



Healthy People. Healthy Communities.

Edward D. Simmer, MD, MPH, DFAPA  
Director

September 18, 2023

The Honorable Henry D. McMaster – **Hand-Delivered**  
Office of the Governor  
1100 Gervais Street  
Columbia, SC 29201

**Re: 2023 Triennial Drinking Water Capacity Development Program Report**

Dear Governor McMaster:

Please see attached the 2023 Triennial Report entitled, *Report to the Governor on the Efficacy of South Carolina's Capacity Development Strategy*.

The federal Safe Drinking Water Act (SDWA), Section 1420(c)(3) stipulates that no later than two years after the date that South Carolina first adopts its capacity development strategy and every three years afterwards, the South Carolina Department of Health and Environmental Control must submit to the Governor of the State a report describing the effectiveness of DHEC's Capacity Development Strategy. The goal of the strategy is to improve the technical, managerial, and financial capacity of the state's public water systems.

This report will be available for public review on the DHEC website at <https://www.scdhec.gov/capdev>. Additionally, electronic copies are being sent to the U.S. Environmental Protection Agency Region 4 and the Association of State Drinking Water Administrators.

Please contact me if you have any questions or concerns.

Sincerely,

Edward D. Simmer

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# DRINKING WATER CAPACITY DEVELOPMENT

for Technical, Managerial & Financial  
Sustainability of Public Water Systems



**2023**

Triennial Report to the Governor on  
the Efficacy of South Carolina's  
Drinking Water Capacity  
Development Strategy



S.C. Department of Health and  
Environmental Control

**REPORT TO THE GOVERNOR**  
**ON THE EFFICACY OF**  
**SOUTH CAROLINA'S CAPACITY DEVELOPMENT STRATEGY**

**SEPTEMBER 2023**

## Executive Summary

The federal Safe Drinking Water Act (SDWA) requires DHEC to submit a triennial report to the Governor on the efficacy of South Carolina's Capacity Development Strategy to document how well the state is meeting its goals. Submittal of the report also is required to receive the full funding allotment from the Environmental Protection Agency (EPA) for the state's annual Drinking Water State Revolving Fund (SRF) capitalization grant.

The strategy goals have been in place since the EPA approved the DHEC strategy in 1999 and continue to be the roadmap for our public water supervision program. The goals are designed to assist public water systems in improving their sustainability and regulatory compliance performance by enhancing their technical, managerial, and financial capacities.

As of June 30, 2023, South Carolina currently has 1391 active, federally defined public water systems operating today; 1332 of those are considered small water systems because they serve populations under 10,000 people. These small water systems are eligible for assistance through SRF set-aside funds to improve their overall operational and financial sustainability and enhance their daily operations, management practices and compliance with the Safe Drinking Water Act and the State Primary Drinking Water Regulations.

For calendar year 2022, 1396 of a total 1402 federally defined public water systems in the state were in compliance with the health-based standards for safe drinking water. This equates to 99% of the systems serving 99% of the population, nearly 4.5 million people. The DHEC drinking water program continues to provide technical assistance in addition to instituting enforcement compliance actions to address the systems that were not rated satisfactory during their sanitary surveys. The focus of these actions is to expeditiously return the systems to compliance with state and federal drinking water regulations.

The health and economic benefits of having safe drinking water are assets that cannot be assigned a monetary value. A reliable drinking water supply is a prerequisite for economic development in all areas of the state.

Many small drinking water systems lack the financial capacity to qualify for typical loan programs like the State Revolving Fund (SRF). In 2010, the state's governing SRF legislation was amended so the SRF program can provide principal forgiveness loan assistance to small water systems, providing an avenue for financially disadvantaged

systems to fund much needed infrastructure improvements. With a principal forgiveness loan, no interest accrues on the loan principal and once the project is constructed and placed into operation the balance of the principal forgiveness loan does not have to be repaid.

DHEC's Office of Rural Water (ORW) continues to aid small water systems to overcome their inherent challenges to becoming sustainable. This office was created in 2016 due to concerns about lead in drinking water and the water crisis in Flint Michigan of the same year. The purpose of this office is to facilitate collaboration between DHEC staff, external technical assistance providers, and state and federal drinking water infrastructure funders to help small rural water systems increase the performance of their systems and consistently provide better drinking water to their customers that satisfies all state and federal standards.

Since the last triennial report, the DHEC SRF program participated in the Seventh (7<sup>th</sup>) Drinking Water Infrastructure Needs Survey and Assessment (DWINSA). DWINSA is a recurring national initiative led by EPA to assess the drinking water infrastructure needs in each state for the coming 20 years. Data was collected for the 7<sup>th</sup> DWINSA in 2021 and the report was sent to Congress in 2023. The results for SC determined that the total drinking water infrastructure needs for the state for the coming 20-year period would cost \$8,099,400,000, an increase of \$1,972,000,000 since the previous DWINSA. Even with an increase in needs, the findings of the 7<sup>th</sup> DWINSA resulted in a decrease to the South Carolina SRF capitalization grant allotment percentage from 1.30% to 1.25%. The SRF capitalization grant has been further reduced due to Congress using the SRF allotment to fund congressionally directed spending. The 7<sup>th</sup> DWINSA weighed heavily on the new Lead & Copper Replacement Rule, which will be a major emphasis of EPA over the next decade. DHEC anticipates collecting data for the eighth DWINSA beginning in 2025.

In addition to this triennial report to the Governor, DHEC also provides an Annual Capacity Development Report to the EPA. In a response from EPA dated May 2, 2023, on the most recent submittal, EPA notes:

"The Region 4 office of the U.S. Environmental Protection Agency has reviewed South Carolina's Capacity Development Strategy Annual Implementation Report for Fiscal Year 2022, that Mr. Wayne Shealy submitted to staff in our Drinking Water Section with correspondence dated September 21, 2022. The report serves as acceptable demonstration that through Fiscal Year 2022, the South Carolina Department of Health and Environmental Control (DHEC) continues to implement its program to ensure that new community water

systems and non-transient non-community water systems adequately demonstrate technical, managerial, and financial capacity to comply with national primary drinking water regulations prior to commencing operation. The report also serves as acceptable demonstration that through Fiscal Year 2022, the State is developing and implementing its Capacity Development Strategy to assist existing systems in acquiring and maintaining technical, managerial, and financial capacity.”

