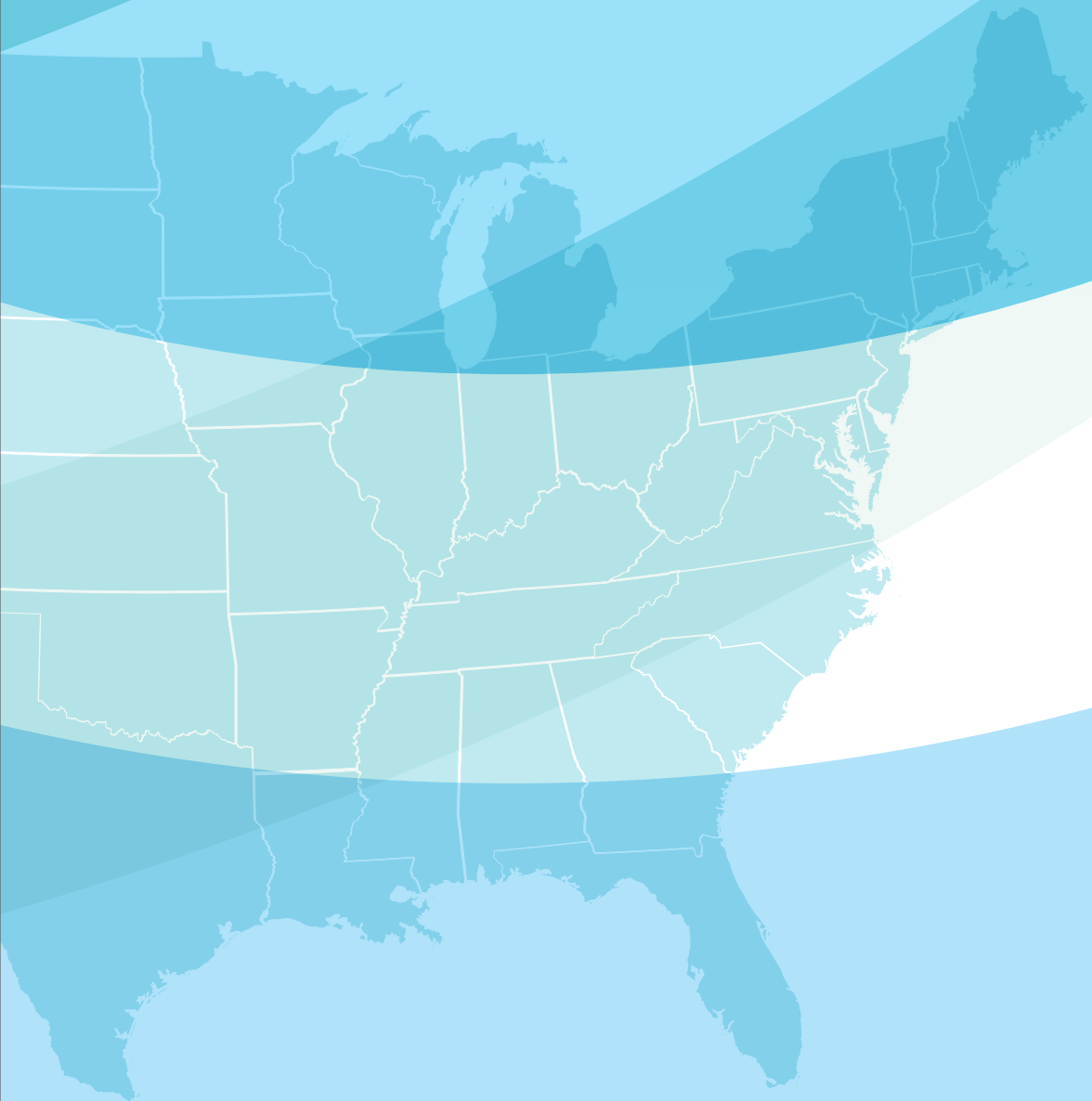
US Water Alliance

The Council of State Governments

One Water for America
Listening Sessions

One Water for America State Policymakers' Toolkit



Preface

The management of water quality and quantity will be among the greatest challenges for policymakers in the coming years.

This toolkit was developed by the US Water Alliance and The Council of State Governments. Our organizations know educating new and returning policymakers is an important way to achieve progress on tough issues. We are proud of this partnership and offer this document in the hopes of advancing innovative solutions to the complex and challenging problems in water today.

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Introduction

Our country is at a crossroads. Our challenges with water quality and water quantity are mounting. Long-term trends such as population growth, economic development, growing income inequality, and a changing climate are colliding with current events such as hurricanes, floods, droughts, wildfires, and algal blooms. The consequences of decades-long underinvestment in our nation's water infrastructure are catching up with us. Urban, rural, environmental, agricultural, and industrial interests are often working at cross purposes. And the pressure of rising water rates to pay for investment in water infrastructure increasingly affects our most vulnerable communities.

Our nation can rise to these challenges and unleash a new era of water management—one that secures economic, environmental, and community well-being for all. The federal laws and regulations surrounding water management are designed to empower states with the responsibility to manage water, in conjunction with local institutions and the federal government. As American communities continue to grapple with emerging and long-standing water management issues, state governments can be a driver and enabler of solutions.

Seven Big Ideas for the Sustainable Management of Water

In 2018, the US Water Alliance produced the *One Water for America Policy Framework: Seven Big Ideas for the Sustainable Management of Water*. The policy framework is a product of collaboration with more than 40 organizations. Together we hosted 15 One Water for America Listening Sessions across the country. These discussions engaged more than 500 leaders, including water utility managers, public officials, business executives, farmers, environmental and watershed advocates, community leaders, philanthropic organizations, planners, and researchers.

