

2017 ANNUAL REPORT

CLEAN WATER STATE REVOLVING FUND PROGRAMS



Years of CWSRF Success!



Dear Colleagues,

This past year we reached a major milestone in the Clean Water State Revolving Fund (CWSRF) Program – in passing the 30 year mark of operation. I cannot imagine that anyone at the beginning of this unique experiment in cooperative federalism would have envisioned the extraordinary accomplishments that the States have achieved. In terms of the most important programmatic measure, assistance provided, the 51 programs have provided assistance totaling over \$126 billion in 38,441 assistance agreements.

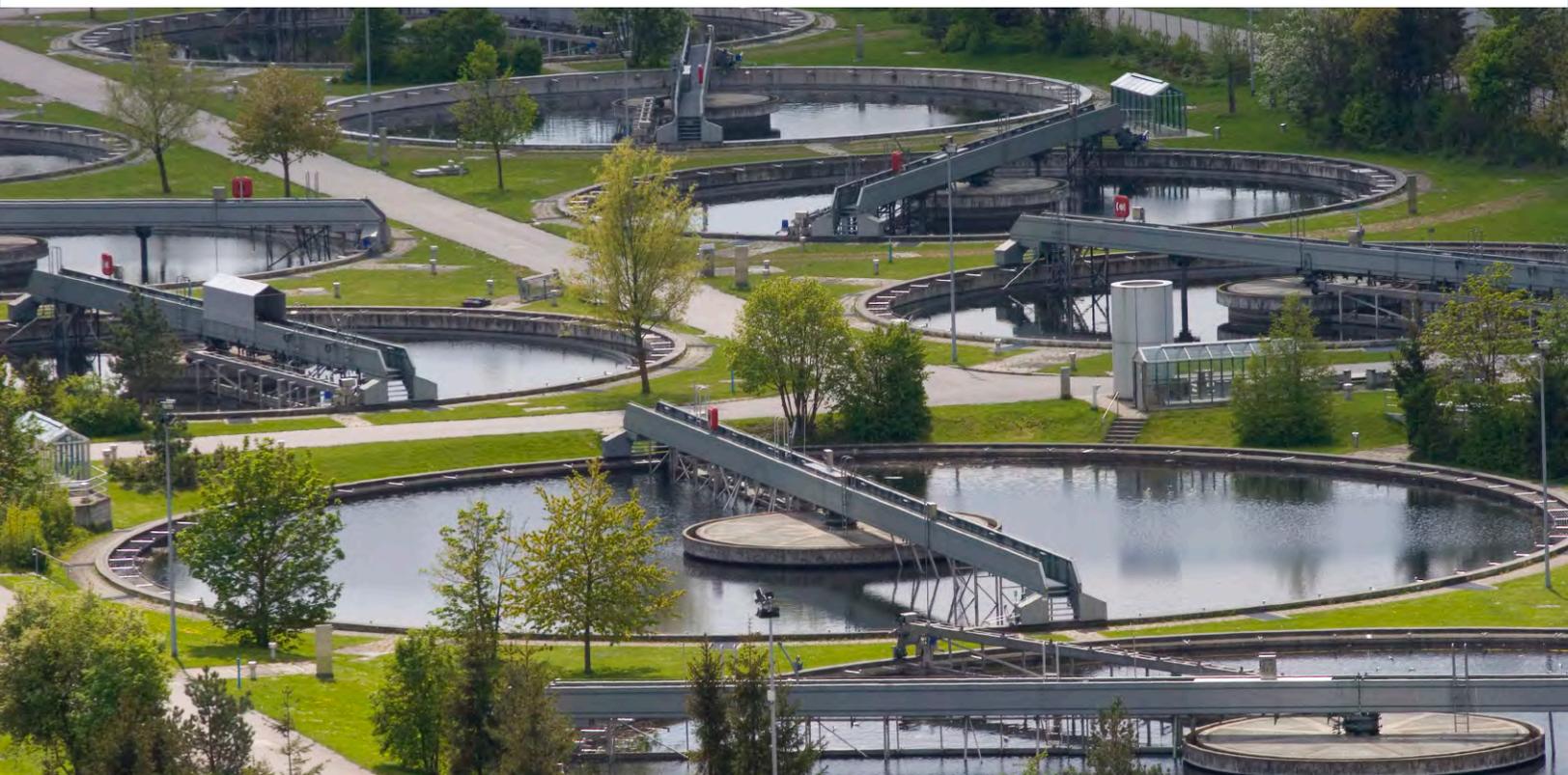
The longstanding goals of the program are to achieve the greatest environmental and public health benefits possible through financing projects across a very wide range of eligibilities and to ensure that the funds are used efficiently in perpetuity. In the pursuit of these goals, the CWSRF programs have provided recipients significant subsidies in their assistance. In this regard, I would underscore that over the past 30 years the CWSRF programs have enabled thousands of communities to build needed water quality infrastructure that otherwise would not have been built due to the lack of financial capacity.

I am pleased to provide the 2017 CWSRF Program's Annual Report that documents the history and growth of this important financial program. In addition to summarizing key financing and environmental performance information, our focus this year is on celebrating our 30th Anniversary. We have included materials displayed at this year's SRF Training Workshop in Indianapolis, IN, and highlighted those CWSRF projects that are recipients of PISCES recognition certificates. Hats off to the regions and states!

Sincerely,



Andrew Sawyers, Ph.D., Director
Office of Wastewater Management
Office of Water
United States Environmental Protection Agency





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30 Years of CWSRF Success

2017 marks 30 years of Clean Water State Revolving Fund success! Over the course of those 30 years, the 51 programs (50 states and Puerto Rico) have provided over \$126 billion in assistance through 38,441 assistance agreements. Many of the wastewater infrastructure assets that have been financed are largely out of the public eye, and maintaining them is of critical importance to the nation. But where did the revolving funds originate, and how did they come to exist as they do today?

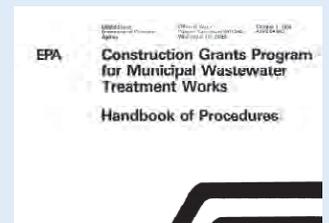
The Water Pollution Control Act Amendments of 1956 created the Construction Grants Program. Through the subsequent decades, this grant program provided approximately \$60 billion in funding for the construction of municipal wastewater treatment plants.

Though successful, Congress recognized that the time had come to shift away from a direct grants program. On February 4, 1987, the 100th Congress of the United States of America passed H.R. 1, the Water Quality Act of 1987. This bill, codified as Public Law 100-4, phased out the Title II Construction Grants and added Title VI, which authorized the State Water Pollution Control Revolving Funds.

Title VI created a truly innovative program that fundamentally changed the landscape of wastewater infrastructure financing by shifting funding from a federal program to state managed programs, and by shifting funding away from grants to loans and other forms of assistance. It also created a strong federal and state partnership, since every dollar contributed by the federal government must be matched at 20 percent by the state. In the spirit of cooperative federalism, each state makes funding decisions based on its unique environmental and economic priorities. This inherent flexibility allows states to provide low-cost financing for critical water infrastructure projects and to direct resources where they are needed most.

**Proven
Integrity
and
Performance**

The Environmental Protection Agency (EPA) released initial guidance for the State Revolving Fund (SRF) Programs on January 28, 1988. This guidance explained the authorization, allotments available to the state programs, eligible

