Climate Resilience Fact Sheet

Key Takeaways

• Extreme weather and climate change will continue to threaten public health, water availability and quality, and water infrastructure.

•The Clean Water and Drinking Water State Revolving Funds can be used to make water infrastructure more climate resilient, while also helping communities address existing water challenges.

•Advocates and State Revolving Fund state administrators can encourage climate resilient infrastructure through integrative, comprehensive planning and by promoting priority-setting systems and additional subsidies for activities that make water infrastructure more resilient, such as green infrastructure, water conservation and efficiency techniques, and flood risk reduction.

Resiliency Has Never Been More Important

In recent years, there has been an increase in extreme weather events like floods, heat waves, droughts, fires, and snowstorms, along with warming temperatures, changing precipitation patterns, and rising sea levels. These events and changes affect communities across the United States and are expected to intensify. They threaten public health, water availability, water quality, and the built infrastructure.

The Clean Water and Drinking Water State Revolving Funds (CWSRFs and DWSRFs, respectively) can be used to make water infrastructure more resilient to changing environmental conditions. The EPA has directed states to use the supplemental SRF funding from the Bipartisan Infrastructure Law to foster resilience to all threats and hazards and to support climate adaptation.

SRF Basics: Investing in Resilient Projects

The SRF programs are used most often for traditional capital investments, like improvements to wastewater treatment plants or new concrete sewer pipes. However, they can also be used for projects that help build the capacity of communities to withstand the impacts of climate change.

The DWSRF finances infrastructure that improves drinking water quality and better protects public health, while the CWSRF supports a wide variety of water quality protection projects, including those that address nonpoint source pollution, watershed protection, and municipal wastewater treatment. There are several ways that communities can finance projects that promote resiliency with DWSRF and CWSRF assistance. Some examples include:

• **Developing plans:** This includes adaptation and mitigation planning to address extreme weather events, like droughts, floods, tornadoes, and forest fires. It also includes integrated water resource management plans, vulnerability assessments, and statewide extreme weather models. These efforts help identify infrastructure needs and may result in a pipeline of sustainable projects that are eligible for SRF funding.

• **Conducting water and energy audits:** Water conservation and efficiency techniques can also increase resilience by reducing water demand, improving reliability of existing water supplies, delaying capital expenditures for new water infrastructure, and reducing energy demands associated with the treatment and transport of water and wastewater. Program rebates and vouchers can incentivize private property owners to adopt such techniques. The DWSRF program can fund incentive programs if the costs are included as part of a larger project (similar to planning and design costs included as part of a loan). The CWSRF program can fund incentive programs that encourage residents in the service area of the proposed project to reduce wastewater or stormwater flow to the project.

• **Constructing resilience-related infrastructure improvements:** This can include backup generators, physical flood barriers, redundant equipment and infrastructure, telemetry systems for remote operation, and saltwater-resistant equipment. It also includes green infrastructure (e.g., rain gardens, green streets) on public and private property. CWSRFs can also be used to preserve and restore natural infrastructure, such as wetlands and forests, which can also bolster climate resilience on a watershed scale.

•**Modifying or relocating facilities:** Water treatment plants can be moved out of the floodplain and existing wells can be deepened. Equipment can also be physically hardened against hazards by waterproofing electrical components, sealing structures to prevent flood water penetration, and adding wind-resistant features.

•**Assisting water systems with developing assessments and emergency response plans (ERPs):** The Safe Drinking Water Act requires community water systems serving more than 3,300 persons to conduct a risk and resilience assessment. Following the completion of the assessment, water systems must develop or update their ERPs. Eligible infrastructure improvements identified by the assessments may be funded through the SRFs.

Providing technical assistance and trainings for water utilities to bolster their resilience. Assistance could be provided to plan and adapt to extreme weather, prepare for emergencies and disasters, set-up Water/Wastewater Agency Response Networks (WARNs), and prepare for and participate in tabletop or field exercises.

If Your Community Faces a Climate Disaster

Communities that find themselves facing a disaster affecting their water infrastructure can more quickly access funding because of a Memorandum of Understanding (MOU) that streamlines coordination between the SRF programs and the Federal Emergency Management Agency (FEMA). The intent is to allow communities receiving FEMA assistance to tap into SRF resources so that applicants can pay for infrastructure costs on an incurred basis rather than paying with their own funds and waiting for a reimbursement from FEMA or for Congress to pass emergency supplemental funds. This MOU allows communities to directly use SRF financing mechanisms for more immediate restoration of vital drinking water and wastewater infrastructure and demonstrates the flexibility of the SRF programs.