The insights from the Listening Sessions were synthesized into *Seven Big Ideas* for the sustainable management of water in the United States:

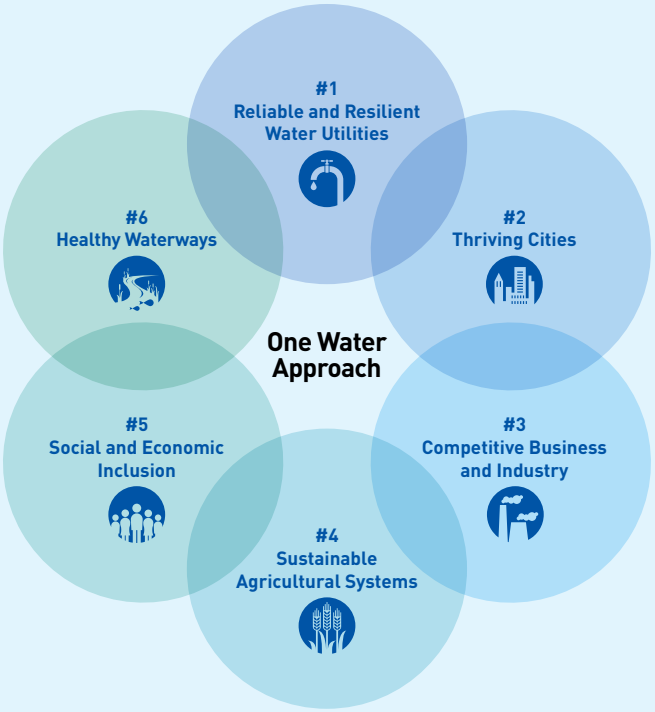
1. **Advance regional collaboration on water management**
2. **Accelerate agriculture-utility partnerships to improve water quality**
3. **Sustain adequate funding for water infrastructure**
4. **Blend public and private expertise and investment to address water infrastructure needs**
5. **Redefine affordability for the 21st century**
6. **Reduce lead risks, and embrace the mission of protecting public health**
7. **Accelerate technology adoption to build efficiency and improve water service**

These *Seven Big Ideas* represent some of the fundamental issues that we must address as a nation to secure our nation's water future. Each of the *Seven Big Ideas* was released as a policy brief that included issue discussion, policy considerations, and examples of policies at the local, state, and national levels. These big ideas are not a comprehensive set of solutions to all our water challenges. Instead, they reflect the priorities, challenges, and solutions we heard consistently in Listening Sessions around the country. They are practical solutions focused on policy and decision-making to positively change how we manage our water resources, services, and infrastructure. Some of these ideas expand on proven practice, and others necessitate change and new approaches.

The One Water Approach

One Water envisions managing all water in an integrated, inclusive, and sustainable manner to secure a bright, prosperous future for our children, our communities, and our country. A One Water approach can take many different forms, but share some unifying characteristics:

- The mindset that **all water has value**—from the water resources in our ecosystems to our drinking water, wastewater, and stormwater.
- A focus on **achieving multiple benefits**, meaning that our water-related investments should provide economic, environmental, and societal returns.
- Approaching decisions with a **systems mindset** that encompasses the full water cycle and larger infrastructure systems.
- Utilizing **watershed-scale thinking and action** that respects and responds to the natural ecosystem, geology, and hydrology of an area.
- Relying on **partnerships and inclusion**, recognizing that real progress will only be made when all stakeholders have a seat at the table.



Why A State-Focused Toolkit?

As the Seven Big Ideas continue to spark action around the country, it's clear that state governments are essential to realizing the promise of One Water. State agencies have a primary role in implementing and enforcing clean water, surface water, and drinking water laws. State policymakers are uniquely positioned to address water management issues through legislation and executive office initiatives. These policymakers can work directly with their municipalities to hear the concerns of ratepayers and give local governments the flexibility and support they need. Drawing public attention to water challenges and solutions can be an effective way to develop the public and political will for innovative policy. The state agencies that are part of a governor's administration can also set reasonable regulatory policy that ensures compliance but also preserves local government flexibility and innovation. State legislatures can also advance sustainable water management by prioritizing funding and financing for water infrastructure and management programs. In many states, governor's offices also propose and advocate for their own legislative ideas. Governors and legislatures also have a role in cooperating with the federal government, which assists in funding and sets regulatory standards through agencies such as the Environmental Protection Agency (EPA).

Roles of State Government

- **Establish Targets and Goals.** Develop and broadcast an achievable One Water vision. For example, the water service extension goals set by Kentucky in Big Idea 1.
- **Benchmark Performance.** Set strong but realistic performance metrics. For example, the Lead and Copper Rule changes established by Michigan in Big Idea 6.
- **Create Enabling Conditions.** Create incentives for innovation and performance. For example, the targeted funding used by North Carolina in Big Idea 5, or permit flexibility implemented by Wisconsin in Big Idea 2.
- **Remove Barriers and Bottlenecks.** Reevaluate state laws or regulations that may hamper innovative problem-solving or filling gaps in existing law. For example, the California State Water Board receiving additional authority in Big Idea 1.
- **Prioritize Funding and Financing.** Establish and secure funding and financing for water infrastructure and water management programs. For example, the dedicated funding mechanisms created by Iowa and Missouri in Big Idea 3.

To spotlight the important role that state governments can play in advancing sustainable water management, we developed this toolkit as a resource for elected officials and staff in the executive and legislative branches of state government. For each of the Seven Big Ideas, we briefly summarize the key issues and then provide real world examples of how states are forging progress. The promising examples are not meant to be prescriptive, but rather serve as a starting place for the generation of potential solutions that are specific to individual state contexts. For research purposes, these examples include endnote citations back to the legislative or regulatory language that was passed and/or implemented.

ONE WATER BIG IDEA 1.

Advance regional collaboration on water management.

While water knows no boundaries, our system of water management is splintered. Across the nation, there are more than 51,000 community water systems and nearly 15,000 wastewater treatment plants. More than 80 percent of our water systems serve fewer than 3,330 people, and 55 percent serve fewer than 500. By contrast, there are approximately 3,000 electricity providers. It can be difficult to spread and share One Water solutions across this many local utilities, who may have different resource and capacity levels. The solutions to this fragmentation are varied and can include any number of activities that fall along a spectrum of collaborative approaches such as watershed-scale planning, coordinating services to better operate and maintain infrastructure assets, consolidating utility service, and more.

State governments can have an important role to play in encouraging, incentivizing, and sometimes requiring regional cooperation. They can encourage a range of options, from informal agreements to area-wide special districts or authorities. At the state level, policymakers can also resolve conflicts across watersheds and regions of the state, as well as with neighboring states that share a watershed. State agencies with grantmaking or lending authority can also incentivize projects that foster regional cooperation and consolidation with grants for feasibility studies, or by incorporating regional collaboration into project funding or financing award criteria. State grant and loan programs can also incorporate incentives for watershed-level planning.

Much of the ongoing work to advance regional collaboration between water utilities takes place in the capacity development program of each state's primacy or funding agency. However, there may be barriers to success that can be addressed at the state level or incentives that have not been instituted by states. State policymakers can work with their state's capacity development program and their primary grantmaking or lending authority to identify ways to maximize ongoing work.

Key Issues to Consider

Supporting Coordination and Shared Services

Resource coordination and solution-sharing can provide significant benefits for utilities within a region in areas as diverse as workforce training, water resource management, disaster preparedness, and purchasing (where a group of utilities can enjoy greater buying power than one utility alone). Some regions are leveraging excess utility capacity to serve neighboring communities as an alternative to building more infrastructure.