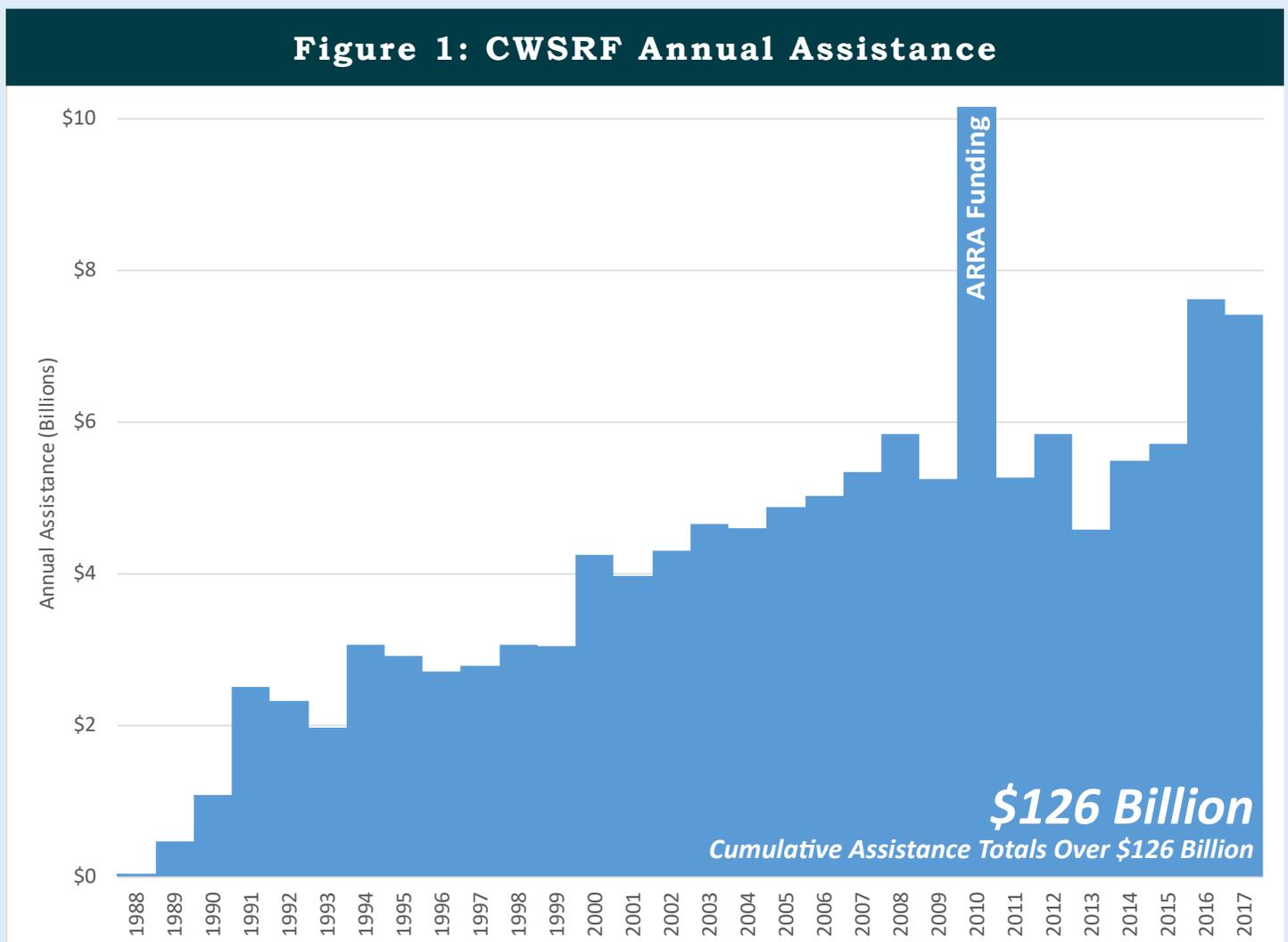


activities that could be funded, and the framework for structuring and operating the program.

The Clean Water State Revolving Fund (CWSRF) Programs function like environmental infrastructure banks by providing low interest loans to eligible recipients for water infrastructure projects. As money is paid back into the fund, the state makes new loans to other recipients. Repayments of loan principal and interest earnings are recycled back into individual state CWSRF programs to finance new projects that allow the funds to “revolve” at the state level over time.

The program generally remained unchanged until the passage of the Water Resources Reform and Development Act (WRRDA) of 2014, which made significant changes to the program, including expanding eligibility categories for CWSRF assistance, requiring loan recipients to prepare fiscal sustainability plans, using additional loan subsidies, developing affordability criteria, and increasing loan maturities to the lesser of 30 years or design life.

Figure 1: CWSRF Annual Assistance

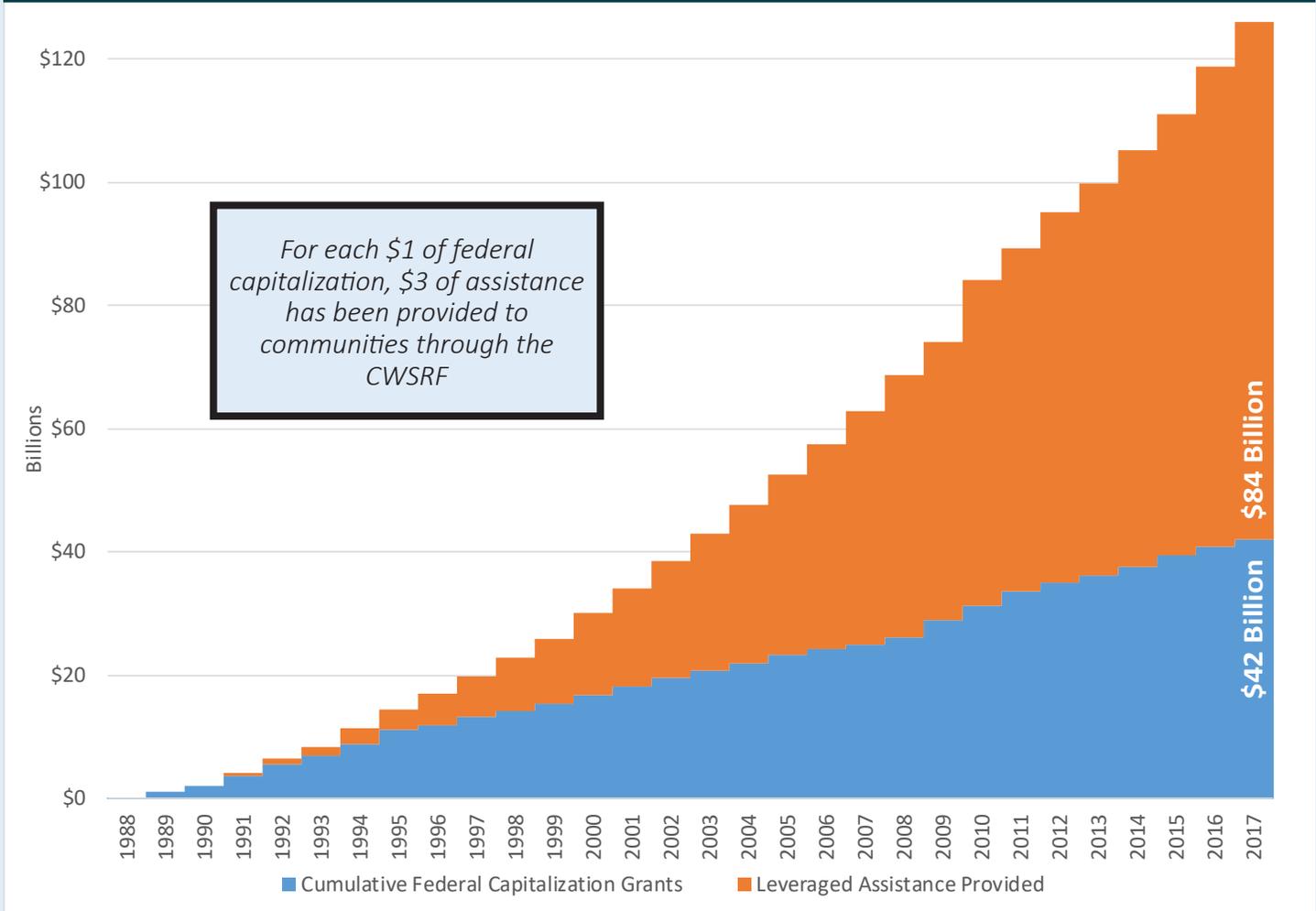


In 1988, the initial year of the revolving fund programs, \$37.7 million in assistance was provided. This number rapidly climbed to almost \$2.5 billion in 1991, and over \$3 billion in 1994.

Fast forward to 2017, and the Clean Water State Revolving Fund Programs surpassed \$126 billion in assistance for a wide range of water quality infrastructure projects. This remarkable level of assistance is made possible due to sound state management, leveraging, and the revolving structure of the CWSRF.

**Recognizing
Performance,
Demonstrating
Results**

Figure 2: Assistance Provided and Federal Capitalization Grants



EPA’s capitalization grants to the states provide the seed funding for the State Revolving Funds. On March 30, 1988, EPA awarded the first CWSRF capitalization grants to Tennessee and Texas and subsequently made awards to the other 48 states and Puerto Rico. In the last 30 years, \$42 billion in federal capitalization grants awarded to the CWSRF programs has enabled the states to fund over \$126 billion in assistance. This equates to approximately three dollars of project assistance for each dollar of federal capitalization.