## A. Introduction

**What is Capacity Development?** Capacity Development was introduced to the country by the 1996 revisions to the federal Safe Drinking Water Act (SDWA) as a new requirement for each state to become proactive in helping its regulated public water systems achieve and maintain ongoing operational sustainability. A sustainable public water system will provide its customers with drinking water that complies with state and federal drinking water standards. The SDWA also requires states to develop and implement strategies to ensure that both existing water systems and newly permitted water systems achieve and maintain the needed technical, managerial, and financial capacity to be sustainable. Simply put, “capacity” is the ability of a water system to consistently provide safe and adequate drinking water to its consumers. South Carolina’s Capacity Development Strategy is intended to achieve this goal through various programs that aid in prioritizing the three core elements of technical, managerial, and financial capacity.

DHEC’s last Triennial Report to The Governor was submitted in September 2020 and can be found at: [scdhec.gov/capdev](https://scdhec.gov/capdev).

This 2023 report discusses the Capacity Development Strategy goals and presents the programs and activities that DHEC uses to accomplish those goals.

## B. Construction Permitting Program and Design Standards

**Maintain an effective construction permitting program.** This program ensures that each new public water system (PWS) and additions or modifications to an existing PWS are designed and constructed in compliance with all permitting regulations, so each PWS is capable of consistently complying with all federal and state drinking water standards.

Design and construction standards required by the construction permitting program (Regulation 61-58) continue to hold engineers, contractors, and water system

management to high levels of accountability to ensure all newly constructed water systems satisfy regulatory requirements and follow appropriate industry guidelines and best management practices. Modifications to or extension of water lines, groundwater wells, and treatment facilities for existing public water systems also must comply with these construction standards. The construction permitting program is partially funded by an application review fee that ranges from \$150 to \$2000 based on the project's complexity and size.

***Minimize the proliferation of small water systems and ensure that new systems demonstrate they will have the capacity to be viable water systems.*** Research shows that small water systems have more difficulty maintaining viability. Therefore, permitting a new system requires a feasibility analysis to evaluate alternatives to constructing a new water system; for example, connecting new construction to an existing system rather than constructing a new independent system. The feasibility analysis must be completed by the applicant's consulting engineer and approved by DHEC's drinking water permitting staff before a new public water system can be permitted and constructed. In addition, a proposed new system must demonstrate that it will be viable, typically through a detailed business plan which must be presented to address the technical, managerial, and financial requirements of owning and operating a public water system.

As such, consulting engineers understand that feasibility analyses are a major consideration of most permit application decisions and likely will direct their clients to connect to an existing viable public water system rather than submitting a construction application for a new system. Since the inception of capacity development as part of new system permitting requirements, DHEC has permitted less than half of construction permit applications for new community or non-transient-non-community water systems. Many of the remaining applicants either abandoned or withdrew their applications based on lack of demand or applicants merged with another public water system. Overall, this process has addressed the need for new systems while building stronger systems. No new water systems have been added during the past three years.

### **C. Sanitary Survey Program**

***Maintain an effective sanitary survey program.*** The sanitary survey program ensures that each PWS is routinely inspected at a frequency that satisfies federal requirements and state guidelines. These inspections, known as sanitary surveys, are necessary to ensure that each PWS is properly operated, maintained, and meets state and federal standards to protect public health.

The survey format is a rating system based on 39 performance criteria and survey questions that are conducted by DHEC staff periodically for each active water system in the state. Surveys are performed at intervals that are determined by a system's type classification and compliance rating from its last inspection. There are three sanitary survey ratings available: "Satisfactory," "Improvement Needed," or "Unsatisfactory." When a system receives an "Improvement Needed" or "Unsatisfactory" rating, DHEC will provide technical assistance and/or use enforcement actions to compel that system to address the deficiency or deficiencies that caused the less than satisfactory rating and to provide a path to achieve a "Satisfactory" rating. Also, an overall "Unsatisfactory" rating may result in the requirement to prepare a business plan to address how the system will regain and maintain viability, focusing on technical, managerial, and financial components.

In 2022, 574 community water systems provided over 4.4 million of the state's residents with safe drinking water. Of these community systems, 425 systems had sanitary surveys with 339 of those receiving "Satisfactory" on their sanitary survey inspection and 80 receiving "Improvement Needed." Six systems received an "Unsatisfactory" score. This means that over 99.7% of residents served by community systems have a drinking water supply meeting state and federal standards.

In late 2023, DHEC plans on implementing a new sanitary survey data system. This will include substantially more questions including items on asset management and capacity development.

### ***Enforcement***

The objective of enforcement is to ensure that timely and effective action is taken whenever a PWS is found to be out of compliance with federal and/or state regulations. While the goal is for systems to maintain compliance, sometimes situations occur requiring enforcement action. In those cases, an appropriate level of action is taken to document and establish corrective measures to regain compliance. As an alternative to enforcement actions, some systems may be prioritized and referred to the Office of Rural Water or other groups for technical assistance. In lieu of requiring a business plan, DHEC may offer a less costly compliance schedule and technical assistance for small systems.

## **D. Water Quality Monitoring and Annual Fee Program**

***Maintain a high compliance rate of bacteriological, chemical and radionuclide monitoring by public water systems.*** Routine water quality monitoring ensures that

each PWS is properly monitored in accordance with federal and state regulations and that compliance with those federal and state regulations, or any violation thereof, is identified in a timely manner so proper corrective actions can be instituted, if required, to return the PWS to compliance.

DHEC effectively manages its monitoring program through annual fees. These fees allow DHEC to collect and analyze samples consistently rather than requiring systems to obtain their own samples. This results in a highly successful compliance rate. The fee program also provides for equitable sampling costs between large and small systems, reducing the financial hardship on smaller systems with subsidies from large systems so more can comply with the program's monitoring requirements. The monitoring compliance rate was 99% for community water systems in State FY 2023 while the compliance rate for all federal systems in the state was 93% (excluding lead and copper violations) encompassing 94% of the population.