Reforming Utility Governance Structures

Solving complex water challenges requires exploring new business and governance models that can help utilities improve service and efficiency. Existing governance models may present barriers to regional collaboration, as well as challenges to effective utility operations. Alternative governance structures, designed to better suit the specific needs of water utilities, can lead to enhanced workforce professionalization, improved bond ratings, and enhanced stakeholder collaboration.

Figure 1

A spectrum of solutions

Expanding Watershed-scale Thinking and Action
Watershed-level management can bring together regional partners with interests in health, agriculture, industry, aquatic species, forests, wildlife, recreation, and other sectors. Engaging a broad range of stakeholders who may have different expertise, priorities, and ways of working can be difficult but can lead to more sustainable outcomes.

What States are Doing

North Carolina

Created grants to fund consolidation and regionalization feasibility studies

The North Carolina General Assembly enacted House Bill 97 in 2015, which created Merger/Regionalization Feasibility Grants to broaden the use of grant funds to encourage water and wastewater utilities to become more viable and proactive in the management and financing of their systems. The North Carolina Department of Environmental Quality uses these grants to provide funding for studies to evaluate the potential consolidation of two or more water or wastewater systems into one system and the potential physical interconnection with another system for regional wastewater treatment or regional water supply. As of 2018, 18 grants totaling $875,000 have been awarded to localities around the state.

California

Granted state authority to incentivize and/or mandate consolidation

The California Legislature enacted Senate Bill 88 in 2015, which gave the State Water Resources Control Board the authority to incentivize and mandate physical or managerial consolidation of water systems that are unable to provide safe drinking water. While the Board also encourages voluntary consolidation, mandatory consolidation can be a valuable tool in bringing water service to vulnerable communities. For example, the unincorporated area of East Porterville experienced persistent drought that dried up local wells. As a result, approximately 500 households in the low-income, majority Latino community went without running water for several years, relying instead on water delivery, public taps, and mobile showers. Through the Board, a state-funded project was implemented to connect residents to the water system in the neighboring town of Porterville. The Legislature also enacted Senate Bill 552 in 2016, which gave the Board authority to provide assistance to failing water systems through consolidation or extension of services (as interim services in preparation for consolidation).

Kentucky

Created a regionalization plan to ensure water service across the state

Kentucky has been a leader in water system consolidation, decreasing from more than 3,000 public water systems and treatment plants in the 1970s to fewer than 800 total water systems today. Senate Bill 409, enacted in 2000, created a structured planning process for water services throughout the state. Goals of the legislation included regionalizing water systems and making potable water available to more residents. The legislation designated the Kentucky Infrastructure Authority as the state agency responsible for developing programs to achieve these goals. Under this program, 15 area development districts across the state prioritize local water projects for state funding based on their alignment to the legislation's goals.

Between 2000 and 2017, the state provided more than $800 million in funding for water projects through this program, effectively incentivizing expansion of water service and regionalization of water systems through merging, consolidating, or sharing resources. In addition, Kentucky state law enables municipalities to expand their water service areas to contiguous areas without annexation. Through water and wastewater training offerings, organizations such as the Kentucky Rural Water Association have made strides in professionalizing utility staff across the state. Not only has the state's water management framework enabled great progress on utility consolidation, it has also extended potable water service—95 percent of Kentucky households are now connected to community water systems.

ONE WATER BIG IDEA 2.

Accelerate agriculture-utility partnerships to improve water quality.

Land management represents one of the greatest opportunities for protecting water quality, preserving ecosystems, and safeguarding our drinking water supplies. American agriculture is highly productive, of the utmost quality, and is very efficient in delivering goods that benefit consumers. Agriculture is one of the largest users of water in the US, and runoff from agricultural lands is believed to be the largest contributor to nonpoint source pollution in our nation's waterways.

State governments can play a critical role in incentivizing collaboration for water quality improvement through agriculture-utility partnerships. These partnerships encourage cooperation among all who contribute nutrients, sediment, or other pollutants to a watershed—cities, utilities, farms, and landowners—to find solutions that make the best use of limited resources. These partnerships have developed to preserve or restore high-quality drinking water, reduce nutrients and algal blooms, and keep streams flowing all year for fish and recreation. States can make space for these partnerships by taking an adaptive approach, allowing for a flexible strategy of deploying solutions, then learning from experience and adapting compliance strategies accordingly. Some states and regions are adopting area-wide nutrient management models to drive collaborative solutions for stronger results.

Key Issues to Consider

Funding for Agricultural and Land Management Best Practices

Requiring farms and ranches to invest in conservation and infrastructure projects to improve water quality can create a financial burden while also increasing prices for food and other agricultural products. In many cases, it can cost a downstream community far less to support upstream farmers in implementing best practices than it would to make costly upgrades to wastewater systems. And, the water quality improvements realized from better farming practices can be far greater than treatment upgrades could provide.

Policy Environment for Land Management Solutions

One of the challenges facing agricultural water policy is that best management practices are deployed at the individual farm level, and it is difficult to scale them up to achieve lasting impacts on water quality. Policies can incentivize the use of advanced technology for water quality optimization. It is possible, with an advanced understanding of the outcomes from specific conservation practices, to select conservation practices with higher potential returns on investment.

Larger-scale Conservation Investments

Another problem to address is the need for sustained funding for improvements that support water quality and other ecosystem service benefits, such as reduced downstream flooding, habitat improvement, and enhanced soil health on agricultural lands. However, as the need for conservation investments is growing, public funding is declining. States can consider moving beyond reliance on federal subsidies by enabling large-scale investments in conservation. State and local investments can act as an anchor for larger scale action by creating funding stability for watershed planning and agriculture groups, drawing in matching funds and resources from other sources like NGOs.

What States are Doing

Wisconsin

Implemented adaptive management regulations for nutrient control

As Wisconsin introduced more stringent phosphorus regulations, the state also adopted watershed adaptive management rules to facilitate nonpoint source solutions for nutrient control. This has helped to enable some of the most successful agriculture-utility partnerships in the country, allowing utilities the permit flexibility needed to create and fund programs located upstream, focused on education and incentivizing nutrient control best practices, for the most efficient impact on water quality downstream. These rules enable utilities to work with farmers on land management solutions like cover crops and no-till farming to meet nutrient reduction targets, rather than relying on point source controls alone. In this adaptive management approach, water quality benefits must be proven over a multi-year horizon, with periodic milestone reviews. If the nonpoint source solutions do not result in demonstrated water quality benefits, the state renegotiates strategies—hence, the adaptive nature of the regulatory approach.

