PISCES

Performance and Innovation in the SRF Creating Environmental Success

A Program of the U.S. Environmental Protection Agency

George F. Ames

PISCES 2025 Recognition Program

FY 2025

EPA

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Cover photo credit: Chemung County Sewer District

DIRECTOR'S **ADDRESS**

This year, the U.S. Environmental Protection Agency (EPA) is proud to recognize 22 Clean Water State Revolving Fund (CWSRF) projects that demonstrate excellence through the George F. Ames Performance and Innovation in the SRF Creating Environmental Success (PISCES) program. Since its inception, the CWSRF has provided over $181 billion in affordable financing for water infrastructure projects that strengthen our nation's water infrastructure while delivering environmental benefits and supporting local economies. Through the federal-state partnership framework of the CWSRF, and thanks to its wide range of eligibilities and project types, states can effectively address the water quality needs of their communities. Projects recognized in this compendium range from large wastewater infrastructure projects to community stormwater and agriculture projects. CWSRF financing empowers communities to implement innovative, modern solutions to their water quality challenges and the reduced interest rates available through the program help reduce the cost of living for Americans throughout the country.

This year, we received PISCES nominations from all 10 EPA regions, encompassing a wide variety of project types and eligibilities. These projects exemplify the ingenuity shown by CWSRF programs and assistance recipients across categories of innovative financing, system partnerships, community engagement, public health protection, and creative solutions. The scale and complexity of the recognized projects in this compendium represent the determination, coordination, and imagination our state and local partners put forth to achieve their water quality goals. These projects are a testament to the significant role the CWSRF plays in building our nation's infrastructure while delivering benefits for public health, local economies, and the environment.

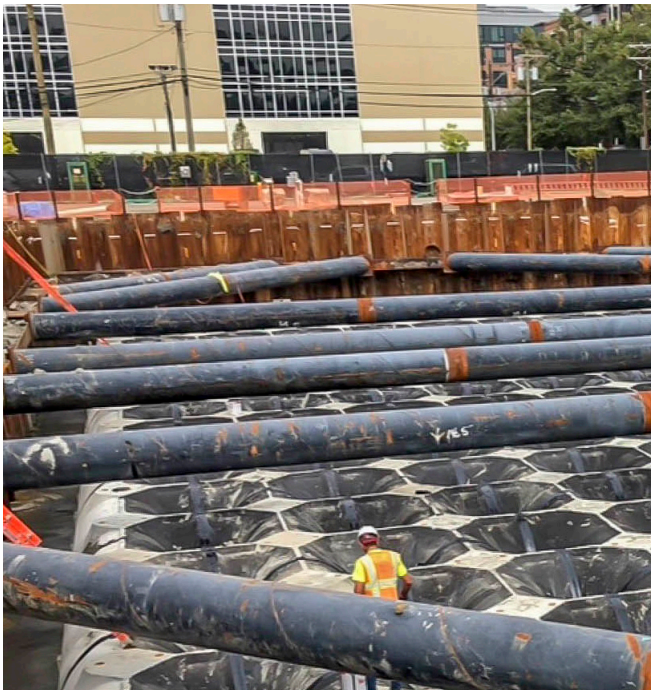
I congratulate all the assistance recipients recognized in this compendium, and I thank the CWSRF programs that nominated them for recognition. We appreciate your dedication to ensuring water quality in our communities and as well as your commitment to the continuing success of this crucial program.

Andrew Sawyers, Ph.D., Director
Office of Wastewater Management

RECOGNIZING **EXCEPTIONAL SUCCESS**

The CWSRF George F. Ames PISCES Recognition Program nationally recognizes CWSRF-funded projects for their exceptional focus on the environment and public health. These projects are examples of the high level of innovation possible with the CWSRF. Participating states in this voluntary recognition program nominated one CWSRF project during the 2025 round. Nominations were based on the following five criteria categories. EPA selected one project from each category to be recognized as an Exceptional Project based on the project's overall impact in the category.

- **Innovative Financing:** Uses a creative financing mechanism that aligns with the needs of the community.
- **Community Engagement:** Involves the community during the project design or includes a project element that encourages community engagement.
- **System Partnerships:** Creates a partnership that brings together stakeholder groups and resources to create a collaborative approach to addressing water quality needs.
- **Environmental and Public Health Protection:** Employs a sophisticated approach to addressing water quality. These projects may include preemptive treatments, reduction in capacity loading, use of new technologies, or other aspects that focus on innovative design.
- **Problem Solving/Creative Solutions:** Uses an unconventional approach in meeting the community's needs.



