

Water Equity and Green Infrastructure in the State Revolving Fund Programs: Delaware, New Jersey, and Pennsylvania

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Introduction & Purpose

The state revolving funds (SRFs) include the Drinking Water SRF (DWSRF) and the Clean Water SRF (CWSRF), which provide financing for drinking water projects as well as wastewater, and stormwater projects, respectively. The CWSRF is the older program and is designed to meet a state's needs on water quality improvements. The DWSRF is similarly designed to improve and meet each state's needs on drinking water. These SRFs are federal-state partnerships designed for ensuring communities, municipalities, and agencies have access to low-interest loans for addressing their water infrastructure needs. The SRFs are "revolving" in that loans are made and repaid with interest and administrative fees; this allows the fund to sustain itself over time and creates opportunities for making grants or other subsidies. The SRF programs can also help to sustain each other by borrowing from one another to meet each state's needs. While the U.S. Environmental Protection Agency (EPA) provides guidance and some overarching requirements, each state manages these funds in accordance with their own policies and practices. As a result, each program is a unique reflection of the approach, priorities and needs of an individual state.

The purpose of this document is to summarize and analyze the policies, practices and results of the CWSRFs and DWSRFs for the states of Delaware, New Jersey, and Pennsylvania within the Delaware River Basin with a particular lens. This analysis is part of a larger project being led by American Rivers in collaboration with The Water Center at the University of Pennsylvania with lead support provided by the William Penn Foundation. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the William Penn Foundation. The aim of the overall project is to gain insights into ways in which these programs do, or could, promote natural infrastructure and water equity within the Delaware River Basin. Therefore, particular attention was paid to the policies and practices of each program for funding projects that utilize natural infrastructure, and for addressing affordability and providing grants or other types of financial assistance that do not have to be paid back. The programs and their associated policies and practices summarized here are as they exist prior to any changes made in response to and/or required by the Infrastructure Investment and Jobs Act passed in late 2021 and subsequent guidance by EPA in early 2022.

About the State SRF Programs

Each of the three states organizes and allocates SRF management responsibilities differently between agency staff and independent public financing authorities. New Jersey and Pennsylvania delegate major responsibilities for SRF management to such authorities whereas Delaware, by far the smallest of the three, does not. Each state is required by EPA to develop and Intended Use Plan (IUP) annually, that includes a Project Priority List (PPL) that outlines the programs' activities and projects anticipated for the upcoming fiscal year.

Delaware

Delaware has a population of 994,735 residents and a total area of 2,488.72 square miles, close to 39% of which is in the watershed.¹ It is the 45th most populous state in the country, but the 6th most densely populated.²

In Delaware, SRF programs funds are managed by the Environmental Finance Office within the Delaware Department of Natural Resources and Environmental Control (DNREC). This office works closely with DNREC staff to establish and apply policies and practices for the CWSRF; and works closely with Department of Health and Social Services (DHSS) staff to establish and apply policies and practices for the DWSRF. In Delaware the CWSRF was created as the “Water Pollution Control Revolving Fund” “by the Delaware Legislature in 1990 in accordance with Title VI of the federal Water Pollution Control Act.”³ The DWSRF fund was created from an amendment to the Federal Safe Drinking Water Act in 1996. The DWSRF’s policies and practices are created and managed by the DHSS through an operational agreement between DHSS and DNREC.

The Department Secretary is the ultimate authority for making SRF decisions; however, a Clean Water Infrastructure Advisory Council (WIAC) composed of appointees is charged with reviewing and making recommendations to the Secretary on how SRF funds are allocated and used. Meetings of the WIAC are staffed by DNREC and DHSS and are open to the public. Committees composed of WIAC members, DNREC staff, and DHSS staff develop and provide input into SRF program policies and practices. Staff from DNREC and DHSS work together to compile these policies and practices into annual IUPs that are submitted and approved by EPA and the WIAC to serve as guidance for the year.

New Jersey

New Jersey is 8,721 square miles in size, 33% of which is in the Delaware River Basin.⁴ New Jersey has a population of 8.88 million individuals, close to 8 million more than Delaware, and 3 million less than Pennsylvania.

In New Jersey, the Department of Environmental Protection (DEP) helps to manage the policies and practices set forth by the yearly CWSRF and DWSRF IUPs alongside the New Jersey Infrastructure Bank (NJIB). The NJIB or “I-Bank” is an independent State Financing Authority established through the New Jersey Legislature in 1986. The I-Bank is “responsible for providing and administering low-interest rate loans to qualified municipalities, counties, regional authorities, and water purveyors in New Jersey for the purpose of financing local transportation and water quality related infrastructure projects.”⁵ The I-Bank is separated into two loan programs and a bond program. The loan programs are separated into the New Jersey Environmental

¹ Kelly Somers, Gerald Kauffman, and Andrew Homsey, December 2017, Partnership for the Delaware Estuary - <http://www.delawareestuary.org/wp-content/uploads/2018/01/Chp1-landscape.pdf>

² Population Density by State - <https://www.statista.com/statistics/183588/population-density-in-the-federal-states-of-the-us/>

³ DNREC - Delaware Water Pollution Control Fund <https://dnrec.alpha.delaware.gov/environmental-finance/revolving-fund/>

⁴ Kelly Somers, Gerald Kauffman, and Andrew Homsey, December 2017, Partnership for the Delaware Estuary - <http://www.delawareestuary.org/wp-content/uploads/2018/01/Chp1-landscape.pdf>

⁵ New Jersey Infrastructure Bank – Annual Report SFY2020 – pg. 1 - <https://cdn.njib.gov/njeit/annualreports/annualreport2020.pdf>

Infrastructure Trust (NJEIT) which is partnered with New Jersey's DEP, and the New Jersey Transportation Infrastructure Bank (NJTIB) which is partnered with the New Jersey Department of Transportation. The NJEIT side of the I-Bank manages the SRF loans through the New Jersey Water Bank Financing Program (NJWB). The NJWB is jointly funded by both the I-Bank and New Jersey's DEP. The I-Bank has the final say on credit worthiness for an SRF loan application and DEP has the final say on eligibility. The I-Bank's board of directors is made up of nine seats, most of which are typically taken up by agency members. The board meets regularly in public hearings where they decide on the allocation of funds for both NJEIT and NJTIB projects. In 2020, however, a new program allowing smaller projects to be decided by staff and bypass the Board was introduced, allowing the I-Bank to accelerate the process for projects below a certain threshold.

NJ's SRF programs are managed through a collaborative effort. The I-Bank works closely with New Jersey's DEP's staff to create and implement the policies and practices that are outlined in the CWSRF and DWSRF IUPs. While the I-Bank makes a final decision on which projects are accepted, DEP is still very much involved in the process.

Pennsylvania

Pennsylvania is the 5th most populated state in the United States and the largest of the three states considered in this document with a total area of 46,055 square miles and a population of over 12 million. 6,280 square miles of the Delaware River Basin is in Pennsylvania, making up 49% of the basin's total square mileage.⁶

Pennsylvania manages their SRF programs through a collaboration between The Pennsylvania Department of Environmental Protection (DEP) and the Pennsylvania Infrastructure Investment Authority (PENNVEST).

PENNVEST is an investment authority that was created through the state legislature on March 1, 1988.⁷

PENNVEST manages the application process for potential borrowers and oversees whether an applicant will be awarded an SRF loan. The final decision on whether an applicant will receive a loan is made by the PENNVEST board of directors.⁸ The 13-member board is a collection of legislators and agency staff; they meet four times a year and their meetings and decisions are open to the public. PENNVEST has a substantial operating budget and staff with which to manage low-cost financial assistance to sewer, stormwater and drinking water projects.

The policies and practices that guide the decisions of PENNVEST and the board are done through a collaboration between DEP and PENNVEST. Every year, the Pennsylvania CWSRF and DWSRF IUPs are written and submitted to the EPA as a collaborative effort between DEP and PENNVEST. The intent of the IUPs are to give guidance to the PENNVEST board and staff on the priorities the state is putting forth for SRF funds that year as well as what general practices they should follow when reviewing applicants. DEP is also very involved with the application process for potential borrowers. There are several steps within the application process that involves DEP project managers. Within the application process, the project managers review project designs to ensure projects are in compliance and to give guidance to applicants. PENNVEST also manages many types of infrastructure projects that are not related to the SRFs

⁶ Kelly Somers, Gerald Kauffman, and Andrew Homsey, December 2017, Partnership for the Delaware Estuary - <http://www.delawareestuary.org/wp-content/uploads/2018/01/Chp1-landscape.pdf>

⁷ PENNVEST Mission Statement - <https://www.pennvest.pa.gov/Pages/Mission.aspx>

⁸ PENNVEST Application Process - <https://www.pennvest.pa.gov/Services/Pages/Apply-Online.aspx>



SRF Program Funding

To better understand how each state invests in SRF projects, it is important to recognize the differences and similarities in their funding. Each year the federal government allocates funding toward the SRF programs for each state provided in the form of a “federal capitalization grant” plus a 604(b) allotment. The 604(b) allotment is 1% of each state’s CWSRF allotment to carry out planning activities.⁹ These amounts are then matched by the state at a rate of 20% of the amount given. These two sources of income into the SRF programs create new funding to be invested each year along with any funds rolled over from previous years or accrued from interest.