Iowa

Allowed water infrastructure funds to be used for upstream water quality projects

The Iowa General Assembly amended the state's Clean Water SRF program by allowing funds to be used for "sponsored project" funding in addition to the drinking water and wastewater projects that have traditionally received funding. The sponsored project funding is being utilized in Iowa to undertake on-farm practices that reduce nutrient pollution that affects downstream communities. To pay for a sponsored project, a city borrows additional funding from the SRF program, and the Iowa Finance Authority has the ability to lower the interest rate by one to two percent. The reduction in interest lowers the total loan payback to less than it would be without the additional borrowing. Therefore, the farmers, the urban dwellers, and all watershed inhabitants benefit from the collaboration. A community that needs to make upgrades can partner with a watershed plan upstream from them, borrowing up to 10 percent in additional funding to pay to install strategically located structures—like bioreactors, wetlands, and drainage water management structures—in the watershed to lower nitrogen and phosphorus loadings in the water coming into their community.

Missouri

Established a sales tax for parks, soil conservation, and water

In 1984, Missouri voters approved the creation of a state-wide one-tenth-of-one-percent sales tax for parks, soils, and water through a constitutional amendment, splitting the funding equally between soil and water conservation programs and stewardship of state parks. Voters have since approved the tax three times, most recently in 2016 with over 80 percent public support statewide. Since its inception, more than 179 million tons of soil have been saved, more than 229,000 soil and water conservation practices have been implemented, and more than $700 million has been generated for assistance to agricultural landowners implementing conservation practices throughout the state.

Willamette Partnership and Association of Clean Water Administrators

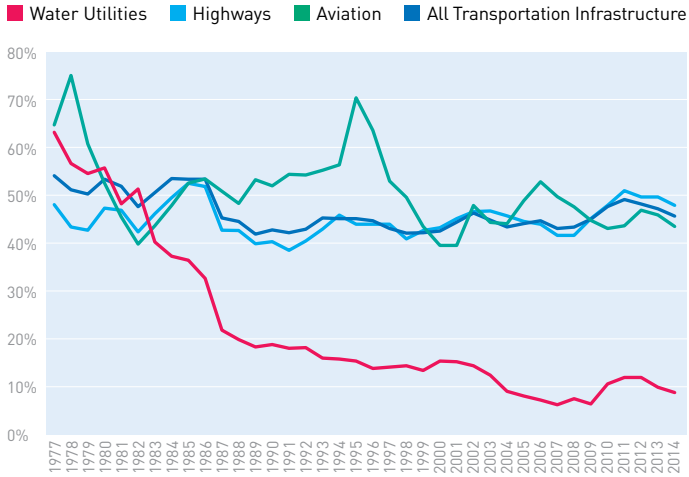
The Willamette Partnership and the Association of Clean Water Administrators developed Water Quality Trading Toolkit templates to provide a blueprint for those states/organizations seeking to create a water quality trading program. The toolkit consists of templates for state guidance and regulatory rules, a watershed framework, and sample permit and annual report language. The templates are designed to work in concert with one another (but can also be used individually), and language can be adjusted and customized to meet particular state needs.

ONE WATER BIG IDEA 3.

Sustain adequate funding for water infrastructure.

To meet the challenges of water system development and renewal, regulatory compliance, the rising costs of day-to-day utility operations, and increasingly unpredictable weather patterns, the need for capital continues to grow for communities. The US EPA estimates that utilities will need to spend $655 billion over the next 20 years to maintain, upgrade, or replace water and wastewater infrastructure. Forty years ago, the federal government contributed 63 percent of total capital spending on water infrastructure. Today, the federal government funds just nine percent of our water infrastructure spending. In comparison, federal spending on transportation infrastructure remained constant over the same period. While the US water industry is still supported, in part, by tax-exempt financing and subsidized borrowing programs like SRF loans, it does not approach the levels needed for reinvestment in our aging systems. Local revenue from water, wastewater, and stormwater rates will continue to be the primary source of funds for utilities.

Figure 2
Federal contribution to total infrastructure spending



Source: CBO 2015.

Given the competing demands on state resources, prioritizing water infrastructure can be difficult. However, state governments have a great deal of flexibility to set appropriation levels for water and wastewater SRF programs, to decide what types of projects are eligible for funding, and to establish prioritization criteria. To make limited dollars go further, state agencies can combine multiple loan funds into comprehensive programs to increase their collective impact and reach. State governments also have the ability to require or encourage utilities to implement best management practices—including asset management and full cost accounting.

Key Issues to Consider

Maintaining the Funding Programs that Work
Programs like the Clean Water and Drinking Water State Revolving Funds (SRFs) face unreliable and decreasing capitalization from Congress and new programs such as the Water Infrastructure Finance and Innovation Act (WIFIA) are augmenting funding for "regionally significant" projects. More is needed to fill the gap, especially for small- and medium-sized systems that have difficulty competing against larger systems for these funds. SRF programs are capitalized by federal dollars and supplemented by state general funds, with the federal portion of SRF-funded projects representing 23 percent. In recent years, federal appropriations for SRFs have decreased, making this form of subsidy less reliable as a sustaining funding source for ongoing capital investments.

Understanding the Full Cost of Service
For most of the 20th century, water rates remained low and stable, largely because of underinvestment in system renewal and replacement, and because the federal Construction Grants program subsidized large capital projects, like wastewater treatment plants. Now, as so many of our country's water assets reach the end of their useful service lives, water rates and charges must catch up with the growing costs of operating, maintaining, renewing, expanding, and replacing infrastructure. As a basis for setting rates and charges, the full costs of providing service need to be understood by utilities. That includes not only all the costs associated with day-to-day utility operations, but also needed investments in system renewal and rehabilitation—costs that are not always fully reflected in rates that are charged by utilities.

"Finding Money" Through Best Practices

A utility's operating efficiency can significantly affect the cost of service and the availability of funds for system investment. Many utilities can also benefit from improving project delivery performance, with the goal of better controlling the considerable costs of implementing capital infrastructure projects. Beyond improving efficiency, utilities also need sound financial planning to help ensure that funds are available for day-to-day operation and maintenance, capital programs, debt retirement, and pension program funding.