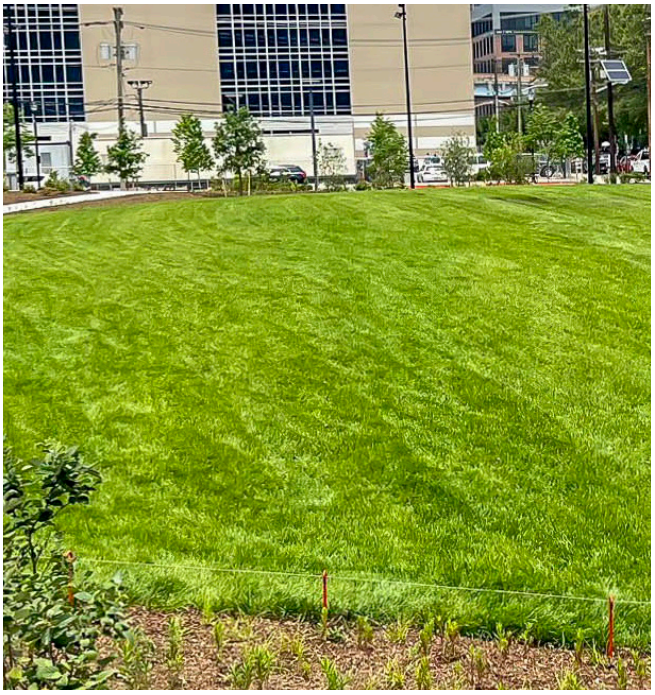


Photo credit: City of Hoboken and North Hudson Sewerage Authority

Photo credit: Chemung County Sewer District

Innovative Financing

New York Environmental Facilities Corporation

Project Name: Chemung County Wastewater Treatment Plant Consolidation

Assistance Recipient: Chemung County Sewer District

The Chemung County Sewer District (CCSD) operates two wastewater treatment plants (WWTPs), the Milton Street WWTP and the Lake Street WWTP, that discharge within the Chesapeake Bay Watershed. In 2014, effluent nitrogen and phosphorus limits associated with the Chesapeake Bay Total Maximum Daily Load were added to the discharge permits for both WWTPs. Additionally, the Lake Street WWTP was operating above its capacity and experienced sanitary sewer overflows (SSOs). With substantial repairs and upgrades required at both WWTPs, the CCSD decided to consolidate the two facilities into one expanded WWTP at the Milton Street location. The Lake Street WWTP will be demolished and replaced with a pump station that will send flows directly to the Milton Street WWTP for treatment. The Milton Street facility's capacity will increase from 12.2 to 28.2 million gallons per day and be upgraded with a new headworks facility, disinfection system, and moving bed biological reactor biological process to increase nutrient removal.

The CCSD utilized innovative financing to maximize grant and low-interest loan options. Initial planning of the project was funded with a $50,000 grant from New York State's Engineering Planning Grant program. Beyond planning, the funding package includes $25 million in an Infrastructure Investment and Jobs Act (IIJA) grant, $1 million in an EPA Community Grant, $150,000 in an Appalachian Regional Commission grant, and $45 million in grants from New York State water quality programs. Additional CWSRF financing includes $25 million in interest-free and $150 million in subsidized financing that was 50% of the market rate.

The two sewer districts being consolidated serve the City of Elmira and six towns and two villages surrounding the city. The new consolidated plant will be permitted to discharge 584,000 pounds per year (lbs/yr) of total nitrogen, which is 18,300 pounds less per year than before the consolidation. Combining two WWTPs into one modern WWTP will reduce operation and maintenance costs, save energy, and eliminate a discharge point to New York State waterways. The consolidation and upgrades are expected to be completed by September 2026 and the Lake Street demolition will be complete by April 2027.

Photo credit: Prince George's County, Maryland

Community Engagement

Maryland Department of Environment

Project Name: Urban Stormwater Retrofit Public Private Partnership (P3)

Assistance Recipient: Prince George's County, Maryland

Prince George's County needed a large-scale solution for managing its urban stormwater runoff to comply with its Municipal Separate Storm Sewer System (MS4) permit and reduce its overall pollutant load to the Chesapeake Bay. As a solution, the County hired a private contractor to form an Urban Stormwater Retrofit Public Private-Partnership to implement stormwater best management practices (BMPs) across the county. This Clean Water Partnership, initiated in 2015, is currently in Phase 2 of its planned 3-phase project.