The sound management of the state programs has ensured that the CWSRF remains at the forefront of funding innovative solutions for treating wastewater, addressing stormwater runoff, tackling non-point source pollution, and addressing a multitude of other environmental issues facing this nation.



Cleaning Our Waters, Renewing Our Communities, Creating Jobs

The Clean Water State Revolving Fund Program has enabled each state to address its areas of need as they see fit. The passage of WRRDA in 2014 expanded CWSRF eligibilities, which allowed the states to fund additional types of projects. Over the last 30 years, 96 percent of funding has gone to publicly owned treatment works (POTWs) in the form of upgrades to secondary and advanced treatment and other categories. Approximately 4 percent of assistance provided, or \$4.6 billion, has gone to nonpoint source and other projects, such as agricultural best management practices, silviculture, estuary assistance, and land conservation.

The CWSRF programs have provided needed assistance to smaller communities. Since 1988, \$14.1 billion has been provided through over 20,500 assistance agreements for projects to communities with populations fewer than 3,500 people. Additionally, \$13.9 billion has been provided through over 5000 assistance agreements for projects to communities with populations between 3,500 and 9,999 people.

Figure 3: CWSRF Needs Categories Cumulative Funding (Billions)

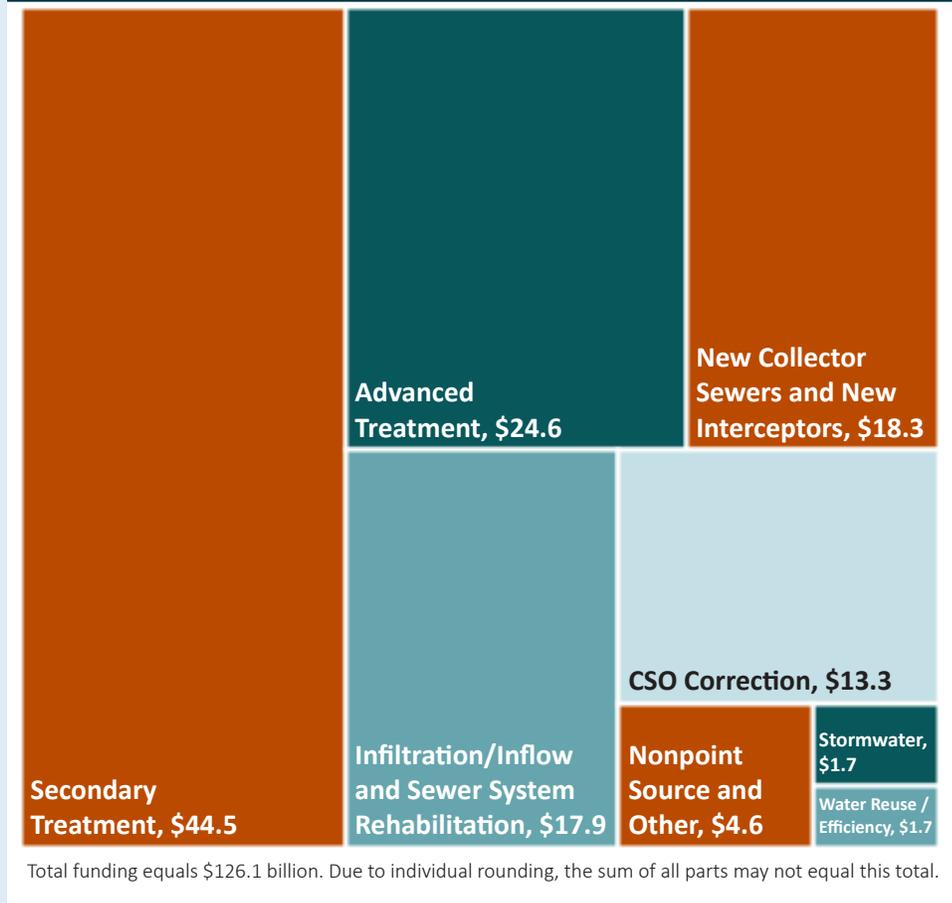
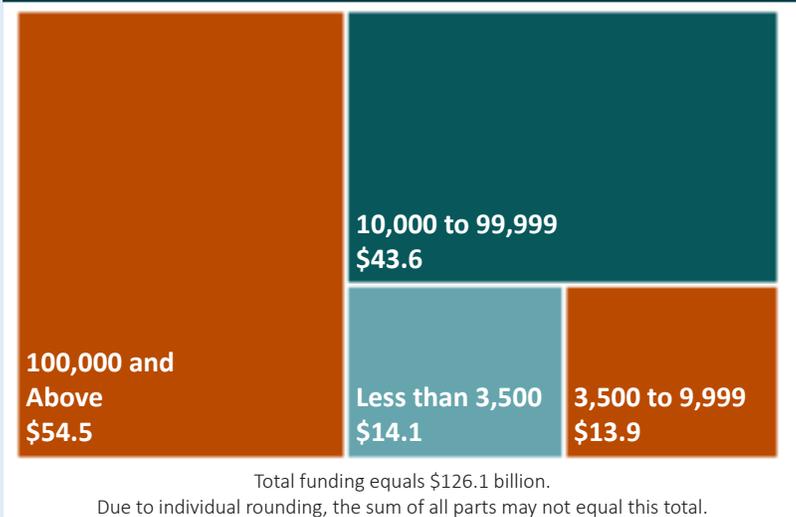


Figure 4: Cumulative Assistance by Population Size (Billions)



A Stronger Nation Through Cleaner Water; A Stronger Economy Through Sustainable Investments

Clean Water State Revolving



Clean Water State Revolving Fund

Low Cost Financing for Wastewater Infrastructure Since 1987

2017 CWSRF 30th anniversary!

2016

CWSRF programs provide over \$7.6 billion in financial assistance through 1,362 agreements

\$118b

WATER RESOURCES REFORM AND DEVELOPMENT ACT

2014

WRRDA is signed into law on June 10, 2014, amending the CWSRF for the first time in the program's history

AMERICAN RECOVERY AND REINVESTMENT ACT

2009

ARRA legislation is signed into law February 17, 2009 appropriating \$4 billion to the CWSRF and introducing the Green Project Reserve, Additional Subsidization, Buy American, and Davis Bacon requirements

\$75b

The Clean Water State Revolving Fund: Tapping its Untapped Potential provides the first compilation of the nontraditional project eligibilities under the original CWSRF statutory authority

2007

EPA hosts national conference on *Paying for Sustainable Water Infrastructure: Innovations for the 21st Century*

Annual assistance provided reaches \$5 billion for the first time, funding 1,859 projects

2006

Over 1,000 nonpoint source projects are funded for the first time in one year: 1,183 projects totaling \$370.3 million

CWSRF Benefits Reporting System (CBR) is created to document the environmental and public health benefits of CWSRF financed projects

2005

Cumulative assistance provided tops \$20 billion

1998

The first EPA/State Workgroup meeting takes place in February

\$22.9b

Fund Timeline



1997

National Information Management System (NIMS) for CWSRF is created, providing a central source for programmatic and financial data

1996

The Clean Water State Revolving Fund Funding Framework is released, which articulates a process for identifying and prioritizing nontraditional projects in an effort to move towards a watershed approach



The Drinking Water State Revolving Fund, modeled after the success of the CWSRF, is created by the Safe Drinking Water Act

1994

Cumulative assistance provided exceeds \$10 billion
For the first time, annual leveraged bonds issued reaches \$1 billion

\$11.4b



EPA issues CWSRF Interim Final Rule
Maryland and Washington fund the first nonpoint source projects totaling over \$300,000

1990



Iowa and New Jersey are the first states to leverage, yielding a total of \$79.2 million
EPA's Environmental Financial Advisory Board is created, devoting a significant amount of attention to the CWSRF

1989

EPA issues CWSRF Initial Guidance and Letter of Credit Brochure
On March 30, the first CWSRF capitalization grants are awarded to Tennessee and Texas

1988

The Council of Infrastructure Financing Authorities is established

ENACTMENT OF TITLE VI, CLEAN WATER ACT:

1987

Amendments to the Clean Water Act pass Congress, creating the Clean Water State Revolving Fund and phasing out the Construction Grants Program

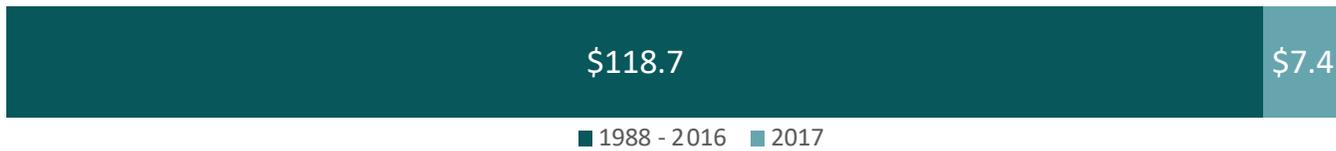
1984

Completion of the report, *Study of the Future Federal Role in Municipal Wastewater Treatment*, recommending the creation of state revolving



2017 Performance Highlights

Figure 5: CWSRF Cumulative and Annual Assistance



In 2017, the CWSRF programs extended 1,484 loans and provided more than \$7.4 billion in assistance to a wide variety of eligible borrowers. 2017 marks the third highest annual funding level in the history of the programs.

