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2023 Triennial Report to the Governor

Effectiveness of South Dakota's Capacity Development Strategy as required by the federal Safe Drinking Water Act of 1996

INTRODUCTION

The Safe Drinking Water Act (SDWA) amendments of 1996 required South Dakota to develop and implement a Capacity Development Strategy. The initial strategy approved by the U.S. Environmental Protection Agency (EPA) was approved in 2000. Amendments to the SDWA as mandated by the America's Water Infrastructure Act of 2018 (AWIA) have required the state to reevaluate and update its Capacity Development Strategy. The AWIA amendments to the SDWA encourage incorporation of asset management tools into the existing system capacity development strategy. Including asset management tools, where appropriate, is intended to build technical, managerial, and financial capabilities to ensure water systems provide sustained safe, clean, and reliable drinking water.

In 2022, EPA approved South Dakota's updated capacity development strategy integrating asset management into the definition of technical, managerial, and financial capacity as:

- **Technical Capacity:** having adequate source water, infrastructure, technical knowledge, and asset management to inform this technical capacity to ensure best technical practices are employed.
- **Managerial Capacity:** having adequate ownership, staffing, organization, and asset management to support management that best practices produce safe drinking water.
- **Financial Capacity:** utilizing asset management principles to ensure reliable drinking water by having sufficient revenue to maintain the system and pay for future improvements and appropriate fiscal management and controls.

The strategy of South Dakota's Capacity Development Program continues to be implemented and is working to improve the technical, managerial, and financial capacity of South Dakota's drinking water systems.

DEVELOPMENT AND OBJECTIVES OF STRATEGY

The major objective of South Dakota's Capacity Development Strategy is to improve the technical, managerial, and financial viability of all public water systems in the state. The federal Safe Drinking Water Act requires that each state incorporate six elements into its strategy. The six elements are listed in the following paragraphs together with a brief description.

A. Prioritization of Systems

Tools that currently exist to identify and prioritize systems include:

- DANR's Drinking Water Database: this database contains live information on monitoring, operator certification, and violations. For systems that incur acute violations, level 2 assessments, and multiple sanitary survey significant deficiencies, the state will utilize a technical assistance provider to help the system complete the Capacity Assessment Worksheets which include asset management, when deemed appropriate.
- Enforcement Tracking Tool (ETT) score > 11 list: this list is produced by DANR and the EPA. Systems that trigger an ETT of 11 or greater will be referred to a technical assistance provider to help the system complete the Capacity Assessment Worksheets which include asset management, when deemed appropriate.
- Sanitary Survey Information. Systems will be completing new questions on technical, managerial, and financial capacity including asset management that will assist the state to evaluate technical assistance and training needs for asset management.
- Drinking Water State Revolving Fund (DWSRF) loan applications. Any system applying for a DWSRF loan is required to complete the Capacity Assessment Worksheets that include asset management.
- State Water Plan applications.
- Consumer Confidence Reports. Systems that fail to submit a consumer confidence report will be referred to technical assistance providers to help the system complete the Capacity Assessment Worksheets, when deemed appropriate.
- Source Water Assessments. When appropriate, information regarding building technical, managerial, and financial capacity including asset management will be integrated into these activities.
- Reports from Technical Assistance Providers. Reports will now include a section on technical, managerial, and financial capacity, including asset management, which allows for a continuous feedback loop for training needs for technical, managerial, and financial capacity including asset management.
- Capacity Assessment Worksheets. These worksheets now include questions on asset management.

These tools encourage systems to develop and implement asset management plans. Through these methods the state and systems will be encouraged to implement best practices for asset management. Technical assistance providers that work with systems to complete the Capacity Assessment Worksheets will be able to provide valuable information on how training should be tailored to better assist systems. This will provide a continuous feedback loop that will provide a baseline to measure improvements (section D) and enable the state to provide continuous improvement for technical, managerial, and financial capacity (including asset management).

B. Factors that Encourage or Impair Capacity Development

Factors that Encourage Capacity Development

There are several factors in South Dakota that currently enhance the technical, managerial, and financial capacity (including asset management) of public water systems.

