

# Increasing Access by Community Water Systems in Puerto Rico to Drinking Water State Revolving Fund Monies

## Executive Summary

Over 100,000 people in Puerto Rico get their drinking water from small, largely rural community water systems. These community-owned and operated systems have water quality, quantity and reliability issues. A recent survey conducted by the U.S. Environmental Protection Agency (EPA) of 235 water systems disclosed the following:

- About a quarter of the systems are unable to meet daily water demands
- Only 18% of the systems utilize filtration
- 40% of the systems do not engage in routine water quality monitoring
- A quarter of the systems provide untreated water to their customers
- There is a high percentage of systems that have been cited for health-based violations

Money to invest in improving these systems is scarce. Further, these communities are unable due to their financial situation to pay debt service on loans or provide a financial return on investment.

EPA has been running a program for the last 25 years called the Drinking Water State Revolving Fund that is an obvious source of funding. The DWSRF provides funds to states which they in turn make available to public water systems to finance infrastructure improvements with an emphasis on addressing water quality issues.

While the DWSRF program is designed primarily to be a revolving fund, i.e., to make loans to communities which when repaid are put back in the program, states can provide grants to “disadvantaged” communities (which characterizes most of the communities served by small water systems in Puerto Rico.)

In order for community water systems to access DWSRF funds, and specifically grant funds (as opposed to loans which are unaffordable), several modifications need to be made to the way Puerto Rico administers the DWSRF program.

1. Changes to the “rules” of the DWSRF program in Puerto Rico
  - An explicit grant program should be established within the DWSRF program to encourage participation by community water systems.
  - Lack of technical, managerial and financial (TMF) capacity (which is a prerequisite for receiving DWSRF monies) should not disqualify a community from applying for and receiving DWSRF funds. The application for a capital improvement grant, however, needs to be accompanied by a plan to increase the community’s TMF capacity to a threshold level.

- The application and approval process for grants of \$500,000 or less should be streamlined.
2. Changes to the administration of the DWSRF program
    - The DWSRF grant program needs to be clearly articulated and communicated (using multiple channels and in both English and Spanish) to both community water systems and the “ecosystem” of technical advisors that work with these systems.
    - A Small Water Systems Advisory Board (SWSAB) should be established to disseminate and exchange information about the DWSRF grant program. The SWSAB would be composed of the community water systems, the Puerto Rico Government and EPA.

## Preface

This white paper is the product of a graduate student infrastructure policy practicum offered by the MPA Program in the Cornell Jeb E. Brooks School of Public Policy. The purpose of the practicum is to present students with a real-world infrastructure challenge. The Spring 2024 challenge was to understand how the U.S. Environmental Protection Agency’s Drinking Water State Revolving Fund Program could be used more effectively by community water systems in Puerto Rico (called aqueducts) to address their water quality issues.

Ten students (listed in Appendix 4), who are in master’s degree programs in public administration and regional planning, participated in the Spring 2024 practicum. The practicum consisted of a semester-long immersion into community drinking water systems and the Drinking Water State Revolving Fund (DWSRF) program. It also included a week in Puerto Rico meeting with community water managers, public officials, and subject matter experts. A list of people and organizations with whom we met is included in Appendix 4.

The team followed an established policy analysis framework starting with defining the problem and refining this definition as information was collected. The team assembled secondary and primary data to identify root causes, culminating in a set of policy suggestions to address the problem.

Through this process the team assembled a set of documents listed in Appendix 3 that can be used to build on this work. We also developed a “phase 2” workplan to test key assumptions—see Next Steps.

We hope the ideas in this document will form the basis for a more expansive use of the DWSRF program in Puerto Rico in order to address water quality issues particularly in disadvantaged communities.

The views included in this proposal are those of the students that conducted the research.

## Context and Problem Definition

Puerto Rico is a United States territory with a population of approximately 3.2 million. Ninety six percent (96%) of the population obtains its drinking water from the Puerto Rico Aqueduct and Sewer Authority (PRASA) which is a publicly owned and operated water utility.

There are approximately 125,000 people who are not served by PRASA (4% of the population). These people obtain their water from small community water systems. According to the U. S. Environmental Protection Agency (EPA),

Non-PRASA systems are primarily located in small, disadvantaged, environmental justice communities in rural areas, and they are typically owned and operated by community leaders.

Non-PRASA communities have a historical high percentage of health-based violations, representing a chronic risk to the public health of the population in these communities.

Puerto Rico's economic constraints and the recent impacts of several natural disasters (hurricanes, earthquakes, drought), as well as the COVID-19 pandemic, have placed an additional burden on non-PRASA systems, negatively affecting compliance rates with drinking water standards.

The poverty rate in Puerto Rico is significant; with a 43.5% poverty rate documented by the US Census for 2021, compared to Mississippi, the mainland's poorest state, with a 18.7% poverty rate. Hence, the whole island of Puerto Rico is considered to have communities with environmental justice concerns.

Source: EPA, 2022. <https://www.zintellect.com/Opportunity/Details/EPA-REG2-2022-02>.

There are approximately 235 non-PRASA systems that are registered with the Puerto Rico government and serve approximately 94,000 people. (There are also a group of "informal" systems that are not registered with the government.)