A hallmark of the CWSRF programs is the below market interest rates that they are able to offer. The weighted average interest rate for CWSRF loans dropped from 1.6 percent to a historic low of 1.4 percent in 2017, a significant savings from the prevailing market interest rate of 3.5 percent. The CWSRF programs' ability to offer below market interest rates is one of the most powerful tools that states use to ensure that financing terms align with the borrower's ability to repay the loan. States are aware of the infrastructure financing challenges faced across the country and continually seek to provide the most cost effective solutions.

CWSRF programs have other tools at their disposal that enable them to provide further cost savings above and beyond the savings provided by low interest rates. Referred to as additional subsidization, these tools include principal forgiveness, grants, and negative interest loans. Since 2009, the programs have provided almost \$4.6 billion in additional subsidization. This additional financial assistance is critical to the CWSRF programs' ability to reach economically stressed communities. Over \$300 million, approximately 4.1 percent of the assistance provided in 2017, was provided in the form of principal forgiveness and direct grants.



Reaching Communities, Achieving Success

The CWSRF programs provided 191 assistance agreements to hardship (disadvantaged) communities, as defined by the state, in 2017. These communities received over \$780 million in 2017, up from \$535 million in 2016. Criteria for identifying hardship communities varies from state to state, and it is possible that a significant amount of assistance to these communities is not captured in the data reporting system.

Figure 6: Funding for Hardship (Disadvantaged) Communities 2013 - 2017



CWSRF programs flexible financing options have allowed these programs to pass on significant costs savings.

Figure 7: Gross Leveraged Bonds Issued 2008 - 2017



Rising demand for the CWSRF programs has led states to turn to leveraged bonds to raise funds for projects. High bond issue levels were standard in 2008 - 2011, then fell off from 2012 - 2015. Strong demand for the cost savings of borrowing from the CWSRF programs prompted a significant increase in gross leveraged bonds issued in 2016 and 2017. Low interest rates and sustained wastewater infrastructure needs likely will contribute to a continuation of these higher bond issues in the near future.



2017 Financial Overview

The Clean Water Act requires an annual financial audit of the 51 state-level CWSRF programs. Each state and Puerto Rico conducts these audits according to the generally accepted accounting standards (GAAP) established by the Governmental Accounting Standards Board (GASB). States often define their CWSRF programs as ongoing enterprise funds under the GASB definitions of funds.

2017 Financial Highlights

- The CWSRF programs provided over \$7.4 billion in funding. In just the past two years alone, over \$15 billion in low cost financing went to 2,825 high priority projects.
- Cumulatively, the CWSRF programs have provided over \$126 billion over the past 30 years.
- Almost 3 percent increase (\$1.4 billion) in CWSRF Program Equity (net assets), for a cumulative total of \$49.6 billion.
- Nearly \$6.3 billion was disbursed for projects, which is a \$200 million increase from the previous year.
- Earnings from loans and investments exceed bond and administrative expenses by \$272 million.
- Leveraged bond proceeds added an additional \$2.2 billion to program cash flow, which is \$351.8 million greater than the amount added in the previous year.

National aggregate financial statements have been developed using data entered in EPA's National Information Management System between July 1, 2016 and June 30, 2017. Because the 51 CWSRF programs are independent state-level entities, no nationally audited CWSRF program financial reports are available. The financial statements are non-audited, cash flow-based financial reports. The four statements are described below.

Statement of Fund Activity (Page 12)

Provides an overview of major indicators of fund activity, including capitalization grant levels, project commitments, project disbursements, and subsidies provided. Both annual and cumulative data are given.

Statement of Revenues, Expenses, and Earnings (Page 13)

Describes the overall performance of the CWSRF fund over the reporting period that is reflected in the increase or decrease in net assets.

Statement of Cash Flows (Page 14)

Provides a detailed accounting of the actual flow of cash into and out of the CWSRF fund.

Statement of Net Assets (Page 15)

Describes CWSRF assets and liabilities through the end of the fiscal year. Assets include financial assets and capital assets. Liabilities include both current and long term liabilities. CWSRF assets include grant funds that have been drawn from the federal treasury to date, but do not include total grant awards. CWSRF assets also include state matching contributions that have been deposited in the fund.



Statement of Fund Activity (Millions of Dollars)

Annual Fund Activity	FY 2016	FY 2017
Federal Capitalization Grants	1,517.9	996.5
State Matching Funds	284.8	215.2
New Funds Available for Assistance	7,260.6	6,577.2
Executed Assistance Agreements	7,625.2	7,422.9
Project Disbursements	6,078.4	6,285.3
Cash Draws from Federal Capitalization Grants	1,505.7	1,259.7
Total Annual Subsidy	183.0	294.5
Grants	46.8	100.7
Negative Interest	0.0	0.0
Principal Forgiveness	136.2	193.8
Cumulative Fund Activity		
Federal Capitalization Grants	40,982.2	41,978.7
State Matching Funds	7,654.0	7,869.2
Funds Available for Assistance	121,562.0	128,139.2
Executed Assistance Agreements	118,683.4	126,106.3
Project Disbursements	103,819.6	110,104.9
Cash Draws from Federal Capitalization Grants	39,249.2	40,508.9
Total Cumulative Subsidy	4,294.0	4,588.6
Grants	532.4	633.1
Negative Interest	0.0	0.0
Principal Forgiveness	3,761.6	3,955.5

Cumulative Executed Assistance Agreements as a percent of Funds Available for Assistance (“pace”) remains at 98 percent, continuing the trend of successfully directing CWSRF funding towards projects that address many important water quality problems. Below market interest rates, flexible financing options, and effective outreach contributed to the ongoing success of the CWSRF programs.



Statement of Revenues, Expenses and Earnings (Millions of Dollars)

Operating Revenues	FY 2016	FY 2017
Interest on Investments	251.8	256.7
Interest on Loans	1,009.9	973.5
<i>Total Operating Revenues</i>	1,261.7	1,230.2
Operating Expenses		
Bond Interest Expense	874.3	879.7
Amortized Bond Issuance Expense	19.4	18.1
Administrative Expenses	57.1	60.1
Additional Subsidy Provided	183.0	294.5
<i>Total Expenses</i>	1,133.8	1,252.3
Nonoperating Revenues and Expenses		
Federal Contribution (Cash Draws)	1,505.7	1,259.7
State Contributions	172.2	150.4
Transfers from (to) DWSRF	(12.9)	(1.9)
<i>Total Nonoperating Revenues (Expenses)</i>	1,665.0	1,408.2
Increase (Decrease) in Net Assets	1,792.9	1,386.1
Net Assets		
Beginning of Year	46,425.4	48,218.2
End of Year	48,218.2	49,604.3

Operating Expenses exceeded Operating Revenue by \$22.1 million. This small deficit reflects the fact that \$294.5 million in additional subsidy was provided in FY 2017 to promote non-traditional projects and support disadvantaged communities.

Revenue from loans and investments exceeded bond and administrative expenses by \$272.4 million.