Enhancements at the Federal Level

- Low interest loans and grants through the DWSRF for capital improvements can assist in building capacity in an existing system because the Capacity Assessment Worksheets are included with each application;
- DWSRF Set-aside funding can be used to develop technical assistance programs which will now include a continuous feedback loop between the assistance and training for technical, managerial, and financial capacity/asset management;
- Low-interest loans through the United States Department of Agriculture Rural Development program for capital improvements can assist in building capacity of an existing system.

Enhancements at the State Level

- **Drinking Water Program:** The drinking water program implements the Safe Drinking Water Act's core program activities which include operator certification and plans and specification review. Enhanced capacity development activities within the core program will, as appropriate, add asset management components to operator certification training, sanitary survey forms, and source water assessments for public water systems;
- **Water Rights Program:** The water rights program appropriates the right to access water in South Dakota and ensures wells are drilled and constructed in accordance with well construction standards established in administrative rule.
- **Water and Wastewater Funding:** This program is responsible for administering the DWSRF loan program, and decides financial eligibility and approves grants and loans which require systems to complete the Capacity Assessment worksheets;
- **DANR and other organizations** such as the South Dakota Association of Rural Water Systems, the Midwest Assistance Program, the South Dakota Section of the American Water Works Association, and the South Dakota Water and Wastewater Association provide technical assistance to water systems that also enhances capacity by including discussion about asset management plans when deemed appropriate. These organizations also routinely provide educational materials and trainings which offer licensed water operators training contact hours needed to renew their licenses. These trainings can include asset management as needed and can incorporate what they learned during technical assistance visits where asset management was discussed.

Enhancements at the Local Level

- South Dakota will work with the many rural water systems to encourage them to be leaders in the development and implementation of asset management plans, where deemed beneficial to the system. We will also encourage them to assist smaller public water systems through SD Water/Wastewater Agency Response Network (SDWARN) and to make presentations on their plans.

Factors that Impair Capacity Development

Just as there are factors that enhance capacity in water systems, there exist factors that impair the capacity of water systems in the state. This section is not meant to address all possible factors that impair the capacity of water systems, including how the addition of asset management will impair capacity, but rather it will highlight the more prevalent factors.

Impairments at the Federal Level

- All federal agencies that provide funding are not involved in capacity development;
- Federal regulations are very complex;
- Unfunded mandates;
- Not enough funding to go around; and
- Encouraging systems to develop and implement asset management plans and coordinating with technical assistance providers to create training on asset management are requirements that will take staff time, but no additional federal resources have been provided.

Impairments at the State Level

- Limits on resources;
- Lack of education to the consumer;
- No incentives;
- Funding limited to nonprofits or governmental entities;
- No influence on water rate structures (except when a system applies for funding); and
- No additional state resources have been provided to account for the additional staff time to encourage systems to develop and implement asset management plans.

Impairments at the Local Level

- Lack of planning;
- Lack of financial management;
- Unmetered water;
- Lack of training/education at the board level;
- Lack of public awareness;
- Failure to know/understand regulations;
- High turn-over (employees and governing body);
- Obtaining financing can be difficult;
- Population is small;
- Insufficient funds;
- Low incomes;
- Unwillingness to raise rates/pay increased rates;
- Unwillingness to regionalize; and
- The addition of asset management plans is expected to exasperate all these impairments listed which will increase the time that will be needed by staff to incorporate and explain them.

C. Use of Authorities and Resources

South Dakota has several existing tools it utilizes to achieve this element:

- **Sanitary Surveys:** Sanitary surveys are conducted on all public water systems (every 3 years for a community water system or non-transient, non-community water system, and every 5 years for a transient non-community water system). The purpose of a sanitary survey is to evaluate the adequacy of a public water system's facilities, equipment, operation, maintenance, and monitoring compliance to produce and supply safe drinking water. South

Dakota has included asset management questions in the sanitary survey. This will encourage systems to develop and implement asset management plans, when deemed appropriate. Furthermore, the information will inform our technical assistance providers on training needs regarding technical, managerial, and financial capacity, including asset management.