In 2023 EPA (which has jurisdiction in Puerto Rico) conducted a comprehensive technical, managerial, and financial assessment of the 235 non-PRASA community aqueducts (shown in the map below as dots). The purpose of this assessment was to "support infrastructure investments and capacity building efforts to assist community non-PRASA water systems achieve and maintain compliance with drinking water regulations, while building resilience to withstand disasters."



Source: Technical, Managerial, and Financial Assessment of Non-PRASA Community Aqueducts: Project Overview 2022-2024, February 27, 2024.

Key findings reported by EPA were:

- 60% of the systems use groundwater (wells) and 40% use surface water
- 77% of the systems meet daily water demands
- Only 18% of the systems utilize filtration
- 40% of the systems do not engage in routine water quality monitoring
- 72 systems (serving 13,600 people) provide untreated water to their customers
- Only 31% of the systems have an operations and maintenance plan
- 80% of the systems do not have licensed operators
- There is a high percentage of systems that have been cited for health-based violations. (Note: Non-PRASA communities rank highest in EPA Region 2’s “Long Standing Health-Based Violators Performance Measures. Region 2 consists of New Jersey, New York, Puerto Rico, the U.S. Virgin Islands and eight Indian Nations. Source: <https://www.zintellect.com/Opportunity/Details/EPA-REG2-2022-02.>)
- Non-compliance with health requirements by non-PRASA systems is the result of:
  - Economic limitations
  - Inadequate treatment
  - Poor sanitary conditions
  - Inadequate maintenance
  - Operational difficulties

Based on the EPA’s assessment there is an obvious and immediate need to invest in these community aqueducts. The question is, where can these communities find investment dollars?

There are various public and private funding sources available to community water systems. These include private philanthropy, private capital in the form of loans, and public loans and grants from Federal agencies including the U.S. Department of Agriculture and the EPA.

A significant consideration when exploring funding alternatives is affordability. Many community systems throughout the U.S and certainly most of the systems in Puerto Rico serve

lower income and disadvantaged communities. This means that the ability of these communities to pay interest on and repay the principal of these loans, even loans with below market interest rates, is very limited—the impact on water rates would be greater than the users could bear.

This white paper focuses on EPA’s DWSRF grant program as a funding source for capital improvements for the following three reasons:

- The DWSRF program is the largest pool of money for the purpose of funding water system improvements in the U.S., particularly improvements that address water quality issues
- EPA in recent years has sharpened its focus to direct funds to “environmental justice communities” (which characterizes most non-PRASA communities).
- As mentioned above these communities are not able to service loan debt service

Despite the apparent “fit” between the DWSRF program and the funding challenges faced by non-PRASA communities, no non-PRASA communities have applied for DWSRF funds for capital improvements. (All DWSRF monies distributed in Puerto Rico since the inception of the program have gone to the state-owned water utility, PRASA.) The purpose of the practicum was to identify and understand the reasons for this, and develop suggested modifications to the DWSRF to facilitate the participation of non-PRASA systems.

## Drinking Water State Revolving Fund

One of the primary responsibilities of the EPA is to ensure “Americans have clean air, land and water”. One of the tools given to the EPA by Congress is the DWSRF which offers loans and grants to fund capital improvements for public water systems. According to the Congressional Research Service,

In 1996, Congress amended the Safe Drinking Water Act (SDWA, P.L. 104-182) to authorize a state loan program (the drinking water state revolving fund) for drinking water to help systems finance projects needed to comply with drinking water regulations and to protect public health. Since FY1997, appropriations for the drinking water state revolving loan fund (DWSRF) program have totaled \$23 billion.

EPA administers the DWSRF (and its companion clean water state revolving fund, or CWSRF), which annually distribute funds to the states [including Puerto Rico] for implementation. Funding amounts are specified in the State and Tribal Assistance Grants (STAG) account of EPA annual appropriations acts.

The CWSRF and the DWSRF, together referred to as the SRF, are federal-state partnerships that provide communities with low-cost financing for water infrastructure projects to achieve the Safe Drinking Water Act’s (SDWA’s) and the nation’s health protection objectives. These programs receive their funds from EPA but are administered by the states. (Note: For each federal dollar a state received through the program, the state had to provide a 20 cents—i.e., a 20% state match.)

Although the CWSRF and DWSRF have largely functioned as loan programs, both allow the implementing state agency to provide “additional subsidization” under certain conditions. Since 1996, the SDWA has authorized states to use up to 30% of their DWSRF capitalization grants to provide additional assistance, such as forgiveness of loan principal or negative interest rate loans, to help disadvantaged communities. America’s Water Infrastructure Act of 2018 (AWIA; P.L. 115-270) increased this proportion to 35% while conditionally requiring states to use at least 6% of their capitalization grants for these purposes.

Source: Water Infrastructure Financing: History of EPA Appropriations, The Congressional Research Service, 2019. [www.everycrsreport.com/files/20190410\\_96-647\\_981dcf4b10a712aad371e7b8bce38a4430f1608d.pdf](http://www.everycrsreport.com/files/20190410_96-647_981dcf4b10a712aad371e7b8bce38a4430f1608d.pdf). Note: The Bipartisan Infrastructure Law passed in 2021 made further amendments to the SDWA that increased the amount of the additional subsidization.