From the outset, the Partnership prioritized community involvement by setting goals for both public engagement and for building a local economy. It conducted outreach with various community groups and created local jobs by specifically contracting with local businesses for supplies and requiring that a percentage of the project's workers to be county residents. To grow a locally based work force, the Partnership developed a professional training program in nature-based infrastructure and related fields. As part of the financing for such a large, multi-phased endeavor, the County relied on public and private funds, including stormwater fees as well as low-interest rate loans from the CWSRF, borrowing $48,000,000 in 2019 (Phase 1) and $65,000,000 in 2023 (Phase 2).

To date, the project has initiated or completed over 400 BMPs including stormwater retention ponds, sand filters, pervious pavement, rain gardens and curb cuts to swales that have resulted in the removal of 3,738 acres of impervious surface. As of September 2024, the project has achieved a reduction in 75,000 pounds of nitrogen, 15,000 pounds of phosphorus, and over 9,000,000 pounds of sediment. The project's unique partnership and local operational approach provides a model for other jurisdictions who seek to optimize their stormwater management implementation. By delegating project selection, design, construction, operation, and maintenance to private partners, the Partnership has been able to cut time and costs involved in implementing stormwater BMPs, while balancing risks among other entities and securing greater community impact.

Photo credit: Marquette County Solid Waste Management Authority

Environmental and Public Health

Michigan Department of Environment, Great Lakes, and Energy

Project Name: Marquette County Landfill Leachate Treatment System

Assistance Recipient: Marquette County Solid Waste Management Authority (MCSWMA)

The Marquette County Landfill receives non-hazardous waste from all municipalities within the county. As part of the landfill operation process, the landfill maintains and operates a leachate treatment system. This system has experienced water quality issues related to chlorides, mercury, perfluorooctane sulfonic acid (PFOS), per- and polyfluoroalkyl (PFAS), and other emerging contaminants. To address these issues, the MCSWMA is installing a leachate treatment system utilizing reverse osmosis (RO) with stormwater blending and on-site disposal via spray application.

The RO treatment system is expected to remove more than 99.9% of PFAS and other contaminants, from the landfill leachate. As a result, this will improve water quality in the Carp River, a nearby trout fishing and recreational waterway that drains into Lake Superior. The RO system filters out contaminants more effectively and utilizes less equipment and operational needs than other treatment systems. The project will also allow the landfill to reduce overall leachate volume, which will lead to future removal of treatment lagoons and enable the landfill to fully utilize waste cells. Depending on treatment capacity, MCSWMA will consider becoming a regional PFAS treatment center, which would reduce the environmental impacts associated with transporting PFAS impacted liquid waste. The MCSWMA received a $7,000,000 CWSRF loan for this project, with $4,435,908 in principal forgiveness. The project has a projected completion in 2026.

Photo credit: Water Works and Sewer Board of the Town of Ardmore

System Partnerships

Alabama Department of Environmental Management

Project Name: Ardmore Wastewater Treatment Plant Renovations

Assistance Recipient: Water Works and Sewer Board of the Town of Ardmore

The Ardmore WWTP, which serves approximately 1,100 customers in both Alabama and Tennessee, was originally built in the 1960s. The facility is overburdened and is not designed to effectively treat the average and peak daily flows that are being received.

The sewer board analyzed alternative solutions to the challenge and created a joint project involving both Alabama and Tennessee. The two states worked together to develop a solution to help Ardmore meet its objectives of having a water system that meets the needs of the community through a combination of state funds through American Rescue Plan Act (ARPA) funds, State Revolving Fund Infrastructure Investment and Jobs Act funds, and community match. Alabama will renovate the existing WWTP and remove sludge from the existing holding lagoon to improve its capacity, and Tennessee will address inflow and infiltration issues on its side of the state line. Additionally, this project will assist with reducing sanitary sewer overflows by increasing line sizing at a critical location in the collection system. This solution will increase capacity of the existing system and enable it to meet the needs of its citizens.

This project enables a small rural community to continue improving water quality and protecting public health without placing additional financial burden on the customers. The mayors and citizens of both Ardmore, Alabama, and Ardmore, Tennessee, have been supportive and offered encouragement as the development of this project has occurred. Now, the public will have a more reliable system with less chance of being exposed to sewage contamination, and a system that can handle both routine daily needs and surges when they occur.

System Partnerships

Arkansas Department of Agriculture

Project Name: Springdale Water & Sewer Commission

Assistance Recipient: Springdale Water & Sewer Commission

The City of Bethel Heights operated two wastewater treatment plants that were outdated and no longer working effectively. The system was out of compliance and the community faced environmental and public health risks. Raw sewage overflowed into homeowners' yards and into community parks and playgrounds. The City of Bethel Heights was under a Department of Environmental Quality consent administrative order and owed fines, so they needed to develop a solution.