As seen in Table 1, Pennsylvania and New Jersey have similar funding levels for both their DWSRF and CWSRF programs, while Delaware’s is significantly smaller. For the DWSRF, federal funding is determined through a “needs based assessment” by the EPA. The EPA conducts an “Infrastructure Needs Survey and Assessment” every four years.¹⁰ The survey projects out each state’s needs for the next 20 years and determines the percentage of the SRFs each state will receive.¹¹ The larger the need a state has for clean water or drinking water, the higher the funding that they will receive from the SRF programs.

How the EPA determines the CWSRF allotments is less clear. The weighting and factors used to establish the formula for the CWSRF allotment is not readily available. In their “Allocation of Wastewater Treatment Assistance” report, the Congressional Research Service (CRS) states that “nowhere in the legislative history of Congress’s final action on the 1987 amendments is there a clear statement about the weighting or factors that went into the final allocation formula - it is even difficult to guess.”¹² That report identifies the factors that likely contributed to the initial allotments as: census population, capital needs for secondary wastewater treatment, a hold harmless provision (to limit the decrease in a state’s allotment), and a minimum allotment amount.¹³ In 2016, the EPA did a review of the allotments received per state for the CWSRF. This report found that the current allotment only meets the water quality needs of 17 states based on the EPA’s 2012 water quality needs assessment data.¹⁴ Table 2.1 provides a snapshot of SRF funding by state for 2020.

⁹ United States Environmental Protection Agency – Website on State Revolving Funds

¹⁰ United States Environmental Protection Agency - Website on Needs Assessment - <https://www.epa.gov/dwsrf/what-infrastructure-needs-survey-and-assessment>

¹¹ Ibid

¹² Environmental Protection Agency - May 2016. Review of the Allotment of the Clean Water State Revolving Fund (CWSRF): Report to Congress. EPA-830-R-16-001

¹³ Ibid

¹⁴ Ibid



Table 1 – SRF Program Budgets/ New Funding 2020

	Delaware	New Jersey	Pennsylvania
CWSRF - State Match (20%)	\$1,575,800	\$13,117,000	\$12,715,000
CWSRF - Fed Cap Grant	\$7,879,000	\$65,585,000	\$63,575,000
CWSRF Total Budget	\$9,454,800 ¹⁵	\$78,702,000 ¹⁶	\$76,290,000 ¹⁷
DW - State Match (20%)	\$2,202,200	\$3,734,020	\$6,777,560
DW - Fed Cap Grant	\$11,011,000	\$18,670,100	\$33,887,800
DW - Total Budget	\$13,213,200 ¹⁸	\$22,404,120 ¹⁹	\$27,110,240 ²⁰

Tables 2a and 2b illustrates the changes in the CWSRF, and Tables 3a and 3b illustrates the changes in the DWSRF over a ten-year period starting with 2010 and ending with 2019. Like any federal program, the SRFs are subject to change depending on the priorities of the administration and Congress. There was a series of decreases in the program's funding that occurred in the 2000s and early 2010s, and a substantial increase in the 2018 federal budget. These trends reflect national policy changes in the programs, as more or less money was allocated in the annual national budget for water infrastructure. In 2010 Delaware did not receive a DWSRF award, but this appears to be due to an administrative error,²¹ with missing 2010 amounts given in 2011. In 2014, New Jersey received a substantial increase in its 2014 DWSRF award, due to relief funds awarded to help mitigate the impacts of Hurricane Sandy.²²

At times, the federal government makes special uses of the SRF programs to deliver other/additional water infrastructure funding to state and local governments; for example, through the American Recovery and Reinvestment Act (ARRA) of 2009, which was before the time period covered in this analysis and explains the relatively high level of funding in the SRFs in 2010. Another instance of this occurred recently with Infrastructure Investment and Jobs Act (IIJA) of 2021, after the time period covered in this analysis.

¹⁵ Delaware Department of Natural Resources and Environmental Control – 2020 Clean Water State Revolving Fund Intended Use Plan

¹⁶ New Jersey Infrastructure Bank - 2020 Clean Water State Revolving Fund Intended Use Plan

¹⁷ Pennsylvania Infrastructure Investment Authority – 2020 Clean Water State Revolving Fund Intended Use Plan

¹⁸ Delaware Department of Health and Social Services - 2020 Drinking Water State Revolving Fund Intended Use Plan

¹⁹ New Jersey Infrastructure Bank - 2020 Drinking Water State Revolving Fund Intended Use Plan

²⁰ Pennsylvania Infrastructure Investment Authority - 2020 Drinking Water State Revolving Fund Intended Use Plan

²¹ EPA – Drinking Water State Revolving Fund Information for the State of Delaware - https://www.epa.gov/sites/default/files/2020-11/documents/delaware_dw20.pdf

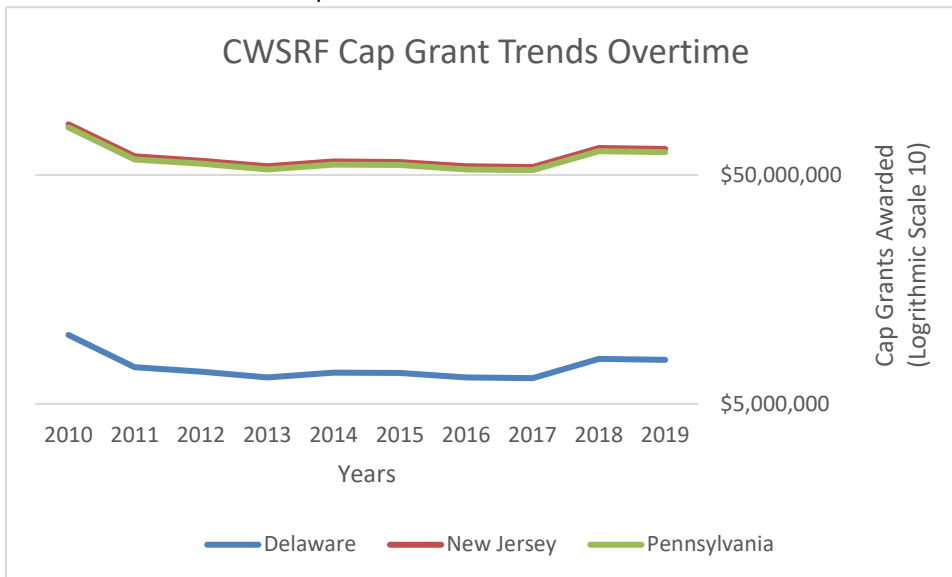
²² EPA – Drinking Water State Revolving Fund Information for the State of New Jersey - <https://www.epa.gov/dwsrf/drinking-water-state-revolving-fund-program-information-state-new-jersey>



Table 2a Clean Water SRF – Annual SRF Federal Capitalization Amount²³²⁴

	Delaware	New Jersey	Pennsylvania
2019	\$7,779,000	\$64,929,000	\$62,939,000
2018	\$7,859,000	\$65,589,000	\$63,579,000
2017	\$6,474,000	\$54,179,000	\$52,518,000
2016	\$6,525,000	\$54,598,000	\$52,925,000
2015	\$6,817,000	\$57,002,000	\$55,255,000
2014	\$6,853,000	\$57,295,000	\$55,539,000
2013	\$6,520,000	\$54,558,000	\$52,884,000
2012	\$6,908,000	\$57,755,000	\$55,984,000
2011	\$7,222,000	\$60,342,000	\$58,492,000
2010	\$10,002,000	\$83,261,000	\$80,709,000

Table 2b CWSRF - Federal Capitalization Amount Over Time²⁵



²³ EPA FY Final Allotments Federal Funds by State - <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-allotments-federal-funds-states>