DWSRF monies are distributed by in-state/territory partners pursuant to guidelines established by EPA. In Puerto Rico, the dispensing agency is the Puerto Rico Department of Health (PRDOH).

Funds allocated by EPA to states, territories and tribes are made available to public water systems via an application process. The DWSRF application process has four general steps:

Step 1-Submission of the Project Listing Form to the State Agency

In Puerto Rico this Listing Form consists of the following elements:

- Preliminary engineering report
- Plans for the proposed project
- Construction cost estimate
- Operating budget
- List of necessary construction permits

Step 2-The State Agency scores and ranks the submitted projects

Each project is ranked and scored based on water quality and public health impacts as described in the documents submitted by applicants. In Puerto Rico the scoring rubric focuses on three impacts:

- Does the project address an immediate, critical and/or chronic public health threat (e.g., water quality)?
- Does the project increase the reliability and dependability of the system?
- Does the project improve the efficacy of the system, including the technical managerial and financial operations of the system?

Step 3-The State Agency prepares annually an Intended Use Plan (IUP) that lists the projects and the funding amounts to be undertaken that fiscal year.

Step 4-The applicant assembles the necessary application materials.

Step 5-Applicant applies for financing.

While the scoring is focused on the “impact” of the project being funded, an application will not be considered unless the applicant can demonstrate a threshold level of technical, managerial and financial (TMF) capacity. The specific language in the Safe Drinking Water Act (SDWA) is:

- A. States may not provide DWSRF loan assistance to systems
  - i. which lack the technical, managerial, and financial capability to ensure compliance; or
  - ii. if the system is in significant noncompliance with any drinking water standard or variance.
- B. However, States may provide assistance if:
  - i. the use of such assistance will ensure compliance; and
  - ii. the system has agreed to make the necessary changes in operation to ensure that it has the technical, managerial, and financial capacity to comply over the long term.

Source: Section 1452(a)(3) Assessment of Capacity (p. 53), Safe Drinking Water Act Amendments of 1996, Public Law 104–182—August 6, 1996.  
<https://www.congress.gov/104/plaws/publ182/PLAW-104publ182.pdf>.

PRDOH defines these three capacities as follows:

- Technical Capacity refers to the adequacy, operation and maintenance of a water system’s physical plant. To assure adequate technical capacity, a project sponsor must demonstrate that its water system has adequate source water and adequate infrastructure and must demonstrate that its water system is operated by personnel with technical knowledge about applicable standards.
- Managerial Capacity refers to the personnel expertise required to administer the overall water system operations. To ensure adequate managerial capacity, the project sponsor must demonstrate it has clear ownership, proper and organized staffing, and effective interaction with regulators and customers.
- Financial capacity refers to the ability to acquire, generate and manage enough monetary resources to support the cost of operating, maintaining, and improving the water system and achieve and maintain compliance with SDWA requirements. To assure adequate financial capacity, the project sponsor must demonstrate it has sufficient revenues, fiscal controls, and credit worthiness.

Source: Capacity Development Program, Puerto Rico Department of Health, January 2023. <https://www.salud.pr.gov/CMS/DOWNLOAD/7763>

Included in Appendix 2 is PRDOH’s Capacity Development Checklist that lists the specific items DOH examines to make the determination whether an applicant meets the TMF capacity threshold.

Since the inception of the DWSRF program EPA has dispensed \$23 billion to states and territories for drinking water projects. Puerto Rico has been receiving DWSRF allocations since 1997. The sum of these allocations is approximately \$386 million. (Source:

<https://www.epa.gov/dwsrf/drinking-water-state-revolving-fund-public-dashboard> and <https://www.epa.gov/dwsrf/2002-2005-allotment-federal-funds-states-tribes-and-territories>.)

All of the money allocated to Puerto has been awarded to PRASA; no non-PRASA systems have applied for DWSRF funding for capital improvements despite having water quality and reliability issues and financial need. (Non-PRASA systems, however, have received funds to pay for technical assistance support either through third parties or directly from PRDOH.)

Puerto Rico is not an anomaly among states with respect to the non-participation of community water systems in the DWSRF. A 2022 report prepared by the Association of State Drinking Water Administrators observed,

The nation's smallest and disadvantaged public water systems (PWS) have not historically used the DWSRF due to the significant challenges.

The total amount of the DWSRF used by the smallest PWSs serving populations of less than 10,001 over the past 25 years is significantly less in percentages and dollars than the amount used by PWSs serving larger populations. In addition, more than 80% of the PWSs in the U.S. serve populations of less than 501 people and have used less than 4% of the total DWSRF assistance over the past 25 years.

To change this dynamic and meet the goals of the Bipartisan Infrastructure Law to provide specific percentages of funding to disadvantaged communities, states and EPA must work together to help improve access to the DWSRF resources for funding and technical assistance to support capacity building for these PWSs.