After much consideration, Bethel Heights decided to partner with the nearby City of Springdale and regionalize with their wastewater treatment systems. This would allow Bethel Heights to abandon its aging wastewater treatment system, and Springdale would absorb the wastewater flows from Bethel Heights.

The City of Springdale received $2 million from the CWSRF, with $1 million in principal forgiveness, to construct approximately 6,000 linear feet of sanitary gravity sewer main. This will convey existing flows from Bethel Heights to Springdale Water Utilities wastewater collection system. The City of Springdale was also able to repair their sewer sanitary flow and expand their wastewater treatment plant to increase capacity to accept Bethel Height's wastewater for treatment.

Photo credit: Malcolm "Jamie" Jameison

Problem Solving / Creative Solutions

Virginia Department of Environmental Quality

Project Name: Berkeley Plantation Living Shoreline

Assistance Recipient: Malcolm "Jamie" Jameison

Assistance Amount: $626,288

The Virginia Department of Environmental Quality's (DEQ) Clean Water Financial Assistance Program utilized the state's Agricultural Best Management Program to provide bridge funding for project construction of the Berkeley Plantation Living Shoreline in Charles City, Virginia. A series of loans were provided to the landowner in phases to fit into program guidelines and the credit criteria of the program. After project completion, the principal of the loans was repaid through a combination of grant funds from the James River Association and agricultural cost share from the Virginia Agricultural Cost Share Program.

The project at Berkeley Plantation on the tidal James River includes the construction of 1,500 linear feet of living shoreline. A living shoreline is a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock. The ecological benefits of living shorelines include improved water quality, increased resilience to erosion, and contributions to carbon sequestration and nutrient cycling, as well as habitat enhancement for wildlife. The project also included the creation of 39,830 square feet of low marsh, 22,300 square feet of upland buffer and the incorporation of 16,570 native plants, such as salt meadow hay, big cordgrass, three-square, broadleaf arrowhead, and pickerelweed, to enhance habitat and stabilize the shoreline.

This closely coordinated partnership of the Virginia DEQ with the James River Association, the Colonial Soil and Water Conservation District, the Virginia Department of Conservation and Recreation is an exemplary instance of intergovernmental cooperation and how public funds can operate in conjunction with funding from the nonprofit sector to drive positive ecological and environmental outcomes. This project also serves as a model for local farmers, demonstrating that land can be restored without jeopardizing farm viability.

Recognized Projects

New Hampshire Department of Environmental Services

Project Name: Laconia Elm Street and Northern Lakeport Sewer Replacement

Assistance Recipient: City of Laconia

The historic neighborhood of Lakeport, in Laconia, New Hampshire, needed to replace its 100-year-old collection system, which was deteriorating due to infiltration and collapsing of its small clay pipes. With the help of an SRF planning grant, the City completed a study of the Lakeport sewer system and inputted the data collected into an Asset Management Plan. The Asset Management Plan became the primary resource to request additional capital funds to rehabilitate, replace, and properly maintain the sewer collection system. After completing the Plan, the City determined that replacement was the best solution to address the capacity and reliability problems facing the Lakeport sewer system. Based on the size and age of the pipes, they replaced the mains with 8-inch PVC sewer mains and installed new service laterals in lieu of lining and point repairs. The larger diameter system will provide benefits to the growing community by increasing capacity and reliability while reducing infiltration and potential overflows into the adjacent Paugus Bay, which serves as the City's drinking water supply.

As part of its planning and outreach efforts, the City's Department of Public Works sought stakeholder input from residents, businesses, the City Council, and other City Departments. To initiate the design and construction of the sewer replacement project, the City received a CWSRF loan for $4,059,527. By securing this loan, the City was then able to leverage additional funding through an American Rescue Plan Act grant. The sewer replacement project now serves as a model for planning and funding infrastructure improvements in the City.

Photo credit: City of Laconia

Maine Department of Environmental Protection

Project Name: Water Resource Recovery Facility Upgrades

Assistance Recipient: City of Saco

The City of Saco's aging water resource recovery facility struggled to maintain treatment during high tides and had combined sewer overflow (CSO) events at their last remaining CSO outfall. To address this, the City decided to implement upgrades including raising portions of the site three feet above base flood elevation and converting one of the existing clarifiers to a storage tank to use in wet weather events. In addition to a new headworks and influent pump station, the upgrades also include a new biological wastewater treatment system, which will reduce nutrient levels in the effluent and increase the system's treatment capacity. All these improvements are expected to greatly reduce discharges and increase resiliency during wet weather events.