***Adequate and safe drinking water begins with a reliable, relatively clean water source.*** After permitting a new community, non-transient non-community or transient PWS with a surface water source, DHEC delineates the source water protection area for use by other regulatory programs, such as the state's NPDES program. This falls under the general concept of Source Water Protection.

Many programs within DHEC contribute to the monitoring, protection, restoration, and enhancement of source waters in South Carolina. DHEC set aside \$2,214,490 in State FYs 2021-2023 from associated Drinking Water State Revolving Fund (DWSRF) capitalization grants for source water protection programs. These funds are being used for the following:

- 1) development of site-specific nutrient criteria and a nutrient Total Maximum Daily Load (TMDL) Models or TMDL alternative restoration plans for impaired waters;
- 2) development of watershed-based plans to support the protection of source waters;
- 3) support for water resource studies and programs to protect and preserve source waters in the state including groundwater or surface water resources;
- 4) monitoring for Hazardous Algal Blooms in South Carolina lakes, especially lakes that have drinking water intakes or are heavily used for primary contact recreation; and

- 5) assisting with completing the Drinking Water Infrastructure Needs Survey and Assessment.

Examples of work include the following projects:

**Catawba River Nutrient TMDL Model:** In recognition of the need for additional data, DHEC continued intensive special monitoring in the Catawba basin for the 2020 growing season to support development of new watershed, river and lake water quality models and establishing site-specific numeric nutrient criteria in the lower Catawba lakes. Grant funds were used to purchase USGS stream flow gaging in two non-point source reference watersheds and contract laboratory services for water quality analyses for lake, river, and wet-weather stream sampling. The data collected will be used to support development of a nutrient TMDL for the Catawba River.

**Watershed Based Plans:** A request for proposals was issued in September of 2020 for the development of watershed-based plans as mandated by the EPA's watershed-based plans development guidance document. The plans address ambient surface water pollutants and their impacts on surface water bodies that are also drinking water sources. Proposals are accepted from SRF-eligible borrowers, watershed organizations, soil and water conservation districts, regional planning commissions, and public universities. Two watershed-based plan proposals were accepted, and plans are being developed by the applicants. One watershed-based plan development is for six, twelve-digit hydrologic unit codes (HUCs) in the Atlantic Intracoastal Waterway, Great Pee Dee River, Cypress Creek, and Yauhannah Creek. There is an approved TMDL for dissolved oxygen covering most of the watershed. Georgetown County Water and Sewer District is providing oversight and guidance for development of a plan to address bacteria, nutrients, and sediment in the Watershed. The Grand Strand Water and Sewer Authority provides drinking water to about 25,000 customers in this area. Georgetown and Horry Counties are among the fastest growing regions in South Carolina. Between 2000 and 2018, the combined populations of Horry and Georgetown counties increased 62 percent, and this growth is expected to continue.

Watershed-based solutions are needed to address the low dissolved oxygen and bacteria impairments and to protect this watershed from urban sprawl and associated pollution. Partners include the Belle W. Baruch Foundation, Coastal Carolina University, American Rivers, and The Nature Conservancy.

**Water Resources Studies:** SRF funds were used to collect and evaluate water use data for surface water and groundwater to better manage water resources in the state. Staff worked on groundwater management plans for areas of the state designated as Capacity Use Areas. Capacity Use Areas are areas within the state where the groundwater aquifers are vulnerable to overuse and/or saltwater intrusion. Six counties in the coastal plain of SC have been designated a new Capacity Use Area referred to as the Santee-Lynches Area. An initial groundwater management plan for the Santee-Lynches Area was written and presented to the DHEC Board in August 2022. An evaluation was produced for the Trident Capacity Use Area in preparation for the groundwater use permit renewal cycle in 2023. The Lowcountry Capacity Use Area is currently going through a groundwater use permit renewal process. A state-wide surface water model continues to be developed and refined to better manage surface water resources in the state. The surface water model is also used for the development and implementation of surface water withdrawal permits in the state.

**Harmful Algal Bloom Studies:** DHEC staff collected and analyzed samples taken from 92 monthly-monitored sites across several South Carolina reservoirs, estuaries, and influent streams for one cyanotoxin: Microcystin. Samples for Microcystins are collected during the typical growing season for algae, which is May through October. These samples were analyzed via Enzyme Linked Immunosorbent Assay (ELISA). Of the 499 samples that were successfully analyzed for Microcystins in 2020, approximately 74% of them had quantifiable concentrations present ( $\geq 0.016 \mu\text{g/L}$ ). Toxin concentrations in all monthly-monitoring samples were less than the EPA's recreational advisory guideline of  $8 \mu\text{g/L}$  for microcystins. Five lakes were also sampled from June through October 2020 as close as practical to drinking water intakes to serve as drinking water source samples. Sites were selected based on previous algal issues and complaints of taste and odor issues. Of these five lakes, one (1) exceeded the EPA's recreational advisory guideline for microcystins toxins. This lake was Lake Whelchel which serves as the primary water source for Gaffney. An advisory was issued in August 2020 and was not lifted until December of 2020. In 2021, two (2) drinking water lakes exceeded the EPA's recreational advisory guideline for microcystin toxins. Lake Rabon (primary water source for Laurens County) and Lake Whelchel exceeded the EPA's recreational advisory guideline and had swimming advisories issued. To lift an advisory, two (2) consecutive samples must have toxin concentrations less than the EPA's recreational advisory guideline. The advisory for Lake Rabon and Lake Whelchel has been lifted. Samples were also collected in response to complaints reporting algal blooms,

fish kills, and taste and odor issues. Twelve (12) samples were collected in response to these complaints in 2020 and seven (7) were collected in 2021.

### **Wellhead Protection Program**

In addition to source water protection, DHEC also utilized approximately \$2,485,752 in DWSRF set-aside funds in SFYs 2021-2023 to assist South Carolina public water systems in developing and implementing their wellhead protection programs and to protect groundwater resources throughout the state.