²⁴ EPA – Clean Water State Revolving Fund National Information Management System Reports - <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-national-information-management-system-reports>

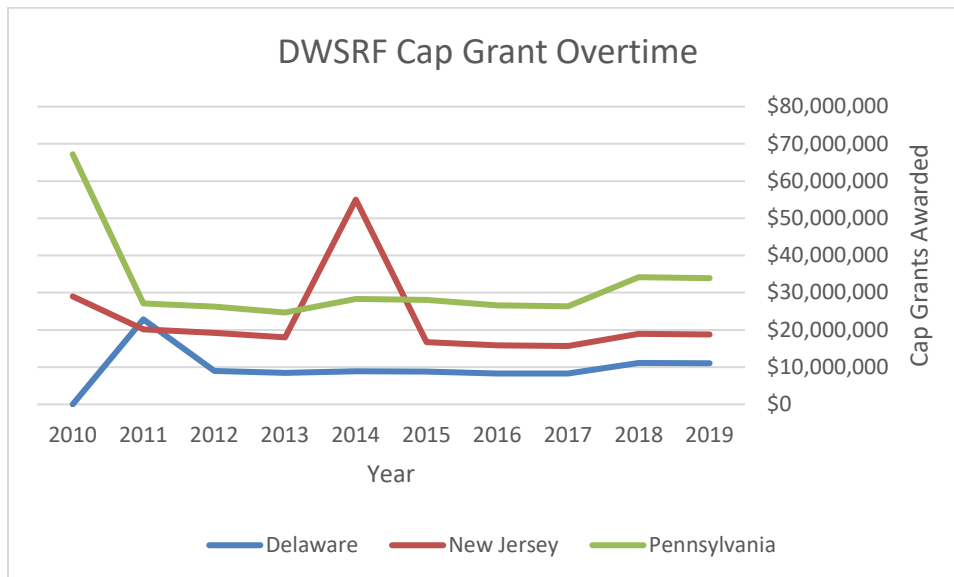
²⁵ EPA FY Final Allotments Federal Funds by State - <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-allotments-federal-funds-states>



Table 3a Drinking Water SRF – Total Budget Amounts

	Delaware ²⁶	New Jersey ²⁷	Pennsylvania ²⁸
2019	\$11,004,000	\$18,780,000	\$33,883,000
2018	\$11,107,000	\$18,957,000	\$34,202,000
2017	\$8,241,000	\$15,680,000	\$26,351,000
2016	\$8,312,000	\$15,815,000	\$26,578,000
2015	\$8,787,000	\$16,718,000	\$28,029,000
2014	\$8,845,000	\$55,017,086 ²⁹	\$28,280,000
2013	\$8,421,000	\$17,990,000	\$24,673,000
2012	\$8,975,000	\$19,174,000	\$26,297,000
2011	\$22,841,000	\$20,120,000	\$27,154,000
2010	\$0 ³⁰	\$28,995,000	\$67,203,000

Table 3b DWSRF – Federal Capitalization Amount Over Time³¹



²⁶ EPA – Drinking Water State Revolving Fund Information for the State of Delaware - https://www.epa.gov/sites/default/files/2020-11/documents/delaware_dw20.pdf

²⁷ EPA – Drinking Water State Revolving Fund Information for the State of New Jersey - <https://www.epa.gov/dwsrf/drinking-water-state-revolving-fund-program-information-state-new-jersey>

²⁸ EPA – Drinking Water State Revolving Fund Information for the State of Pennsylvania - <https://www.epa.gov/sites/default/files/2020-11/documents/pennsylvania2020.pdf>

²⁹ Funds Increased in an effort to combat the impacts of Hurricane Sandy

³⁰ Administrative anomaly where the 2010 amounts were not rewarded until 2011, making 2011's amounts more than double what they should have been.

³¹ Ibid



Project Priorities

The EPA establishes the eligibilities of projects that are eligible for SRF funds. The CWSRF has eleven eligibility requirements that are not meant to be exclusionary, but to serve as a means of guidance. The eleven eligibilities are: centralized wastewater treatment, energy conservation, water conservation, stormwater, agricultural best management practices, decentralized wastewater treatment, resource extraction, contaminated sites, landfills, habitat protection and restoration, silviculture, desalination, groundwater protection and restoration, surface water protection and restoration, and planning/assessment projects.³² Eligibilities for the DWSRF include national primary drinking water regulations and health protection objectives.³³ Included are six broad categories of eligible projects: treatment, transmission and distribution, source water, storage, consolidation, and projects that create new systems.³⁴

As long as federal mandates are met each state can delineate which projects take priority over others. These priorities can change from year to year depending on Clean Water Act and Safe Drinking Water Act compliance and priorities related to human health, permit compliance, or high priority environmental concerns. The most common method states use to order projects are through a priority ranking system. This is a numerical system that is designed to remove the personal bias of the evaluator. It allows projects to be funded based on the stated priorities of the authorities or agencies that create the program. The criteria used for these systems vary widely from state to state, and all three of the states considered have such a system.³⁵

Delaware

Delaware's current DWSRF ranking criteria has ten categories used to determine funding priorities. The projects each accrue points based on how well they perform within these ten categories. Projects with the highest accrued points are the most likely to get funded. The ten categories are as follows:

1. Growth – is the project primarily for growth? If yes, the project is not eligible.³⁶
2. Affordability – According to the preliminary Financial Review, is this project considered unaffordable and/or does this project meet disadvantaged community criteria? – 100 points allowed
3. Quality Deficiencies – Was the applicant required to provide a public notification to its consumers during the past three years for exceeding a drinking water standard in accordance with state or federal regulations? – 80 points allowed
 - a. Does the project description stated in the application address the compliance issue for which the public notification was required? – 30 points allowed
4. System Information –
 - a. populations less than 10,000 – 10 points
 - b. Municipal communities – 5 points
 - c. Other communities – 5 points

³² United States Environmental Protection Agency. May 2016, Overview of Clean Water State Revolving Fund Eligibilities

³³ United States Environmental Protection Agency. June 2017. Drinking Water State Revolving Fund Eligibility Handbook

³⁴ Ibid.

³⁵ EPA, July 2012 – Sustainability and the Clean Water State Revolving Fund – A Best Practices Guide – EPA-832-R-12-005

³⁶ Environmental Protection Agency – Prioritizing Drinking Water Needs: A compilation of state priority systems for the Drinking Water State Revolving Fund Program



5. Regionalization
 - a. Is the applicant providing water to a non-complying water system? – 50 points
 - b. Is the applicant providing water to an area of existing private wells with water quality deficiencies? – 50 points
 - c. Will the project result in the consolidation of complying water systems? – 70 points
 - d. Will the project result in an interconnection with another water system? – 30 points
6. Storage
 - a. Does the project address acute quantity deficiencies?
 - i. Water pressure below 25 psi – 30 points
 - ii. Lack of adequate supply – 30 points
 - b. Does the project address chronic quantity deficiencies?
 - i. Lack of adequate storage – 20 points
 - ii. Water shortages during peak demand – 20 points
7. Treatment – referring to section 1 and the project description, will the project directly remedy the contaminant exceeding or non-compliance with treatment upgrades? – 100 points
8. Distribution
 - a. Inadequate intake, failing transmission mains – 80 points
 - b. Meter installation or replacement – 60 points
 - c. Hydrant installation or replacement – 40 points
 - d. Valve installation or replacement – 30 points
9. Source – upgrades that address inadequate source and/or replacement of contaminated sources – 100 points
10. Sustainability – is the applicant's 5-year capitalization plan or similar document included in the application? – 40 points³⁷

For the CWSRF, DNREC creates its project priority list using eight criteria. Each project can receive points in any criteria up to a predetermined maximum. The eight criteria for the Delaware CWSRF ranking system are:

1. Water Quality Protection – 45 points can be accrued for point source projects.
 - a. Up to 10 bonus points can be given. An additional point will be given for each 10% of allowable pollution load eliminated.
2. Targeted Waterbodies – 20 points can be accrued from addressing an existing Total Maximum Daily Load (TMDL) plan or addressing a watershed management plan
3. Clean Water Priorities – 20 points can be accrued from addressing septic system elimination projects, wastewater treatment facilities and CSO's, other wastewater projects, and surface water management projects
4. State Strategies – 10 points can be accrued by addressing 212 projects or non-point source (319) projects
5. Green Project Reserve – 10 points can be accrued by addressing the criteria outlined in the natural infrastructure considerations portion of this document
6. Sustainability – 30 points can be accrued by addressing asset management implementation, full cost pricing standards, and climate change adaption or resiliency projects
7. Land Conservation – 10 bonus points can be accrued in this category

³⁷ DENREC and DHSS – August 11, 2021 – Delaware Clean Water and Drinking Water State Revolving Fund Virtual Workshop - <https://documents.dnrec.delaware.gov/fab/cwsrf-dwsrf-borrower-workshop.pdf> .