What States are Doing

North Carolina

Combined different federal and state funds to maximize funding impact

In 2013, North Carolina combined its Drinking Water SRF, Clean Water SRF, and Community Development Block Grant infrastructure programs into one division for a more streamlined and effectively prioritized funding approach. The objectives were to make limited dollars go further and to encourage comprehensive planning at the community level. The same year, the State Water Infrastructure Authority was created as an independent body with primary responsibility for awarding both federal and state funding for water and wastewater infrastructure projects. In the nine-member authority, three members are leaders of state government departments or divisions, and six are appointed by the governor and leaders of the state legislature. The authority is also responsible for developing a state water infrastructure master plan (published in 2017) that recommends ways to maximize the use of available funding sources, examines best and emerging practices, and assesses the needs of troubled systems. The state also has a program that provides grants for utilities to inventory their existing systems, document the condition of the inventoried infrastructure, and take the next steps to define and prioritize critical projects.

Texas

Created a dedicated water infrastructure funding program

The Texas Legislature created the State Water Implementation Fund for Texas (SWIFT), which was approved by Texas voters through a constitutional amendment. The program is designed to provide affordable, ongoing state financial assistance for projects in the state water plan. The program helps communities develop cost-effective water supplies by providing low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms. Through fiscal year 2017, SWIFT committed over $5.6 billion for water projects across Texas.

New Jersey

Established new requirements for asset management

In 2017, the New Jersey Legislature enacted the Water Quality Accountability Act (WQAA) to require asset management by purveyors of public water. Asset management is the practice of managing infrastructure capital assets (pumps, motors, pipes, etc.) to minimize the total cost of owning and operating these assets while delivering the desired service levels. This ensures that planned maintenance can be conducted, capital assets can be repaired, replaced, or upgraded on time, and that there is enough money to pay for it. The WQAA requires utilities to create and implement an asset management plan designed to inspect, maintain, repair, and renew its infrastructure consistent with industry standards. This legislation, however, only addresses drinking water utilities and not wastewater or stormwater.

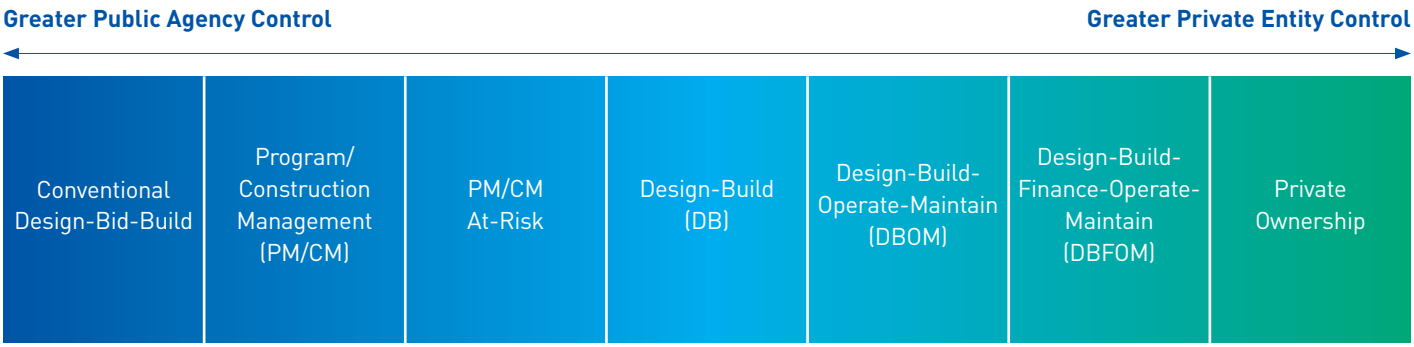
ONE WATER BIG IDEA 4.

Blend public and private expertise and investment to address water infrastructure needs.

The US water utility sector is both public and private. Public-private partnerships (P3s), in one form or another, have been in practice for generations, with many publicly-owned utilities utilizing private companies to assist in planning, engineering, technology application, project delivery, operations, maintenance, and management. In addition to this mix of public and private expertise in water delivery, privately-owned water utilities account for about 15 percent of the US water market. Greater national understanding is needed on how to best blend public and private expertise to achieve positive outcomes. Private expertise and investment can hold promise, especially for communities that find meeting their water infrastructure needs challenging. Ultimately, these decisions are made locally, and each community must decide what path will provide the best results.

For US water systems, one of the biggest barriers to adopting alternative delivery and private investment models is a lack of enabling legislation at the state level. Where states do allow public-private partnerships, transportation infrastructure, in many cases, is the only infrastructure type permitted. Even where water infrastructure projects can explore alternative project delivery mechanisms, there is a general lack of understanding about what the options are, how they can be used, and the pros and cons of each. States can adopt broad enabling legislation, which allows P3s for all types of infrastructure including water, through a process that promotes transparency and community engagement. This allows local governments to determine what the best approach is for their own systems.

Figure 3
Spectrum of project delivery alternatives



Key Issues to Consider

Developing a Common Understanding of Public-Private Project Delivery Models

A P3 is a contractual arrangement between a public agency and a private entity. Under P3s, the skills and assets of both public and private parties can be shared in delivering a service, project, or facility for public use. Communities can use many forms of P3s to design and build, finance, and/or operate a water project, program, or entire utility system. Different delivery alternatives provide varying levels of public versus private control. Successful P3s have the potential to expedite project delivery, improve service quality, and control costs. However, the spectrum of P3s can be complex, and their potential risks and benefits must be understood so that communities can make the right decisions about the best delivery models for local water needs.

Understanding Newer Models for Private Investment in Water Infrastructure

As private investment in infrastructure becomes more common in sectors like transportation, it is important to understand how those newer models can apply to the water sector and what barriers exist to their application. Private investment has been constrained in the water utility sector for many reasons: limits on tax exemption, uncertainty about returns on investment, stakeholder skepticism, complex water laws and regulations, and the long lead times and high cost of closing deals. Private investors tend to look for viable, repeatable projects with reasonably balanced risks and returns.

Integrating Social Impact Investing into the Menu of Financing Options

Social impact investing is an investment model that aims to create measurable social or environmental impacts in addition to financial returns. Institutions and foundations are increasingly turning to this model as a way to build community benefits into infrastructure projects. Several communities are employing "green bond" financing and Environmental Impact Bonds to upgrade water infrastructure. Communities generally have a local payback mechanism for these investments, like a stormwater utility fee charged to customers. Funding and payback to private investors is linked to specific environmentally sustainable approaches, such as green infrastructure for effective stormwater management.

What States are Doing

Virginia

Expanded eligibility in its enabling legislation for public-private partnerships

Virginia began its experience with P3s in 1995 with legislation that provided the legal framework for P3s in the transportation sector. In 2002, the Virginia legislature expanded that framework to include the possibility of P3 procurement outside the transportation sector. The Commonwealth's enabling legislation for P3s allows it to be flexible in the types and sizes of projects it selects, including for water, wastewater, and stormwater infrastructure. The legislation also established the Virginia Office of Public-Private Partnerships, which centralizes financing, evaluation, and development of P3 projects in one state agency.