- 1) For new wells in community and non-community public water systems, DHEC performs a complete wellhead assessment which includes the delineation of the protection area, inventory of potential contamination sources, a susceptibility analysis, and preparation of an assessment report that will be made available to the public. During SFYs 2021-2023 DHEC delineated protection areas and completed susceptibility analyses for 62 proposed wells serving public water systems.
- 2) DHEC provides technical assistance to public water systems that are beginning their voluntary wellhead protection programs.
- 3) DHEC provides technical assistance to public water systems that have a known and existing drinking water quality problem or that have just learned of an emerging drinking water quality problem.
- 4) DHEC conducts studies and collects data to evaluate groundwater resources in the state. This information is used to better manage groundwater resources in the state, especially in areas of the state where groundwater overuse or saltwater intrusion threaten the long-term viability of the resource.

### **Area Wide Optimization Program (AWOP)**

DHEC initiated participation in the EPA's National Area-Wide Optimization Program (AWOP) in 1997 and values this successful program for its role in providing the state's citizens with drinking water that meets or exceeds state and federal standards. This program continues to attain its goal of maximizing public health protection by the optimization of particulate removal at each of the state's 61 surface water treatment plants, while reducing microbial and disinfection by-product (DBP) formation in all water systems. Surface water plants and facilities (water systems whose source is a lake or river) are encouraged to voluntarily join the program because its established

treatment goals exceed those drinking water quality standards established in the State Primary Drinking Water Regulations R.61-58. The AWOP program is partially funded by DHEC's Drinking Water SRF capitalization grant set-aside for public water system supervision.

The AWOP program has a priority ranking system for evaluating and scoring surface water systems' success in reducing microbials in their water. This prioritization lets the system and DHEC apply resources and optimization tools in areas with the most need. In 2022, 3,511,000 SC residents (the state's population is approximately 5 million) received drinking water from surface water plants, with approximately 3,120,000 receiving drinking water from plants that have been optimized for microbial protection. By contrast, in 1998 when the AWOP began, only 49,000 state residents received drinking water from plants that met settled and filtered optimization goals.

Another AWOP program task is using its priority ranking system to score and evaluate surface water plants' successes in reducing disinfection byproducts (DBP) in their system. In 2022, 2,272,000 of the 3.5 million residents using water from surface water plants received drinking water from DBP-optimized plants.

Other initiatives for the DHEC AWOP team include conducting workshops to teach specific requirements for microbial and DBP optimization, implementing the Revised Total Coliform Rule, implementing a strategy to monitor PFAS in public water systems, and continuing to be a leader in AWOP innovation for SC and nationally. Annually, water systems achieving AWOP goals are recognized for their accomplishments, providing incentives and pride in demonstrating to their management and consumers the benefits of exceeding drinking water standards.

## **E. Business Plans**

The purpose of a business plan for a water system is to show that the proposed water system will be viable. A business plan for a public water system consists of three sub-plans, a "facilities plan," a "management plan," and a "financial plan." The business plan is intended to show how a water system will be operated and maintained as a viable entity. The Plan may apply to new or existing water systems and may also be utilized as a self-assessment tool or an enforcement action to assist systems in better managing their assets.

## **F. Operating Permit Program**

The operating permit program began in 1998 to ensure compliance with amendments to the State Primary Drinking Water Regulations. Operating permits are issued to active water systems. When a system is slated to change ownership, operating permit transfers must be approved by DHEC before ownership of a public water system can be legally transferred. This process prevents the transfer of a water system to an owner lacking the adequate technical, managerial, or financial capacities to operate and maintain a system in compliance with state and federal regulations. Likewise, proposed new systems must follow a similar process and demonstrate that it is not feasible to connect to another existing system. In addition, a system with an unsatisfactory sanitary survey rating may be required to submit a business plan addressing the technical, managerial, and financial requirements needed to bring the system into compliance.

## **G. Develop Benchmarks from Annual Financial Statements from Existing Water Systems to Help Determine the Adequacy of Business Plans**

DHEC's SRF Division has a complement of financial accountants who, in addition to tracking expenditures, etc., also review business plans and conduct Utility Sustainability Assessments (UtSAs). These assessments are conducted whenever a system requests SRF loan assistance to determine if the system is sustainable. If it is determined that a system is not sustainable, it may be referred to a technical assistance provider or other group to help build its capacity. SRF financial assistance may also be provided if it is determined the proposed project will help a system become sustainable.

## **H. Encourage and Facilitate the Consolidation and Regionalization of Public Water Systems**

Many smaller municipal systems must deal with rising operational costs while their customer base is not increasing enough to generate the additional revenues to meet those increased costs. Sharing or consolidating services, personnel, and/or water system equipment through a regionalization relationship is one possible solution for these systems.

The SRF program offers loan incentives for drinking water systems who are exploring regionalization or consolidating operations. Additional priority ranking points for such efforts range from 10 points for two or more systems joining together and up

to 40 additional points if a viable system is willing to take over a non-viable system to correct operational, maintenance, and/or financial issues that are causing the non-viable system to be out of compliance with safe drinking water regulations. DHEC cooperates with local government entities and other state agencies to explore opportunities for water utilities to regionalize or consolidate.

## **I. Encourage and Facilitate the Local Planning Process and Coordination Between State and Local Governments**

DHEC's SRF program and the Office of Rural Water (ORW) continue to participate in an infrastructure funder's group that meets periodically and is comprised of representatives of the DHEC SRF, SC Rural Infrastructure Authority, U.S. Economic Development Administration, U.S. Department of Agriculture Rural Development program, and Community Development Block Grant within the S.C. Department of Commerce. This group discusses water infrastructure projects in the state and is able to direct water systems to the funding agency or agencies best suited to meet their needs. In addition, these agencies often work together to co-fund projects. Previous regionalization and consolidation projects have benefitted from these funding agencies having open lines of communication.