To arrive at the proposed solution, the City assembled a Community Resiliency Committee which included conservation agents, residents, business owners, and City staff to provide feedback during the design process. Additionally, the City held virtual public committee meetings to keep residents informed. As construction progresses, the City continues to provide updates to residents through a project webpage on the Saco, Maine website that includes a live camera feed of the worksite. The project is slated for completion by June 2027.

Photo credit: City of Saco

New Jersey Department of Environmental Protection

Project Name: Hoboken Northwest Resiliency Park/ NHSA Interconnected CSO Enhancements

Assistance Recipient: City of Hoboken, NJ and North Hudson Sewerage Authority

The City of Hoboken and the North Hudson Sewerage Authority (NHSA) undertook two interconnected projects designed to address water quality and public health problems by reducing combined sewer overflows (CSOs), mitigating flooding, and enhancing urban resilience. First, the City and NHSA created Northwest Resiliency Park, a 5.4-acre project on a former industrial site. It was developed to serve as both recreational space and a critical flood mitigation solution for the City. The park features advanced stormwater management systems, including an underground detention tank with one-million-gallon capacity, that reduce flooding and improve water quality in surrounding neighborhoods. Then, NHSA coordinated alongside the City of Hoboken to construct a pumping station structure to convey water overflow to the newly constructed park's underground detention tank. Together, these projects have reduced CSO events in the sewersheds from an average of four per month to just four per year, reducing damage to property and assets. This project demonstrates Hoboken's innovative approach to blending flood mitigation with public amenities.

The projects were financed with $40 million in loans from the NJ Water Bank, with a total of $3 million of principal forgiveness. Total savings for this project is estimated to be over $20 million dollars over the life of the loans and the projects created over 350 jobs during construction.

Photo credit: City of Hoboken and North Hudson Sewerage Authority

Delaware Department of Natural Resources and Environmental Control

Project Name: Lewes Donovan Smith Manufactured Home Park (MHP)

Assistance Recipient: Lewes Board of Public Works (BPW)

Donovan Smith Manufactured Home Park (MHP) is a low-income community located outside the city limits of Lewes, Delaware. The community utilized an outdated gravity sewer collection system that was not performing well. Sanitary sewage was collected into several on-site holding tanks, which had to be pumped out several times per week for off-site disposal.

The MHP received a CWSRF loan of $2,742,146 for the elimination of the outdated onsite sewage treatment system and installation of a gravity sewer system, connecting the MHP to central sewer. These improvements will help prevent excess nutrients from entering the Broadkill River Watershed and meet the existing Total Maximum Daily Load (TMDL) limits for nitrogen, phosphorus, and enterococcus bacteria. Receiving 100% principal forgiveness on the loan allowed the community to avoid dramatically increasing rent paid by residents. The community also received over $2.8 million from the Drinking Water State Revolving Fund (DWSRF) program to install a new central drinking water system.

Photo credit: Lewes Board of Public Works

West Virginia Department of Environmental Protection

Project Name: Route 2- Phase II Collection System Extension & WWTP Upgrade

Assistance Recipient: Pea Ridge Public Service District (PSD)

The Village of Barboursville had a wastewater treatment lagoon that was impacted by flooding from nearby rivers during flood events. The Village determined that the most feasible solution was to decommission the lagoon and regionalize its treatment services with a nearby community, thereby sharing the costs of upgrading the existing Pea Ridge system. The project not only connected 2,471 customers from the decommissioned lagoon to the new system, but it also eliminated 110 failing septic systems and 43 failing home aeration units that were along the conveyance system extension. The upgrades to the Pea Ridge PSD took into consideration future flood conditions and all proposed controls and basins were constructed above the 100-year flood elevation level.

This project was split into three separate phases, allowing the CWSRF funds to be leveraged with funds from other entities and more competitive, manageable bids for the entire project. Additionally, the Village was able to secure $5,400,000 in principal forgiveness out of its CWSRF loan of $39,442,493. The collection system extension and treatment plant upgrades are expected to be completed by May 2025.

Photo credit: Pea Ridge Public Service District

Pennsylvania Infrastructure Investment Authority

Project Name: Meadville Area Sewer Authority- Wastewater Treatment Plant Upgrades

Assistance Recipient: Meadville Area Sewer Authority

The Meadville Area Sewer Authority received a $26 million loan from PENNVEST to make important wastewater treatment plant upgrades to their aging systems. The Meadville Area Sewer Authority replaced and upgraded their influent raw wastewater pumps, sequencing batch reactor (SBR) system, and UV system in an effort to proactively improve their aging wastewater treatment plant. The project will also include the installation of incoming power monitoring and a new standby emergency power source in addition to replacement of the existing roof system. These improvements will increase reliability at the treatment plant and reduce maintenance costs. It is estimated that the potential energy savings that will be realized through the increased efficiency of the SBR and UV systems will be approximately $170,000 annually. A higher level of treatment will also be achieved at the plant through the new processes implemented.

