

# Funding Resilient Infrastructure and Communities with the Clean Water State Revolving Fund



Variable weather events and natural disruptions, including floods, droughts, tornadoes, wildfires, and hurricanes, have adversely impacted communities across the United States in recent years. These events underscore the need for communities to build infrastructure and manage resources that can maintain performance when impacted by such disruptions. Today's infrastructure challenges include not only needs for repair, upgrade, and replacement, but also ensuring infrastructure assets and communities are resilient to variable weather events.

## How the CWSRFs Work

The Clean Water State Revolving Fund (CWSRF) is a low-interest source of financing for a wide range of wastewater infrastructure and water quality projects. The program is an effective partnership between EPA and the states as well as the territory of Puerto Rico. Each program has the flexibility to fund a variety of projects that address the most pressing water quality needs. The state- and territory-administered programs each operate like banks with federal and state contributions used to capitalize the programs. These funds are used to make low-interest loans to local communities for water quality projects and are then repaid to the CWSRFs over terms as long as 30 years or the useful life of the project, whichever is less<sup>1</sup>. Repayments are then recycled back into the fund to finance additional projects. The below-market rate loans offered by the program save borrowers significant resources over the life of the loan compared to traditional financing sources.

## Getting A Project Funded

EPA encourages states to consider funding a wide variety of eligible water quality and public health projects based on a state's specific needs. Utilities and municipalities that want to learn more about CWSRF funding opportunities should seek out their state's CWSRF program to learn more about the process states use to determine which projects are funded. A directory of CWSRF state programs can be found at <https://www.epa.gov/cwsrf>.

## Assistance for Resiliency Projects

The CWSRFs can provide assistance for a wide range of eligible activities that can help communities become more resilient to natural disasters and extreme weather events. These resiliency features, such as energy and water efficiency upgrades, and stormwater management are often incorporated into a larger project that can strengthen and protect water infrastructure. Resiliency projects:

- Prevent interruption of collection system operations in the event of a flood or natural disaster;
- Maintain the operation of a treatment works and the integrity of the treatment train in the event of a flood or natural disaster;
- Preserve and protect treatment works in the event of a flood or natural disaster;
- Enhance community resilience through stormwater management using both green and grey infrastructure in the event of a flood; or
- Secure and conserve local water supplies through water reuse and conservation in the event of a drought.

<sup>1</sup> When appropriate, the CWSRFs can provide extended term financing beyond 30 years by purchasing or refinancing municipal debt obligations.

### Financial Benefits of CWSRF Funding

CWSRF assistance options deliver significant benefits and incentives to borrowers. CWSRF loans can provide the following benefits:

- Coverage of up to 100% of project costs;
- Discounted loans below the market rate down to zero percent in some states;
- Deferred payments of principal and/or interest;
- Terms of up to 30 years and extended term financing that reduces annual interest payments;
- Dedicated revenues for loan repayments that can come from any source;
- Reliable access to capital through the use of programmatic, portfolio, and co-financing;
- Access to additional subsidies;
- Credit enhancements that lower the cost of borrowing for less than AAA green debt obligations; and
- Access to affordable assistance for project development, planning, and technical assistance.

States can also provide assistance to assess treatment works' vulnerability to extreme weather or analyze the best approach to integrate system and community resiliency priorities, as long as the work is reasonably expected to result in a capital project. Examples include water/energy audits, asset management plans, and drought management plans. These efforts help analyze infrastructure needs and can result in a pipeline of sustainable projects that are eligible for CWSRF funding.

### Encouraging Resilient Infrastructure

Priority-setting systems are an effective tool that states use to encourage resilient wastewater and stormwater infrastructure. Each CWSRF program has a unique priority setting system that evaluates and ranks projects. Ranking criteria primarily focus on public health and water quality but can also address other concerns, such as infrastructure resiliency. States can encourage more projects that promote system resiliency through targeted ranking criteria (e.g., offering priority points) and funding incentives (e.g., reduced interest rates and/or waiving fees).

Additional subsidies (e.g., principal forgiveness, negative interest rate loans, and grants) can be used to encourage resiliency projects. CWSRF programs can also use their administrative resources to provide technical assistance and training in the development of resiliency projects. Additionally, many states use various marketing strategies to share information with prospective borrowers.