ORW partners with many statewide organizations and agencies along with other internal DHEC divisions to provide assistance to small and underserved communities. Below are some of the partnerships:

- Southeast Rural Community Assistance Project (SERCAP)
  - Financial and technical assistance (COMMUNITY/INDIVIDUALS)
- South Carolina Rural Water Association (SCRWA)
  - Financial and technical assistance (COMMUNITY)
- State Revolving Fund (SRF)
  - Financial assistance (COMMUNITY)
- South Carolina Water Associations (WEASC/SCAWWA)
  - Managerial and operational assistance (COMMUNITY)
- Rural Infrastructure Authority (RIA)
  - Financial assistance (COMMUNITY)
- United States Department of Agriculture (USDA)
  - Managerial, operational, and financial assistance (INDIVIDUALS)
  - Water and Environmental Programs
- Economic Development Administration (EDA)
  - Financial assistance (INDIVIDUALS)
  - Funding Opportunities

- Department of Housing and Urban Development (DHUD)
  - Community Development Block Grant (CDBG) (COMMUNITY)
- Environmental Protection Agency (EPA)
  - Managerial and operational assistance
  - Water Finance Clearinghouse
- Local Councils of Governments (COGs)

ORW participates as a member of the South Carolina Rural Infrastructure Authority (RIA) Sustainability Advisory Committee. RIA hosted a Sustainability Forum in September 2021. The forum focused on the viability/sustainability of public utility systems in South Carolina. RIA hired a contractor to do an in-depth look at this important and challenging issue in our state. The outcome of the study and forum provided tools for assessing the viability of utility systems and explored possible solutions for nonviable utilities such as partnerships and regionalization.

### **DHEC and RIA SRF Partnership**

DHEC and RIA work closely together to fund and oversee various projects to build capacity in systems throughout the state. RIA manages the financial resources needed and the loan process to administer the funds. DHEC SRF staff review the technical engineering reports, plans & specifications, permitting, inspections, and jointly track project invoices. Three successful projects are noted below:

**City of Camden:** The City of Camden received a Basic Infrastructure grant as well as Clean Water and Drinking Water SRF loans to rehabilitate and/or replace aging water and sewer lines along multiple streets in the Kirkwood neighborhood. The gravity sewer project improved flow and reduced sewer blockages from root infiltration and line collapses. As a result of the water and sewer improvements, residents should not only experience fewer line breaks and service disruptions, but should also notice improved water quality, flow, and pressure as well as increased fire protection from the placement of new fire hydrants in the area. This project further spurred the city to put the electrical lines underground while working on the water and sewer lines. The project benefited 200 residential customers.

**City of North Augusta:** The City of North Augusta utilized a \$12.9 million SRF loan to construct a new 30-million-gallon raw water storage tank and raw water transfer pump station, which benefited nearly 12,000 customers. Through this project, the City was able to comply with state disinfection requirements and improve the system's water quality and reliability.

**Town of Batesburg-Leesville:** This project was awarded to provide new interior and exterior coatings and other improvements to the existing Ridgell Street elevated tank. The project addressed a DHEC consent order for violating the State Drinking Water Act. The elevated tank remediation will improve the quality of life by enhancing water quality for 964 residential and business customers.

### **SC Infrastructure Investment Program (SCIIP)**

Following the enactment of the American Rescue Plan Act of 2021 (ARPA), the SC General Assembly allocated approximately \$1.486 billion to RIA for use in drinking water, wastewater, stormwater, and related infrastructure and study projects. In April 2023 RIA published a list of 216 fund recipients receiving up to \$10 million per project for a total investment of \$1.369 billion. In addition, three projects totaling \$100 million received SCIIP grants in September 2022. RIA also issued State grants to 37 entities in a total amount of \$15.3 million.

Complementing the above potential allotments, RIA and DHEC SRF offered Principal Forgiveness loans to 15 systems that did not receive SCIIP funding or only partial funding of their grant requests so they could move forward with addressing their water and/or sewer needs.

*This collaboration of federal, state, municipal, and other public agencies has resulted in the largest water infrastructure investment in South Carolina history, benefitting numerous facilities in every county of the state; helping them to build capacity in all areas. DHEC Bureau of Water staff will review and permit each of these projects while RIA will track the financial aspects of the projects and make sure all program requirements are met.*

### **Operator Certification Licensing Program**

DHEC provides support to the SC Department of Labor, Licensing and Regulation (SCLLR) for implementation of the operator certification licensing program. A senior DHEC drinking water program manager currently serves on the LLR Board of Environmental Certification that oversees the operator certification licensing program. DHEC also assists with operator training and compliance monitoring activities. Properly trained and licensed system operators are key to having drinking water systems capable of meeting state and federal drinking water standards. To be a licensed operator, licensees must pass tests on the proper operation of water systems and applicable drinking water regulations and maintain continuing education credits. Not employing a certified operator with the appropriate certification grade is a violation of state drinking water regulations. There are

currently approximately 1410 Water Treatment and 1710 Water Distribution operators along with 780 trainees in South Carolina. With an aging work force, emphasis has been placed on work force development programs in recent years.

## J. Public Education Initiative

***Provide Technical Assistance through support of public water system education & outreach initiatives for improving the technical, managerial, and financial capacity of public water systems.*** DHEC provides education and outreach for technical assistance and training using internal and external capacity development programs.

### Office of Rural Water

The primary objective of the Office of Rural Water (ORW) is to foster healthy living in healthy communities, with a particular emphasis on smaller, underserved, and historically disadvantaged communities. DHEC staff endeavor to facilitate access to DHEC's vision and mission by instilling a culture of collaborative problem-solving and fostering regional partnerships. ORW embodies this mission by encouraging innovative local and regional solutions through cooperation and the shared pursuit of excellence. Science becomes actionable, equipping operators and staff with knowledge about regulatory requirements and impending regulatory shifts. ORW believes in an inclusive approach, working with smaller communities in a cooperative spirit, leveraging a comprehensive network of partners to disseminate a range of financial assistance resources. These include funding aid, rate analyses, grant writing resources, and viability studies. This allows DHEC to concurrently address and find solutions for communities plagued by longstanding compliance management issues on operational and scientific fronts. Moreover, ORW sets an example by administering and coordinating grant programs aimed at testing, educating, and remediating lead contamination in drinking water in schools across the state, thereby protecting our most vulnerable citizens, children. Also, as a non-regulatory branch, trust is developed between the Agency and its public water systems, resulting in pride by all parties to significantly influence the quality of drinking water for citizens throughout the state, effecting change in various ways.