Photo credit: Meadville Area Sewer Authority

South Carolina Department of Health and Environmental Control

Project Name: Greeleyville Main Street Sewer Improvements

Assistance Recipient: Town of Greeleyville

Assistance Amount: $930,456

The Town of Greeleyville received a CWSRF loan with principal forgiveness to complete their Main Street Sewer Improvement Project. This project included installing more than 3,000 linear feet of gravity sewer lines to eliminate the need for 21 onsite septic systems. The runoff from these failing onsite septic systems contributed to contamination of two local watershed sub-basins both listed in the 2018 SC 303(d) List of Impaired Waters. Additionally, the Town of Greeleyville was ranked third in the State on the SCDHEC Priority List of Environmentally Distressed Communities for Sewer Needs as of April 2015 and was listed as an "Imminent Health Hazard" per the SCDHEC Declaration of Imminent Health Hazard Memorandum dated April 2008 due to chronic failure of onsite septic systems.

After completion of the Greeleyville Main Street Sewer Project, the failing septic systems were taken offline and over 1 million gallons of water annually will now be sent to Greeleyville Wastewater Treatment Facility. Due to the improvement of runoff water quality, all residents and natural resources downstream and adjacent to the project area will indirectly benefit from this project. The CWSRF principal forgiveness loan of $930,456 allowed the Town of Greeleyville to complete this project without placing the burden of increased utility rates or taxes on their community.

Photo credit: Town of Greeleyville

North Carolina Department of Environmental Quality

Project Name: Subaqueous Sanitary Sewer Project

Assistance Recipient: Lake Lure

The Town of Lake Lure, North Carolina, was experiencing maintenance and operational challenges with its 100-year-old collection system. The outdated design of the collection system meant that the main sewer line is located in the center of the lake — Lake Lure — and manholes were fitted with flushing valves to assist in flushing solids. The outdated design posed future emergency risks for the Town, as most of the collection system was inaccessible for repairs. Also, flushing of the system resulted in infiltration and inflow that hindered treatment of the wastewater and contributed to violations of the Town's wastewater permit effluent limits.

The Town received a CWSRF loan of $19,580,261 to help pay for the removal of the existing sewer out of the center of the lake and the installation of a new sewer/forcemain in a different location. The Town also is planning to relocate its wastewater treatment plant (WWTP) from its current location in the floodway to an area with a lower flood-risk. Lake Lure recently experienced catastrophic flooding from Tropical Storm Helene and the existing pump station was flooded along with the WWTP. A portion of the CWSRF funds will be used to perform emergency repairs to the pump station.

Photo credit: Lake Lure

Indiana Finance Authority

Project Name: Spider Creek Sanitary Sewer Overflow Storage Project

Assistance Recipient: City of Bedford

The City of Bedford experienced sanitary sewer overflows (SSOs) in Spider Creek due to the inability of the system to accommodate high flows. The Spider Creek SSO point is a major contributor to overflow events and releases sewage when the existing Spider Creek pump station cannot sustain wet weather flows. Bedford has an Agreed Order with the Indiana Department of Environmental Management to address discharges from the wastewater collection system.

Through a $8,340,000 CWSRF loan, this project will replace the undersized and aging Spider Creek lift station, eliminate SSOs to the 10-year 1-hour storm for SSO at one of the lift stations along Spider Creek, and reduce SSOs at several locations within the Westside sewer system. Addressing the SSOs along Spider Creek will reduce contaminants in the creek and improve water quality, benefitting the residents of Bedford.

This project would have significantly burdened residents of Bedford due to the cost. Multiple sources of loans and grant funds were secured to keep customer user rates at an achievable level for the community. By using SRF versus open market, it is estimated that Bedford saved approximately $1,379,389 in interest over the term of the loan.

Photo credit: City of Bedford

New Mexico Environment Department

Project Name: White Rock Water Resource Recovery Facility (WRRF)

Assistance Recipient: Los Alamos County

The White Rock Water Resource Recovery Facility (WRRF) serves a community of approximately 5,800 people in Los Alamos County. This WRRF was required to undergo major facility and process improvements due to more stringent discharge standards and to meet the County's water efficiency goals. Utilizing a $26 million loan from the New Mexico Environment Department, this project will construct a new WRRF facility. This new facility will optimize facility design for functionality, capital, and operation and maintenance costs. The project employs technologies that reclaim wastewater and reduce the demands on potable water resources by generating a reusable end product while utilizing means that minimize electricity demand, reduce stormwater pollution, and minimize manpower. The new facility will meet all environmental requirements as well as addressing water and energy efficiencies and addressing stormwater runoff concerns.