Source: State Drinking Water Program-Challenges and Best Practices: Small and Disadvantaged Water System Funding and Assistance <https://www.asdwa.org/wp-content/uploads/2022/08/ASDWA-White-Paper-Small-and-Disadvantaged-Water-System-Funding-and-Assistance-FINAL-080822.pdf>

## Root Causes

The objective of the practicum was to identify and understand the reason(s) why non-PRASA systems are not receiving DWSRF monies for capital improvements and develop recommendations to facilitate the participation of non-PRASA systems in the DWSRF program.

A key structural reason why non-PRASA communities have not participated in the DWSRF program is their lack of TMF capacity as described above. (In EPA's assessment of the 235 non-PRASA systems, only 10% were deemed to meet the minimum TMF threshold.)

PRDOH recognizes that the lack of TMF capacity is an issue and has included the following language in its 2022 Intended Use Plan (that is consistent with Paragraph B of Section 145(a)(3) of the SDWA):

Technical assistance may include assistance to potential loan recipients complying with national and state drinking water regulations. It is essential to continue expanding the technical assistance provided and explore new mechanisms and programs to address the needs of small systems. With the collaboration of public and private entities these



activities may be undertaken to provide direct assistance to selected or specific communities. PRDOH will also use the resources under the technical assistance set aside to assist drinking water systems in their process of developing their asset management plan.

Source: Page 92 of 2022 Intended Use Plan, Puerto Rico Department of Health, February 2023. <https://www.salud.pr.gov/CMS/DOWNLOAD/7431>

In addition to not meeting TMF capacity requirements, there are several other factors that deter community water systems from applying for DWSRF funding. The 2022 Association of Drinking Water System Administrators cited several:

- These systems are financially unable to pay back loans; are challenged by the lack of political support to take loans; want 100% grants; and have debt capacity restrictions which prevent them from incurring additional debt to pay back and qualify for loans.
- Disadvantaged systems lack the resources to begin the application process, and therefore do not apply.
- States are unable to help systems that are unwilling to accept assistance.
- The funding restrictions such as debt capacity and funding requirements such as TMF capacity, make loans and grants inaccessible to these water systems and make them ineligible for funding.
- These systems lack adequate staff and/or certified operators.

Source: State Drinking Water Program-Challenges and Best Practices: Small and Disadvantaged Water System Funding and Assistance.

A 2023 report prepared the U.S. Chamber of Commerce titled Small and Disadvantaged Community Water Funding Roadmap made the following observations about the “the key challenges and barriers for small and disadvantaged communities to access funding”:

- Insufficient capacity to know where to get started and how to complete funding applications.
- Lack of operational and financial capacity to adequately manage utilities while also modernizing for resilience and sustainability.
- Reluctance to burden their taxpayers/users.
- Lack of scale of service to implement projects and address costs.
- Low margins, lack of personnel, and rapidly increasing operations and maintenance costs are making it increasingly difficult for small systems to adequately deliver affordable water services.
- Lack of predevelopment funding to de-risk the up-front project engineering and design,

Source: Page 6 of the Small and Disadvantaged Community Water Funding Roadmap, U.S. Chamber of Commerce, Veolia and the University of Pennsylvania, March 2023. <https://www.uschamber.com/energy/small-and-disadvantaged-community-water-funding-roadmap>

Through our fieldwork we identified a number of reasons why non-PRASA systems are not applying for nor receiving DWSRF monies (other than for technical assistance). These reasons are listed in Appendix 1. We distilled these reasons into four root causes:

- A perception that DWSRF is loan program (which is not a viable funding option for most non-PRASA communities).
- The DWSRF rules and process are complicated requiring more expertise and bandwidth than most communities have available.
- Accessible and useful information about the DWSRF program is not readily available (in English and in Spanish). This has resulted in lack of knowledge of and information about DWSRF among community leaders and service providers. (Note. We were informed that PRDOH is planning to provide information online about the application process.)
- A concern on the part of communities about the “strings attached” to the DWSRF program in terms of regulations and PRDOH (and other state agencies) oversight and involvement.

## Recommendations

We have developed various recommendations to address the root causes above. These actions, however, are not likely to increase the access by non-PRASA systems to DWSRF funds for capital improvements without first making certain changes to the DWSRF program in Puerto Rico. These changes are outlined below.

- An explicit grant program should be established within the DWSRF program to attract non-PRASA systems that do not have the ability to pay interest or principal on DWSRF loans.
- Lack of TMF capacity should not disqualify a community from applying for and receiving DWSRF funds with the proviso that the application for a capital improvement grant be accompanied by a plan to increase TMF capacity to a threshold level.
- The application, approval and audit process for a grant should be streamlined, e.g., less documentation and fewer requirements. Note: We envisage grants of \$500,000 or less which should not entail extensive financial reviews by multiple parties.

Based on our understanding of the legislation enabling DWSRF, PRDOH has the flexibility and latitude to make the above changes in order to tailor a funding program for non-PRASA systems, particularly systems serving disadvantaged communities: According to EPA,

States may customize loan terms to meet the needs of small and disadvantaged communities or to provide incentives for certain types of projects. States have the authority to provide up to a fixed percentage of their capitalization grants as additional subsidization in the form of principal forgiveness, negative interest rate loans, or grants.

Source: How the Drinking Water State Revolving Fund Works, EPA.

