential to pay off economically in private sector investment and job growth.

A new report [8] from the US Water Alliance identifies three key issues influencing water infrastructure funding as well as policy solutions at the local, regional, state, and national levels. While their entire report is well worth reading, the state solutions for managing water resources more wisely and effectively while stretching limited public dollars are discussed here.

To begin with, the report calls upon states to prioritize funding of water-related loan and grant programs, especially given that they have huge amounts of flexibility to set appropriations for water and wastewater State Revolving Fund (SRF) programs, to decide what types of projects are eligible for funding, and to establish prioritization criteria. States can combine multiple loan funds to increase their collective impact and reach, as has been done in North Carolina. In 2013, North Carolina created a new Division of Water Infrastructure that combined the infrastructure loan programs under the Drinking Water SRF and the Clean Water SRF and added the Community Development Block Grant program. The same year, North Carolina created the State Water Infrastructure Authority to award federal and state funding for water and wastewater infrastructure projects and examine best and emerging practices.
Second, the report encourages states to **adopt stronger standards for utility management and oversight**. While most states have some level of oversight over water utilities, they can go further and require more rigorous business practices, including asset management and full-cost accounting. These requirements can even be incentivized through SRF funds and grant awards. One area for potential state action is proper monitoring of water loss through water main breaks and unseen leaks, which act like a tax on the cost of drinking water. States can pass legislation requiring their water utilities to conduct validated water loss audits and implement cost-effective reductions in water loss. The [American Water Works Association](#) (AWWA), the trade group for drinking water utilities, has developed standardized terminology and methods by which utilities can reliably audit their water supplies and implement controls to minimize system losses. While some states are leading the way by requiring best practices for identifying and reducing leaks, many states are yet to act and remain unaware of the massive water losses from their public water systems.

In addition to these two state solutions, there are a couple of other strategies that states can pursue to stretch their dollars. One is **incentivizing partnerships and consolidation of water systems**, especially in situations where they are unable to sustainably operate their systems or meet requisite water quality standards. There are over 50,000 drinking water systems and nearly 15,000 wastewater utilities that are highly fragmented and face many challenges such as limited access to capital, operational inefficiencies, and reduced purchasing power. Consolidation can help meet their challenges by leveraging economies of scale and available expertise to make better use of resources.

In 2015, California passed legislation giving the State Water Resources Control Board the authority to order certain consistently failing water system to consolidate with another, viable water system. The goal is to reduce cost and improve reliability by extending any development costs to a larger pool of ratepayers. However, it is Kentucky that has emerged as a national leader in incentivizing public water system consolidation, **going from more than 3,000 in the 1970s to fewer than 800 total water system today**. In 2000, Kentucky passed SB 409 creating a funding source, the “2020 Account,” to incentivize regionalization, consolidation, and merger of water systems, with the goal of making potable water and wastewater treatment available to all residents. Kentucky’s success in its effort to consolidate water systems as an effective alternative to costly water supply development holds lessons for other states.

Additionally, states can look to **public-private partnerships (P3s)** as a way to start addressing their water infrastructure dilemma. While P3s are commonly associated with large-scale transportation projects, they have begun to appear in the water sector. The Environmental Finance Center at The University of North Carolina last year completed a study sponsored by the EPA’s Water Infrastructure and Resiliency Finance Center which did an in-depth examination of nine projects where communities used P3 models in the water sector. The study can help state policymakers understand the proposed and realized benefits, the process involved in closing transactions, and the known performance of P3s in the water sector to date. Given the inherent complexity of P3 agreements, creating enabling statutes is perhaps the first step a state can take to send a strong signal to investors that a state sees value in private sector involvement in water infrastructure financing and delivery. Currently specific state laws authorizing P3 arrangements are highly fragmented and pose a hurdle for potential investors and project developers who need to scale business models across jurisdictions.

State and local governments are bearing the burden of funding for water infrastructure. While more federal help would be welcome, states will need to take the lead in water infrastructure improvements and in doing so develop creative and innovative approaches to stretch their water dollars further. Letting water infrastructure degrade to dangerous levels can have serious consequences for state economies, not to mention public health. At the same time, water
infrastructure investments are good for the economy. It is estimated that an additional $82 billion per year in water infrastructure at all levels of government over the next ten years would result in over $220 billion in total economic activity and generate approximately 1.3 million jobs over the 10-year period.