Kentucky

Created enabling conditions for public-private partnerships

In 2016, the Kentucky state legislature passed its P3 law after years of debate, refinement, and a governor's veto in 2014. The new law authorizes and establishes a consistent framework for P3s for both state and local governments, and it broadly defines "public-private partnership" to include categories like water. The legislature intends broad oversight and engagement with P3s, requiring state approval of any P3 agreement with a value of $25 million or greater. For local P3 utilization, projects with an estimated value of 30 percent of the local government's annual General Fund revenues must be reviewed and approved by a newly-created state oversight board. The law also establishes a transparent process for submitting unsolicited proposals by private entities with a 90-day public notice period.

ONE WATER BIG IDEA 5.

Redefine affordability for the 21st century.

Water service is generally affordable for most Americans, but lower-income individuals can face significant burdens. In some communities, the lowest 20 percent of earners pay from 4 to 19 percent of their monthly household income for water and wastewater services, and this issue grows more acute as income inequality increases in the US. Utilities in cities with low-income populations, in rural areas, and in jurisdictions with declining populations struggle to keep water and sewer rates affordable while funding infrastructure needs to protect public health and comply with regulations. Affordability is a challenge in virtually every US community, with vulnerable populations—including elderly, disabled, and fixed- and low-income people—struggling to pay their water bills.

State governments can assist communities with water affordability through a variety of policy and funding solutions. Matching funds can supplement local water affordability programs or the establishment of statewide affordability programs can support individual communities. States can also work to recognize and remove legal barriers to affordability solutions. For example, in some states, there are legal prohibitions on rate structures that cross-subsidize certain classes of customers, which limits the rate structure solutions that are available to communities. States can also define clearer metrics and guidelines, as well as acceptable approaches, for assessing community affordability that rely on more comprehensive and accurate criteria than the EPA's financial capability guidance.

Key Issues to Consider

Safe and Affordable Water Service for Vulnerable Populations

Utilities need to balance providing necessary water and sewer service with financial stability and sustainability. When bills go unpaid, a utility may enforce shutoffs or liens, but this has detrimental effects on the customers and does not necessarily address the systemic issues that often lead to non-payment. Aside from protecting public health, there is a strong business case for affordability. Comprehensive, community-specific affordability solutions can help customers get back on track with regular bill payment, which can greatly increase collection rates and improve utilities' revenue streams.

Need for Comprehensive, Not Piecemeal, Approaches

The most effective affordability programs are multifaceted: they are woven into a utility's rate design and financial strategies, they include specific measures for bill payment assistance, and they include measures for enhancing water conservation and repairing leaks at the household level to reduce individual customers' water use and billings. Optimally, utilities partner with other social service agencies as well, helping to ensure that wrap-around services are available to residents who need financial support in multiple areas.

Accurate Data on Community-Specific Affordability Needs

Affordability programs should take into consideration the distribution of poverty, home ownership rates, age distribution of housing stock, and the community's existing social service network. However, the lack of accurate data is a major challenge to the widespread use and effectiveness of affordability programs. Many communities do not have a detailed understanding of who is served by existing assistance or affordability programs, how many people in need are not covered, and how affordability is measured. In some cases, the communities affected by affordability issues are not always those one might expect. A clearer understanding of the demographics would help communities target assistance to those most in need.

Cost of Compliance

The method currently used by the EPA to assess a community's financial capability has been criticized for obscuring nuances about affected populations, economic trends, and appropriate measures of burden. Since compliance program costs can run into the hundreds of millions or even the billions of dollars, this can exacerbate affordability problems. Using an incomplete measure of financial capability can result in communities being over-burdened with compliance costs, particularly when those costs are viewed in the context of other high-priority needs (including other environmental compliance requirements).

What States are Doing

California

Created a statewide program for water bill assistance for low-income residents

The California Legislature enacted Assembly Bill 401, or the California Low-Income Water Rate Assistance Act of 2015, which directed the California Water Board to develop a plan for a statewide Low-Income Water Rate Assistance (LIRA) Program. Under this plan, households with incomes under 200 percent of the federal poverty line are eligible for assistance. Methods for providing funding assistance could include bill credits, tax credits, or the use of existing assistance programs like the Supplemental Nutrition Assistance Program (SNAP). These recommendations build on a suite of actions already undertaken to help disadvantaged communities with their water needs, including technical assistance, SRF loan forgiveness, state bond fund capital grants, and consolidation with larger utilities as part of the state's implementation of Assembly Bill 685 in 2012, which legislatively recognized water as human right.

North Carolina

Established affordability criteria to better target state funding

The North Carolina Department of Environmental Quality has sought ways to help target its limited grant funds to some of the most distressed communities in the state. The State Water Infrastructure Authority worked with the legislature to define affordability in statute. The Authority then developed a set of indicators and benchmarks (that are periodically updated) intended to better distinguish between utilities that can least afford a critical infra-structure project, and those that can afford to incur some amount of debt or obligate some amount of funding toward it. The Authority developed an approach to prioritize communities that: 1) have smaller populations; 2) are comparatively worse than state benchmarks for five key economic indicators: population change, poverty rate, median household income (MHI), unemployment rate, and property valuation per capita; 3) have current monthly utility rates (independent of MHI) that are higher than the state median; and 4) will demonstrate a project cost per connection that is higher than the state median. This restructured approach enables state funding resources to benefit more communities by combining loans and grants based on affordability while acknowledging that full grant funding of projects is, in some cases, still the most appropriate approach when rates are the most extreme in the state.

ONE WATER BIG IDEA 6.

Reduce lead risks, and embrace the mission of protecting public health.

When anyone turns on a tap in their home, school, or place of business, the water from the tap should be safe to drink. Water utilities are responsible for providing safe drinking water by treating water to regulatory standards, and by maintaining safe water quality throughout their distribution systems. However, there are limits to water utilities' ability to ensure safe water at the tap, since water utilities do not control the quality of the privately-owned water lines that run onto privately-owned property. While water utilities can play a leading role, community-wide solutions require the engagement of schools, city departments, state agencies, community groups, and other stakeholders.