8. Borrower Type – 10 points can be accrued in this category³⁸

Delaware uses these ranking criteria to evaluate and compile projects into an annual priority list of projects eligible to receive funding.³⁹

New Jersey

New Jersey also has a ranking method for creating a project priority list. DEP's "Priority List" provides "priority points" that accumulate to create a total score for a potential project. The higher the score, the more likely the project is to be funded.⁴⁰ For the DWSRF points are awarded with each of the following categories in mind:

1. Compliance with the SDWA and protection of public health
2. Water supply plans/studies
3. State designations – DEP assigns points to projects in municipalities that the State Planning Commission has approved under the Plan Endorsement or Center Designation Process
4. Affordability - (Municipal MHI/ Statewide MHI) x 100
5. Population⁴¹

For the New Jersey CWSRF, points are awarded with each of the following priorities in mind:

1. Projects that are intended to benefit Barnegat Bay
2. Projects that implement sustainable community planning activities
3. Projects that assist in reducing the damages of harmful CSO discharges
4. Projects that implement green infrastructure or have water or efficiency improvements
5. Stormwater and nonpoint source pollution management facility projects with the highest priority going toward projects that are in the stormwater and other nonpoint source activity category
6. Water use and water quality projects, with public potable water supply projects receiving the highest priority
7. Smart growth projects that use the implementation of the State Development and Redevelopment Plan⁴²
8. Projects are assigned points based on the population of the area served by the project. This category has the least number of points and is designed to serve as a tiebreaker, where if two projects have the same amount of points the project with the highest population will take priority⁴³

In addition, New Jersey's CWSRF is currently prioritizing projects designed to prevent or mitigate Harmful Algal Blooms (HABs) by allocating additional principal forgiveness loan resources to these types of projects. HABs are colonies of algae growing out of control that can reduce the oxygen in water bodies to a dangerous amount and damage the environment and the health of people who use them. In an effort to combat HABs, New Jersey is allocating more funds toward projects designed to mitigate water pollution from stormwater runoff and

³⁸ DNREC and DHSS – August 11, 2021 – Delaware Clean Water State Revolving Fund and Drinking Water State Revolving Fund Virtual Workshop

³⁹ Ibid

⁴⁰ New Jersey I-Bank - Clean Water State Revolving Fund Intended Use Plan – Appendix 1

⁴¹ New Jersey I-Bank – Drinking Water State Revolving Fund Intended Use Plan

⁴² Ibid. pg. 25

⁴³ Ibid



nonpoint source pollution and excessive nutrient pollution that can cause them.⁴⁴ New Jersey is also prioritizing lead abatement projects. The New Jersey CWSRF is using a provision in the federal Safe Drinking Water Act to transfer funds from the CWSRF to the DWSRF for projects that address lead abatement. This Oct 2020 provision allowed for a one-time transfer up to 5% of the total historical CWSRF allotments to be transferred from the CWSRF to the DWSRF⁴⁵, although New Jersey ensures that fund transfers are well below that maximum. The DWSRF uses these funds as its own to fund affordable lead remediation projects through its “Lead Remediation Principal Forgiveness Loan”. This program can fully fund lead line replacement projects of up to \$1 million. For larger lead line replacement projects, the I-bank absorbs 50% of the project costs. This leads to New Jersey having larger subsidies that it might have otherwise, as illustrated in Table 5.

Pennsylvania

Similar to New Jersey and Delaware, Pennsylvania also uses a ranking priority system for evaluating potential projects. They take a quantitative approach to determining the top benefits per project. Each project receives a numerical value based on its benefits and the projects with the highest grade receive top priorities. Each project will receive a grade depending on how many points it accumulates through the review process. The maximum number of points a project can receive in each category is as follows:

Drinking Water:

1. Public health and compliance projects take the highest priority with 30 points
2. Infrastructure health projects - 25 points
3. Community health projects - 15 points
4. Source water protection projects - 5 points.

Wastewater:

1. Public health projects - 35 points
2. Aquatic health, infrastructure health, and compliance projects - 20 points
3. Community health projects - 10 points

Nonpoint Source:

1. Water quality, planning, and benefit-to cost projects - 30 points
2. Compliance projects - 10 points
3. Safety projects - 5 points

Stormwater:

1. Public health projects - 40 points
2. Aquatic health, and infrastructure health projects - 20 points

⁴⁴ New Jersey Infrastructure Bank - 2021 Clean Water State Revolving Fund Intended Use Plan.

⁴⁵ More info here: <https://www.epa.gov/dwsrf/wifta>; PA and NJ participated in WIFTA.



3. Compliance projects - 15 points
4. Community health projects – 10 points⁴⁶

A project can accumulate the maximum number of points if it is deemed that it addresses all the criteria.

Loan Rates

The intent of the SRF program is to provide low-interest rate loans that are more affordable to the borrower than market-rate loans to encourage water infrastructure investments. There are certain federal rules that all states must follow regarding how interest rates are determined. States, however, still have a great deal of leeway in how they determine interest rates depending on the priorities and practices that are specific to each state. In all three states examined, the loan rates are established based on the policies highlighted here and can be adjusted based on the specifics of the project and borrower through the review process of each applicant. Some consistencies in these considerations include: the credit rating of the potential borrower, what partners the borrower has with the project, the initial costs, the length of the project, and what potential loans the borrower has already procured for the project.⁴⁷ In order to be competitive with interest rates that are currently very low, all three states examined are currently using a standard loan rate based on federal minimum requirements, with interest rates and administrative fees (where applicable) each set at a minimum 1% per annum, and a maximum of 4% per annum. The interest rate national average for the CWSRF is 1.2%.⁴⁸ The interest rate national average for the DWSRF is 1.3%.⁴⁹

Delaware

Delaware uses a base interest rate that is indexed to market rates; but with today's very low market rates this rate is at federal minimum requirements, with interest rates and administrative fees each at minimum of 1% per annum. Lower interest rates may then be determined and made available based on projected residential user rates (PRUR). The PRUR is a projection of the increase in rates needed to cover the total costs of the system including the new loan, expressed as a percentage of Median Household Income (MHI). A rate above 1.5% of MHI for a single wastewater or drinking water utility (or 3% for wastewater and drinking water combined) is considered economically disadvantaged and is therefore qualified for a subsidy. Additionally, if a municipal bond rate is found that is lower than the combined interest rate and admin fee for the SRF loan, the Delaware SRF program will match that rate. The policy will also be adjusted per any changes in tax reform or other regulatory changes.⁵⁰ Delaware also has sponsorship programs whereby rates can be lowered for borrowers who "sponsor" additional land conservation or water quality improvement projects as part of their loans (as further discussed in the "SRF Additional Programs and Innovations" section below.)

⁴⁶ Pennsylvania Department of Environmental Protection – Resources on SRF Website -

<https://www.dep.pa.gov/Business/Water/CleanWater/InfrastructureFinance/Pages/State-Revolving-Fund.aspx>

⁴⁷ Environmental Protection Agency. March 2018. SRF Fund Management Handbook

⁴⁸ United States Environmental Protection Agency - Website on CWSRF

⁴⁹ United States Environmental Protection Agency - 2020 infographic on the Drinking Water State Revolving Fund
https://www.epa.gov/sites/default/files/2020-12/documents/dwsrf_infographic_dec_2020.pdf

⁵⁰ Delaware Department of Natural Resources and Environmental Control - 2020 Clean Water State Revolving Fund Intended Use Plan



New Jersey

New Jersey takes a different approach with its rates, using the market rate (with a 1% per annum minimum and 4% per annum maximum) as the base and offering blended rates for priority projects. With a blended rate, a certain percentage of the loan is based on the market value and the remaining amount is interest-free. New Jersey's Smart Growth Financing Program (within the CWSRF program) offers up to 75% of project costs at 0% interest with the rest offered at market rate. This is an example of a 25% blended rate, whereby 25% of the loan is at the market rate, and 75% is interest free. As shown in Table 4 below, New Jersey also offers blended rates for a variety of other priority projects, including Combined Sewer Overflow (CSO) projects, other water quality projects, Brownfield redevelopment projects, as well as for principal forgiveness loan plans for these types of projects.⁵¹

Table 4 – New Jersey 2020 Blended Rates Priorities⁵²

Project Type	Blended Rate	Cap
CSO Sewer	25%	-
Water Quality	50%	-
Brownfield Redevelopment	75%	-
PFL -Coastal Community Water Quality Restoration	50%	\$2.5 Million
PFL – CSO projects	50%	\$2 Million
PFL - Water Quality Restoration projects	50%	\$2 Million

Pennsylvania

PENNVEST makes loans with between 1% and 4% interest depending on the user rates of the community the loan is servicing. Currently loan rates are typically set at 1% but can be greater depending on the market value of the project.⁵³ Special cases for lowered interest rates can be given as a subsidy using principal loan forgiveness. For disadvantaged communities PENNVEST utilizes a financial capability analysis that compares community demographic data to similarly situated communities. For such communities PENNVEST offers a term extension up to but not exceeding 30 years of repayment of principal and interest if necessary. Extended term projects are funded with a bond purchase agreement with the funding recipient, whereas other projects go through loan agreements.⁵⁴ Those rates are set per the qualifications set and outlined in the affordability section of this document.