- **Operator Training and Certification Program:** As of July 1, 2000, all public water systems are required to have a certified operator. A well-trained operator is an important factor in maintaining a water system's capacity. DANR works with the South Dakota Association of Rural Water Systems to provide operator training classes to prepare operators for certification before the exams. Several other organizations within the state also provide training opportunities for continued education for operators to maintain their certifications. South Dakota plans to incorporate information about technical, managerial, and financial capacity, including asset management, in operator certification training classes. These classes will emphasize the importance of asset management plans and will reach out to system operators because they are required to be certified. South Dakota will encourage systems to develop and implement asset management plans, as deemed appropriate, because all operators need continuing education credits to maintain their license and those trainings will now include information on asset management.
- **Technical Assistance Programs:** DANR staff can provide technical assistance beyond the scope of sanitary surveys. DANR also partners with third-party technical assistance providers who can provide free or low-cost assistance to public water systems deficient in technical, managerial, or financial capacity. South Dakota and technical assistance providers plan on encouraging systems to develop and implement asset management plans, as deemed appropriate, when they visit systems. They can also provide the Capacity Assessment Worksheets which include asset management and assist the system to complete the worksheets.
- **Source Water Assessments:** DANR encourages all public water systems to develop a source water assessment plan and update the plan as needed. Although this work is conducted mostly at the local level, when appropriate, information regarding building technical, managerial, and financial capacity including asset management will be integrated into these activities.
- **Plans and specifications review:** Plans for new public water systems or changes to existing public water systems of sanitary significance are reviewed by an engineer to ensure that the public water system can deliver safe drinking water to its consumers and meet all state and federal requirements. If, during a plans and specifications review, it was determined that a system would benefit from an asset management plan, a review comment will be added to the approval letter suggesting that the system owner integrate a strategy to complete an asset management plan.
- **Public Education:** Development of public education materials helps address the following impairments - lack of consumer education, lack of public awareness, and unwillingness to pay increased rates. Public education gives us opportunities to show how technical, managerial, and financial capacity, including asset management, can be used to ensure compliance with the National Primary Drinking Water Regulations. Systems working with the public encourage a partnership where technical, managerial, and financial capacity, including asset management, can be discussed. This partnership in and of itself is an educational experience for the public and provides a feedback loop for the system.
- **Board Training:** Educating board members on the public health connection of operation provides opportunities to discuss how technical, managerial, and financial capacity, including asset management, can be used to ensure compliance with the National Primary Drinking

Water Regulations. Developing a partnership between board members and operators, the state and technical assistance providers can offer opportunities to discuss technical, managerial, and financial capacity, including asset management. The training materials can include technical, managerial, and financial capacity, including asset management, and the importance of developing an asset management plan.

- **New Water System Planning Manual:** This manual helps new systems develop and implement a planning process aimed at enhancing technical, managerial, and financial capacity.
- **Capacity Assessment Worksheets:** The Capacity Assessment Worksheets address all areas of capacity including asset management. South Dakota has developed these worksheets for use in the DWSRF loan program but can also use it for systems triggered by our ranking systems, discovered systems, systems with an ETT of 11 or greater and other situations, when deemed appropriate. Water systems complete these Capacity Assessment Worksheets on their own or with help from technical assistance providers. Information from the worksheets can be used to determine the type of assistance and training the water system is most in need of.
- **Monitoring:** The water quality of public water systems throughout the state is monitored by sampling and laboratory analysis by a South Dakota certified laboratory. Systems with routine failure to monitors or contaminant exceedances will be referred to technical assistance providers, who can help the system complete the Capacity Assessment Worksheets including asset management, to help identify which capacity areas need to be improved to return to compliance.
- **Partnership Development:** South Dakota encourages public water systems to participate in the SD Water/Wastewater Agency Response Network (SDWARN), which prepares, organizes responses, and shares equipment and personnel in the event of a natural or human-caused emergency. South Dakota will encourage systems to be leaders in the development and implementation of asset management plans, and to assist other systems through the SDWARN in development of asset management plans, where deemed beneficial to the system.

D. Establishing a Baseline Assessment and Measuring Improvement

South Dakota currently has certain measures in place that can be used to set a benchmark for the capacity program. These are:

- **Drinking Water Program Benchmarks:** The Drinking Water Program within DANR currently tracks certain measures/benchmarks each quarter. These measures can be used as important indicators to gauge the success of South Dakota's Capacity Development Program. They are:
 - Number of Systems (by type);
 - Population Served (by type);
 - Number of systems with MCL violations (by type);
 - Percentage of systems with MCL violations (by type);
 - Number of Systems with Monitoring/Reporting Violations; and
 - Number of Systems with No Violations (by type).
- **ETT > 11 List:** An ongoing evaluation of the ETT list helps the state understand whether capacity program activities are effective over time.

