



E C O S

GREEN REPORT

Drinking Water Financing

Advancing Drinking Water Infrastructure Financing
and Positive Public Health Outcomes

INTRODUCTION

The U.S. Environmental Protection Agency's (EPA) 2015 Drinking Water Infrastructure Needs Survey and Assessment, released in 2018, identified a \$472.6 billion need for investments in drinking water infrastructure over the next 20 years. Officials at local, state, and federal agencies all recognize the urgency of working together to support the systems that deliver safe drinking water to Americans every day.

This report highlights states' efforts to effectively leverage different drinking water financing resources, while building the capacity of state programs and public water systems, assisting small systems in addressing drinking water needs, and ultimately improving the protection of public health and the environment.

FEDERAL DRINKING WATER FINANCING PROGRAMS

States have access to a variety of federal funds to support drinking water projects. States, territories, and tribes that have been delegated primary drinking water enforcement responsibility, or primacy, by EPA receive Public Water System Supervision (PWSS) grants. These EPA grants help the agencies develop and implement PWSS programs to enforce the requirements of the Safe Drinking Water Act and ensure that water systems across the United States are in compliance with the national drinking water regulations.

In addition to PWSS grants, states receive Drinking Water State Revolving Funds (DWSRF) to finance drinking water infrastructure projects. In 2017, the DWSRF program marked its 20th anniversary, having helped states provide more than \$35 billion in loans and other funding agreements to water systems. States receive DWSRF capitalization grants from EPA that are then used to provide financial support to drinking water systems in the form of grants, low-interest loans, and loans with principal forgiveness. Additionally, a portion of each state's DWSRF capitalization grant can be set aside to help administer its drinking water program.

In addition to EPA-funded programs, other federal agencies like the U.S. Department of Agriculture (USDA) and U.S. Department of Housing and Urban Development (HUD) also provide funding for drinking water investments. To supply drinking water to their citizens, states may use combinations of these funding sources.

COORDINATING ACROSS STATE AGENCIES AND PROGRAMS

State PWSS programs have direct contact with community water systems as part of their responsibility to ensure drinking water system compliance. These relationships give the PWSS programs insight into the needs of water systems. When the experiences of the PWSS can inform the priorities and actions of the DWSRF program, states can make better infrastructure financing decisions to improve protection of public health and the environment. In some states, the PWSS, DWSRF, and Clean Water State Revolving Fund (CWSRF) programs are in the same agency and in others they are not. While each state's organization provides challenges and opportunities, many states have developed practices to strengthen communication among the programs, whether they are in the same agency or not.

The **Kansas Department of Health and Environment (KDHE)** houses both the DWSRF and PWSS programs. The KDHE Public Water Supply Section is comprised of four units: DWSRF, Compliance and Data Management, Engineering and Permits, and Capacity Development and Enforcement. The DWSRF unit has always been part of the public water program, but for many years there was a lack of communication among the four units. To try to address that issue and improve the work of the Public Water Supply Section they implemented efforts to:

- Encourage communication among the four units;
- Have each unit represented in enforcement meetings; and
- Bring someone from the DWSRF unit to share information about capacity development, operator certification, and compliance with the rest of the units in the Public Water Supply Section.

Once the agency's leadership made these changes to increase communication among the units, the units began to function more effectively.

While Kansas has worked to better coordinate the PWSS and DWSRF programs within the same agency, Minnesota faces different challenges because the programs are housed in separate state agencies. The **Minnesota Pollution Control Agency** houses the CWSRF for the state, the PWSS and technical side of the DWSRF program are in the **Minnesota Department of Health**, and the financial sides of the DWSRF and CWSRF are in the **Minnesota Public Finance Authority**. The state has implemented several strategies to better coordinate the water efforts among these agencies.

- The different agencies keep the same schedules in order to coordinate deadlines and track parallel items.
- City representatives and water utilities work on drinking well pipes and sewer pipes at the same time using both CWSRF and DWSRF funds. This allows the CWSRF and DWSRF programs to coordinate, and fewer resources are used by conducting multiple types of work in one location at the same time.
- For the last 30 years, the agencies have held an annual meeting to discuss the status of drinking water systems in the state. The meeting involves funders, regulators, and other agencies to ensure proper communication and coordination.