Additionally, municipally sponsored and not-for-profit sponsored projects have special considerations. For not-for-profit organizations, tax returns, and financial statements are used to determine interest rates. The rates are determined by the not-for-profit organization's working budget, as well as the funds of their owners and benefactors. This evaluation will be used to determine the organization's capacity to cover their debt services accrued by receiving the loan.

⁵¹ New Jersey Infrastructure Bank - 2020 Clean Water State Revolving Fund Intended Use Plan

⁵² Ibid

⁵³ PENNVEST - Loans and non-point source pollution financing page - <https://www.pennvest.pa.gov/migration/Pages/560726.aspx>

⁵⁴ PENNVEST. 2021 CWSRF Intended Use Plan

Application Process

The application process for each state varies depending on the size of the program as well as how the funds are managed. The intent of each application process is to streamline requests and to create an easy and fair priority listing for the programs. Applicants in each of the states considered can start their application process by meeting with government agency members where they can receive guidance on what will be required of them as a potential applicant. All three of the considered states offer these consultations for any potential applicants. The consultation must be requested by the applicant and can be as simple as a phone call. Consultations are also offered throughout the entire application process for each of the states considered. This is a voluntary step that can help potential applicants create the framework for a successful application process. Being aware and taking advantage of the offered consultations requires some capacity and knowledge and can help clarify and avoid or minimize impediments to an SRF loan. However, in each state the process requires months of work for both the potential borrower and the lender before a final decision is made. The more technical support an applicant has, the easier the process will be for them.⁵⁵

New applicants must also go through various online portals to procure the proper forms and paperwork for all the states considered. For New Jersey www.h2loans.com is the portal, for Pennsylvania and Delaware the applications can be downloaded through the investment authority or agency websites.

Once the paperwork has been received from the appropriate website, all three states require that the potential borrower produce a Notice-of-Intent (NOI). NOIs require construction and engineering plans as well as life cycle estimates for the intended project. Additionally, preliminary financial information will be required, this is so the investment authorities and agencies can accurately determine the credit eligibility for the potential applicant and whether financial assistance (such as PFLs) will be required. NOIs require some risk on behalf of the potential applicant, with no guarantee that their loan will be approved. In the NOI phase applicants need to be able to answer a series of questions about the level of improvement the project will be accomplishing as well as why the project is needed. The cost of the construction permitting, as well as design costs will be up to the applicant to pay regardless of the final loan approval. To help alleviate this risk, Pennsylvania and New Jersey have specific loans designed to pay for initial construction and engineering planning costs.^{56 57} These construction loan program (CLP) loans help to alleviate some of the risk, but they must be paid back within three years of procuring them in order for the loan program to stay credible, and to keep the agencies and investment authorities from losing funds.⁵⁸ Delaware has planning matching grant and planning advance programs that applicants can apply to for assistance with project planning costs.

Once the NOIs have been reviewed and the individual processes that occur within each state occur, each state has a review process in which the PPL is created. The PPL is created through the process listed in the “project priorities” section of this document. Those projects with the highest ranking within the PPL will receive funding

⁵⁵ Environmental Protection Agency. March 2018. SRF Fund Management Handbook

⁵⁶ New Jersey Water Bank, July 16, 2018 - Unlocking Green Infrastructure Financing - https://www.nj.gov/dep/dwg/pdf/NJWB_GI_Applicants_Guide_v8.2.18.pdf.

⁵⁷ PENNVEST Website and application guideline, <https://www.pennvest.pa.gov/about-us/Pages/FAQ-Apply-for-Funds.aspx>

⁵⁸ Conversation with PENNVEST, NJDEP, and DENREC

and acceptance first. In order to be fully considered in the PPL the entire application process must be completed, which can be a long and laborious process. So it's not surprising that, for all the states considered in this document, most applicants who finish the application process are approved for SRF loans.

Delaware

Delaware has the simplest application process of the three states considered in this document. One unique aspect of its process is that *where* a potential applicant applies will differ depending on if they are seeking CW or DW SRF funding. A potential applicant begins the official process by going to the DNREC or DHSS websites. There they can download an application document that will ask for a variety of demographic data as well as financial data. There is a different application form for not-for-profit and private entities than there is for government entities. The Water Infrastructure Advisory Council (WIAC) holds a public hearing on the draft Project Priority List and adopts a final List after public review and comment. That list is used to award funding during the fiscal year, which runs from July 1 to June 30.⁵⁹ A second invitation to submit NOI is sent out each summer, to allow the PPL to be updated, if needed. The revised PPL is adopted by the WIAC using the same public review process.

After the PPL is adopted, those applicants whose projects are on the fundable portion of the list will be contacted to submit a loan application for funding. Submitted projects that are ready to proceed to the planning and design phase are included in IUPs for both SRF programs. Applicants with projects on the IUP are asked to submit loan applications within four to six months for funding consideration. Submitted loan applications must include a Preliminary Engineering Report and an Environmental Information Document.⁶⁰

Another difference in the Delaware process is the opportunity to apply for one or more of a series of grant programs. These include planning matching grants for municipalities and community water quality improvement grants for non-profit organizations.⁶¹ These grants are administered by DNREC and DHSS outside of the IUP/PPL process and approved by the WIAC.

New Jersey

New Jersey's application process differs from the other states in a few ways. The most important of which is the management of the loan process through the h2loans web portal. In order to start the application process at all in New Jersey an h2loans account needs to be created. This is to make the loan process easier and easily traceable for both the potential borrower and the investment authority.

Another area that New Jersey differs is the requirement for partnerships to be clear up front. Setting up an h2loans account requires explicit indicators that potential borrowers have existing relationships with municipal partners, and construction engineering partners. After the initial authorization resolution is given to the I-Bank, a potential

⁵⁹DNREC Website - <https://dnrec.alpha.delaware.gov/environmental-finance/revolving-fund/>

⁶⁰ DNREC Website - <https://dnrec.alpha.delaware.gov/environmental-finance/revolving-fund/>

⁶¹ See <https://dnrec.alpha.delaware.gov/environmental-finance/> for a list of these programs

borrower has to give a statement of assurances from these potential partners to ensure that they are working together to create the promised project.

Pennsylvania

For Pennsylvania, the loan process is very deliberate and works in partnership between PENNVEST, DEP, and the applicant. An applicant must go through a process with several consultations to ensure everything is on-track between the potential borrower and PENNVEST before the final decision is made. These consultations are meant to help review the finances and the engineering requirements for a potential project. This process is slightly different depending on if the applicant is applying for a wastewater, stormwater, or drinking water loan.

Pennsylvania differs in that the collaboration with DEP and PENNVEST are more clearly written into the application process. Prior to being considered for the PPL a potential borrower has a series of steps that they must partake in to be considered. How Pennsylvania differs is that in-between each of these steps there is a required meeting with either PENNVEST or DEP staff to ensure that the project is in a good place to match all the requirements that must eventually be met to be considered for the PPL.