Statement of Cash Flows (Millions of Dollars)

Operating Activities	FY 2016	FY 2017
Cash Draws from Federal Capitalization Grants	1,505.7	1,259.7
Contributions from States	172.2	150.4
Loan Disbursements (Including Additional Subsidy)	(6,078.4)	(6,285.3)
Loan Principal Repayments	4,102.3	3,930.7
Interest Received on Loans	1,009.9	973.5
Administrative Expenses	(57.1)	(60.1)
<i>Total Cash Flows from Operating Activities</i>	654.5	(31.1)
Noncapital Financing Activities		
Gross Leveraged Bond Proceeds	1,863.6	2,215.4
Bond Issuance Expense	(14.1)	(19.4)
State Match Bond Proceeds	112.6	64.8
Cash Received from Transfers with DWSRF	(12.9)	(1.9)
Interest Paid on Leveraged and State Match Bonds	(874.3)	(879.7)
CWSRF Funds Used for Refunding	(26.4)	(23.0)
Principal Repayment of Leveraged Bonds	(1,483.8)	(1,464.5)
Principal Repayment of State Match Bonds	(106.8)	(65.8)
<i>Net Cash Provided by Noncapital Financing Activities</i>	(542.2)	(174.1)
Investing Activities		
Interest Received on Investments	251.8	256.7
Release (Deposit) of Leveraged Bond Debt Service Reserve	521.3	39.2
<i>Net Cash Provided by Investing Activities</i>	773.1	295.9
Net Increase (Decrease) in Cash and Cash Equivalents	885.4	90.7
Cash and Cash Equivalents		
Beginning of Year	12,555.0	13,440.4
End of Year	13,440.4	13,531.1



Statement of Net Assets (Millions of Dollars)

Assets	FY 2016	FY 2017
Cash and Cash Equivalents	13,440.4	13,531.1
Debt Service Reserve - Leveraged Bonds	4,022.9	3,983.7
Loans Outstanding	50,753.5	52,813.5
Unamortized Bond Issuance Expenses*	251.2	252.5
<i>Total Assets</i>	68,467.9	70,580.9
Liabilities		
Match Bonds Outstanding	604.4	603.5
Leveraged Bonds Outstanding	19,645.3	20,373.1
<i>Total Liabilities</i>	20,249.7	20,976.6
Net Assets		
Federal Contributions (Cash Draws)	39,249.2	40,508.9
State Contributions	5,497.8	5,648.2
Transfers - Other SRF Funds	(524.8)	(526.8)
Other Net Assets	3,996.1	3,974.0
<i>Total Net Assets</i>	48,218.2	49,604.3
Total Liabilities and Net Assets	68,467.9	70,580.9

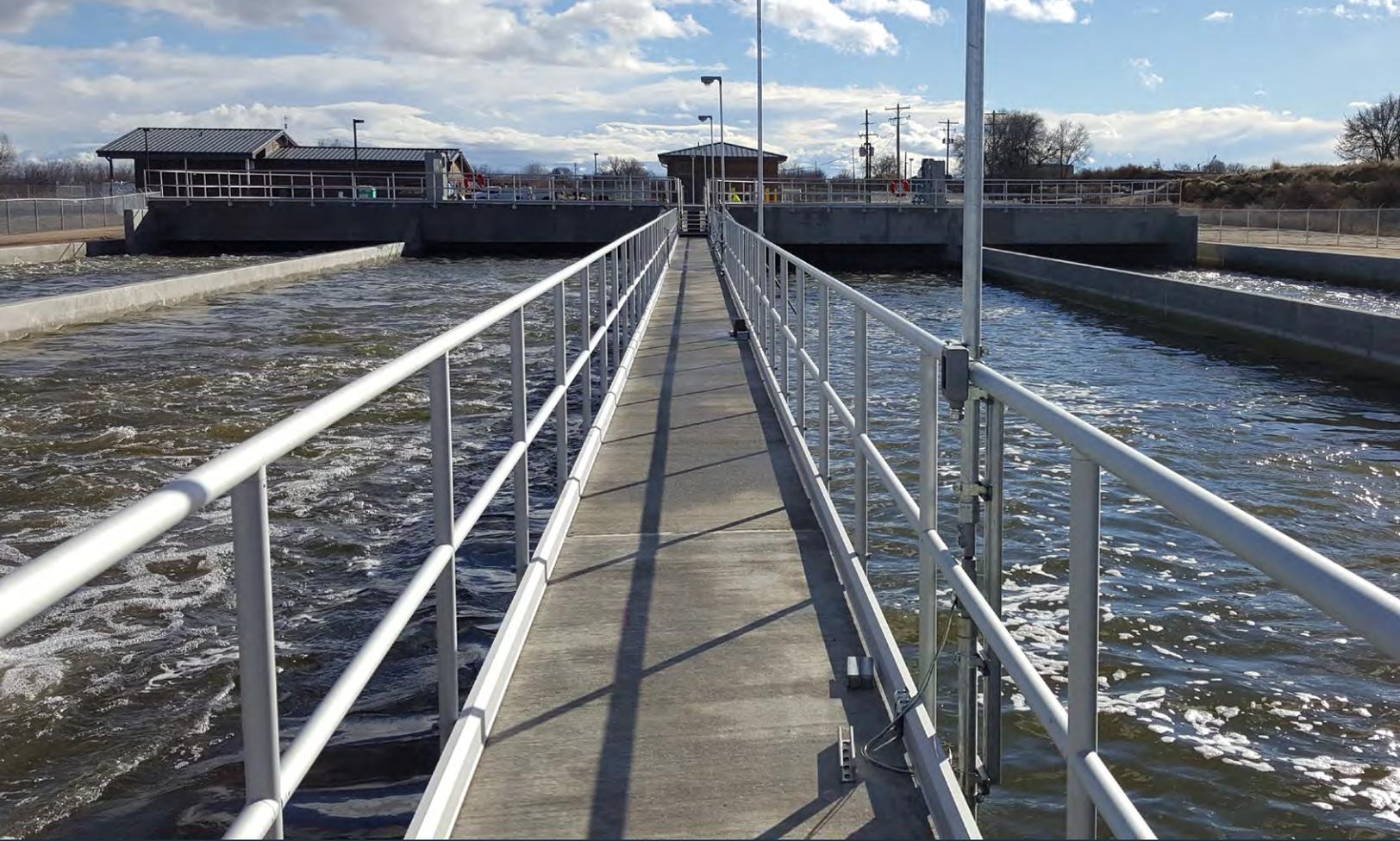
* Unamortized Bond Issuance Expenses are costs that have been incurred but have not been fully recognized (amortized). These costs will be recognized (amortized) over time over the remaining life of the bonds outstanding, similar to a pre-paid expense, and consistent with GAAP.

Loans Outstanding increased by over \$2 billion, and is a main contributor to the over \$2.1 billion increase in Total Assets.

Federal and State Contributions helped increase Net Assets by nearly \$1.4 billion.

The \$22.1 million decrease in Other Net Assets is mainly due to the increased use of additional subsidy in FY 2017.





Highlighted CWSRF PISCES Projects

The Clean Water State Revolving Fund's Performance and Innovation in the SRF Creating Environmental Success (PISCES) program allows assistance recipients to gain national recognition for exceptional projects funded by the CWSRF. Participating state programs each nominated one project that demonstrates one or more of the evaluation criteria:

- Water Quality, Public Health, or Economic Benefits
- Sustainability
- Innovation

Projects eligible for recognition may be any size but must have an executed assistance agreement in place. Also, projects may be operational or in the planning phase. After all project nominations were reviewed, EPA selected five exceptional projects for further recognition. These five projects demonstrated excellence in matching the PISCES criteria and pushed the envelope for being innovative in using the CWSRF to achieve clean water for their communities. Several additional projects closely demonstrated this level of innovation and are recognized as an Honorable Mention. This Annual Report highlights both the Exceptional Projects and those projects chosen as Honorable Mention!



Exceptional Projects

**PROGRAM: ARKANSAS CLEAN
WATER REVOLVING LOAN FUND**

**RECIPIENT: LITTLE ROCK
WASTEWATER UTILITY**



**PROJECT: SEWER SERVICE
LINE REPLACEMENT
PROGRAM**

Under a Consent Order to reduce inflow and infiltration (I/I) to their collection system to stop manhole overflows, the Little Rock Wastewater Utility has spent millions of dollars to rehab the collection system and are starting to hit diminishing returns. As a result, the Utility developed a Sewer Service Line Replacement Program to work on reducing a different source of I/I into the system. The program is designed to assist homeowners in paying for the replacement of the service line from their home to the sewer main. It is an ongoing effort to reduce I/I which will decrease the cost of sanitary sewer collection and treatment as well as the customer's monthly bill. The partial reimbursement program reimburses homeowners up to \$2,500 after their service line is replaced by a plumber and inspected by the Utility. The program is funded with a loan from the Arkansas CWSRF combined with a fund created using

revenues from a \$1 surcharge on each customer's sewer bill.