Indiana is another state where the SRF programs are working well together. In 2005, Indiana consolidated all the SRF components into the **Indiana Finance Authority (IFA)**, which has increased efficiency for the state. Uniting the CWSRF and DWSRF under one agency and director allows the programs to coordinate priorities more easily, prevent duplication, and oversee both the environmental and technical review processes. The IFA refers to itself as the one-stop-shop for the SRF.

COORDINATING ACROSS FUNDING SOURCES

With the multitude of federal and state funding sources available, states have established best practices to effectively coordinate among various funders in order to provide communities with the best funding packages.

The [Oklahoma Funding Agency Coordinating Team \(FACT\)](#), facilitated by the Oklahoma Rural Water Association, is comprised of the **Oklahoma Department of Environmental Quality (DEQ)**, EPA, USDA Rural Development (RD), Indian Health Service, and other state and federal water funding agencies. FACT meets quarterly to discuss the status of Oklahoma community water supplies identified in DEQ's enforcement list. Water systems with the most urgent problems and the greatest financial need are invited to attend and receive help as quickly and effectively as possible. Helping those systems quickly is one way states can address pressing public health concerns related to drinking water quality. Feedback from survey responses collected immediately following the meeting and from a follow-up survey a few months later are used to improve the assistance provided by FACT and help plan the direction of subsequent FACT meetings.

Since every public financing agency in Oklahoma is part of FACT, this reduces communication barriers, streamlines application processes, and results in quicker assistance. FACT provides a single, uniform method for water and wastewater systems that are requesting funding to obtain regulatory approvals. Additionally, FACT offers [guides, checklists, and forms](#) that are accepted by all participating agencies. DEQ has been a member of FACT since its inception in the early 1990s and has been instrumental in crafting an organization that helps to address some of Oklahoma's challenging public water supply issues.

The **Kansas Department of Health and Environment (KDHE)** signed a [memorandum of understanding](#) (MOU) with USDA RD and Kansas Department of Commerce (KDC) to establish a standard operating procedure for funding regional projects. The MOU outlines ways for the agencies to operate together by tailoring the funding strategies to a specific project. The agencies commit to not fund individual projects if they determine that regionalization is the best option for the water systems. The state agencies provide incentives for water systems to regionalize: KDHE offers up to 30% in principal forgiveness for a regional project; KDC adds grant money from the Community Development Block Grant (CDBG), which is funded by HUD, to lower the overall cost; and USDA RD provides lower long-term financing.

The **Missouri Department of Natural Resources'** CWSRF and DWSRF programs, USDA RD, and the Missouri Department of Economic Development's CDBG program comprise the largest drinking water and wastewater infrastructure financing programs in the state. The [Missouri Water and Wastewater Review Committee](#), made up of members from all three agencies, meets once a month to discuss individual projects, current initiatives, issues, and funding. The committee uses a common application process and coordinates responses to applicants to reduce duplication and confusion. Strategic coordination allows the committee to assist small communities with identifying the most appropriate resources to help them resolve their infrastructure needs.

The **Idaho Department of Environmental Quality's (DEQ)** SRF program, the Idaho CDBG program, the Army Corps of Engineers, and USDA RD meet quarterly to review applications and look at potential opportunities to jointly fund projects. For small communities having multiple funding sources is beneficial when financing expensive drinking water projects, particularly when grant dollars can be combined with loans. The quarterly meetings also provide a chance for the funding agencies to coordinate joint trainings, discuss potential improvements, and promote increased cooperation rather than competition.

The **New Mexico Environment Department** along with other state government agencies and private companies organized the [2018 New Mexico Infrastructure Finance Conference](#) to support the planning and funding of infrastructure projects throughout the state. The conference provided local governments, legislators, federal and state agencies, tribes, private organizations, and businesses the opportunity to learn about financing and technical assistance to facilitate capital projects in New Mexico. The agenda was built to address an array of infrastructure opportunities, from drinking water to transportation to human services. Multiple sessions were dedicated to helping local governments and others properly plan and find financial resources for infrastructure projects.

PROMOTING THE DWSRF PROGRAM & HELPING SMALL SYSTEMS OVERCOME FINANCIAL HURDLES

In an effort to encourage the use of state DWSRF funds, some state agencies have established innovative practices to both reduce the barriers to apply for a DWSRF loan and to attract more borrowers to the program. Many small drinking water systems face significant obstacles that prevent them from being able to even complete the application process for a DWSRF loan. To address this challenge, states offer different forms of assistance to help small and financially disadvantaged systems afford drinking water infrastructure projects, remain in compliance with state health regulations, and improve public health by providing clean drinking water.