Natural Infrastructure Considerations

Promoting the use of natural or “green” infrastructure for clean water has been a priority of the CWSRF program nationally since 2009 and is a major priority for American Rivers because of the variety of community benefits it provides; improving livability, air and water quality, reducing heat islands and energy usage.⁶² American Rivers defines green infrastructure as “an approach to water management that protects, restores, or mimics the natural water cycle.”⁶³ Green stormwater infrastructure uses materials and processes that are natural (such as trees, plants and soils) or that mimic nature (such as porous pavement and rain barrels) to slow runoff when it rains and absorb or remove pollutants before that runoff reaches streams and rivers. Additionally, it can reduce the flow of stormwater into Combined Sewer Systems (CSSs) to reduce the number and severity of Combined Sewer Overflows (CSO) events, when a mix of rainwater runoff, domestic sewage, and industrial wastewater exceeds the capacity of the system and is discharged to rivers and streams.⁶⁴ All three states have CSOs systems that are subject to this kind of CSO pollution, which is a priority the CWSRF seeks to address.

In 2009, new guidance was put in place through the American Recovery and Reinvestment Act (ARRA) to ensure that natural infrastructure was supported through the CWSRF. Federal regulation initially guaranteed amounts of 20% of all CWSRF funds were to be spent on green programs in a guaranteed “reserve.” This program was therefore named the “green project reserve” (GPR). In 2012, new legislation changed the allocation amount for the GPR to 10% instead of the initial 20%. The states considered here have all shown natural infrastructure to be

⁶² Environmental Protection Agency – March 2014, Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow (CSO) Control - https://www.epa.gov/sites/default/files/2015-10/documents/greening_cso_plans_0.pdf - Publication #832-R-14-001

⁶³ American Rivers – Website on What is Green Infrastructure - <https://www.americanrivers.org/threats-solutions/clean-water/green-infrastructure/what-is-green-infrastructure/>

⁶⁴ EPA Guidance on CSOs - <https://www.epa.gov/npdes/combined-sewer-overflows-csos>

a priority at some point in the past, but each currently requires only the 10% minimum for guaranteed GPR amounts prescribed by EPA. Each state differs in how they define natural or green infrastructure projects.

Eligibility principles for the GPR were laid out in the 2010 GPR guidance document from the EPA. The EPA set an inclusive approach to determining what is and is not a ‘green’ water project. Wherever possible, the guidance references existing consensus-based industry practices to provide guidance for developing green projects.⁶⁵ In order to be eligible for GPR funding, a project must be otherwise eligible for CWSRF funding. In addition, GPR projects must meet the definition of one of four GPR categories: green infrastructure, water efficiency, energy efficiency, and environmentally innovative projects. Use of GPR funding is not limited to green infrastructure. Most states claim this credit via energy and water conservation projects; for example, switching to a more efficient pump or changing part of a system to be gravity-fed. Across the country, states only allocated 3% of CWSRF commitments to green stormwater and natural infrastructure from 2016 to 2020.⁶⁶ Whereas, projects that fall into any one of the four categories listed by the EPA are eligible for GPR credit.⁶⁷

Table 5 illustrates how each of the three states examined here spent GPR funding for FY2020. The table is not indicative of each State’s GPR priorities, however, as project types can vary widely from year to year. For all three states examined here, GPR financing eligibility is assessed through the normal SRF application process, as described in the “application process” section above.

Delaware

Delaware defines natural infrastructure as “preservation and restoration of natural landscape features, such as forests, floodplains, and wetlands coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. This Includes bioretention, trees, green roofs, porous pavements, and cisterns.”⁶⁸ Delaware follows the previously outlined eligibility principles from the EPA and allocated \$1,499,145 toward GPR projects in 2020. To additionally incentivize the use of green infrastructure, Delaware provides project sponsorship opportunities for land conservation and water quality improvements, as well as community water quality improvement grants described further in the “SRF Additional Programs and Innovations” section. These programs have helped Delaware commit a higher percentage of its CWSRF investments to green infrastructure than most other states.⁶⁹

⁶⁵ Environmental Protection Agency – April 21, 2010. 2010 Clean Water and Drinking Water Revolving Fund 20% Green Project Reserve: Guidance for Determining Eligibility - https://documents.dnrec.delaware.gov/fab/Documents/Clean%20Water%20Infrastructure%20Project%20Funding/3_c-2010%20Clean%20Water%20and%20Drinking%20water-%20Green-project-reserve-guidance.pdf

⁶⁶ Environmental Policy Innovation Center – February 2022. *Financing Green Stormwater and Natural Infrastructure with Clean Water State Revolving Funds*

⁶⁷ United States Environmental Protection Agency – SRF Handbook

⁶⁸ Department of Natural Resources Environmental Control, Office of the Secretary Environmental Finance, April 14 2021, State of Delaware Water Pollution Control Revolving Fund FFY 2021 Intended Use Plan

⁶⁹ Environmental Policy Innovation Center – February 2022. *Financing Green Stormwater and Natural Infrastructure with Clean Water State Revolving Funds*

New Jersey

New Jersey defines natural infrastructure through their 2018 “unlocking green infrastructure financing” report. In that report the I-Bank states “green infrastructure mimics natural processes, utilizing soils and vegetation to manage rainwater where it falls. By focusing on nonpoint source pollution and the environmental impact of land development, green infrastructure can complement, or be an effective alternative to traditional ‘gray’ infrastructure techniques in minimizing and preventing adverse stormwater runoff impacts.”⁷⁰ The NJWB highlights several types of projects eligible for green infrastructure financing including rain gardens, bioswales, stormwater bumpouts, porous asphalt or concrete, green roofs, cisterns, and street tree trenches.⁷¹ The NJWB encourages collaboration on green infrastructure projects to make the application process worthwhile and meet the minimum application value of \$250,000. This includes bundling multiple green infrastructure projects together, bundling green projects with grey infrastructure projects, and partnering with a non-profit.⁷² The NJWB also provides 50% principal forgiveness, 25% DEP interest-free financing, and 25% I-Bank Market rate financing for (green infrastructure) projects that manage stormwater to reduce the overflow of untreated wastewater from CSOs. This results in a half grant, half loan at .125% of market rate. There is a \$2 million cap on principal forgiveness per applicant and DEP interest-free funding is provided for costs beyond the cap in lieu of principal forgiveness.⁷³

Pennsylvania

Pennsylvania uses EPA guidance to define natural infrastructure. Using the wording from the EPA’s 2012 guidance document on the GPR, Pennsylvania and the EPA both define natural infrastructure as projects that “include a wide array of practices at multiple scales that manage weather and that maintain and restore natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater.”⁷⁴ PENNVEST also uses the EPA guidance regarding what is an eligible project for GPR funding. To qualify for GPR funding all projects must be principally for water quality/ public health purposes and be cost-effective. There are some projects that PENNVEST does not categorically qualify as green projects, these cases would require an additional application process that would include a Business Case.⁷⁵ An example of a project like this would be livestock fencing or stream buffers under the green infrastructure category.⁷⁶ PENNVEST has shown to have a specific interest in green infrastructure projects in the past. Through Pennsylvania’s “Growing Greener” initiative, PENNVEST has made grants available specifically for green infrastructure projects that “promote sound land use, while simultaneously improving the Commonwealth’s water resources. Under this initiative PENNVEST has grant funds available for drinking water, wastewater, and stormwater infrastructure projects...that highlight green principles”.⁷⁷

⁷⁰ New Jersey Water Bank, July 16 2018, Unlocking Green Infrastructure Financing. Pg. 3

⁷¹ Ibid. pg. 6

⁷² Ibid. pg. 10

⁷³ Ibid. pg. 14

⁷⁴ Environmental Protection Agency – April 21, 2010. 2010 Clean Water and Drinking Water Revolving Fund 20% Green Project Reserve: Guidance for Determining Eligibility

⁷⁵ EPA eliminated the need for GPR business cases several years ago. States make the call and when/if EPA audits them, provide their rationale.

⁷⁶ Pennsylvania Infrastructure Investment Authority – April 28, 2009. Guidance for Potential ARRA Green Project Reserve Applicants in PA.

