

# Rhode Island Department of Health Center for Drinking Water Quality

## Capacity Development Program Annual Implementation Report

July 1, 2023–June 30, 2024



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## Introduction

The Rhode Island Department of Health (RIDOH) Center for Drinking Water Quality (DWQ) is pleased to submit its 2023 Capacity Development Annual Program Implementation Report. This report is required by Section 1420 of the 1996 Amendments to the *Safe Drinking Water Act* (SDWA) and to maintain compliance with requirements of the Environmental Protection Agency (EPA) Drinking Water Revolving Loan Fund Capitalization Grant. The report covers the period of July 2023 through June 2024 and is presented annually to the EPA - Region I. Copies are available by contacting [DOH.RIDWQ@health.ri.gov](mailto:DOH.RIDWQ@health.ri.gov).

The Public Water System Supervision Program (PWSS) is an essential component of RIDOH's mission to prevent disease and promote public health. Since 1976, the EPA has annually received a Congressional appropriation under Section 1443(a) of the SDWA to assist states, territories, and tribes in carrying out their PWSS programs.

In Rhode Island, RIDOH has been delegated primary enforcement responsibility for the PWSS program. In partnership with the Rhode Island Infrastructure Bank (RIIB), RIDOH applies for and receives an annual capitalization grant. This grant allows RIDOH to develop and implement the PWSS program to adequately enforce the requirements of the SDWA and ensure that water systems comply with national primary drinking water regulations.

### **Key activities carried out under the PWSS program include:**

- Developing and maintaining State drinking water regulations;
- Developing and maintaining an inventory of public water systems throughout the State;
- Developing and maintaining a database to keep compliance information on public water systems;
- Conducting sanitary surveys, conformance, and compliance inspections;
- Supporting technical, managerial, and financial (TMF) capacity of public water systems;
- Reviewing public water system plans and specifications;
- Providing technical assistance to managers and operators of public water systems;
- Ensuring that public water systems regularly inform consumers about the quality of the water that they are providing;
- Certifying laboratories to analyze drinking water to determine compliance with the regulations; and
- Carrying out an enforcement program to ensure that the public water systems comply with all the State's requirements.

States use capacity development to efficiently target the TMF needs of public water systems and then directly address those needs through specific activities that help systems obtain and maintain compliance.

## **Rhode Island's Capacity Development Program**

**The SDWA includes the following capacity development provisions:**

1. New Community water systems (CWS) and Non-Transient Non-Community (NTNC) water systems that begin operation after October 1, 1999, must first demonstrate capacity;
2. Public water systems (PWS) that lack adequate capacity are prohibited from receiving assistance from the Drinking Water State Revolving Loan Fund (DWSRF) unless assistance is directly related to improving the system's technical, managerial, or financial capacity; and
3. States must develop and implement a strategy to assist PWS in acquiring and maintaining adequate capacity; and
4. States must incorporate and promote asset management in their capacity development strategy.

The State of Rhode Island implemented the activities discussed in this report in accordance with Section 1420(c) of the SDWA. Neither the State's legal authority to implement the new systems program or the control points have been modified during the reporting period.

## Capacity Development Strategy for New Systems

New systems must have enough capacity to meet the National Primary Drinking Water Regulations to become licensed water suppliers in Rhode Island. A listing of new CWS and NTNC water systems licensed to operate within the past 3 state fiscal periods (July 1, 2021–June 30, 2024) is provided in Appendix A on page 16.

Rhode Island uses the EPA Enforcement Targeting Tool (ETT) as one indicator for assessing a system's capacity to achieve sustainable operations. Based on the ETT calculation, our compliance team has determined that 1 of 2 newly activated systems was significantly out of compliance with drinking water standards for federally regulated contaminants. This community system was referred to our Center's capacity development and DWSRF programs for further assistance. Consolidation between this and another existing system was also discussed as a potential solution. The system is currently under a consent agreement with the DWQ compliance team. They have also received a facilities improvement plan (FIP), engineering assistance, and have been referred to our partners at RIIB to secure funding for consolidation.

Program staff continuously monitor new systems and offer assistance when appropriate or when requested by system personnel. During the 3 years, both newly activated systems received violations. One system received violations for monitoring and reporting, and the other system received violations for monitoring or reporting, water quality, public notice, and treatment technique.