Areas where specific efforts have been focused are:

- Training water operators on SC water regulations;
- Participation at local and regional conferences and workshops to inform operators, engineers, and others on the latest regulations and programs;
- Promoting the regionalization or mergers of smaller systems;

- Providing education on establishing an adequate rate structure and how that alone can significantly improve operational and financial viability;
- Offering collaborative and innovative solutions to problems inherent with aging infrastructure issues;
- Engaging communities about the benefits of water system partnerships;
- Educating communities on technical or financial assistance opportunities for which they may be eligible;
- Providing outreach to local schools regarding water quality issues such as disinfection by-products, microbial growth, and lead in drinking water;
- Assisting water systems to maintain or regain compliance with the Lead and Copper Rule; and
- Conducting cross-connection control classes to certify local plumbers, contractors, and utility staff on the proper use, installation, and testing of backflow prevention devices.

During State FY 2021-2023, ORW worked on approximately 25 projects that required technical, managerial, and/or financial assistance. In the pursuit of infrastructure improvement and sustainable practices, ORW staff have seen noteworthy accomplishments in Clarendon, Charleston, and Richland County communities. The Richland County community of Eastover is considered by ORW staff as both a managerial and technical assistance success story. ORW continues to guide the Eastover staff through an abrupt change in mayors while adding fire flow testing and updates to the Town's water system. In Clarendon County, the Town of Summerton is presently embarking on a multi-million-dollar wastewater regionalization which will simultaneously increase sustainability of the wastewater systems in the area and improve the groundwater quality for local residents by eliminating discharges from 2 smaller wastewater treatment plants and rerouting them to an advanced municipal facility located several miles away. Meanwhile, in Charleston County, the Town of Awendaw has effectively utilized technical assistance to promote cost-efficient measures. By averting unnecessary expenditures, the community has managed to reappropriate thousands of dollars which are being redirected towards the enhancement of water quality monitoring, ultimately benefitting the residents who rely on the drinking water system. These instances demonstrate the effectiveness of prudent management and judicious allocation of resources. For a few additional projects, please see the 2022 Year in Review on the Office of Rural Water's website at [sdcdec.gov/bow/office-rural-water](https://sdcdec.gov/bow/office-rural-water).

In addition to the above, ORW also administered the state's Lead Testing in School and Child Care Program Drinking Water Grant established by the Federal Water Infrastructure Improvements (WIIN) Act. Example guides to assist schools with

reducing potential lead in school water lines are available at [scdhec.gov/bow/lead-testing-schools-child-care-programs](https://scdhec.gov/bow/lead-testing-schools-child-care-programs).

### Small Water System Technical Assistance

The objective of this program is to provide assistance to small public community water systems (systems serving less than 10,000 people) to improve their daily operations, which in turn will help increase their sustainability, regulatory compliance, and ability to qualify for SRF project assistance under the Safe Drinking Water Act and State Primary Drinking Water Regulations. The DHEC SRF program has contracted with the SC Rural Water Association (SCRWA) to provide technical assistance and training to small systems on issues such as regulatory compliance, sanitary survey improvements, water loss control, metering, updating distribution system maps, chlorine gas use and safety, and financial/asset management.



*SCRWA staff replacing an altitude valve for Silver Springs Water District in Neeses.*

Qualifying for SRF loan assistance can be a challenging task for small systems, but SCRWA staff are available to help systems satisfy SRF sustainability requirements. SCRWA also offers water system board member training focusing on effective water system management practices. DHEC staff often attend and participate in SCRWA training sessions. A total of \$500,000 for State FY 2021-2023 was set-aside for DHEC's TA activities from associated DWSRF capitalization grants. SCRWA staff provide a number of different services and training opportunities for small water systems statewide. They also work with small systems who have applied for SRF funding but need to improve their sustainability scores to become SRF eligible. This work is often one-on-one and on-site with the system. SCRWA frequently consults and collaborates with DHEC Drinking Water Compliance staff. DHEC notes the successful outcomes



*Ricky Ingram of SCRWA installing a meter to measure flow in Norway.*

being derived from the SCRWA contract and will continue the technical assistance contractual relationship with SCRWA in FY 2024.

### **Training**

SCRWA provides training on various topics for systems. All sessions were 3 - 6 hours in length and were conducted regionally across the state or centrally via the Zoom platform. Some sessions qualified for CEUs. Topics and number of sessions for State FYs 2021-2023 included:

- Elevated Tank Maintenance – 2 sessions
- Fiscal Sustainability / Asset Management – 2 sessions
- OSHA Compliance and Silica Safety – 17 sessions
- Finished Water Storage – 1 session
- Pump Performance – 1 session
- Introduction to Water Treatment – 3 sessions
- Flow Monitoring Technologies – 1 session
- Hydrants, Flushing, and Fire Flow – 2 sessions
- Field Approach to Altitude Valves – 1 session
- All About Valves – 1 session
- Chlorine Safety – 8 sessions
- DHEC Rules and Regulations / Lab Basics – 2 sessions
- AWIA Compliance – 7 sessions
- Distribution System Corrosion Control – 1 session
- Reducing Electrical Costs – 1 session
- Safety 100 General OSHA Requirements – 1 session
- DHEC Cross Connection Control Admin Class – 1 session
- Source Water 120 – Protecting the Source – 1 session
- Water Softening and Advanced Treatment – 1 session
- Chemical Dosing Equipment – 1 session
- Reading and Interpreting Construction Documents – 3 sessions
- DHEC Sanitary Survey Preparedness – 1 session
- Emerging Contaminants in Water and Wastewater – 1 session

- Positive Customer Relations and Public Communication – 1 session
- Disinfection Techniques – 5 sessions
- Membrane Treatment and Handling of Wastes – 1 session

\*\*The above classes were offered utilizing and in collaboration with funding provided by DHEC SRF and EPA Training and Technical Assistance Program.

## System Mapping

A GIS specialist provides mapping assistance to small systems such as digitizing existing maps, collecting data on infrastructure locations, providing instruction on use and loan of SCRWA equipment for systems to collect their own data. Maps were created and presented to systems for QA/QC, and finished maps were delivered to the systems in hard copy and in digital format. During SFYs 2021 – 2023, water utilities were assisted through the GIS Mapping Program on twenty-six (26) projects.

## Direct Assistance

In addition to training, SCRWA staff provide on-site assistance to help solve system problems and improve their capacity. One example is assistance provided to the Town of McColl.

