



Clean Water
State Revolving Fund



Protecting Source Water with the Clean Water State Revolving Fund

Protecting sources of drinking water through infrastructure investment not only safeguards the water we rely on, it also can save communities money. By managing potential sources of contamination and preventing pollutants from reaching sources of drinking water, communities may avoid the need for additional drinking water treatment, thereby reducing treatment costs. Low-cost financing from the Clean Water State Revolving Fund (CWSRF) is available for source water protection activities and can amplify these savings for communities and their water users.

The CWSRF is a federal-state partnership that offers flexibility to finance a broad range of projects that address states' highest priority water quality needs. The programs in each state and Puerto Rico operate like banks. Federal and state contributions are used to capitalize the programs, and these funds are distributed as low-interest loans for projects that improve water quality and help protect the environment and public health. Funds are then repaid to the CWSRF and used to finance additional projects.

CWSRF ASSISTANCE FOR SOURCE WATER

CWSRF financing is available to public, private, or nonprofit entities for many types of source water protection (SWP) projects, including both green and grey infrastructure water quality solutions for both surface water and groundwater.

CWSRF-eligible source water protection projects include:

- [Land conservation](#)
 - Easements, leasing, and fee simple purchase of land
- [Agricultural best management practices](#)
 - Cropland and livestock
- [Decentralized wastewater treatment](#)
 - Septic tank repair or replacement
- [Remediation or prevention of contamination from resource extraction sites](#)
- Habitat restoration
- Shoreline/riparian buffers
- Stormwater management
- Contaminated site clean-up
- Wildfire risk management
- Development and updates of source water protection plans
- Development and initial delivery of public outreach and education materials

CWSRF assistance cannot be provided for operations and maintenance or routine ambient water quality monitoring. A full listing of CWSRF eligibilities, including examples of eligible projects and assistance recipients, can be found in the "[Overview of Clean Water State Revolving Fund Eligibilities](#)."

LOAN REPAYMENT OPTIONS

CWSRFs can offer a variety of types of financial assistance. Potential CWSRF borrowers must identify a dedicated repayment source, which need not come from the project itself, before a loan is approved. Finding a source of repayment for source water protection projects may prove challenging.

Some potential repayment sources include:

- Recreational fees (e.g., fishing licenses, entrance fees);
- Dedicated portions of local, county, or state taxes or fees;
- Stormwater utility fees;
- Fees paid by developers;
- Donations or dues made to nonprofit organizations;
- Individual or business revenues;
- Revenue from sustainable timber harvest or other forest products;
- Carbon and/or nutrient credits; and
- Downstream water users.

Because source water protection projects may not have associated available income streams, states use a variety of financing mechanisms for these projects. While direct lending is one option, many states have used innovative partnership models to facilitate coordination and funding support for regional

solutions to water quality problems. These additional options include sponsorship lending, intermunicipal and intermediary lending, and watershed partnership programs, among others. For more information on these financing mechanisms, please reference "[Financing Options for Nontraditional Eligibilities in the Clean Water State Revolving Fund Programs](#)," on EPA's website.

LEVERAGING CWSRF FUNDS

CWSRF funds can be leveraged with other funding programs that protect and improve freshwater resources and public health. For example, several states have used funds from their [Drinking Water State Revolving Fund \(DWSRF\) set-asides](#) to develop source water assessments, appraisals, and plans to meet application requirements for CWSRF loans and [Clean Water Act Section 319 Nonpoint Source \(NPS\) Management](#) grants. In some states, CWSRF repayment funds are used by borrowers to match other federal grants, like Section 319 NPS management grants, to help initiate projects.

LEARN MORE ABOUT FUNDING

CWSRF programs are managed by the states and assistance is distributed directly from state agencies. The procedures and funding of eligible projects may vary according to the priorities of each state.

Contact information for each program's states is posted at: <https://www.epa.gov/cwsrf/state-cwsrf-program-contacts>.

CWSRF FINANCIAL BENEFITS

CWSRF assistance options deliver significant benefits to prospective borrowers. Incentives may vary by state program. CWSRF loans can provide the following benefits:

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



CWSRF SOURCE WATER PROTECTION CASE STUDIES

ARIZONA'S CWSRF FOREST THINNING AND RESTORATION PROGRAM

Forest thinning and fire prevention are investments in a community's health, not unlike investments in a water or wastewater treatment facility. Responding to contamination can be as much as [200 times](#) more expensive as preventing the pollution of drinking water resources. Using conservation forestry practices, like forest thinning, helps stabilize watershed vegetation in the understory and prevent erosion, which protects water quality.

The Flagstaff Watershed Protection Project is a partnership between the City of Flagstaff, the Water Infrastructure Finance Authority of Arizona (WIFA), which administers the CWSRF program, and the Coconino National Forest to help reduce the risk of devastating wildfire and post-fire flooding in the Rio de Flag and Lake Mary Watersheds.