Photo credit: Los Alamos County

Oklahoma Water Resources Board

Project Name: Oklahoma City Water Utility Trust, Cybersecurity Improvements

Assistance Recipient: Oklahoma City Water Utility Trust

Assistance Amount: $55,009,383.19

Oklahoma City Water Utility Trust (OCWUT) received over $55 million in CWSRF assistance to implement critical cybersecurity upgrades. These cybersecurity improvements addressed an array of challenges through innovative technology and systems integration, ensuring long-term financial and operational sustainability without imposing undue financial burdens on the community. This project addresses the need for improved reliability, resiliency, and cybersecurity of OCWUT's critical systems.

OCWUT developed a comprehensive solution that included upgrading its utility billing system (SAP), replacing its end-of-life call center phone system and interactive voice response system (IVR), and modernizing the SCADA system firewalls to ensure continued cybersecurity support.

The upgraded software ensures compliance with National Institute of Standards and Technology (NIST) cybersecurity standards, protects water and wastewater systems, and maintains secure customer data and payment processing. The project represents a holistic approach to addressing emerging threats in a unique and forward-thinking manner, bolstering resiliency against both cyberattacks and enhancing water quality, public health and community resilience.

Texas Water Development Board

Project Name: Regional Wastewater Improvements, Phase III

Assistance Recipient: Sienna Regional Municipal Utility District

Sienna Regional Municipal Utility District received a $25 million CWSRF loan to address challenges associated with significant population growth combined with aging wastewater infrastructure. The District remedied this through a regionalization agreement with Missouri City. As part of the project, multiple package plants were decommissioned and replaced with a single upgraded treatment plant. As part of the improvements to the regional wastewater treatment facility, the existing oxidation ditches were upgraded to a complete mixed sludge process with nitrification for improved nutrient removal. Wastewater at the new plant is treated to a Type I reuse standard, which makes it suitable for agricultural applications where human contact with the reclaimed water is likely.

The consolidation of the treatment plants resulted in lower overall operation and maintenance expenses, which decreases the burden on ratepayers. It also means fewer outfalls to local surface waters and a lower environmental impact to the local watershed. The improvements to the treatment plant reduced the nutrient content and improved the overall quality of the effluent, while increasing the plant's treatment capacity up to 4.5 million gallons per day. The project was completed in November 2024.

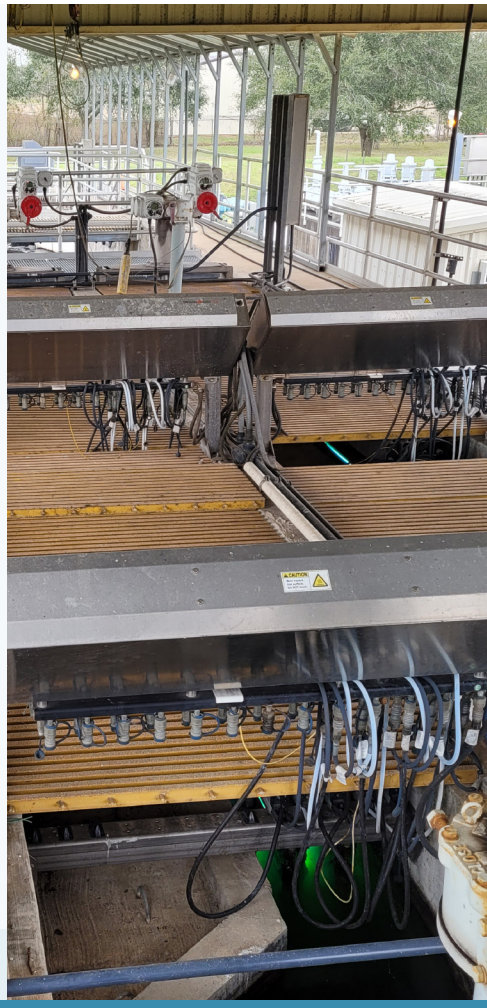


Photo credit: Sienna Regional Municipal Utility District

Missouri Department of Natural Resources

Project Name: Republic Wastewater Treatment Facility Expansion Project

Assistance Recipient: City of Republic

Located in a rural area of southwest Missouri, the City of Republic is experiencing rapid population growth due to an influx of new businesses. This population growth has strained the City's collection system and contributed to multiple effluent violations of its National Pollution Discharge Elimination System (NPDES) permit. To meet an enforcement deadline, the City developed a Capital Improvement Plan for treatment facility upgrades. The upgrades needed to both increase capacity and enhance treatment to account for future projected growth in the community. The upgrades also had to allow for additional treatment if needed, as the Stockton Lake Watershed (the watershed that the facility discharges to) is being reviewed for potential impairment.