### Drought Resiliency and the CWSRF

The duration and impact of drought vary across areas of the United States and can lead to widespread water shortages, wildfires, and crop and livestock losses. The economic impact of these events is felt both regionally and nationally, but even more so in the communities directly affected.

The CWSRFs provide financial assistance for a broad range of eligible water infrastructure projects to assist communities' efforts to become drought resilient. However, such projects do not need to be solely designed to mitigate drought and can have other tangible benefits. Drought resiliency projects may also better position utilities and their customers to conserve and use water resources more efficiently to reduce costs.

#### Memorandum of Understanding (MOU) between EPA and the Federal Emergency Management Agency (FEMA)

On June 4, 2019, EPA and FEMA announced an MOU<sup>2</sup> that establishes a framework for EPA-funded SRF programs to assist and collaborate with FEMA disaster assistance grant programs. The SRFs work cooperatively with FEMA and state, local, tribal, and territorial governments to allow local entities to quickly recover and restore their vital infrastructure after a Presidentially declared disaster. The proposed activities in the MOU streamline coordination between FEMA and the SRFs to enable funding to be made available as quickly as possible to support essential infrastructure projects. Communities will no longer have to expend their own funds first and wait for a reimbursement through a FEMA grant and/or supplemental funds from Congress. By having this MOU in place, communities will have the resources available to not only save time and lower costs, but also have access to the necessary tools that can help increase their resiliency to future disasters.



<sup>2</sup>A copy of this MOU can be viewed at <https://www.epa.gov/cwsrf/memorandum-understanding-between-environmental-protection-agency-and-department-homeland>

In 2018, EPA's Water Infrastructure and Resiliency Finance Center developed a report entitled *State Revolving Funds: Financing Drought Resilient Water Infrastructure Projects*. This report focused on how 13 drought-prone states used the CWSRF to support drought resilient infrastructure investment through innovative funding policies and programmatic actions, as well as other incentives, state requirements, and technical assistance. For example:

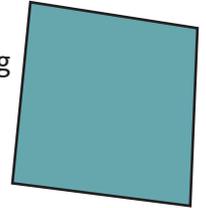
### **California**

The California State Water Resources Control Board CWSRF supports the three goals of the California Water Action Plan: more reliable water supplies; the restoration of important species and habitat; and a more resilient, sustainably managed water resources system that can better withstand inevitable and unforeseen pressures in the coming decades.



### **Colorado**

The Colorado CWSRF has five sections in their priority setting system including sustainability/Green Project Reserve (GPR). Examples include projects that incorporate GPR components at a minimum of 20% of total project costs; projects that implement a source water protection plan; and planning and design grants where projects will generate and/or utilize reclaimed water for direct reuse or correct a water loss issue.



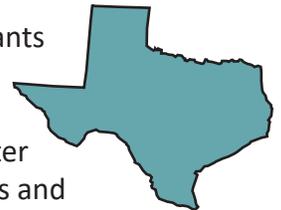
### **Oklahoma**

The Oklahoma Water Resources Board developed the Oklahoma Drought Tool for communities and planners in collaboration with the U.S. Bureau of Reclamation. The tool outlines drought management concepts, planning options, and other resources.



### **Texas**

The Texas CWSRF requires applicants to have a water conservation and drought contingency plan for loans greater than \$500,000. Water conservation plans include targets and goals for efficiency, reuse, and other options.



For more information and a full version of this report, please visit <https://www.epa.gov/waterfinancecenter/state-revolving-funds-financing-drought-resilient-water-infrastructure-projects>

## **Clean Water Success Stories**

### **Lessons Learned From Hurricane Sandy & New York's Storm Mitigation Loan Program**

Superstorm Sandy, the deadliest and costliest storm of the 2012 hurricane season, highlighted the vulnerability of heavily populated communities and the need for resiliency strategies for extreme weather events and associated coastal flooding. Storms, flooding, and rapid sea level rise can impact resources and infrastructure in low lying areas including roads, public access points, and sewer and water mains.

In the aftermath of Superstorm Sandy, the U.S. Congress appropriated \$600 million in SRF funds for New York and



Damage along seaside areas of Brooklyn, NY after Hurricane Sandy.