PROMOTING THE DWSRF PROGRAM

Over the past few years, the **North Dakota Department of Health** has improved its marketing strategy for the DWSRF program. To do this, staff members travel to some of the larger cities in the state to conduct trainings about the program for water systems. This assistance helps systems that are applying for DWSRF funding reduce errors in the preparation of applications, which helps reduce project delays. Also, each year the DWSRF program produces a brochure to distribute at trainings, presentations, and conferences. This brochure contains information about the number and dollar amount of loans approved over the course of the year, any changes to the program, and in-depth descriptions of specific DWSRF projects to highlight the variety of work that the program can fund.

The **Rhode Island Infrastructure Bank (Infrastructure Bank)** utilizes the principal forgiveness component of the DWSRF to accelerate improvements in water quality for small water systems in Rhode Island. After the Infrastructure Bank conducted an in-depth review of its DWSRF program and found that small water systems' projects on the Rhode Island Department of Health's Project Priority List rarely moved forward into the project development phase, it conducted a round of statewide outreach meetings with cities and towns to offer financial support for local small water systems. Several communities responded positively to the outreach campaign and subsequently requested DWSRF loans for their small water systems. These loans with principal forgiveness make safe drinking water affordable for small communities in Rhode Island, creating positive public health outcomes for those communities.



The **Idaho Department of Environmental Quality (DEQ)** sends a press release each time a DWSRF loan is granted and writes [blog posts](#) to showcase the funded projects and associated savings. This practice meets the loan signage requirement without having to put a physical sign at the project site that is often in a rural location. The blog posts raise awareness of the DWSRF program as they can be seen by more people than a rural sign that will only be seen by the people that pass it.

The DEQ blog also features articles on topics such as operator training and certification, and treatment technology to serve as a resource for water systems. The DEQ helps public water systems achieve and maintain compliance by providing information and technical assistance in the form of brochures.



The **Indiana Finance Authority (IFA)** makes its DWSRF program competitive with other federal and private loans by offering 35-year loans for qualifying projects. The agency believes making the program competitive is better than marketing. The 35-year loans make it the cheapest option available to water systems and as such, IFA is oversubscribed each year.



The **Kansas Department of Health and Environment (KDHE)** sets up booths at a variety of conferences to provide information about the state's DWSRF program. This effort is part of KDHE's new outreach strategy to expand the reach of the state's DWSRF program by focusing on meeting the people who make the decisions.

APPLICATION AND PLANNING ASSISTANCE

The **Missouri Department of Natural Resources (DNR)** provides [engineering report grants](#) to applicants in rural areas to help with the planning required to apply for a DWSRF loan. Applicants with the greatest need are selected first for the grants that help small systems overcome the financial barrier of securing an engineering report. During Missouri's 2017 fiscal year, the DNR used these grants to fund up to 100 percent of the cost of the engineering report for disadvantaged communities.

Communities use the grant to hire an engineer to perform a thorough evaluation of the water system and develop an engineering report. This is the first step toward implementation of changes to help the system achieve and maintain technical, managerial, or financial (TMF) capacity, including compliance with public health standards in the National Primary Drinking Water Regulations and Missouri's public drinking water regulations. Depending on the system's needs, the engineer may recommend changes such as restructuring, regionalization, operational changes, treatment adjustments, infrastructure improvements, or other improvements to increase the TMF capacity.

The **Oregon Health Authority** provides planning funds to small systems through the [Sustainable Infrastructure Planning Projects \(SIPP\) Program](#). The program provides up to \$20,000 per project in a forgivable loan. The following projects are eligible for the SIPP Program.

- Feasibility Studies
- Asset Management Plans
- System Partnership Studies
- Resilience Plans
- Water Rate Analyses
- Leak Detection Studies
- Water System Master Plan for water systems with less than 300 connections
- Seismic Risk Assessment and Mitigation Plans

Oregon started the SIPP Program as a way to combat a slowdown in loan applications and attract borrowers to apply for DWSRF funding. By giving small systems the funds to plan their projects, many systems ultimately capitalize on those plans by applying for DWSRF funding. Although there is over a year turn around time, so far one third of the 2015 projects and one fourth of the 2016 SIPP projects subsequently applied for DWSRF funding.