DWQ proactively ensures that new system representatives meet a regulatory requirement to attend an orientation meeting prior to final approval and initial operations. This meeting provides the opportunity to meet with rule managers and subject matter experts, ensuring that new representatives understand the obligations of owning a PWS. During this meeting, each PWS representative is provided with a "New Public Water System Management Resource Binder," which contains crucial information regarding regulations, sampling, DWQ contact information, forms, and guidance documents.

Invitations for this meeting are also extended to PWS that have recently changed their administrative staff, designated operators, or board members.

During the reporting period, 5 in-person and virtual orientation meetings were held. Our Capacity Development program staff continued to work closely with all DWQ program staff to develop and complete supporting documentation and resources to assist systems in achieving and maintaining compliance.

## Capacity Development Strategy for Existing Systems

Rhode Island's public drinking water systems face a wide array of challenges in meeting the standards enforced under the PWSS program. To assist existing water systems, RIDOH maintains a Capacity Development Strategy. Capacity development helps PWS personnel plan for and provide water that is safe to drink today and in the future, while consistently complying with the statutory and regulatory requirements of the SDWA.

The 3 major components of capacity identified in the 1996 Amendments to the SDWA are

- **Technical Capacity**—the ability of water system staff to operate and maintain infrastructure;
- **Managerial Capacity**—the expertise required of the system personnel to administer the system's overall operations; and
- **Financial Capacity**—the resources and fiscal management that support the cost of operating a water utility.

The Capacity Development Strategy includes identifying methods for targeting assistance and intervention to proactively help systems comply with drinking water regulations. This is accomplished by developing contracts, services, and tools that take into consideration the abilities of water system personnel, the expertise of industry service providers, and the experience of RIDOH staff. This is also accomplished through partnerships that provide wide-ranging services, which help the owners and operators of PWS achieve sustainable operations over time.

RIDOH encourages the development of asset management by directing DWSRF set-asides to asset maintenance programs and by collaborating with technical assistance providers. In addition, PWS that produce over 50 million gallons of water per year prepare a Water Supply System Management Plan (WSSMP) for the Rhode Island Water Resources Board. Some of the elements of the WSSMP that incorporate asset management principles are system management, including system safety and reliability, infrastructure maintenance, repair, and reduction of leakage.

## Capacity Development Tools and Assistance

These services and tools include training initiatives which are included in RIDOH's work plan and are funded through DWSRF set-asides.

The term 'capacity development' gained prominence in the 1990s, in part due to the growing realization that providing technical solutions and/or funding are not sufficient by themselves to address most development challenges. This led to a renewed focus on strengthening the underlying human and organizational capabilities by working more closely with the individuals, organizations, and communities that were the intended beneficiaries of development support, to create an effective approach that will last for years.

During the reporting period, RIDOH engaged with partner organizations and executed its strategy to enhance system sustainability, provide systems with critical tools and resources, and strengthen operator knowledge and skills. In January 2023, RIDOH renewed technical assistance contracts to provide financial and managerial training to any small system receiving DWSRF funding, including nonprofit transient systems. RIDOH also incorporated the ability to work with PWS that had FIPs completed in prior years, revisiting and either affirming or adding to the original recommendations.

### Technical Assistance Contract Services and Outcomes

Vendor	Service	Outcomes
Global Environmental Consulting	Consumer Confidence Reports for systems serving 10,000 or fewer	90 reports completed
Northeast Water Solutions, Inc.	FIP for CWS, nonprofit NTNC, and nonprofit Transient Non-Community (TNC) systems serving 10,000 or fewer	7 systems received services
Northeast Water Solutions, Inc.	Engineering services for CWS, nonprofit NTNC, and nonprofit TNC systems serving 10,000 or fewer	7 systems received services
New England Water Works Association (NEWWA)	Free operator training opportunities	459 training contact hours delivered
RCAP (Resources for Communities and People) Solutions <sup>1</sup>	Financial and managerial training for small PWS receiving DWSRF funds	0 systems received services

<sup>1</sup> During the 2023 program year there were no public water systems referred to RCAP Solutions managerial and financial training. Work will continue under this contract in 2024.

RIDOH also maintains a cooperative agreement with University of Rhode Island (URI) Cooperative Extension. Under this agreement, URI provides

- Technical assistance and outreach to municipal officials, water suppliers, and private drinking water well users on assessment results and local protection measures;
- Outreach to professionals who play a role in public water supply protection; and
- Resources to build audience capacity to adopt source water protection measures.