- Number of Certified Operators: Monitoring the number of certified operators is a tool in measuring the management capabilities of water systems.

When the above measures lead to an ETT of 11 or greater, South Dakota will send the system the Capacity Assessment Worksheets and provide technical assistance to complete them. Systems that incur two or more significant deficiencies during a sanitary survey will also be sent the worksheets and technical assistance.

In addition to the measures listed above, the volume of technical, managerial, and financial capacity activity, including asset management, will be tracked. This will include:

- The number of Capacity Assessment Worksheets including asset management completed by systems, where deemed appropriate (i.e. having an ETT of 11 or greater, discovered systems, systems triggered by our priority scheme, systems with a DWSRF loan);
- The number of site visits for technical assistance that involved capacity/asset management assistance;
- Number of training sessions given that focused on technical, managerial, and financial capacity including asset management;
- Number of Sanitary Surveys completed and the results of the asset management questions; and
- Number of Level 1 and Level 2 assessments for the revised total coliform rule where technical, managerial, and financial capacity assistance were also provided.

South Dakota plans to measure improvements by tracking systems with an ETT of 11 or greater for the next three years to determine if their compliance record has improved. South Dakota will also perform this same measurement with systems triggered by our priority scheme, discovered systems, and DWSRF loan recipients.

E. Identification of Stakeholders

For the 2022 revised capacity development strategy, South Dakota engaged its stakeholders by holding a meeting at the annual South Dakota chapter for the Water and Wastewater Association. Stakeholders were presented with a survey allowing them to provide input about the revised strategy and how asset management will be added. Survey results were compiled and the approved revised strategy utilized the survey results to improve the final strategy.

F. Encourage development of Asset Management Plans by public water systems

South Dakota will use the five-core-questions framework, as appropriate, to encourage the development of, and assist in the implementation of, asset management plans. The framework is composed of the five core questions listed below, and these questions are included in the Capacity Assessment Worksheets (which can be found on SD DANR's website).

1. What is the current state of the utility's assets?
 - a. Prepare an asset inventory.
 - b. Develop a method to assess and prioritize assets based on condition.
 - c. Assess the asset's remaining useful life.
 - d. Determine asset's value and replacement cost.

2. What is the utility's required "sustainable" level-of-service?
 - a. Analyze current customer demand and satisfaction.
 - b. Analyze anticipated customer demand.
 - c. Communicate system performance goals with the public.
 - d. Identify standard levels of services and track system performance.
3. Which assets are critical to sustained performance?
 - a. Conduct a failure analysis on all assets.
 - b. Determine probability, risk, and consequences of failure.
 - c. Prioritize system assets based on importance to system operation.
4. What is the utility's best "minimum life-cycle cost" capital improvement plan and operations and maintenance strategies?
 - a. Implement an appropriate maintenance schedule.
 - b. Identify life-cycle costs for all assets.
 - c. Identify and compare the cost of rehabilitation versus replacement.
5. What is the utility's best long-term financing strategy?
 - a. Regularly review system budget.
 - b. Establish and fund a capital improvement account.
 - c. Implement a rate structure to ensure financial sustainability.

To encourage systems most in need of technical, managerial, and financial capacity assistance and assist them to develop and implement an asset management plan, the Capacity Assessment Worksheets will be sent to systems, when deemed appropriate: The following criteria will be used when identifying systems that need assistance: systems with the highest ranking in the state prioritization scheme for systems needing capacity/asset management assistance, systems with an ETT score of 11 or greater, discovered systems, systems applying for a DWSRF loan, and other situations as determined by the state. Technical assistance providers will also be utilized to help the systems complete the worksheets when needed.

The state will also assist in capacity and asset management assistance during technical assistance visits and by providing training on asset management to the above list of systems and all systems in South Dakota. The technical assistance providers will meet with South Dakota staff on a regular basis to provide a continuous feedback loop about how best to tailor visits and training to further asset management plans.

Technical assistance providers will use the EPA's Asset Management: Best Practices Guide when working with water systems on creating asset management plans.

Additionally, South Dakota has added the following questions to the sanitary surveys:

- Does the system currently have an asset management plan?
- If no, are you interested in developing an asset management plan?
- If yes, how often does the system update the asset management plan?