<https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works#tab-1>

Further, EPA requires states and territories to use a certain percentage of their annual allocations for “additional subsidization” which includes grants. (Source: Changes to the Drinking Water State Revolving Fund (DWSRF) Program, Congressional Research Service, March 1, 2024.

<https://crsreports.congress.gov/product/pdf/R/R47935>)

Assuming that PRDOH is willing to develop a grant program designed for non-PRASA communities that utilizes “disadvantaged community” set-asides and recognizes the development

of TMF capacity is an integral aspect of a grant- funded project, then there are various actions that can be taken that address the root causes identified above. These are:

1. Clear communications about the DWSRF grant program—The DWSRF grant program will be clearly articulated and communicated (using multiple channels and in both English and Spanish) to both non-PRASA communities and technical advisors. (Note: It is critical for the technical advisory “community” to have a clear understanding of the requirements of and process for applying for DWSRF grants.)
2. Establish a Small Water Systems Advisory Board (SWSAB)—Establish a SWSAB composed of representatives of non-PRASA communities, PRDOH and EPA. The SWSAB would be tasked with communicating to non-PRASA communities the benefits and requirements of DWSRF and serving as a help desk for communities interested in the DWSRF program. (The SWSAB could build off the existing Water Coalition. This coalition was established in 2018, and is comprised of governmental, NGO academic organizations. Source: <https://www.fema.gov/press-release/20210318/water-coalition-multisectoral-effort-support-community-aqueducts-puerto-rico> .
3. Emphasize TMF capacity development as an important component of technical assistance—With respect to DWSRF monies distributed by PRDOH for technical assistance to non-PRASA communities, PRDOH could give preference to efforts aimed at developing TMF capacity (as defined by the DWSRF program).

## Conclusion

While we recognize that non-PRASA communities have capital improvement funding options in addition to the DWSRF, DWSRF represents the largest pool of money to fund the types of infrastructure improvements needed by non-PRASA systems. Every effort should be made to facilitate access by non-PRASA communities to these monies.

Further, DWSRF capital grants not only provide crucial financial support for much needed infrastructure investment, but also can serve as a powerful incentive for communities to enhance their technical, managerial and financial operations. By professionalizing their operations these communities can better ensure the provision of safe and reliable drinking water.

## Next Steps

There are several hypotheses embedded in the above recommendations that would be useful to test:

- Will PRDOH see a benefit in reconfiguring part of its DWSRF program?
- Will grants attract non-PRASA communities to the DWSRF as a funding mechanism to address water quality issues?
- Is it possible to develop TMF plan templates that could be used to assist non-PRASA systems meet the DWSRF thresholds?

There is an opportunity to answer these questions working in conjunction with a current Cornell-led NSF research project that is focused on the development and commercialization of a low-cost water filtration technology. This technology could be the “right” solution for a subset of non-

PRASA systems, particularly systems that utilize surface water and do not currently have filtration. (According to the EPA assessment of non-PRASA systems there are 79 of these systems.)

The cost of a system using the above mentioned technology and sized to serve 250 people is approximately \$200,000. Phase 2 of the NSF project will fund the construction of one or two of these systems in Puerto Rico. The pilot sites will be chosen from the group of 79 surface water systems that do not have filtration using the following three criteria:

1. Technical Suitability—Is the technology solution suitable for the community (number of persons served, topography, etc.)?
2. Community Engagement—Is the community willing and able to participate in the pilot and to undertake the technical, managerial and financial actions that are required for the community to operate and maintain the system going forward?
3. Compliance Potential—Does the community have the resources to comply with the technical, managerial and financial requirements as defined by the PRDOH?

The rationale for the third criterion is that TMF plans will be developed for the pilot communities and then these plans will be used as templates which can be customized for “rollout” communities (see below) and made part of DWSRF grant applications by the rollout communities.

A possible sequence of activities is:

- Spring 2025—select 2-3 pilot sites.
- Spring/Summer 2025 (assuming the NSF proposal is accepted and pilot systems are funded),
  - Build out the pilot systems
  - Develop TMF plans for each pilot community. These plans will be used as templates for subsequent installations, i.e., the rollout communities.
  - Select 4-5 “rollout” communities (based on the three criteria above)
- Fall 2025—prepare DWSRF applications for the rollout communities (which will include TMF plans) and submit these applications to the PRDOH for inclusion in Puerto Rico’s 2026 IUP

# Appendix 1

## ROOT CAUSE HYPOTHESES

No non-PRASA communities have applied for DWSRF funds for capital improvements. (All DWSRF monies distributed in Puerto Rico since the inception of the program have gone to the state-owned water utility, PRASA.) The root cause hypotheses below were developed by the team based on its research.

### People:

- Limited access to technology and internet resulting in a lack of awareness about the DWSRF program
- Constrained resources within PRDOH to oversee or provide support to non-PRASA systems
- Lack of expertise and bandwidth in community water systems to support DWSRF funding applications
- Language barriers

### Plant

- Lack of resources to complete the necessary pre-engineering work
- Cost and inconvenience of water quality testing

### Policy

- Costly and cumbersome regulatory processes
- Absence of dedicated funding “bucket” within DWSRF for non-PRASA systems
- Confusion about water pricing guidelines/requirements to be eligible for DWSRF funding

### Process

- Lack of public participation and knowledge about the quality of water
- Insufficient and inconsistent exchange of information among PRDOH, technical service providers and communities.
- Lack of information about the impact of water quality on public human health
- DWSRF is a multi-step, complicated process

## Appendix 2

### CAPACITY DEVELOPMENT PROGRAM

Puerto Rico Department of Health, January 2023.