New Jersey to reduce flood damage risk and vulnerability, or to enhance resilience to rapid hydrologic change or a natural disaster at a publicly owned treatment works (POTW). The New York Environmental Facilities Corporation (NYEFC) used their funds to create the Storm Mitigation Loan Program (SMLP) for Clean Water SRF projects. \$339.7 million in CWSRF funds were made available to provide financial assistance in the form of zero-interest loans and grants for storm resilience and mitigation projects. These projects included flood-proofing critical treatment systems, correcting significant problems to reduce the likelihood of sewer backups or flooding of a treatment facility, and upgrading and hardening pump stations to ensure peak flow capacity during a storm event. The SMLP promotes the use of sustainable practices in the design and construction of water quality infrastructure to reduce the risk to water systems from future storms and other natural disasters in the 14 counties affected by Sandy.



SMLP to upgrade a pump station in Suffolk County, NY to prevent future flooding. Photo Courtesy of the Environmental Council of the States.

Today, the NYEFC continues to work with communities to fund resilience and mitigation projects by offering additional subsidization in the form of grants, as well as low- or no-interest loans. In addition, if there is a project that needs funding over and above what was originally planned, the CWSRF may be able to provide that assistance. For more information on this program, visit <http://www.efc.ny.gov/CWSRF>

### **Southern Monmouth Regional Sewerage Authority Station Resiliency Upgrades**

The South Monmouth Regional Sewerage Authority (SMRSA) in New Jersey operates a wastewater treatment plant and conveyance system serving several coastal communities that have recently experienced extreme weather events. SRF funds provided short-term financing to SMRSA through the NJ Water Bank's Statewide Assistance Infrastructure Loan (SAIL) Program as an advance for FEMA assistance to build three pump stations, saving the community an estimated \$1.9 million in short and long-term interest costs.

Two of these pump stations are fully operational mobile units that can be disconnected during a severe storm and transported to a safe location. Once the storm subsides, the mobile stations are returned and reconnected. These mobile resilient pump stations (MRPS) contain main electrical components, computer equipment, and an emergency generator – all located on a mobile trailer at the original pump station site. Older pump stations in coastal areas were seriously damaged in recent years, costing millions of dollars to repair and leaving communities without wastewater services.



Photo Courtesy of New Jersey Department of Environmental Protection

The new MRPS limit the disruption in conveyance, minimize sewer overflows, and will save SMRSA millions of dollars by preventing damage from future storms. The third pump station replaced an older station that was in a 100-year flood zone. This new pump station is a permanent fixture designed to look like the neighboring residential housing and was placed outside the floodplain.

## **Wellington Avenue Combined Sewage Overflow Treatment Facility Upgrades**

Since 1978, the Wellington Avenue Combined Sewage Overflow Treatment Facility (WACSOTF) in Newport, Rhode Island has reduced the number of Combined Sewer Overflows (CSOs) that would otherwise discharge into the Newport Harbor. WACSOTF is situated at a location that is vulnerable to flooding, and a National Oceanic and Atmospheric Administration tide gauge at the location has documented nearly a one-foot rise in sea level since 1930. 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 with an interest rate of 2.16 percent from the Rhode Island Infrastructure Bank to upgrade and fortify WACSOTF. These upgrades added flood protection and station 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; performed a feasibility assessment for incorporating dechlorination as an interim measure; and made improvements to ancillary electrical, mechanical, and HVAC systems critical for increased reliability, worker safety, and energy efficiency.



Photo Courtesy of Rhode Island Department of Environmental Management

## **Oklahoma Water Resources Board Atoka Reservoir Dam Rehabilitation**

The Atoka Reservoir is a source of drinking water for the residents of Oklahoma City. Past flooding damaged the reservoir's dam and spillway, creating safety concerns for the City's pump stations and transmission lines. These critical water system components ensure that the water is delivered to approximately 1.2 million people within the city and surrounding communities. During high rain events and flooding, the population served by this water system was vulnerable to losing a critical public service. In addition, the flood storage capacity of the reservoir and discharge capacity of the spillway were limited. The City responded to this concern by financing \$34 million through the CWSRF for the repair of the spillway and to increase the height of the reservoir embankment to allow for greater flood storage capacity. Improved flood resilience allows the reservoir to hold more stormwater, which reduces sediment and nutrients from flowing into the neighboring North Boggy Creek. Overall, these repairs reduce the risk of a dam breach while improving the water quality of the creek which is on Oklahoma's 303(d) Impaired Waters List.



Photo Courtesy of Oklahoma Water Resources Board

**For more information on the CWSRF, contact:**

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