⁷⁷ Pennsylvania Infrastructure Investment Authority - Green Initiatives. <https://www.pennvest.pa.gov/Information/Funding-Programs/Pages/Green-Initiatives.aspx>

Table 5 – Green Project Reserve Spending Over Time (Since 2012)

	Delaware ⁷⁸	New Jersey ⁷⁹	Pennsylvania ⁸⁰
Green Infrastructure	\$39,510,346	\$7,0136,194	\$121,082,676
Energy Efficiency	\$5,2610,296	\$66,685,681	\$27,433,937
Water Conservation	\$6,586,800	\$4,966,963	\$3,159,289
Green Innovative Projects	\$1,807,264	\$0	\$6,354,746
Total Cumulative GPR	\$100,514,706	\$141,788,838	\$158,030,648

Water Equity Considerations

Affordability has long been a consideration for the SRF programs and is the primary way in which it addresses water equity. Ensuring affordable and equitable access to clean water by all has increasingly become a priority for American Rivers, The Water Center at Penn, and other clean water advocates. The US Water Alliance identifies water equity as occurring when communities have:

- Have access to safe, clean affordable drinking water and wastewater services;
- Share in the economic, social, and environmental benefits of water systems; and
- Are resilient in the face of floods, drought, and other climate risks.⁸¹

The SRF programs address water equity through the lens of affordability. The Drinking Water State Revolving Fund (DWSRF) specifically has regulatory enforcement built into the law that is meant to assist “disadvantaged communities.” According to Section 1452 of the Safe Drinking Water Act (SDWA) of 1996, a disadvantaged community is “the service area of a public water system that meets affordability criteria established after public review and comment by the State in which the public water system is located.”⁸² Disadvantaged communities are defined through the DWSRF in the most literal way possible – communities that cannot afford their water infrastructure needs. The 2018 America’s Water Infrastructure Act (AWIA) took this a step further and mandated that each State define their disadvantaged communities. It is up to each individual State to determine who is defined as disadvantaged within their programs. The EPA has implicitly required States to provide allowances to defined disadvantaged communities in both the Clean Water State Revolving Fund (CWSRF) and the DWSRF. For the DWSRF, the EPA mandates that each State provide allowances to these disadvantaged communities in the form of 6-35% of the SRF capitalization grant. The DWSRF provides some flexibility in how disadvantaged

⁷⁸ EPA – Drinking Water State Revolving Fund Information for the State of Delaware - https://www.epa.gov/sites/default/files/2020-11/documents/delaware_dw20.pdf

⁷⁹ EPA – Drinking Water State Revolving Fund Information for the State of New Jersey - https://www.epa.gov/sites/default/files/2020-11/documents/NJ_dw20.pdf

⁸⁰ EPA - Clean Water State Revolving Fund Program Information for the State of Pennsylvania - <https://www.epa.gov/sites/default/files/2021-02/documents/pa.pdf>

⁸¹ <http://uswateralliance.org/wec/framework>

⁸² The United States 1996 Congress, August 6, 1996 - Section 1452 of the Safe Drinking Water Act - <https://www.govinfo.gov/content/pkg/CPRT-106SPRT67528/pdf/CPRT-106SPRT67528.pdf>

community allowances can be spent. These allowances often take the form of set-asides or grant programs designed specifically to assist disadvantaged communities.⁸³

There are a number of tools SRF managers can use to make loans more affordable and accessible to communities in need, including adjusting rates, extending the borrowing period, and forgiving principal. Just as federal GPR requirements dedicate a level of funding for natural infrastructure projects, they also dedicate funding explicitly to be used for affordability via Additional Subsidy. These subsidies can be achieved through Principle Forgiveness Loans (PFL), grants, or negative interest loans. PFL are loans for which the lender absorbs or “forgives” some of the principal costs of the clean water or drinking water loan: either the interest, the initial cost, or both. A 0% loan with 100% principal forgiveness is essentially a grant (although there may still be closing costs and borrower requirements that need to be met.) A negative interest loan is another way to accomplish this that is challenging from an accounting perspective and rarely used. Federal legislation mandates that 10% of the DWSRF and CWSRF programs be spent on improving underserved communities via Additional Subsidy.⁸⁴ Table 6 illustrates the amounts guaranteed for each state’s PFL.

Table 6.1 - Amounts Guaranteed for Additional Subsidy by State in 2020

	Delaware	New Jersey	Pennsylvania
CWSRF Total	\$777,900 ⁸⁵	\$4,622,057 ⁸⁶	\$6,293,900 with a max of \$25,175,600 ⁸⁷
DWSRF Total	\$1,110,000 ⁸⁸	\$18M per applicant (including lead project funding) ⁸⁹	\$8,891,740 ⁹⁰

There is, however, leeway in how a state defines a project that is eligible for Additional Subsidy. The computation of how a PFL is calculated must, by law, start with a minimum 1% interest rate. That 1% interest rate can then be further reduced to an eventual 0% loan if the project fulfills all the qualifications listed by the state. Pennsylvania calls this a “target percentage” and the percentage rates are averaged and compared based on census data.⁹¹ For each state considered, the three primary criteria to determine eligibility for PFL are: household income, unemployment rates, and population trends Table 6.2 summarizes how each state uses those criteria.

Delaware, Pennsylvania, and New Jersey all give out subsidies as a portion of their federal capitalization grants, primarily in the form of PFLs.

In addition to PFLs, states can utilize SRF “set-asides” and grant programs to make funding available for programs and projects outside of the loan process. They can also look for ways to clarify and streamline their

⁸³ The United States Environmental Protection Agency – 2018 – America’s Water Infrastructure Act <https://www.epa.gov/ground-water-and-drinking-water/americas-water-infrastructure-act-2018-awia>

⁸⁴ Ibid.

⁸⁵ Delaware Department of Natural Resources and Environmental Control – 2020 Clean Water State Revolving Fund Intended Use Plan

⁸⁶ New Jersey Infrastructure Bank - 2020 Clean Water State Revolving Fund Intended Use Plan

⁸⁷ Pennsylvania Infrastructure Investment Authority – 2020 Clean Water State Revolving Fund Intended Use Plan

⁸⁸ Delaware Department of Health and Social Services – 2020 Drinking Water State Revolving Fund Intended Use Plan

⁸⁹ New Jersey Infrastructure Bank - 2020 Drinking Water State Revolving Fund Intended Use Plan

⁹⁰ Pennsylvania Infrastructure Investment Authority - 2020 Drinking Water State Revolving Fund Intended Use Plan

⁹¹ Ibid

systems and processes to make them more accessible. The three states examined are all working to apply these kinds of tools in different and innovative ways.

Table 6.2 - How Each State Determines Eligibility for PFLs for the CW SRF

	Delaware ⁹²	New Jersey ⁹³	Pennsylvania ⁹⁴
Income	Greater than 1.5% of Median Household Income spent on water usage is eligible	Median Household income of less than \$90,000 is eligible	Median Household Income based on a comparison between census data and the consumer price index.
Unemployment	Communities with higher than a 5% delinquency rate for both wastewater and drinking water are eligible. This is a metric Delaware uses as a proxy to determine unemployment	Counties with an unemployment rate higher than 3% are eligible	Counties with unemployment rates on the decline based on census data (specifically counties with an unemployment rate that exceeds 40% of the state average) are eligible.
Population Trends	Estimated number of equivalent dwelling units (EDU) per wastewater facility is a proxy – Communities with a falling number of EDUs over the past decade are eligible	Communities with a population increase of only 2% or lower between censuses are eligible	Population increases of less than 2% between censuses and populations with a majority over 64 are eligible

SRF Additional Programs and Innovations

Aside from the standard loan-making process, there are a number of other ways for states to use SRF funding innovatively to advance their priorities, including through set-asides, sponsorship programs, grant programs, and other initiatives. How states do this varies greatly.

Set-Asides

In the DWSRF program, states can “set aside” up to a certain percentage of their federal capitalization grants for the following purposes:

- Administration and Technical Assistance (4 percent)
- Small Systems Technical Assistance (2 percent)
- State Program Management (10 percent)
- Local Assistance and Other State Programs (15 percent)

⁹² Delaware Department of Natural Resources and Environmental Control – 2020 Clean Water State Revolving Fund Intended Use Plan

⁹³ New Jersey Infrastructure Bank - 2020 Clean Water State Revolving Fund Intended Use Plan

⁹⁴ Pennsylvania Infrastructure Investment Authority – 2020 Clean Water State Revolving Fund Intended Use Plan

EPA provides guidelines but these set-asides can be used for a broad range of activities, by staff or contractors. States must identify how set-aside funds will be used in their IUPs and, with the exception of set-asides for administration, must provide a work plan for this. Set-asides are an important means of funding the more programmatic activities needed to support sustainable water infrastructure and are used by all three states examined here to help fund staff positions related to the SRF program, to some degree.

One example of creative uses of set-aside funds is New Jersey's Construction Loan Program. This program is designed to help alleviate the initial costs for potential borrowers in the planning and engineering phase of the application process. It is highly recommended by the New Jersey I-Bank for potential borrowers and completely funded with DWSRF set-aside funds.