<https://www.salud.pr.gov/CMS/DOWNLOAD/7763>

The Safe Drinking Water Act (SDWA) Amendments of 1996 authorize a Drinking Water State Revolving Fund (DWSRF). The DWSRF is designed to assist publicly owned and privately owned community water systems and nonprofit non-community water systems in financing the costs of infrastructure needed to achieve or maintain compliance with SDWA requirements, and to meet the public health objectives of the SDWA.

Section 1452 (a)(3) of the SDWA prohibits a state from providing DWSRF assistance to a system that lacks technical, managerial and financial capacity or is in Significant Non-Compliance "SNC" with any requirements of a national primary drinking water regulation or variance, unless: 1) the use of the financial assistance will ensure SDWA compliance, or (2) the owner or operator of the system agrees to undertake feasible and appropriate changes to assure that adequate capabilities will be put in place, and agrees to implement such changes.

The following is a screening process used to assess the technical, managerial, and financial capacity of any DWSRF project sponsor.

#### I. Technical Capacity

Technical Capacity refers to the adequacy, operation and maintenance of a water system's infrastructure. To assure adequate technical capacity, a project sponsor must demonstrate that its water system has adequate source water and adequate infrastructure and must demonstrate that its water system is operated by personnel with technical knowledge about applicable standards. In assessing the technical capacity of the water system, the Department of Health will review, in addition to other information, the following items regarding the project sponsor:

1. SDWA Compliance data including recent sampling results. Inspections reports and/or Sanitary Surveys to identify actual and potential problems that might lead to non-compliance or degradation of drinking water quality.
2. Operator Certification to evaluate if the water system is operating under an operator certified by the Commonwealth, with the appropriate certification classifications and in accordance with operator certification program, as stated in the SDWA.
3. Susceptibility assessments as established by DOH on the Source Water Assessment Program (SWAP) to determine potential source water contamination.
4. Enforcement actions: administrative consent orders, or directives issued to the water system, requiring corrective actions to ensure compliance with the SDWA.
5. Comprehensive Performance Evaluations (CPEs) to analyze a surface water treatment plant's performance.

6. Consumer Complaint Records to identify technical problems with the water system (e. g., odor; taste, or low-pressure source capacity to supply actual demand).
7. Engineering reports, project, and long-term planning documents, for Improvements to ensure compliance with Federal and Commonwealth SDWA regulations, rules, and statutes.

Note: Significant Non-Compliance refers to long term repeated violations that constitute a threat to public health. A summary of significant non-compliance is attached to this document.

8. Design is in compliance DOH regulation. The project sponsor's must demonstrate adequate technical capacity as follows:
  - a. The project sponsor and its water system are not in significant noncompliance as defined by EPA.
  - b. The project sponsor and its water system have no continuing violations under the Commonwealth laws and regulations.
  - c. The project sponsor is operating its water system under a certified operator, or the appropriate certification pursuant to Commonwealth Operator Certification Process,)/DWSRF Operator Certification Program (Act. No. 53 of July 13, 1978, as amended by Act 29 of January 16, 2002, and Act No. 59 of May 81, 2002, and by the Regulation for the Certification of Operators of Systems and/or Treatment Plants for Drinking Water and Wastewater, which derogated Regulation No: 5440 of June 27, 1996.

## II. Managerial Capacity

Managerial Capacity refers to the personnel expertise required to administer the overall water system operations. To assure adequate managerial capacity, the project sponsor must demonstrate that relative to its water system it has clear ownership, proper and organized staffing, and effective interaction with regulators and customers. In assessing the managerial capacity of the water system, the DOH, in consultation with the Puerto Rico Department of State Drinking Water Treatment Plant Operator Certification Board and in accordance with the DOH/Department of State Drinking Water Treatment Plant Operator Certification Program and other Commonwealth Agencies, as appropriate, shall review, in addition to other information, the followings items regarding the project sponsor:

1. A summary of Biographies, Resumes and other related material from the previous 5 years, to determine the training expertise and education of personnel.
2. Business or Water System Plan to evaluate management's overall practices and ownership accountability to assist in evaluating the owner's understanding of current DOH regulations and professional practice.
3. A summary of billing and collection procedures used for the water system from the previous 5 years.
4. Consumer Complaint Records within the previous 5 years to identify the water system's responses to customer complaints.
5. Documents that demonstrate ownership accountability and evidence of the community Incorporation.

6. Evidence of the compliance and/or the corresponding endorsement of other Commonwealth Agencies concerned with the construction process of water systems.
7. Administrative Structure Flow Chart and Membership selection or establishment procedure
8. Legal document specifying and assuring the compliance of the System with the SDWA Regulation including mechanisms for user charge fee or process.