The Utility encouraged homeowners to take advantage of the financial benefit and replace their service line using eye-catching colorful inserts included with sewer bills. The Utility worked with the Arkansas CWSRF program to ensure that therevolving fund could provide assistance to individual homeowners. Because CWSRF funds were loaned to the Utility, the innovative reimbursement structure allowed individual homeowners, who are not usually eligible for Arkansas CWSRF assistance, to benefit from the low-interest loan program. The homeowner is responsible for contracting for the work, ensuring that the CWSRF and the Utility do not face the liability of entering a homeowner's property to replace the lines. This project makes innovative use of new CWSRF project eligibilities, allowing the CWSRF to directly assist homeowners with shouldering the burden of replacing the service line from their home to the utility sewer collection system, an activity that was not previously eligible in the CWSRF.



PROGRAM: DELAWARE CWSRF

RECIPIENT: DNREC PARKS AND WASTE & HAZARDOUS SUBSTANCES

PROJECT: NVF YORKLYN SITE WETLAND PROJECT

The first of its kind in Delaware, this brownfield to wetlands conversion project will use natural systems to remediate water bodies impaired by decades of industrial activity. The loan will be repaid from Hazardous Substances Control Act (HSCA) tax revenues and is secured by a revenue pledge in the form of a Master-Lease

Purchase Agreement with the Department of Natural Resources and Environmental Control (DNREC) as the Lessee and the CWSRF as the Lessor. A memorandum of understanding between the parties gives DNREC the right to withhold HSCA tax revenues to pay annual CWSRF lease payments. This innovative lease-purchase financing structure allows the Division of Waste & Hazardous Substances (WHS)

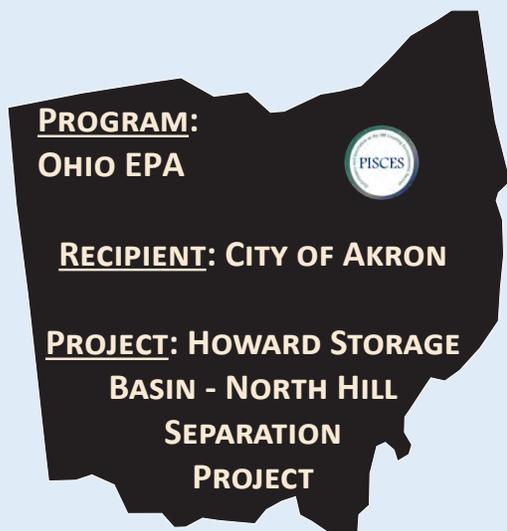




to borrow from the CWSRF without obligating the State to any indebtedness associated with a traditional loan agreement. In addition, the overall project involves a cooperative partnership between multiple state agencies (DNREC-CWSRF, DNREC-WHS, DNREC-Parks and Recreation), the federal government (EPA-Brownfields), and the private sector.

The Delaware CWSRF provided \$3.3 million in financing to create 2 acres of wetlands by replacing 29,000 tons of soil contaminated with zinc with clean fill material and topsoil.

The wetlands will improve water quality, store stormwater to mitigate flooding, help flush the remaining zinc-impacted groundwater to the recovery trench, and support the economic redevelopment of the Fiber Mills District in Yorklyn. An additional \$1 million loan will create a series of additional wetlands around the project site to protect residents and buildings from flooding and runoff. Without the financing and spirit of partnership made possible by the Delaware CWSRF, the remediation of the site was estimated to take another 40 years and cost an additional \$10.7 million.

PROGRAM:
OHIO EPA

RECIPIENT: CITY OF AKRON

PROJECT: HOWARD STORAGE BASIN - NORTH HILL SEPARATION PROJECT



Akron received an innovative financing package from Ohio EPA's Water Pollution Control Loan Fund (WPCLF) program to construct a 2.4 million-gallon concrete storage basin to reduce combined sewer overflows into the Little Cuyahoga River. Akron will borrow \$22 million (\$13 million at the special 0 percent rate for combined sewer overflow [CSO] projects) at an overall blended interest rate of 0.93 percent. In addition to the rate, the other terms of the assistance package demonstrate the flexibility of the CWSRF to enable communities like Akron to make these projects a reality. This is the first CWSRF customer to receive 45-year term financing, which Ohio worked with U.S. EPA to approve in January 2017. In total, this financing package will save Akron approximately \$16.9 million compared to financing this project at the market rate of 3.68 percent. To eliminate any fees or the additional costs of a bonding

agent, the WPCLF purchased a bond from Akron and financed a portion of the project costs for the extended term.

The Howard Storage Basin will hold excess flows during periods of high rainfall and release the combined sewage to the sewer system when flows have dropped. Designed to contain the "typical year" event without allowing any overflows to the river, this project will dramatically enhance the water quality in the Little Cuyahoga River. The Basin project also is sponsoring three Water Resources Restoration and Protection (WRRSP) projects (a land purchase, a wetland restoration, and a dam removal), which will discount the entire loan package an additional 0.1 percent.



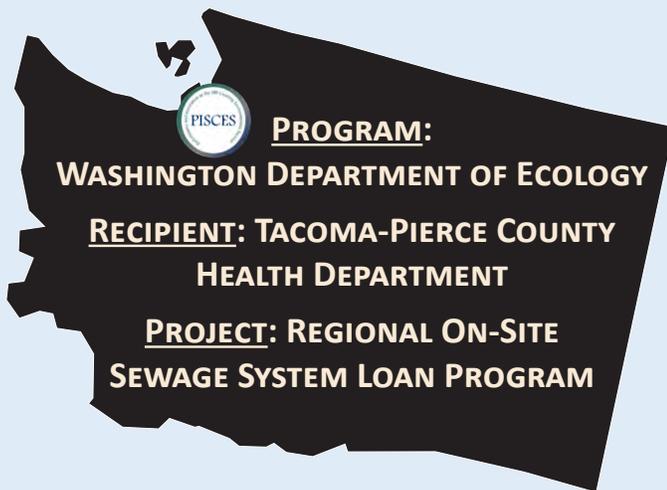


PROGRAM: RHODE ISLAND CWSRF
RECIPIENT: RI AIRPORT CORPORATION (RIAC)
PROJECT: RIAC GLYCOL RECOVERY SYSTEM



The propylene glycol recovery system at the T.F. Green Airport, in Warwick, Rhode Island, is one of only four de-icer management facilities in the world. Funded with \$33 million from the Rhode Island Infrastructure Bank, this world-class approach to capturing contamination from plane de-icing chemicals allows the airport to comply with its Rhode Island Pollutant Discharge Elimination System (RIPDES) permit. The system replaces the previous management technique of using vacuum trucks to capture propylene glycol from catch basins, which was only able to recover 20-30 percent of the pollutant. The new collection system achieves a laudable 60 percent collection rate and has been sized to ensure the airport facility can grow and drive economic development.

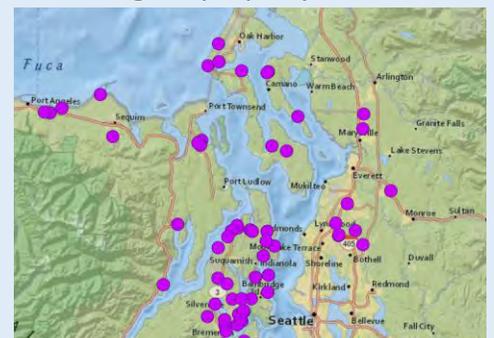
The sophisticated system installed at T.F. Green Airport diverts stormwater runoff to storage tanks, where real-time sensors can detect de-icer contamination and divert, store, and treat the runoff using anaerobic digestion. Leaving no opportunity untouched, the system captures methane produced by the treatment process and uses it to pre-heat the incoming waste stream as well as heat the treatment facility, which reduces operations and maintenance costs by lowering natural gas usage at the facility by 95 percent. This well-considered process prevents propylene glycol (known for lowering dissolved oxygen in waterbodies) from entering Warwick Pond and Buckeye Brook. Buckeye Brook is undammed and, along with Warwick Pond, serves as a spawning ground for many fish such as alewife and blueback herring that migrate into Narragansett Bay. The project protects the water quality for these fish species essential to the Bay's ecosystem and the local fishing industry, and received accolades from local watershed advocates.