McColl is the second largest town in Marlboro County. It lies in the state's Pee Dee region, eight miles from the North Carolina border. The population was 2,070 as of the 2020 census. McColl is the home of the Pee Dee Indian Tribe. They are a relatively small American Indian tribe that has occupied the Pee Dee region for several centuries. The racial makeup of the town is 65.57% white, 19.22% African American, 12.69% Native American, 0.12% Asian, 0.56% from other races and 1.84% from two or more races. Hispanic or Latino of any race were 1.48% of the population. The median income for a household in the town was \$22,015.



*Chad Byars and Phil Franklin of SCWRA and Mayor Garner, Town of McColl, flow-testing hydrants.*

The town has 982 water connections and purchases water from Marlboro Water Company and uses two wells in addition to having a wastewater treatment facility which also had a laundry list of violations and needs. The town is currently under contract with a certified operator for compliance requirements and the town's field crew of two is responsible for the maintenance. The town was in enforcement for its water and the wastewater systems.

Several SCRWA staff were assigned to assist McColl with its consent order. Specific assistance was provided with flow testing of hydrants, valve locating and operation, elevated tank inspection report review, water audit and other compliance issues. Staff worked to achieve 100% compliance on hydrant maintenance records, fire flow data collection and valve maintenance records. SCRWA's GIS specialist worked with SCRWA staff and town personnel to update and publish accurate system maps for the town to comply with annual sanitary survey deficiencies. The mayor personally went with the crew and spent several days flow testing all the fire hydrants within the town's service area to make sure there was adequate fire protection. The mayor and staff spent weeks looking for valves and checking them to make sure they operated properly. Many of the valves were under pavement and had to be cut out and raised. Several programs had to be written and others needed to be updated such as leak detection and backflow programs. DHEC required the town to have both water tanks washed out and inspected as well as permanently abandon two old wells that could not be used. The mayor and staff developed a flushing program to use on a monthly basis to make sure the water stays fresh throughout the distribution



*Honorable George Garner, Mayor, reviewing system assets for Town of McColl.*

system and now these lines are flushed routinely. All the backflow devices in town were tested as required by DHEC. The town performed a water audit to determine the amount of water loss. SCRWA staff recommended developing an asset management system.

One of the most important things the mayor has been pushing for is to get the town's financial audits up to date. The municipal audits had not been completed for several years and the town is not eligible for water and sewer funding assistance because of delinquent audits. The office staff and

the mayor understand how important this is and have been encouraging the auditors to complete this as soon as possible. The town anticipates their audits should be up to date by the end of 2023.

One of the town's main issues was constricted fire flow in critical areas, including the town's school. It was suspected that several valves were either completely or partially closed which was only allowing less than 200 gallons per minute of flow at hydrants



*Mayor Garner and Operator Johnny Jones at a critical school fire hydrant.*

around the school. Using SCRWA equipment, SCRWA and two staff located several buried valves and then returned them to a fully open condition. After this work was completed, the hydrant shown here was used to extinguish a fully involved structure fire at the athletic field behind the school.

With regular follow up and coordination with DHEC and Town personnel, McColl should soon be able satisfy its consent order. For a link to the complete SCRWA report, please see: <https://arcg.is/0ySWP9>.

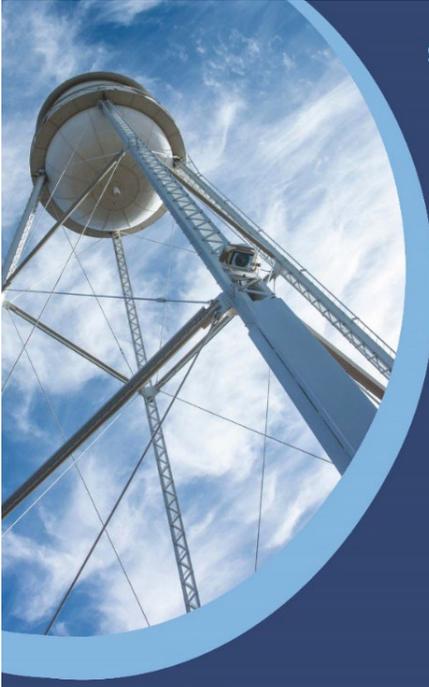
Other towns that the SC Rural Water Association provided technical assistance to include Clio, Bowman, Marietta Water District, West Pelzer, Belton Honea Path, Lynchburg, and Bethune.

### **Outreach Coordinator**

DHEC's SRF division has recently hired a staff member to help enhance outreach to water systems throughout the state. Outreach is provided through attendance at regional water association meetings, promotional flyers, informational booths at conferences, and webinars on such topics as SRF funding. Support is also provided on preparation of reports, data, and other SRF/Capacity Development functions.

## K. Asset Management

Following the America’s Water Infrastructure Act of 2018 (AWIA) the SC Capacity Development Strategy was amended in November 2022 to include Asset Management as a key element in insuring a sustainable water system. DHEC has and will continue to encourage and assist public drinking water systems with asset management planning and the preparation of asset management plans. DHEC activities to support asset management planning and plan development are listed below. The focus is on systems having an asset management plan and adopting asset management practices to improve and enhance the overall system capacity and sustainability.



**FISCAL SUSTAINABILITY PLANNING AND ASSET MANAGEMENT WORKSHOP**

  
**MAY 25, 2023**  
8:30 AM - 3:30 PM

  
**SCRWA OFFICE**  
128 STONEMARK LANE  
COLUMBIA, SC 29210

  
**WORKSHOP FEE**  
\$45.00

**REGISTER ONLINE: [WWW.SCRWA.ORG](http://WWW.SCRWA.ORG)**

  
SCRWA  
SC Rural Water Association

  
dhec  
S.C. Department of Health and Environmental Control

### Asset Management Training

Drinking Water SRF (DWSRF) capitalization grants have been utilized through a technical assistance contractor to fund asset management training workshops for small public drinking water systems (population served less than 10,000) in the state. Asset management training workshops will continue to emphasize the benefits of asset management planning and having an asset management plan. The training curriculum includes all aspects of asset management planning including tools that systems can use to assist with preparing an asset management plan. The training incorporates the best practices of asset management including the five core elements that EPA recommends a system consider when preparing an asset management plan: Current State of Assets, Level of Service, Critical Assets, Minimum Life Cycle Costs, and Long-term Funding Plans.