The project sponsors must demonstrate adequate managerial capacity as follows:

1. The project sponsor or its water system shall not be in receivership;
2. The project sponsor demonstrates to the Department's satisfaction that it has clear ownership of the water system or that other arrangements are in place to satisfy the managerial capacity requirements; and
3. The project sponsor and its water system do not have any continuing violations of requirements, rules or statutes of the DOH's and other Commonwealth Agencies as applicable.

### III. Financial Capacity

Financial capacity refers to the ability to acquire, generate and manage enough monetary resources to a project sponsor for its water system to support the cost of operating, maintaining, and improving the water system and achieve and maintain compliance with SDWA requirements. To assure adequate financial capacity, the project sponsor must demonstrate that relative to its water system it has sufficient revenues, fiscal controls, and credit worthiness. In assessing the financial capacity of the water system PRIFA/PRFAFAA1 will conduct and evaluate in coordination with DOH as appropriate (in accordance with their standard operation procedures) the financial capability analysis to determine revenue generating and pay back capabilities of the borrower project sponsor through information require and to be provided on the Business Plan.

1. Business Plan and financial information, including, where available but not limited to the following, shall be evaluated:

- a. Financial statements or annual audit reports for the previous three years.
- b. Current and proposed rate schedules. as applicable; or if rate schedules are unavailable, then documents indicating the project sponsor's access to credit for operations and contingencies to demonstrate the project sponsor's capability to repay debt.
- c. A summary of any pending litigation regarding current or proposed rates.
- d. Federal and state income tax returns of the projects sponsor for the previous 3 years.
- e. Current operating budget and projected budget for a five year or as available period including debt service on the loan and any rate schedule adjustments.
  - (i) Revenue projections including any assumptions on which the projections are based. Total annual percentage of budgetary Increases, annual percentage increases to meet loan repayments



- and other non-loan project costs, and time when same shall take effect should be identified and included.
- (ii) Expenses projections including a copy of the Capital Budget and assumptions on which the projections are based.
- (iii) Plans for rate increases.
- f. Composition of customer base

The project sponsor's water systems meet the standards for adequate financial capacity if the following is met: Business Plan has been reviewed and approved by DOH and PRFAFAA/PRIFA were applicable. The referenced Capacity Development Checklist summarizes and outlines the above-mentioned activities.

IV. Long-term Capacity

DOH, where appropriate, will assess whether a project sponsor and its water system have a long-term plan to undertake feasible and appropriate changes in operations necessary to develop adequate capacity. Information such as engineering reports and other available information will be used in making these assessments. Plan review procedures for these systems are being developed and may be established and discussed in the Standard Operating Procedures of DOH. DOH has initiated and will continue to encourage consolidation of water systems in an effort to improve capacity.

V. Systems with inadequate capacity

A water system that requires Improvement to obtain adequate capacity can apply to the DWSRF provided that the improvements will ensure SDWA compliance. DOH in consultation with the corresponding agencies, as applicable, will make these assessments on a case-by-case basis, with emphasis on compliance with all applicable requirements rules or statutes of the concerned agencies. The project sponsor must agree and demonstrate to the concerned agencies satisfaction the Implementation of any required technical managerial or financial change necessary to obtain approval by DOH.

VI. Systems in Significant Non-Compliance "SNC"

The SDWA prohibit a state from providing DWSRF assistance to a system in significant noncompliance (SNC) with any requirements of a national primary drinking water regulation or variance, unless 1) The use of the financial assistance will ensure SDWA compliance, or 2) the owner or operator of the system agrees to undertake feasible and appropriate changes to assure that adequate capabilities will be put in place and agrees to Implement such changes.

As of January 2010, the Department of Health implemented in the Public Water Supply Supervision Program (PWSS) actions to reflect the new Enforcement Response Policy (ERP) and the Enforcement Targeting Tool (ETT). DOH completed the transition from the evaluation of systems through the traditional Historical Systems in Non-Compliance (HSNC) to the new EPA enforcement approach, the ETT and thus has been working since its effectiveness in fiscal year 2010. Regarding

the Capacity Development and the DWSRF programs the term “historical significant noncompliance (HSNC)” and “significant noncompliance” (SNC) are to be interpreted as systems with ETT scores of eleven (11) or greater.

Currently systems are being evaluated using the Enforcement Targeting Tool (ETT). The ETT approach replaces the existing contaminant by contaminant compliance Strategy with one that focuses on the drinking water systems with the most serious or repeated violations. Under this new approach, the states will not be required to submit a list of HSNCs every three years. It uses a targeting tool/formula as a model for escalating responses to violations in a timely and appropriate response. This new strategy brings the systems with the most significant violations to the top of the list for enforcement actions in states. The ETT enables the prioritization of PWS by assigning each violation a “weight” or number of points based on the assigned threat to public health. Points for each violation of a water system are summed to provide a total score for that public water system (PWS). A PWS that incurs in a system score of 11 points or greater is considered as in significant Noncompliance with the National Primary Drinking Water Regulations (NPDWR) and is subject to the required enforcement actions.