SRF Advocacy on Climate Resilience

State administrators, along with state advocates, can encourage projects that promote water system resilience through targeted ranking criteria (i.e., offering priority points), financing incentives (e.g., reduced interest rates and/or waiving fees), and additional subsidies (e.g., principal forgiveness and/or grants). These are all mechanisms in a state's SRF program that can promote projects that help climate resilience. Priority setting systems evaluate and rank projects by awarding points according to ranking criteria. Ranking criteria primarily focus on prioritizing public health and water quality but can also prioritize other concerns, such as infrastructure resilience.

Under federal law, states can provide additional subsidization through their CWSRF programs to projects that address water-efficiency and energy-efficiency goals, mitigate stormwater runoff, or encourage sustainable project planning, design, and construction. **Advocates should encourage the use of additional subsidization for these projects in tandem with providing additional subsidization for communities that meet affordability criteria.**

The CWSRF program requires that no less than 10 percent of states' federal capitalization grants go to assist projects that fall under the Green Project Reserve (GPR), which include green infrastructure, water or energy efficiency improvements, and other environmentally innovative activities. **Advocates should encourage states to dedicate more than the minimum 10 percent towards GPR projects, which will help increase investments for climate resilient infrastructure.**

While there are federal requirements, each state determines their specific policies and practices through their Intended Use Plan (IUP), which the public can comment on each year. Advocates should use the public comment period to encourage the policies and practices listed above that incentivize projects promoting climate resilience.

Long-Term Climate Resilience Planning

Along with SRF policies, advocates can also encourage the use of climate resilience planning in their communities. The planning and assessment processes that go into building a comprehensive climate resilience plan are eligible for SRF assistance. Once a community has a plan in place and knows its most significant climate risks, it can identify adaptation options and integrate other funding sources to move towards long-term resiliency. Effective planning can also allow communities to implement integrated water management practices, like One Water, as well as coordinate with other capital improvement projects, such as in transportation or housing.

Additional Resources

Creating Resilient Water Utilities | US EPA, 2022

U.S. Climate Resilience Toolkit | NOAA, 2014

Climate Mapping for Resilience and Adaptation (CMRA) | NOAA, 2022

Using State Revolving Funds to Build Climate-Resilient Communities | NRDC, 2014

Tap into Resilience Toolkit: State Revolving Fund | WaterNow Alliance, 2021

Case Studies

Oak Beach, NY

The Oak Beach area of New York was without electricity for 30 days due to Superstorm Sandy, resulting in a loss of drinking water supply for three privately-owned public water systems serving 120 people. The DWSRF provided $1.2 million in assistance to consolidate the three water systems and build new resilient infrastructure. The project included the construction of a new water treatment plant, pump station, storage tanks, and backup power source. It also modified existing wells and upgraded the distribution system including the installation of new transmission mains, new distribution mains, and new service lines. Project managers ensured that any critical components within the project were elevated above flood level to prevent potential damage during extreme weather events.

Gold Hill, OR

The City of Gold Hill, Oregon, used DWSRF assistance to hire a professional engineering firm to complete a Seismic Risk Assessment and Mitigation Plan in 2019. The City developed this plan to meet a new state requirement for affected water systems in earthquake zones. This plan included the identification of critical water supply locations and infrastructure, as well as evaluated the likelihood and consequences of seismic failures for critical facilities. Additionally, the plan included recommendations for Capital Improvement Plan projects and/or operational changes. The total project assistance provided by the DWSRF was $20,000, and the project will benefit 1,254 people. This project is a best practice example of how DWSRF assistance can be used for planning and assessments and to evaluate long-term resiliency.

Newport, RI

Since 1978, the Wellington Avenue Combined Sewage Overflow (CSO) Treatment Facility (WACSOTF) in Newport, Rhode Island, has reduced the number of CSOs that would otherwise discharge into the Newport Harbor. WACSOTF is situated at a location that is vulnerable to flooding. Although elevated, the first floor of the WACSOTF is predicted to be a foot under water in a 100-year flood event. To mitigate these risks, the City of Newport received a $5.4 million CWSRF loan from the Rhode Island Infrastructure Bank to upgrade and fortify WACSOTF against flooding. The upgrades added flood protection and resiliency from threats of rising sea levels; increased the capacity of the sanitary pumps and force main to eliminate CSOs; added capacity and automation improvements to the chlorination system; and made improvements to ancillary electrical, mechanical, and HVAC systems critical for increased reliability, worker safety, and energy efficiency.