After the Schultz Fire consumed over 15,000 acres of forest outside of Flagstaff, and resulted in \$147 million in damage, the city voted to support a bond measure to fund large-scale projects to thin forests and undertake better vegetation management practices on city, state, tribal, and federal lands. This was the first time the city considered a nonpoint source project of this kind to be part of a Capital Improvement Plan and included in their water infrastructure budget. In addition to the proceeds from the bond measure, the city received a \$6 million WIFA CWSRF loan (with \$1 million of that being forgivable principal) with 0.4 percent interest for the project, which has thinned or harvested nearly 5,000 acres.

MEASURABLE BENEFITS TOOL

Using Flagstaff, Arizona's lessons learned and

comprehensive wildfire impacts and cost avoidance research, WIFA created a Measurable Benefits Tool that estimates the environmental, financial, and social benefits associated with undertaking forest thinning projects. The tool uses specific metrics such as cost of wildfire suppression and rehabilitation, impacts on property values, lost recreational value and economic activity, job losses, impacts to drinking water treatment costs, impacts to public health, and local economic prosperity.

The triple-bottom line tool developed for WIFA could be adapted to other states. The Measurable Benefits Tool is customizable by city, county, or national forest. This allows WIFA to create targeted marketing and education packages customized by the location and characteristics of the community and stakeholders. Targeted marketing provides local residents with a picture of the potential impact that wildfire can have on their wallets, health, and community.

The CWSRF can be a key partner in funding various source water protection efforts, including forest thinning and fire prevention. In many cases, DWSRF financing may also be leveraged for this purpose. The SRFs can be an important part of a comprehensive strategy to improve forest management programs across the western United States.

PENNSYLVANIA WORKS WITH PUBLIC AND PRIVATE PARTNERS TO PROTECT SOURCE WATERS

Pennsylvania's CWSRF program, administered by the Pennsylvania Infrastructure Investment Authority (PENNVEST), has financed projects that address the protection of source water from both nonpoint and point sources of pollution.

LOAN FOR WORKING FOREST CONSERVATION EASEMENT AND SUSTAINABLE LAND MANAGEMENT

Promoting responsible land use upstream can improve downstream water quality. Responsibly managed forested ecosystems provide a source of high-quality fresh water at a fraction of the cost of constructed water treatment systems. [Studies](#) have found that for every 10 percent increase in forest cover in the source area, drinking water utility treatment and chemical costs decreased approximately 20 percent. An agreement between the Lyme Timber Company LP (Lyme), the Pennsylvania Department of Conservation and Natural Resources (DCNR), the Conservation Fund, and PENNVEST will ensure that 63,500 acres of Pennsylvania forestland are sustainably managed, providing not only water quality benefits, but also recreation opportunities, wildlife habitat, and raw materials for the Commonwealth's forest products industry.

Lyme, a timberland investment management organization, specializes in the negotiation of working forest conservation easements that restrict development on lands. Once the land is acquired, Lyme generates income from sustainable timber harvesting while simultaneously applying conservation strategies to the land. To secure the financing for the acquisition of two separate tracts of land in northwest Pennsylvania, Lyme applied for a CWSRF loan from PENNVEST.

As part of Lyme's low-interest loan agreement, they:

- Donated a conservation easement for public recreational access and water quality protection on 9,400 acres of timberland in northwest Pennsylvania,
- Agreed to perform \$750,000 of acid mine drainage remediation on lands impacted by contamination, and
- Agreed to manage an additional 51,000 acres of land for a seven-year period, subject to conservation restrictions, while granting rights to Pennsylvania for the purchase of conservation easements to permanently protect the land.

PENNVEST provided a \$50 million CWSRF loan at an interest rate of one percent for the project, which will

produce savings for Lyme of approximately \$900,000 per year during the first five years of the loan (relative to Lyme's usual 3.5 percent net borrowing cost). The Conservation Fund (TCF), a non-profit organization with a dual mission to support conservation and economic development, supported Lyme's application and participated in meetings with DCNR. TCF has agreed to facilitate Lyme's conveyance of conservation easements on the timberlands, by sale and donation, to Pennsylvania. The Pennsylvania DCNR will enforce the terms of the easement.

This project area overlaps with surface water protection areas that provide water to drinking water systems serving more than 12,500 homes and to greater than 700 private wells in areas subject to conservation easements.

PENNSYLVANIA PROJECT PROTECTS DRINKING WATER SOURCE FOR 1.5 MILLION RESIDENTS

Pennsylvania also protects and improves the quality of source waters by upgrading aging wastewater infrastructure. The Commonwealth's largest CWSRF project undertaken to date is improving the drinking water source of 1.5 million people. The project is a complete upgrade of the sludge handling facility for the City of Reading's wastewater treatment plant. The project addresses the aging infrastructure at the Fritz Island Treatment Plant that has resulted in compliance issues and sanitary sewer overflows during wet weather events.

By addressing the overflows and upgrading the treatment facility, the water quality for the Schuylkill River and the Delaware Estuary will improve. Additionally, the improved water quality will benefit downstream water supply intakes. The Schuylkill River is the primary source of drinking water for approximately 1.5 million people living downstream from the treatment plant's discharge.

PENNVEST financed this CWSRF project for \$149 million at one percent interest for 20 years, which produced a savings of more than \$21 million for the community.