An ongoing challenge that systems face is to maintain asset management plans and data after they have been initially developed. As more utilities develop asset management plans, the need to maintain these plans will only rise in importance. Asset management training can help in this regard as it emphasizes the importance of maintaining asset management plans after they have been developed. In addition to SRF funded training, DHEC works with other organizations, government agencies, and vendors to identify asset management resources.

## Direct Assistance to Small Systems

Two key obstacles to small systems preparing an asset management plan are lack of resources to guide the preparation of the plan and having the system information needed to prepare a plan. The direct assistance to small systems helps to address these obstacles.

**ASSET MANAGEMENT PLAN ASSISTANCE**  
FOR PUBLIC DRINKING WATER SYSTEMS

**THE 5 CORE ELEMENTS OF ASSET MANAGEMENT**

- 1. Current State of Assets
- 2. Level of Service
- 3. Critical Assets
- 4. Minimum Life Cycle Cost
- 5. Long-term Funding Plan

**Asset Management**

THE SOUTH CAROLINA DRINKING WATER SRF PROGRAM OFFERS FUNDING TO PUBLIC DRINKING WATER SYSTEMS TO PREPARE PLANNING DOCUMENTS INCLUDING ASSET MANAGEMENT PLANS.

1. Does your system have an asset management plan?
2. Does your system have a capital improvement plan or similar financial plan to address the future costs of maintaining and replacing assets and updating the system to meet future customer demand and regulatory requirements?

**NEED FUNDING INFO?**  
SRF-Info@dhec.sc.gov  
scdhec.gov/SRF

**NEED TECHNICAL ASSISTANCE?**  
Ricky Ingram  
Ricky@scrwa.org  
scrwa.org  
epa.gov/dwcapacity

**SOUTH CAROLINA SRF STATE REVOLVING FUND**

**SCRWA SC Rural Water Association**

**EPA**

DWSRF funds have and will continue to be used to fund a contractor to provide direct technical assistance to small public systems to assist with planning, data collection, and preparing asset management plans. Assistance with preparing asset management plans focuses on incorporating the five core elements recommended by EPA. The technical assistance contractor can provide direct assistance to small systems for other activities that can support asset management planning such as mapping system assets, leak detection testing to identify system assets in need of repair, rate setting to make sure capital resources are available to fund future repairs and upgrades,

and to identify user-friendly and reasonably priced asset management tools (e.g., asset management software). Small systems are identified for direct assistance based on needs identified by the DHEC sanitary survey, monitoring data, or requests

for assistance by the system. The technical assistance contractor may receive direct requests for assistance by a system or identify a system needing assistance during training sessions or system visits. In State FY 2023, DHEC Bureau of Water contracted with the South Carolina Rural Water Association to provide small systems with Asset Management training and technical guidance to assist them in preparing asset management plans.

A key obstacle to small systems implementing and maintaining an asset management plan is turnover of leadership and staff positions. Direct assistance to small systems, while not addressing turnover directly, may have an indirect positive effect on this ongoing challenge as key staff are better equipped to manage their systems.

### **Funding for Asset Management Plans**

Another obstacle to small and disadvantaged systems preparing asset management plans is lack of financial resources to prepare the plan. The South Carolina DWSRF program offers funding to public drinking water systems to prepare planning documents including asset management plans. The program offers either low interest loans or principal forgiveness funds to public drinking water systems depending on factors such as the system size, median household income of the service area, and the system's ability to afford a DWSRF loan. Providing principal forgiveness funding for small, disadvantaged systems to prepare asset management plans helps to address this obstacle.

## **L. Implementation and Conclusion**

Many of the goals and objectives of South Carolina's Capacity Development Strategy are closely aligned and implemented under the umbrella of the Public Water System Supervision Program (PWSS). PWSS incorporates several Bureau of Water activity areas, noted earlier, whose overall responsibility is to ensure all public water systems are permitted, constructed, monitored, operated, and maintained in compliance with the federal Safe Drinking Water Act and the State Primary Drinking Water Regulations, R.61-58, so the health and well-being of all citizens is protected.

The funds allocated to PWSS are taken as set-asides from the annual Drinking Water State Revolving Fund (DWSRF) capitalization grant. A total of \$4,179,318 was set aside from DWSRF capitalization grants for State FY 2021-2023 to fund PWSS program activities. Activities managed through the PWSS program include construction permitting, water quality permitting, water quantity permitting, groundwater

protection, drinking water protection/surface water system sanitary surveys, capacity development/new water system permitting and operating permit program, drinking water enforcement, AWOP (area-wide optimization program), and technical assistance.

DHEC continues to implement many programs and procedures and introduces new ones as federal guidance and other needs change to support and enhance the technical, managerial, and financial capacities of the state's drinking water systems. The goal of the capacity development strategy is to ensure the state's drinking water systems achieve sustainability while providing their customers with an adequate, safe water supply that satisfies all state and federal standards. DHEC also seeks new approaches to support systems such as creating the ORW and working with independent partners such as SCRWA. ORW provides DHEC with a non-regulatory way to help systems address compliance, technical and financial challenges, and explore alternate methods to achieve compliance and sustainability such as partnering or combining with other water systems. SCRWA provides a full array of services for small systems to improve their capabilities resulting in success stories, such as the Town of McColl.

New federal programs such as "Build America, Buy America" (BABA), Lead Service Line Replacements, and the transfer of funds from State Revolving Fund programs to direct federal allotments for projects will bring new challenges for public water systems and the states that oversee them, demonstrating the need for programs like Capacity Development to provide assistance to systems in managing the associated requirements. As ARPA and SCIIP funds begin to make an impact on the state through infrastructure projects, DHEC will continue to monitor the progress of those projects and their impact on water quality and communities they serve.

*This report is publicly available on DHEC's Capacity Development website at: [scdhec.gov/capdev](https://scdhec.gov/capdev).*

The next Report to The Governor will be due September 30, 2026.

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