State governments are critically important partners on the issue of lead. EPA generally delegates primacy for enforcing the Safe Drinking Water Act, including the Lead and Copper Rule (LCR), to state and tribal agencies. The day-to-day responsibilities of LCR compliance and enforcement rests with state agencies, who interact directly with local utilities. Now that the country is a few decades into the implementation of the original LCR, states may need to evaluate their oversight of the LCR. State governments may need to strengthen LCR compliance and support utilities in addressing the challenge of lead in water. To ease the burdens of compliance, state governments can consider boosting funding for lead service line (LSL) mapping and removal. State governments can also be leaders in helping to educate the public and fill in information gaps with statewide testing and assistance programs, especially targeted at schools and child-occupied facilities.

Key Issues to Consider

Education and Public Awareness

Lead in water is a legacy issue that reaches across private property lines and different agencies' areas of responsibility, presenting unique challenges from one place to the next. In the wake of the Flint, Michigan water crisis, elevated lead levels continue to be found in communities across the US, yet generally there is little education on the risks, and little public awareness of how to manage them.

Regulations and Enforcement to Minimize Lead Risks

Much of the lead remaining in our water systems is in older privately-owned plumbing and in lead service lines—the privately-owned pipes that connect individual properties to the public water main in the street. Across the nation, there are an estimated six to ten million LSLs still in place, but the actual number is unknown. Under the 1991 EPA LCR, many water systems adopted best practices, including corrosion control. Questions remain, however, about whether the LCR does enough to protect public health. Enforcement is also a concern, with testing requirements applied differently across different communities and states. Compliance and monitoring of sampling requirements could also be improved.

Funding and Logistics for Lead Removal

Fully removing lead service lines is complicated and expensive, costing thousands of dollars per line, and many states restrict use of state funds on private property. Because of these challenges, many water utilities that do tackle LSLs have been replacing only the part of the service line that is in the public right-of-way. However, the Centers for Disease Control and Prevention (CDC) has linked partial LSL replacement to *increases* in blood lead levels. Questions remain in every community about who should bear the costs of full LSL replacement, and, as we consider approaches, we must ensure that they are affordable, implementable, and safe for all.

In-building Plumbing and Lead

The presence of lead in water systems goes beyond the service line and exists in in-building plumbing systems. The use of lead in pipes and solder was banned under the Safe Drinking Water Act Amendments of 1986, but lead may be present in the plumbing systems of homes, apartment buildings, schools, park facilities, daycare centers, and other structures built before the ban. The problem of lead in in-building plumbing is particularly

acute in historically underserved communities, where housing may be dilapidated, and the effects of all sources of lead exposure—from water systems and in-home plumbing, but also paint, contaminated soil, and air—may compound the problem. Solutions can include having the building tested upon sale or at specified intervals, requiring an environmental audit (especially for child care and elementary schools) to test for lead hazards, or amending building codes to ensure the removal of lead hazards upon remodeling. Where possible, lead assessment and removal practices need to be consolidated—for example, by combining programs to comprehensively address risks related to lead in plumbing and paint together.

Limitations of Corrosion Control

While corrosion control has provided a great deal of protection from lead risks, it has its limitations. Even with effective corrosion control, disturbing an LSL—for example, by partially replacing it, working on a connected water main, or installing a new water meter—can sometimes result in elevated lead levels at the tap for weeks, and even months, after the disturbance occurs. In addition, low or intermittent use of water in a household can increase the likelihood of lead in tap water, even in systems with effective corrosion control.

What States are Doing

Michigan

Updated its Lead and Copper Rule

In 2018, Michigan updated its Lead and Copper Rule (LCR), mandating full lead service line replacement within 20 years at a rate of at least five percent per year regardless of whether a water system exceeds the Lead Action Level, and reducing the Lead Action Level from 15 parts per billion to 12 in 2025. The new Michigan LCR also bans partial replacement of LSLs, except in the case of emergencies, and requires water utilities to pay the full cost of complete LSL replacement. In addition, it expands public education and notification requirements, creates a statewide water system advisory council, and increases the amount of lead testing water utilities are required to complete. While the provisions of the rule are expansive, no funding mechanism was identified, so the full cost of implementation was passed to on local utilities and ratepayers.

Wisconsin

Dedicated part of state water infrastructure funding for lead service line replacement

In order to ensure that all water systems are able to provide safe drinking water regardless of their ratepayer base, Wisconsin passed a law enabling its Department of Natural Resources to offer federal funds to disadvantaged municipalities with lead service lines. In 2016, the state allocated $14.5 million in funding drawn from its 2017 Safe Drinking Water Loan Program Principal Forgiveness Funds for private lead service line removal. The funding allows municipalities to pay for private LSL removal in homes, schools, and licensed/certified daycares without incurring debt, taking the pressure off vulnerable households. The principal-forgiven loans range from $300,000 to $1,000,000 and are awarded based on factors such as population size, median household income, and the number of private LSLs within the municipality. Cities may add criteria, like the age of children in the home. Funded projects must result in full lead service line replacement. Around $13 million has been allocated for the 2018 fiscal year, with allocations ranging from $150,000 to $3.8 million. This policy is a helpful tool in addressing disparities in access to clean, safe water.

Ohio

Strengthened its lead testing protocols

Ohio passed a law to strengthen and clarify its lead testing protocol. The new law is targeted at stricter compliance with the federal LCR and adopts new requirements that charge the Ohio EPA with reviewing standards for lead and copper monitoring, requiring more timely public notification of monitoring results, and ensuring public water systems optimize corrosion control treatment. The law also requires water systems to map lead lines in their systems (as required by the US EPA).

New York and Massachusetts

Implemented state-wide testing programs

Both New York and Massachusetts are working to augment local lead mitigation efforts with statewide testing and assistance. Through its Free Lead Testing Pilot Program, the New York State Department of Health offers free testing for lead in drinking water to residents who are served by either a private well or public water system. Similarly, the Massachusetts Department of Environmental Protection runs a program to help public schools in the state voluntarily test their drinking water for lead and copper and develop lead drinking water programs. State-run testing programs can go beyond what the LCR requires to help ensure a more accurate assessment of lead-in-water problems.

ONE WATER BIG IDEA 7.

Accelerate technology adoption to build efficiency and improve water service.

New technologies and processes can drive transformations in water management and assist in solving pressing challenges. For example, wastewater—industrial and municipal—can be converted into valuable resource streams. Sensors and satellites can provide precision data on water quality, water quantity, and infrastructure condition, which facilitates decision-making. Partnerships among industries, agriculture, and water utilities can surface creative ideas for long-term resource sustainability. The water sector is filled with innovative ideas that are fundamental to overcoming our nation's water hurdles, but the challenge lies in accelerating their implementation.