## Identifying Systems in Need of Assistance

RIDOH's PWS Capacity Development Strategy includes a prioritization framework designed to identify systems in need of capacity assistance and provide proactive intervention.

Staff evaluate data from multiple sources to determine leading indicators that a system can benefit from technical, managerial, and financial capacity-building. They review compliance data, sanitary survey reports, DWSRF-related documentation, quarterly ETT reports, and annual licensing applications.

Staff also work closely with internal colleagues and external partners to establish productive information-sharing practices that support accelerated identification of systems in need.

An environmental scientist is assigned to be the primary circuit rider for RIDOH DWQ. This circuit rider provides 1-on-1 technical assistance to small water systems with distribution system issues, Level 1 Assessments, seasonal start-up processes, Drinking Water Watch or Drinking Water Viewer assistance and challenges with maintaining compliance. For Level 1 Assessments triggered by coliform bacteria, the circuit rider can provide field and desktop technical assistance. From July 1, 2023, to June 30, 2024, the circuit rider provided 23 water systems technical assistance for Level 1 Assessments triggered by coliform bacteria.

In recent years, RIDOH created a new performance measure process for compliance—a quarterly calculation of a 5-year “compliance score” for each PWS that enables RIDOH to prioritize additional compliance effort to PWS that are repeat violators, either after a violation has occurred or to preempt additional violations. This additional compliance effort includes actions such as individualized technical assistance, penalties, informal enforcement meetings, deadline reminders, and compliance agreements.

From July 1, 2023, to June 30, 2024, there were 82 water systems that were repeat violators and were provided additional compliance assistance. The compliance and technical assistance team identify repeat violators during the notice of violation process and determine and provide appropriate technical assistance. This includes coordination with the enforcement manager and outreach specialist. The goal for the performance measures is a reduction in the total and average 5-year compliance score for all water systems. RIDOH tracks statistics showing that PWSs that choose to accept on-site technical assistance from our circuit rider are less likely to trigger another Level 1 Assessment in the subsequent 12 months.

## **Building Partnerships**

Changing perceptions and creating an understanding of water quality and quantity issues requires progressive and proactive rethinking of our partnerships and responsibilities. The Capacity Development program brings RIDOH's drinking water program functions together to partner with suppliers and consumers who all must play a role in assuring the capacity of new public water utilities and strengthening existing water system capabilities.

RIDOH's PWS Capacity Development program meets this challenge by implementing a set of documents and resources to assist systems with common challenges and obstacles.

RIDOH has an outreach specialist who is charged with creating documentation, guidance, and instructional materials that address system needs and support system personnel in increasing their knowledge of water system operations and management. The outreach specialist can evaluate and prioritize these needs through integrated work with both operator certification staff and drinking water compliance staff. Direct interaction with the operator community as well as participation in internal and external compliance meetings, where routine water system issues and challenges are discussed, allows the outreach specialist to tailor outreach efforts to prioritize common issues faced by PWS personnel.

Documentation developed during this reporting period includes:

- Guide to Drinking Water Viewer (guide);
- Compliance with the Revised Lead and Copper Rule (web content);
- Sampling Reporting Guidance Manual for Public Water Systems (guide);
- Data on PFAS in Drinking Water in Rhode Island (web content) revised and updated;
- Water Infrastructure Improvements for the Nation Act Testing School and Child Care Drinking Water for Lead 2023 - Ongoing (web content); and
- Lead Contamination of Water (web content) revised and updated.

Documentation in development during this reporting period includes:

- Child Care Facilities: Sign Up for Free Testing (promotional one-pager);
- Cybersecurity Hygiene, Basics and Advanced (fact sheets); and
- Handouts for Drinking Water and Public Water Systems Travelling Roundtable Series (fact sheets).

## **Evaluation of effectiveness**

DWQ uses mass emails via the Mailchimp platform to provide direct outreach, introduce new documents and webpages, and share capacity development opportunities. Mailchimp generates a report for each email 'campaign' sent that shows the open rate for the email and the click rate for the hyperlinks to documents and webpages, including a performance comparison against the average RIDOH campaign as well as against other government agencies using Mailchimp.

Developing outreach materials always involves direct and constant collaboration with relevant drinking water program staff, which ensures critical information is accurately conveyed to PWSs.