The City worked with the Missouri Department of Natural Resources to secure funding for the upgrades. It obtained a $50 million CWSRF loan while interest rates were low and chose a Progressive Design-Build construction delivery approach to meet the project timeline goal. The remaining costs were covered by a State Infrastructure Program grant for $25 million and a variety of additional funding sources. The upgrades will increase the current facility's design flow from 3.2 to 5.0 million gallons per day, install components that allow for advanced biological nutrient removal, and enhance supervisory control. The new secondary treatment train will include a chemical feed system that allows for additional treatment and stricter nutrient limits, if needed.

Photo credit: City of Republic

Colorado Water Resources and Power Development Authority

Project Name: Clifton Sanitation District Photovoltaic and Battery Project

Assistance Recipient: Clifton Sanitation District

Assistance Amount: $3,000,000

The Clifton Sanitation District is one of the largest public utilities in Western Colorado, providing wastewater service for over 20,000 people in unincorporated Mesa County. The District is making improvements to ensure operational resiliency from energy grid unreliability and rising energy costs while protecting affordability for its ratepayers. The District created its first energy inventory to gain understanding of their energy use, as they are expanding operations to meet a booming regional population. The inventory revealed that 73% of the District's GHG emissions were caused by consumption of electricity from the local grid.

The District is re-sourcing its electricity supply to more reliable, onsite energy generation from a 4-acre solar array on a District-owned parcel unusable for treatment due to County setback requirements. The photovoltaic array will offset the District's annual consumption of over 2,000,000 kilowatt hours of electricity by 125%. The project will eliminate over 954 metric tons of carbon emissions annually and provide over 500,000 kilowatt hours of energy to support the grid. The project transforms underutilized land into an asset, which will offset the District's annual electricity consumption by 125%. The district will sell the surplus energy to the local utility to generate $180,000 annually in extra revenue to help fund capital projects and offset operational needs. This will help stabilize utility rates and allows for energy banking with the utility to supply future expansion.

Photo credit: Clifton Sanitation District

Water Infrastructure Finance Authority of Arizona

Project Name: Wastewater Treatment Plant Rehab and Energy Savings Project

Assistance Recipient: City of Eloy

Assistance Amount: $3,499,836

The City of Eloy is a small, rural community located halfway between Phoenix and Tucson. Over the last 40 years, Eloy's economy has been largely transitioning from a vibrant agricultural hub to a more industrial and service sector economy, including automobile manufacturing. During this transition, the City's domestic wastewater treatment plant infrastructure began to fail. Four of the five blowers for the WWTP's aeration basins failed, and the fifth was reaching the end of its useful life. At the same time, increasing energy costs made the treatment of wastewater less and less economical.

To solve this problem, Eloy sought CWSRF financing to replace the failed blowers with energy efficient turbo blowers; replace leaking blower piping, damaged conduit and wires, and the 22-year-old aeration basin control panel; and install solar energy generation systems at the WWTP. The $3.5 million loan for the project included $1.1 million in forgivable principal.

Since project completion in September 2024, the upgrades have offset energy use by 138% at the headworks and 58% at the blower building. It has also increased the reliability of the WWTP for the more than 1,850 domestic connections from which it collects water.

Photo credit: City of Eloy

Alaska Department of Environmental Conservation

Project Name: Mountain Point I&I Study

Assistance Recipient: Ketchikan Gateway Borough

The Mountain Point Wastewater collection system in the Ketchikan Gateway Borough, which also serves the Native Village of Saxman, was facing inflow and infiltration issues. Through a $100,000 CWSRF loan and a $75,000 Sustainable Infrastructure Planning Project (SIPP) loan from the State of Alaska, the Village of Saxman, in partnership with the Ketchikan Gateway Borough, will work to identify problem areas in the system and develop a plan that outlines potential solutions. The plan will present a summary of deficiencies and findings and a capital projects list that includes planning documents and cost estimates. This study of the system's inflow and infiltration issues is a prime example of the intended use of a SIPP loan and, once completed, should lead to a capital construction project.

The Ketchikan Gateway Borough will benefit from this system partnership by rectifying Saxman's sewer collection system issues, which in turn will reduce the stress it will have on the Mountain Point WWTP. To facilitate the project, the Borough has pledged its wastewater operators and vactor truck to clean the Borough and the Native Village of Saxman sewer mains in advance of mobilization.

Photo credit: Ketchikan Gateway Borough

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