The Regional On-Site Sewage System Loan Program (RLP) consolidates multiple county-level septic loan programs into a single public-private partnership (P3) between the State Department of Ecology, State Department of Health, multiple counties and local health jurisdictions, and third-party lender Craft3. The Department of Ecology contracted with Craft3, a nonprofit Community Development Financial Institution (CDFI), through a competitive procurement process, and created this P3 to administer a revolving loan fund. Funded with SRF loans, Washington State Centennial Clean Water grants, and private funds leveraged by Craft3, the RLP program provides loan assistance to eligible property owners across the region

to repair, upgrade, or replace failing or malfunctioning septic systems (or convert to sewers in some cases), protecting public health and water quality. Under this creative arrangement, Craft3 works with local authorities to approve individual projects. Craft3 assumes the financial risk associated with lending and is obligated to repay the SRF funds.

The program creates economies of scale that leverage Craft3's lending expertise and administrative infrastructure. This makes more funds

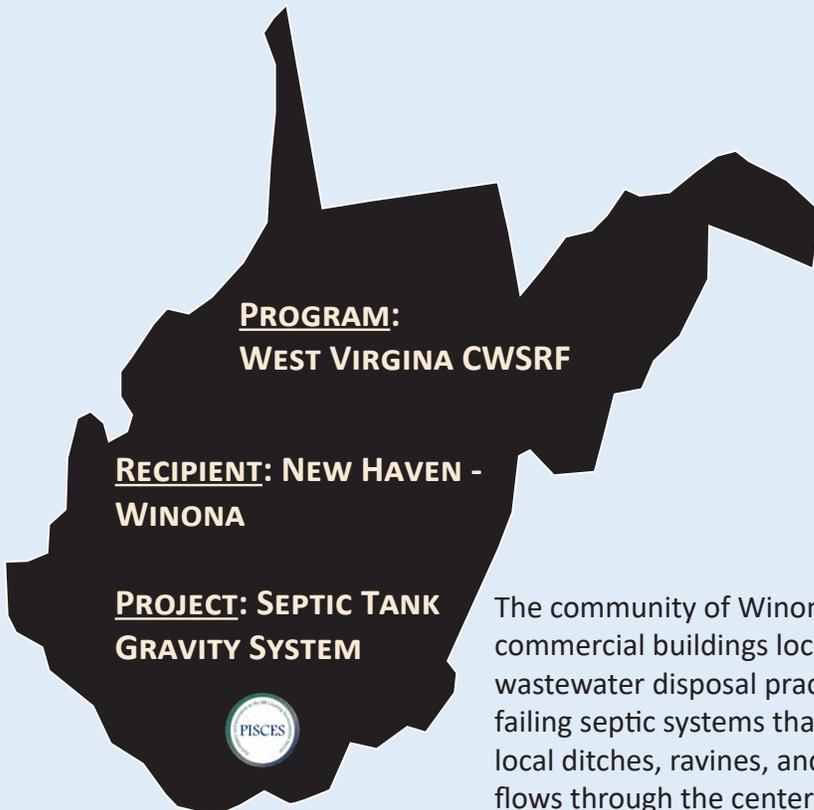




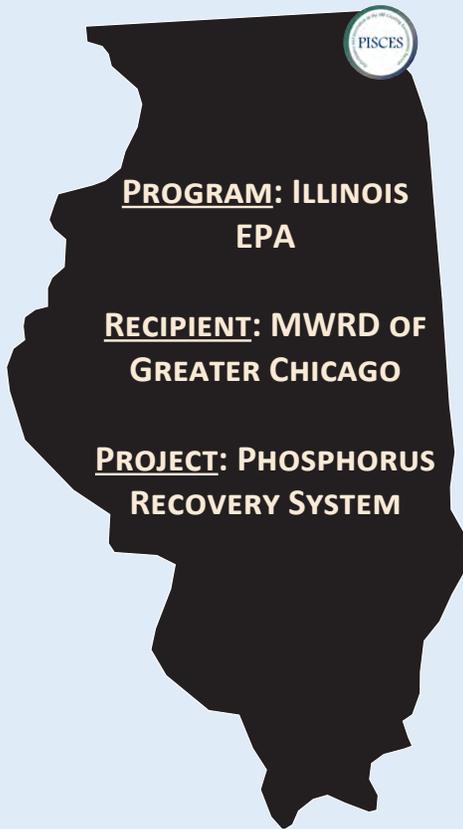
available for loans, outreach, and education, with less needed for program administration. This allows local governments to reap the benefits of a SRF funded program while receiving support in managing the local loan program. Low-income borrowers account for 36 percent of the projects, many of who do not qualify for traditional financing. The new consolidated program streamlines and standardizes the construction process, making it easier for contractors to work across jurisdictions. Contractors are paid immediately once each system passes inspection. The RLP also lends to small businesses, helping to stabilize local economies.



PISCES Honorable Mentions



The community of Winona is a former coal camp of 99 homes and commercial buildings located in Fayette County, West Virginia. Current wastewater disposal practices in Winona consist of direct discharges and failing septic systems that release raw or partially treated wastewater into local ditches, ravines, and streams. Because of this, Keeney Creek, which flows through the center of the community, has the highest frequency of bacteria violations in the New River watershed. This project creates a state-of-the-art decentralized sewer system through a series of distributed high capacity septic systems. The project will treat wastewater using Orenco Advantex technology, which recirculates effluent through sheets of textile filters that last longer and require less maintenance than alternatives. The project combines principal forgiveness from the CWSRF with grant funding from two state agencies to keep the project affordable (under \$60 per month per household) for this low-income community. The flexibility of the CWSRF to provide funding for pre-bid engineering, legal, accounting, and administrative costs was key to making this project a reality.



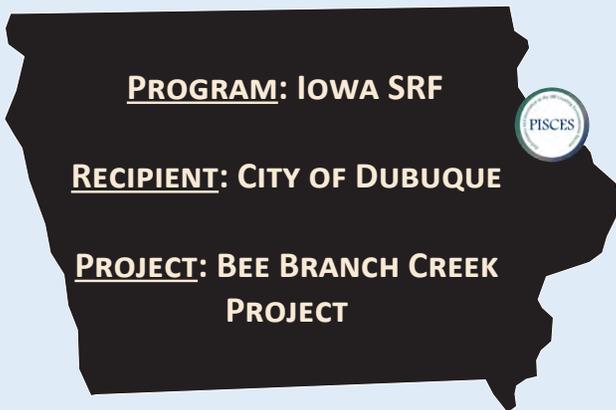
**PROGRAM: ILLINOIS
EPA**

**RECIPIENT: MWRD OF
GREATER CHICAGO**

**PROJECT: PHOSPHORUS
RECOVERY SYSTEM**



When the Metropolitan Water Reclamation District of Greater Chicago used CWSRF financing for improvements at their water reclamation plant in Cicero, IL, they not only saved money, they made wastewater treatment history. The project introduced the largest phosphorus recovery system in the world. This new technology harvests phosphorus from wastewater and transforms it into eco-friendly fertilizer, which will divert 1,100 tons of phosphorus each year from the treated discharged to the Mississippi River Basin. The phosphorus recovery facility is a pre-engineered metal building housing fluidized bed reactors, chemical storage, and chemical feed facilities for magnesium and sodium hydroxide. Removing the nutrient and converting it to fertilizer provides cost savings compared with traditional phosphorus removal in terms of lower costs for chemicals, waste disposal, maintenance, and electricity.



PROGRAM: IOWA SRF

RECIPIENT: CITY OF DUBUQUE

**PROJECT: BEE BRANCH CREEK
PROJECT**



The Bee Branch Creek project in Dubuque, Iowa is a success story about how a city dealt with an historic neighborhood prone to flooding (with six Presidential Disaster Declarations and \$70 million in damage between 1999 and 2011) by replacing one-mile of storm sewer with a creek and floodplain. This daylighting of the creek will not only allow stormwater from flash floods to safely move through the area (protecting more than 1,000 properties), but will also restore aquatic habitat by allowing sunlight to foster the growth of the microorganisms needed to sustain fish. The design includes riffles, runs, a cobble creek bed, submerged boulders, and permeable pavement for nearby streets. The project proved its worth in 2017, when a heavy thunderstorm caused minimal flooding compared to a similar storm in 2002 which resulted in more than \$11 million in damage. Nearly half the project's \$60 million cost came from the CWSRF (including \$6 million principal forgiveness), and the city paid for the rest with financing from six other state and federal programs and municipal stormwater utility fees.