Pennsylvania has also used set-aside funds innovatively. For example, in 2007 DWSRF funds were provided by PADEP to the Partnership for the Delaware Estuary to coordinate the Schuylkill Action Network (SAN), a collaboration of over 100 organizations working to improve water quality in the Schuylkill River. SRF funds were combined with support from the Philadelphia Water Department to sustain the SAN, which identifies and coordinates projects and activities to reduce agricultural runoff pollution, stormwater runoff pollution, and abandoned mine drainage in the Schuylkill River, a major drinking water source for the City of Philadelphia.

Sponsorship Programs

Another creative way states have found to incentivize and fund green infrastructure projects is through sponsorship programs. These programs utilize the traditional loan structure to provide additional resources for green infrastructure projects. An applicant borrowing for a traditional project can "sponsor" a related green infrastructure project that gets added to the loan, and interest rates are lowered to compensate for the additional cost. The green infrastructure project can be undertaken by the loan applicant directly, or the applicant can provide those funds to another entity to complete the project.

Delaware has two such programs. The Land Conservation Sponsorship Program provides funds for the permanent protection of conservation land and the Water Quality Improvement Sponsorship Program provides funds for projects that improve water quality (like stream restoration, reforestation, etc.) Both programs were introduced several years ago, and each has been used at least once. However, with interest rates currently at the SRF program minimum, these programs are not feasible.

The I-Bank's blended rates programs (previously described) take a somewhat similar approach by using the traditional loan structure but waiving interest for a portion of the project and the I-Bank has some innovative accomplishments, some including green infrastructure projects in Camden and Hoboken that helped transform contaminated properties to public assets using 50% principal forgiveness to attract and enable their completion.



Grant Programs

When SRF loans are made, they are repaid with interest and, in some states, administrative fees. Other states charge administrative fees as part of their application process. The interest must be returned to sustain and grow the fund for future loans. However, the administrative fees are not subject to the federal SRF requirements and can be used for other purposes. Some states used these funds for grant programs, which are often more desired by potential borrowers and can be important for keeping the overall programs relevant and enticing

In Delaware, these fees go into a “non-fed admin account” managed by DNREC Environmental Finance and fund several grantmaking programs. Those administered by DNREC’s Nonpoint Source Pollution Program as part of the CWSRF include: Community Water Quality Improvement Grants (CWQIG), Surface Water Matching Planning Grants, Wastewater Matching Planning Grants, and Asset Management Grants. On the DWSRF side are two administered by DHSS: Drinking Water Matching Planning Grants and Asset Management Grants. Of these, CWQIGs are particularly aimed at green infrastructure projects undertaken by non-profit organizations to advance innovative solutions for water quality improvement and/or have “cost-effective and measurable results.”⁹⁵ Eligible projects are: “Providing benefits to water quality within an impaired watershed.

Implementation of non-regulatory projects listed in a watershed management plan. Installation of community stormwater management improvements in existing developments and municipalities. Or restoration for water quality benefits.”⁹⁶ CWQIGs are up to \$75,000 and require little if any match (recently reduced from 25% to 0) but applicants must go through a competitive selection process and meet state insurance requirements.

Pennsylvania’s Growing Greener initiative is one way Pennsylvania is innovating with its water infrastructure programs. Growing Greener is also known as the “Environmental Stewardship and Watershed Act” and was passed into law in December of 1999. Funded and administered by the PADEP through non-SRF funds, the program plays an important role in providing assistance for green projects throughout the state. “The primary purpose of the program is to restore impaired waters and protect waterways from nonpoint source pollution within (Pennsylvania).”⁹⁷ Under the Growing Greener initiative PADEP directs projects to PENNVEST for drinking water, wastewater and stormwater infrastructure grants.⁹⁸ In this way, the Growing Greener and SRF programs leverage and support each other for maximum impact.

Other Initiatives

In Delaware the [Clean Water for Delaware Act](#) was signed into law in July of 2021, which aims to pool and leverage funding with special consideration to underserved communities. Through the Clean Water for Delaware Act, a new “Clean Water Trust” is being created with \$22.5 million of state funds allocated to the DWSRF and CWSRF and an additional \$5 million of conservation funds for a total \$50 million state investment on top of

⁹⁵ Delaware Department of Natural Resources and Environmental Control - Community Water Quality Improvement Grants.
<https://dnrec.alpha.delaware.gov/environmental-finance/community-water-quality-improvement/>

⁹⁶ Ibid.

⁹⁷ Pennsylvania Department of Environmental Protection – 5/21. Growing Greener Plus Grants Program: Funding Watershed Planning, Restoration and Protection Efforts - 101-BK-DEP3193.

⁹⁸ PENNVEST website - <https://www.pennvest.pa.gov/Information/Funding-Programs/Pages/Green-Initiatives.aspx>

federal SRF funds. \$1.6 Million of each allocation per year at a minimum of the investments made through this trust must, by law, be set aside for underserved communities. Additionally, the Clean Water for Delaware Act requires creation of a cabinet level committee called the “clean water trust oversight committee” which will give advisory information to the WIAC when deciding water funding allocations through an annual clean water strategic plan. The Clean Water for Delaware Act was the result of a multi-year advocacy effort and will transform the way the state invests in clean water. DNREC has just begun to implement the reorganization it calls for but in July 2021 announced a new Clean Water Initiative for Underserved Communities.

Through its regular activities, PENNVEST accepts and is able to accommodate requests for innovative green infrastructure projects from non-traditional borrowers. For example, PENNVEST provided \$2 million in CWSRF grant assistance to the Delaware Valley Regional Planning Commission (DVRPC) for green infrastructure applications to address non-point source pollutant loads.⁹⁹ The DVRPC is a regional commission serving the greater Philadelphia region through an interstate compact with New Jersey and provides service to five counties in Pennsylvania and four in New Jersey with “services include land use and environmental planning, mapping, and data analysis.”¹⁰⁰ Similarly, PENNVEST made a \$7.9 million investment in the Partnership for the Delaware Estuary’s construction and start-up of a hatchery to propagate freshwater mussels for clean water projects at Bartram’s Gardens in Philadelphia.

All three states are challenged when it comes to addressing smaller projects and communities. In response to this challenge, Both the I-Bank and PENNVEST have new programs that provide a simpler, quicker pathway to approval for projects under a certain size, and both encourage combining multiple smaller projects into one application. In addition, PENNVEST is funding a Center for Water Quality Excellence being piloted in the York/Lancaster Area to provide a resource center and assistance to smaller, non-traditional applicants. Delaware’s sponsorship programs address this to some degree by allowing green infrastructure projects to be coupled with larger traditional infrastructure projects but are thwarted by interest rates currently too low to make sponsorships advantageous.

The iBank’s 2018 collaboration with NJFuture to develop a comprehensive Application Guide to clarify the sequence of requirements and define standards for applicants is also an important step for increasing the accessibility of the SRFs to new and low-capacity borrowers.¹⁰¹

⁹⁹ Ibid

¹⁰⁰ United States Environmental Protection Agency - May, 2017 - Financing Options for Nontraditional Eligibilities in the Clean Water State Revolving Fund Programs. Publication number - 830B17003

¹⁰¹ NJ Future – July 2018 – A Review of New Jersey’s Water Bank Financing for Green Infrastructure Projects.

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Acronyms

ARRA - American Recovery and Reinvestment Act

CDP - Capacity Development Program

CLP - Construction Loan Program

CSOs - Combined Sewer Overflows

CSS - Combined Sewer System

CWQIG - Community Water Quality Improvement Grant

CWSRF - Clean Water State Revolving Fund

DEP - Department of Environmental Protection

DNREC - Delaware Department of Natural Resources and Environmental Control

DHSS - Department of Health and Social Services

CRS - Congressional Research Service

DVRPC - Delaware Valley Regional Planning Commission

DWSRF - Drinking Water State Revolving Fund

EPA - Environmental Protection Agency

GPR - Green Project Reserve

HABs - Harmful Algal Blooms

I-Bank - New Jersey Infrastructure Bank

IUP - Intended Use Plan

NJEIT - New Jersey Environmental Infrastructure Trust

NJTIB - New Jersey Department of Transportation

NJIB - New Jersey Infrastructure Bank

NJWB - New Jersey Water Bank Financing Program

PENNVEST - Pennsylvania Infrastructure Investment Authority

PFL - Principal Forgiveness Loan

SDWA - The Safe Drinking Water Act

SRF- State Revolving Fund

TMDL – Total Maximum Daily Load

WIAC - Water Infrastructure Advisory Council