After numerous storms hit Connecticut, many residents were left without power and clean water, and some communities were on boil water notices for a month or longer. To address this public health concern, the **Connecticut Department of Public Health (DPH)** developed the [Emergency Power Generator Program](#). The generator program provides subsidized DWSRF loans to assist small systems in obtaining backup electrical power systems to prevent the whole water system from going offline in the event of a power outage and to stay in compliance with the state's regulations. The loans are subsidized at 45% for projects under \$100,000. Since 2013, the program has provided 57 loans to small systems for generator installations, totaling approximately \$1.7 million.

Building on the success of the emergency generator program, the Connecticut DPH recently launched its [Small Loan Program](#) that is designed to benefit very small systems. This program uses DWSRF money to provide low-interest loans to public water systems for the purchase and installation of drinking water equipment costing less than \$100,000.

Since neither program funds construction projects that have additional requirements, DPH was able to streamline the loan requirements in the following ways.

- Most projects qualify for categorical exclusions from environmental reviews.
- Projects do not need to follow the Davis-Bacon requirement.
- Applicants only need to get three contractor quotes instead of conducting a lengthy open bidding process.
- Applicants do not need a bond counsel for loan closing.

This is one example of a way that states can directly address a public health concern by using DWSRF money.

To help improve public health and drinking water quality in Alaska's rural communities, the **Alaska Department of Environmental Conservation** developed a [micro loan program](#) that provides native villages with small loans for water infrastructure projects. Those eligible may receive a low-interest micro loan with terms of up to 30 years and a significant subsidy in the form of principal forgiveness. The program is funded using DWSRF money and is intended to help familiarize native villagers with the process of taking out loans and paying them back. The micro loans can be combined with other grant funding but not with tribal set-asides.



The **Hawaii Department of Health (DOH)** uses DWSRF funding to provide engineering services contracts for small systems. By giving small systems access to this service, the systems are able to develop an overall infrastructure condition assessment, identify acute infrastructure needs, and ultimately use DWSRF funding to meet those needs. Before Hawaii provided these services, some small systems had difficulty finding engineers, but DOH was able to identify engineers who were willing and available to help these small water systems which the agency attributes to the island's strong sense of community.



The **Iowa Department of Natural Resources** offers [planning and design loans](#) at no interest for up to three years to cover the costs incurred in the planning and design phase of a water infrastructure project. These loans help applicants who do not have planning funds get their projects off the ground. The planning and design loan can be rolled into a SRF construction loan or repaid upon obtaining permanent financing. Additionally, Iowa's DWSRF program has a designated staff member who carries out the mandatory environmental reviews for the projects. This takes the burden of completing the review off of the applicant.



The **Minnesota Public Finance Authority (PFA), Department of Health (DOH), and Pollution Control Agency (PCA)** jointly host and participate in finance training sessions for the DWSRF and CWSRF programs. The three agencies present at the annual Minnesota Rural Water Associations finance conference to provide water systems an overview of the SRF programs and help with the application process. USDA RD and HUD CDBG also participate in the conference to talk about their programs. Additionally, the Minnesota PFA, DOH, and PCA have their own spring conference where the consulting and engineering communities update each other and discuss timely issues.

UTILIZING TECHNOLOGY

States are using technology to lend out more DWSRF money to communities and to assist water systems with financial management.

Over 15 states have worked with the University of North Carolina Environmental Finance Center to develop [water utility rate dashboards](#). These dashboards allow water systems to compare and benchmark current rates and to better understand the effects of their rates on the community. Additionally, the tool helps state officials and staff determine if the rate is adequate to sustain operations and maintenance.

The **Idaho Department of Environmental Quality** worked in collaboration with the Southwest Environmental Finance Center to develop the SMART Financial Tool. This tool allows water systems to put their financial information into the online dashboard and get feedback that helps them with their budget and prepares them to provide necessary underwriting information to prospective lenders.

The **California Environmental Protection Agency** uses a sophisticated cash flow modeling system to ensure they are maximizing the amount of money that can be loaned out. The modeling system tracks various inflows and outflows and can add in items like capitalization grants, state match, and investment earnings depending on the desired scenario. The modeling system provides an accurate estimate of how much DWSRF funding can be loaned out each year. This is particularly useful when creating the yearly Intended Use Plan and fundable project list.