## Capacity Development, Compliance, and Enforcement

By partnering with compliance and enforcement staff, DWQ has been successful in assisting not only smaller utilities such as schools, factories, restaurants, and child care facilities that maintain their own water supply, but also major municipal water systems.

DWQ regulates 473 public water suppliers. The assistance provided through our capacity development and compliance partnership includes

- Identification and prioritization of need based upon compliance history;
- On-site technical assistance and 1-on-1 troubleshooting to aid in the return-to-compliance;
- Assistance developing water system best practices and standard operating procedures; and
- Guidance documents and fact sheets designed to reinforce regulatory requirements and educate new system owners and staff.

Capacity Development staff attend DWQ's weekly compliance meeting in which all open enforcement actions and sanitary survey findings are reviewed by a cross-functional team. This team is composed of representation from compliance, inspections, and engineering teams and has proven to be an invaluable mechanism to identify potential areas for capacity development intervention and support. During this reporting period, the name of this meeting was changed to the Topics Across Groups (TAG) meeting.

The performance of the State's PWS during 2023, based on compliance with water quality criteria requirements in the SDWA, is evaluated and compared to previous years using a "performance indicator" value. This value is determined by calculating the days each water system is in compliance with all maximum contaminant levels (MCLs) and treatment techniques, as well as the population the system serves, and comparing this result to the number of days the system is serving that population. An indicator value of 1.0 means that all PWSs were in compliance with MCL and treatment technique requirements for the entire year. During 2023, this indicator was 0.982.

## Capacity Development and Operator Certification

Ensuring a competent workforce is a key element in the protection of public health and the provision of safe drinking water. Individuals who operate public water supply treatment and distribution systems must be certified and licensed by RIDOH. Once licensed, operators adhere to continuing education and experience requirements prior to license renewal or upgrade. There are approximately 690 licenses for treatment and distribution operators issued in the state, with some individuals holding multiple licenses and certifications.

Operator training initiatives are included in RIDOH's work plan and are funded through DWSRF set-asides. We ensure adequate training opportunities for new and recertifying operators through a board review and approval process for courses submitted by qualified providers.

During the reporting period, New England Water Works Association conducted 7 training sessions and granted a total of 459 contact hours. These training sessions were scheduled in Fall 2023 for delivery in winter and spring 2024. The program selected topics to address compliance issues, violation trends, and small PWS compliance, including

- Using Unidirectional Flushing as a Distribution Tool;
- Asset Management to Ensure Stable and Sustainable Water Utility Operations;
- Solving Drinking Water Operator Exam Word Problems;
- Where it all Begins: Knowing and Protecting Your Source Water;
- How to Successfully Operate and Maintain Your Distribution System; and
- Disinfection and Distribution System Water Quality.

There are 90 CWS and 80 NTNC PWS that are required to comply with the State's operator certification rules and regulations. The State has classified all these systems for distribution and classifies systems for treatment when needed. Presently, all of the 170 PWS are under the supervision of a certified operator.

## **Capacity Development and the Drinking Water State Revolving Fund**

Capacity Development staff partner with DWSRF program staff to develop outreach materials, create guidance documents, and provide system-specific assistance navigating the application process. Through our partnership with the RIIB, RIDOH implements a marketing and outreach strategy to encourage small systems to consider the DWSRF when undertaking infrastructure projects in the future.

Beginning in 2018, the State Revolving Fund Intended Use Plan incorporated allowances for \$100,000 in principal forgiveness for small systems receiving DWSRF funding. Additional subsidy may be granted based on the median household income of the consumers served by a PWS. To ensure long-term water system sustainability, RIDOH has included additional capacity development requirements in the funding process. These included a FIP and up to 6 hours of financial and managerial training.

RIDOH also offers engineering services to small systems through DWSRF set-asides.

In 2023, RIDOH approved and the Rhode Island Infrastructure Bank funded 8 new loans totaling \$78,653,350.

## **Strategy Modifications**

DWQ's Capacity Development program submitted its updated Capacity Development Strategy by the due date of December 31, 2022. The updated strategy was approved in March of 2023. There were no modifications to the strategy during the reporting period. A formal review of implementation of the existing strategy was not conducted during the reporting period.