The Rock County Land Management Office has been a standout local government unit when it comes to implementing Minnesota’s innovative Agricultural Best Management Practices (AgBMP) Loan Program. In the 20-year history of the program, the County has provided 377 loans worth nearly \$8 million for AgBMPs using CWSRF funds, state funds, and other financing sources to reduce costs to the multi-generational farms. Dennis Leuthold borrowed \$149,000 to address high nitrates in local wells by reconstructing his stockyard for 926 cows. The result of the rancher’s environmental stewardship efforts was an immediate drop in nitrate levels well below drinking water standards. Elsewhere in Rock County, the owner of Fluit Farm borrowed \$200,000 to purchase a high clearance fertilizer applicator, improving his crop yield while at the same time protecting residents with shallow drinking water wells from nitrate pollution. Demonstrating the spirit of cooperative problem-solving embodied by Rock County, Fluit Farm also has offered to lend the machinery to neighboring farmers.

PROGRAM: MINNESOTA CWSRF

RECIPIENT: ROCK COUNTY

PROJECT: IMPLEMENTATION OF NONPOINT PRACTICES

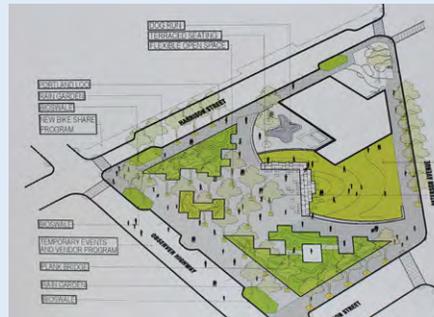


PROGRAM: NEW JERSEY SRF



RECIPIENT: CITY OF HOBOKEN

PROJECT: GREEN INFRASTRUCTURE CSO INITIATIVE



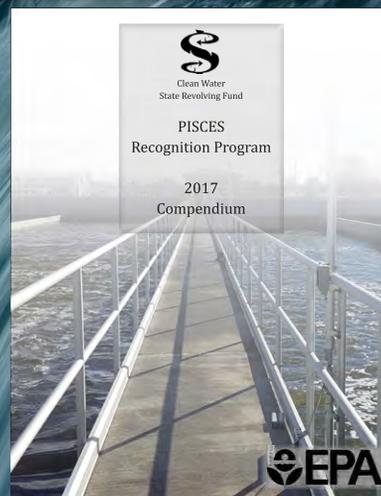
Sporadic flooding is a part of life in the low-lying sections of Hoboken since they are located in the tidal marsh of the Hudson River across from Manhattan. The City also struggles with combined sewer systems overflows; during storm events, the volume of sewage and stormwater overwhelms the system, causing diluted raw sewage to back up into basements and neighborhoods. Hoboken is tackling these problems head-on with a city-wide stormwater management campaign and green infrastructure initiative, featuring two parks designed to better handle stormwater flows. The green features of these parks include underground detention systems, permeable paving, rain gardens, and bioswales to filter and absorb street runoff. Together, these 1-acre and 6-acre park facilities can detain up to 1.2 million gallons of stormwater and slowly release it to the City’s sewer system for treatment while providing green space. With a total cost of \$37 million, funding for these projects was provided by two different New Jersey agencies, including \$4.2 million in low-interest CWSRF financing from the NJ Environmental Infrastructure Financing Program.

2017 PISCES Recognized Projects

- ◆ Greater Lawrence Sanitary District, MA
- ◆ New Rochelle WWTP Upgrades, NY
- ◆ Philadelphia Green Infrastructure, PA
- ◆ City of Waynesboro, VA
- ◆ Southern Kent Island, MD
- ◆ Albertville Biosolids improvements, AL
- ◆ Graceville Digester Project, FL
- ◆ 4th Avenue Ocean Outfall - Myrtle Beach, SC
- ◆ Hinesville Stormwater Infrastructure, GA
- ◆ Three Rivers Protection and Overflow, IN
- ◆ New Water R2E2: Resource Recovery, WI
- ◆ Conservation Commission Green Infrastructure, OK
- ◆ Wastewater Reuse Project, LA
- ◆ Montoyas Arroyo Improvement, NM
- ◆ Grand Lakes Reclaimed Water System, TX
- ◆ Onsite Septic Remediation Program, MO
- ◆ Boxelder Biological Nutrient Removal, CO
- ◆ Fruitland Wastewater System Consolidation and Facility Upgrade, ID



Information about all of the exciting 2017 PISCES Projects can be found in the 2017 PISCES Compendium, which can be accessed at www.epa.gov/cwsrf/pisces



State Agencies That Manage CWSRF Programs

EPA Region 1 — Boston, Massachusetts

Connecticut Department of Environmental Protection
Connecticut Office of the Treasurer
Maine Municipal Bond Bank
Maine Department of Environmental Protection
Massachusetts Water Pollution Abatement Trust
Massachusetts Department of Environmental Protection
New Hampshire Department of Environmental Services
Rhode Island Clean Water Finance Agency
Rhode Island Department of Environmental Management
Vermont Department of Environmental Conservation
Vermont Municipal Bond Bank

EPA Region 2 — New York, New York

New Jersey Department of Environmental Protection
New Jersey Environmental Infrastructure Trust
New York State Environmental Facilities Corporation
New York Department of Environmental Conservation
Puerto Rico Environmental Quality Board
Puerto Rico Infrastructure Financing Authority

EPA Region 3 — Philadelphia, Pennsylvania

Delaware Department of Natural Resources and Environmental Control
Maryland Department of the Environment
Pennsylvania Infrastructure Investment Authority
Pennsylvania Department of Environmental Protection
Virginia Department of Environmental Quality
Virginia Resources Authority
West Virginia Development Authority
West Virginia Department of Environmental Protection
West Virginia Infrastructure and Jobs Development Council

EPA Region 4 — Atlanta, Georgia

Alabama Department of Environmental Management
Florida Department of Environmental Protection
Georgia Environmental Facilities Authority
Georgia Environmental Protection Division
Kentucky Infrastructure Authority
Kentucky Division of Water
Mississippi Department of Environmental Quality
North Carolina Department of Environmental and Natural Resources
South Carolina Department of Health and Environmental Control
South Carolina Budget and Control Board
Tennessee Department of Environment and Conservation
Tennessee Comptroller of the Treasury

EPA Region 5 — Chicago, Illinois

Illinois Environmental Protection Agency
Indiana Department of Environmental Management
Indiana Finance Authority
Indiana State Budget Agency
Michigan Department of Environmental Quality
Michigan Municipal Bond Authority
Minnesota Pollution Control Agency
Minnesota Public Facilities Authority
Minnesota Department of Agriculture
Ohio Environmental Protection Agency
Ohio Water Development Authority
Wisconsin Department of Natural Resources
Wisconsin Department of Administration

EPA Region 6 — Dallas, Texas

Arkansas Natural Resources Commission
Arkansas Development Finance Authority
Louisiana Department of Environmental Quality
New Mexico Environment Department
Oklahoma Water Resources Board
Texas Water Development Board

EPA Region 7 — Kansas City, Missouri

Iowa Department of Natural Resources
Iowa Finance Authority
Kansas Department of Health and Environment
Kansas Department of Administration
Kansas Development Finance Authority
Missouri Department of Natural Resources
Missouri Environmental Improvement and
Energy Resources Authority
Nebraska Department of Environmental
Quality
Nebraska Investment Finance Authority

EPA Region 8 — Denver, Colorado

Colorado Water Resources and Power
Development Authority
Colorado Department of Public Health and
Environment
Colorado Department of Local Affairs
Montana Department of Environmental Quality
Montana Department of Natural Resources and
Conservation
North Dakota Department of Health
North Dakota Public Finance Authority
South Dakota Department of Environment and
Natural Resources
Utah Department of Environmental Quality
Wyoming Department of Environmental Quality
Wyoming Office of State Lands and Investments

EPA Region 9 — San Francisco, California

Arizona Water Infrastructure Finance Authority
California State Water Resources Control Board
Hawaii Department of Health
Nevada Department of Conservation and Natural
Resources

EPA Region 10 — Seattle, Washington

Alaska Department of Environmental
Conservation
Idaho Department of Environmental Quality
Oregon Department of Environmental Quality
Washington Department of Ecology

To access state program websites,
please visit www.epa.gov/cwsrf





For more information about the Clean Water State Revolving Fund, please contact us at:

United States Environmental Protection Agency
Office of Wastewater Management
Clean Water State Revolving Fund Branch
1200 Pennsylvania Avenue NW (4204M)
Washington, DC 20460

www.epa.gov/cwsrf