The **Oklahoma Water Resources Board (OWRB)** developed an [online interactive map](#) of all the public water systems in the state. The map includes system size and boundaries, population served, type of water source, and contact information. This tool is particularly useful to system managers, engineers, water resource managers, and planning officials when they are improving existing systems and making development decisions. Additionally, systems frequently utilize the information to plan system extensions, merge customer information, and reduce response times for local emergencies. The OWRB also has a [drinking water and wastewater financing map](#) that shows each grant and loan provided to Oklahoma water systems.

CHANGING STATE REQUIREMENTS & PROCESSES

States have changed practices in a variety of ways in order to better manage, support, and regulate their water systems. Some states have enacted legislation to require public water systems to have an asset management plan, while others have streamlined application processes.

The **Idaho Department of Environmental Quality's** Grants and Loans Program conducted a kaizen event to streamline environmental reviews and reduce applicant costs. Under the new streamlined process, applicants have noticed quicker turnaround times for project reviews, which has resulted in early project completion and significant cost savings. For example, the entire planning process for the Southside Water and Sewer District's drinking water project was completed in under 18 months, compared to the state average of 26 months. As a result, \$13,643 remained of the \$40,100 grant, a 34% savings in grant funds. Additionally, with faster planning the system is able to move forward with implementation and bringing clean drinking water to the public sooner. The kaizen process has helped DEQ achieve its goal of becoming as efficient as possible by eliminating duplicative steps and reducing process time.

In June 2017, **Ohio** enacted [legislation](#) mandating that all public water systems in the state have an asset management plan that demonstrates ongoing TMF capacity by October 1, 2018. The goal is to improve water quality across Ohio's 4,000 public water systems and to ensure safe and reliable drinking water. The law addresses recurring asset management problems seen at some public water systems, including deferred maintenance, lack of management oversight, and inadequate historical records of water lines or maps of service areas. These issues have resulted in extended periods of water use restrictions or lack of available water for system users.

In 2018, **Connecticut** passed a similar law on asset management. The [Connecticut House Bill 5163](#) requires all small community water systems to have an asset and fiscal management plan. The Connecticut Drinking Water Section is working with state and federally funded external partners, Rural Community Assistance Partnership, and Environmental Finance Center Network, to provide training and technical assistance to small community water systems to comply with the new requirement.

Excerpt from CT House Bill 5163:

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Each small community water system shall prepare a fiscal and asset management plan for all of the capital assets that comprise such system. The fiscal and asset management plan shall include, but need not be limited to, (1) a list of all capital assets of the small community water system, (2) the useful life of such capital assets, which shall be based on the current condition of such capital assets.

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KEY FINDINGS

Based on the examples shared in this report, ECOS highlights five key findings on how states are financing drinking water infrastructure projects and better protecting human health and the environment.

Finding #1

States that take advantage of opportunities to link PWSS and SRF offices see improved efficiency, better communication, more coordinated programming and distribution of resources, and improved public health outcomes.

Some ways states have done this are:

- Encouraging coordination between the PWSS and DWSRF programs;
- Inviting staff from different programs to sit in on planning meetings to increase coordination; and
- Keeping a shared calendar between agencies or program offices to assist them in working together.

Finding #2

Creating a structure or forum to facilitate regular conversation allows funding agencies to create the best funding packages for water systems.

Some ways states have done this are:

- Creating a team across funding agencies (e.g., USDA, HUD) that meets on a regular basis to coordinate public funding needs, resources, and prioritization;
- Creating an MOU to guide funding coordination;
- Creating a joint government-private sector conference for planning; and
- Leveraging multiple funding sources to take advantage of existing mechanisms.

Finding #3

Helping small systems overcome planning and financial hurdles leads to positive public health outcomes.

Some ways states have done this are:

- Providing financial assistance for project planning, design, and engineering services; and
- Providing small loans for non-construction projects so systems can quickly and affordably upgrade treatment equipment.

Finding #4

Legislation and technology can be effective state tools to support water systems by helping them build technical, managerial, and financial capacity.

Some ways states have done this are:

- Adopting legislation that requires small systems to have an asset management plan; and
- Utilizing technologies to assist systems in building their technical, managerial, and financial capacity.

Finding #5

Streamlined processes provide quicker assistance to communities that need it most.

Some ways states have done this are:

- Using the kaizen process to help streamline environmental reviews and reduce application costs; and
- Coordinating between agencies to create common application processes.

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