While updating the Capacity Development Strategy in 2022, DWQ created and distributed a survey for PWSs to gather more comprehensive information about Rhode Island PWSs' asset management knowledge. DWQ utilized the results from the study to inform updates the Capacity Development Strategy in 2022. DWQ will continue to distribute the survey every 2 years until the Strategy is revised again, to measure the program's success and to identify areas for improvement.

### **2024 Capacity Development Strategy Survey**

The primary purpose of the Capacity Development Strategy Survey is to identify what water systems need in order to improve their technical, managerial, and financial capacity. This survey also asks PWS officials to clarify what support they need from DWQ. RIDOH uses survey responses to inform future outreach efforts. The survey was distributed again in May of 2024. The results of the 2024 survey are provided in Appendix B on page 16.

The survey is hosted on an online service and distributed via Mailchimp mass email to all active Rhode Island PWSs.

## Conclusion

More than 20 years have elapsed since Rhode Island began instituting its Capacity Development strategy. The strategy provides the framework for RIDOH and DWQ to identify a range of approaches that would facilitate the continuous sharing of knowledge and development of tools that have become so important to the provision of safe drinking water and sustainable water systems in our state.

This report has described the activities of each component of the Capacity Development program. Realizing that circumstances are different for each type of PWS, RIDOH, our industry peers, and our partners at the EPA have taken steps to identify the challenges faced by systems.

Together, we aim to ensure that the programs we currently have in place continue to successfully address the needs of our systems, and that the assistance we provide in the future is

- Enhancing water system capacity proactively;
- Focusing on education and outreach; and
- Strengthening collaborations between Capacity Development and other drinking water programs.

Together, Capacity Development and all RIDOH's drinking water programs have had a substantial and positive impact on the health and safety of the people of Rhode Island.

## Appendix A

There were 2 new Community water systems (CWS) for the reporting period July 1, 2021, to June 30, 2024; there were no new Non-Transient, Non-Community water systems (NTNC) licensed during the reporting period.

PWS ID#	PWS Name	Operation Start Date	Type (CWS or NTNC)	Population Count
RI1000020	Rockland Oaks	8/1/2021	CWS	26
RI2980487	South Trail Commerce	12/28/2022	CWS	175



## **Appendix B: 2024 Capacity Development Strategy Survey Outcome Summary**

### **Audience:**

- The survey was distributed to all PWS's in Rhode Island;
- 63 water systems completed the survey; and
- 50% of the systems were Transient systems, 14% were NTNC systems, and 36% were Community systems.

### **TMF Capacity:**

- 68% these systems agree that their system has adequate technical capacity;
- 71% of these systems agree that they have managerial capacity; and
- 59% of these systems agree that they have financial capacity.

### **Outreach Material Needed:**

- Funding sources and coordination for PWS improvements and upgrades;
- Strategies for addressing compliance issues;
- Public Notification;
- Revised Total Coliform Rule; and
- Ground Water Rule .

### **Staffing:**

- 54% of the systems do not have paid staff working for their system;
- 69% of the systems do not have organizational structure with clearly defined roles; and
- 75% of these systems have access to adequate legal, financial, and technical support when needed.

### **Record Keeping:**

- 84% of these systems have a record keeping system;
- 68% of these systems have ways to retain institutional knowledge;
- 81% of these systems have procedures in place to receive, document, and respond to customer complaints or questions; and
- 85% of these systems keep detailed records of routine and emergency maintenance activities.

### **System Upkeep:**

- 57% of these systems have not imposed any water use restrictions in the past 5 years;
- 63% of these systems have PWS Master Plan, Operations and Maintenance Manual and Engineering as-built record drawings;
- Almost 90% these systems have sampling plans for Revised Total Coliform Rule, Disinfection Byproducts Rule, and Lead and Copper Rule;
- 37% of these systems have Asset Management plans and FIPs;
- 69% of these systems have evaluated components to determine which assets are most likely to fail;

- 74% of these systems have a maintenance procedure in place for routine repair and replacement of PWS components;
- 62% of these systems do not have an emergency or back-up water supply, such as an auxiliary approved-well or an emergency interconnect with another PWS; and
- 33% of these systems do not have a generator.

**Supply and Demand:**

- 68% of these systems meter water production and usage;
- 50% of these systems do not anticipate future growth in customer demand;
- 85% of these systems have enough water to meet the current and possible future needs of their PWS; and
- 37% of these systems are not willing to consolidate with a nearby system.



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