States and localities can conduct an audit of their existing regulations and look to eliminate or modify those that are hampering opportunities for the development and deployment of technological innovation. The nation's fragmented regulatory structure prevents new innovations from being developed and can prevent proven innovations from spreading and scaling. In addition, states can help streamline technology adoption by setting standards for piloting and implementing new water management technologies. States can also jointly develop shared permitting and certification platforms. If states agree on a set of common standards, a technology that has been approved in one state would be able to enter an expedited approval process in a reciprocal state.

Key Issues to Consider

Pace of Implementing New Technologies and Processes
The water sector has the potential to be a driver for innovation and economic growth in communities, but adoption across the utility sector remains slow compared to other industries. Given the critical mission of protecting public health, water utilities and state agencies tend to be risk-averse. Utilities provide constant, continuous water service, meaning there is little time for validating new technologies in the face of day-to-day demands. The regulatory approval process for new water technologies tends to be long, and it varies from state to state, which can discourage private investment in solutions and dampen innovation. Finally, testing and scaling new technologies is resource-intensive, which inhibits the adoption of existing solutions and innovations. Private industry, meanwhile, is advancing water innovation more rapidly. Responding to water-related risks to business, industries are aggressively exploring and implementing the technologies necessary to keep workers employed, facilities open, and businesses profitable.

Capacity to Collect, Analyze, and Share Data Securely
New technological innovations are enabling better data collection, management, and analysis. Better data management can enable us to make more effective decisions, build more efficiency into water system operations, and optimize revenues. By sharing and integrating information on water quality, quantity, and usage at a watershed scale, we can transform our ability to better manage water resources. There is a powerful business case for sharing and integrating water information to facilitate better decision-making. However, many communities and utilities often do not have the capacity to effectively use the large volume of data that existing and new technologies produce. For those that do, there is sometimes a reluctance to collect or share data, given concerns on how this information may be understood by the public or used by regulators, as well as growing unease over cybersecurity issues.

Innovation Mindset
In the private sector, necessity drives innovation in water management. Business imperatives call for finding new ways to secure sustainable water supplies, conserve water in production processes, and manage waste streams in compliance with regulations. On the public sector side, meeting our water challenges means that water utilities must continue moving their position on innovation from being "nice-to-have" to "mission critical." While there are notable exceptions, many utilities today operate much as they did 20 years ago. The ability to embrace and implement technological innovation depends on a variety of factors, including leadership and culture, the regulatory environment, and funding mechanisms for system improvement. At the heart of the challenge is fostering an innovative mindset, which calls for bold leadership, cultural change, training, and peer-to-peer exchange.

What States are Doing

Massachusetts

Launched a Water Innovation Trust

In 2015, Massachusetts enacted legislation to capitalize a Water Innovation Trust for innovative water projects throughout the commonwealth, administered by the Massachusetts Clean Energy Center. In partnership with the Massachusetts Department of Environmental Protection, the Center supports the development of a robust water technology test-bed network and assists municipal wastewater treatment plants in their efforts to adopt energy-efficient and innovative water treatment technologies. The Center has awarded grants for a Wastewater Treatment Pilot Program, designed to encourage the development of innovative wastewater treatment technologies that reduce electricity consumption, cut energy costs for communities, and/or improve the treatment process. The Center is also undertaking feasibility studies for water technology demonstration centers for a future test-bed network.

California, Colorado, and Minnesota

Enacted regulations and guidance to enable onsite non-potable water systems

One promising approach to water management in the built environment is the use of onsite systems that collect and treat non-potable water, and then reuse it for non-potable purposes such as toilet and urinal flushing, cooling, or irrigation within a building. However, lack of state or national water quality standards for onsite non-potable water systems (ONWS) and wide variations in water quality criteria have hindered development and implementation of these systems. In 2018, California signed into law Senate Bill 966, which directs the State Water Resources Control Board to establish risk-based water quality standards for onsite non-potable water systems. Similarly, Colorado Department of Public Health and Environment updated its Regulation 84 that governs reclaimed water use to allow localized non-potable water systems to treat onsite wastewater for toilet flushing and irrigation. Colorado adopted a risk-based water quality approach for localized water reuse systems. Minnesota published guidance in 2018 also recommending of the risk-based water quality approach to onsite reuse systems.

National Blue Ribbon Commission for Onsite Non-potable Water Systems

To address the lack of and inconsistencies in standards, the San Francisco Public Utilities Commission (SFPUC), US Water Alliance, and Water Research Foundation established the National Blue Ribbon Commission for Onsite Non-potable Water Systems. The Commission is a collaboration of public health agencies and water utilities from 11 states and the District of Columbia. Working together, the Commission is developing tools and resources for state and local regulators to advance safe and practical implementation of onsite non-potable water systems. The Commission produced a guidebook that presents a consistent national approach for developing regulations and oversight and management regimes that protect public health. The recommended approach uses the latest science and is based on a landmark quantitative risk methodology study conducted by WRF, the National Water Research Institute (NWRI), and the SFPUC. The risk-based approach provides for consistent standards that are transferable from state to state and community to community, while maintaining flexibility to meet specific local needs. The Commission's guidance report also includes policy templates and models for program implementation, which state and local policymakers can tailor for their own use. These resources are a significant step in addressing the institutional barriers that have been limiting innovation in the way we manage water within individual buildings.

Supporting Organizations

The US Water Alliance

The US Water Alliance advances policies and programs to secure a sustainable water future for all. Our membership includes water providers, public officials, business leaders, environmental organizations, community leaders, policy organizations, and more. A nationally recognized nonprofit organization, the US Water Alliance brings together diverse interests to identify and advance common ground, achievable solutions to our nation's most pressing water challenges. We:

Educate the nation about the true value of water and the need for investment in water systems. Our innovative education and advocacy campaigns, best-in-class communications and media activities, high-impact events, and publications are educating and inspiring the nation about how water is essential and in need of investment.

Accelerate the adoption of One Water policies and programs that manage water resources to advance a better quality of life for all. As an honest broker, we convene diverse interests to identify and advance practical, achievable solutions to our nation's most pressing water challenges. We do this through national dialogues, knowledge building and peer exchange, the development of forward-looking and inclusive water policies and programs, and coalition building.

Celebrate what works and spread innovation in water management. We shine a light on those who engage in groundbreaking work through storytelling, cataloguing and disseminating best practices, and spearheading special recognition programs that focus attention on how water leaders are building stronger communities and a stronger America.

The Council of State Governments

Founded in 1933, The Council of State Governments is our nation's only organization serving all three branches of state government. CSG is a region-based forum that fosters the exchange of insights and ideas to help state officials shape public policy. This offers unparalleled regional, national and international opportunities to network, develop leaders, collaborate and create problem-solving partnerships. Learn more at www.csg.org.

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