It is the intention that the list generated as part of the ETT can be used as one of the ways to identify systems that may lack technical, managerial and financial capacity (TMF) and prioritizes the assistance that can be provided. This Department, instead of reporting SNCs, will be indicating which of those new community and nontransient non-community water systems has had, at any point during the first three years of operation, unaddressed violations that incurred an ETT score greater than or equal to 11. Under the Enforcement Response Policy (ERP), these systems are considered a priority system by EPA. This is a tool to determine steps to help the systems return to compliance. Priority is awarded to systems with higher population. As stated before, DOH completed the revision of the Non-PRASA Strategy, which is included in the Capacity Development Strategy with the purpose of using or applying the ETT concept where now all systems included are ranked based on the ETT, notwithstanding if these are SNC or not, changes the total of systems PRASA or NonPRASA less than 10,000, that will be included.

The Check List Capacity Development Program New Drinking Water Capacity Assurance Plan (Attachment III) provides the procedures that could be used to evaluate systems in SNC while review procedures for systems that are not in compliance are fully developed, established and discussed in the Standard Operating Procedures of DOH.

## Appendix 3

### FOUNDATIONAL MATERIALS

Below is a list of foundational source materials used in preparation of this document.

1. Puerto Rico Department of Health DWSRF Documents -  
[https://www.salud.pr.gov/avisos\\_publicos](https://www.salud.pr.gov/avisos_publicos)
  - [Intended Use Plan- General Supplemental Funding FY 2022-May 2023](#)
  - [Appendix I - Genl Supplemental 2022 IUP](#)
  - [Attach II-Capacity Dev. Program-Word version-14-Dic-17](#)
  - [Attach III-Ranking and Method-Rev Jan 2023-Hardship and asset mgmt-apr 2023](#)
  - [Attach V-CHECK LIST FOR PRIORITY RATING-Hardship. Disadv Rev Asset Mgmt REv](#)
  - [Attach VI-CHECK LIST FOR PRIORITY RATING-Hardship. Disadv Rev Asset Mgmt REv April 2023](#)
2. Draft Intended Use Plan (IUP) for the Puerto Rico Drinking Water State Revolving Fund (DWSRF) October 1, 2024 - September 30, 2025, Puerto Rico Department of Health, May 15, 2024. <https://www.salud.pr.gov/CMS/DOWNLOAD/9027>
3. Improving a Program That Works, New Jersey Future and Environmental Policy Innovation Center, October 2023. [https://www.njfuture.org/wp-content/uploads/2023/11/NJF\\_EquityStudyFINAL.pdf](https://www.njfuture.org/wp-content/uploads/2023/11/NJF_EquityStudyFINAL.pdf)
4. Changes to the Drinking Water State Revolving Fund Program, Congressional Research Service, March 1, 2024. <https://crsreports.congress.gov/product/pdf/R/R47935>
5. Uncommitted State Revolving Funds, Katy Hansen, Govind Sawhney, Simon Warren, and Martin Doyle, Nicholas Institute for Environmental Policy Solutions, Duke University, March 2022. [https://nicholasinstitute.duke.edu/publications/uncommitted-state-revolving-funds#:~:text=States%20and%20the%20federal%20government,Revolving%20Fund%20\(SRF\)%20programs](https://nicholasinstitute.duke.edu/publications/uncommitted-state-revolving-funds#:~:text=States%20and%20the%20federal%20government,Revolving%20Fund%20(SRF)%20programs).
6. State Drinking Water Program-Challenges and Best Practices: Small and Disadvantaged Water System Funding and Assistance, Association of State Drinking Water Administrators, August 2022. <https://www.asdwa.org/wp-content/uploads/2022/08/ASDWA-White-Paper-Small-and-Disadvantaged-Water-System-Funding-and-Assistance-FINAL-080822.pdf>
7. Small and Disadvantaged Community Water Funding Roadmap, U.S. Chamber of Commerce, Veolia and the University of Pennsylvania March 2023. <https://www.uschamber.com/energy/small-and-disadvantaged-community-water-funding-roadmap>
8. Self-Assessment for Small Publicly Owned Water Systems, EPA, <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=9101MBIH.PDF>
9. The Capacity Development Program was created under the Safe Drinking Water Act (SDWA) Amendments of 1996. The three major components of the Capacity

Development Program are: <https://www.epa.gov/dwcapacity/learn-about-capacity-development> Original source: pp112-113 [https://www.epa.gov/sites/default/files/2020-05/documents/safe\\_drinking\\_water\\_act-title\\_xiv\\_of\\_public\\_health\\_service\\_act.pdf](https://www.epa.gov/sites/default/files/2020-05/documents/safe_drinking_water_act-title_xiv_of_public_health_service_act.pdf)

#### 10. Water System Asset Management Plans--

- <https://www.epa.gov/system/files/documents/2021-10/2021.10.14-asset-managment-in-drinking-water-regulations-webinar-slides.pdf>
- [https://www.business.ct.gov/-/media/departments-and-agencies/dph/dph/drinking\\_water/pdf/fiscal-and-asset-management-plan-template-instructions.pdf](https://www.business.ct.gov/-/media/departments-and-agencies/dph/dph/drinking_water/pdf/fiscal-and-asset-management-plan-template-instructions.pdf)

## Appendix 4

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