When DANR staff determines it beneficial, public water systems will be encouraged to develop an asset management plan utilizing available templates and spreadsheets when identified as a recommendation on their sanitary survey report. This information will also inform the training needs on technical, managerial, and financial capacity including asset management.

EFFECTIVENESS OF STRATEGY

The previous information was presented to provide some background as to how the strategy was developed. Probably the most significant tool utilized in the strategy process is the Drinking Water Program's database. As stated above, DANR uses the database to prioritize systems in need of assistance. Systems ranking as high priority are generally those with health or water quality compliance problems, monitoring or reporting problems, or operator certification issues and they are typically identified and addressed early on by the Drinking Water Program. The Capacity Development Program activities have remained relatively unchanged in the years since the program was approved. The following sections describe capacity development progress.

- **Existing Drinking Water Systems** - All existing public water systems are entered into the Drinking Water Program's database. Information on these systems is continuously updated as data comes in from monitoring, sanitary survey inspections, operator certification activities, etc. The database contains information on each system such as their source and treatment facilities, microbiological data, violation history, chemical data, and operator certification data. When a compliance problem or other issue surfaces, procedures are in place to work with a system to understand the problem and correct it. If it is deemed to be a problem that requires more extensive evaluation, other resources such as the South Dakota Rural Water Association or Midwest Assistance Program can be called in to provide technical assistance, board training or other assistance to resolve the problem and restore capacity. In addition to the technical assistance that is available, there are different funding programs in DANR which are available to help existing systems identify infrastructure problems (Small Community Planning Grants) and upgrade facilities (Drinking Water State Revolving Fund) if necessary. There are also other tools planned or in development to help systems maintain capacity. These tools include public education materials, board training, and a water system planning manual for existing systems similar to the *New Water System Planning Manual*.
- **New Drinking Water Systems** - DANR has the authority to ensure that all new community and nontransient noncommunity water systems have adequate technical, managerial, and financial capacity prior to system start-up. A *New Water System Planning Manual* was developed to help potential new water system applicants ensure that they will have adequate capacity. Since the program began, thirty-nine water systems have been issued certificates of approval and another four have been identified and are in various stages of completing the capacity requirements in order to obtain approval. A new water system must receive a certificate of approval before providing water as a public water system. Information regarding the requirements for new water systems has been posted on DANR's website and the department has held meetings and issued mass mailings to county government officials and other organizations to increase public awareness. Despite those efforts, new water systems (typically new housing developments) continue to be somewhat problematic in that construction occurs prior to having met new water system requirements. A database to track new water systems has been developed. This database contains the following information: general water system and contact information and dates that various components of the approval process were received including the date the certificate of approval was issued. Once enough of the newly approved water systems are activated as new public water systems, a comparison could be made between the compliance rates of the new systems and those of existing systems. If new water system compliance rates are greater than existing water system compliance rates, the program for new systems could be considered a

success. If compliance rates of new systems are less than that of existing systems, changes will be made to the program in order to improve new water system compliance rates.

- Operator Certification** - As of July 1, 2000, all community and nontransient noncommunity water systems were required to have a certified operator. A certified operator can account for a significant portion of the technical and managerial capacity of a system so it is a parameter that is monitored very closely. Systems out of compliance have one year to regain compliance before enforcement action is taken. In recent years, the Department in cooperation with the Board of Operator Certification has become more aggressive in pursuing enforcement activity resulting in improved certification compliance. In the past three years, operator certification compliance varied from 96-97 (averaged values between both types of water certification) percent depending upon the type of water certification required (water treatment or water distribution). In the state fiscal year 2023, compliance rates were 99 percent for Water Treatment and 95 for Water Distribution. DANR contracts with the South Dakota Rural Water Association to provide various operator certification training classes at no expense to the operators. DANR conducts the certification exams and issues certificates based on exam results.
- Water Quality Reports** - The overall quality of drinking water provided by public water systems remains good. as shown in the figure below. During State FY 2023, 100 percent of the community public water systems were in compliance with the drinking water maximum contaminant level standards and 95% in compliance with monitoring/reporting requirements for total coliform. 99 percent of community public water systems met all chemical, radiological, and turbidity maximum contaminant level standards, 99 percent met all lead and copper action level standards. We are striving to continue the high compliance levels by continuing to partner with and focus on capacity development activities by DANR with support of South Dakota Association of Rural Water Systems and Midwest Assistance Program.

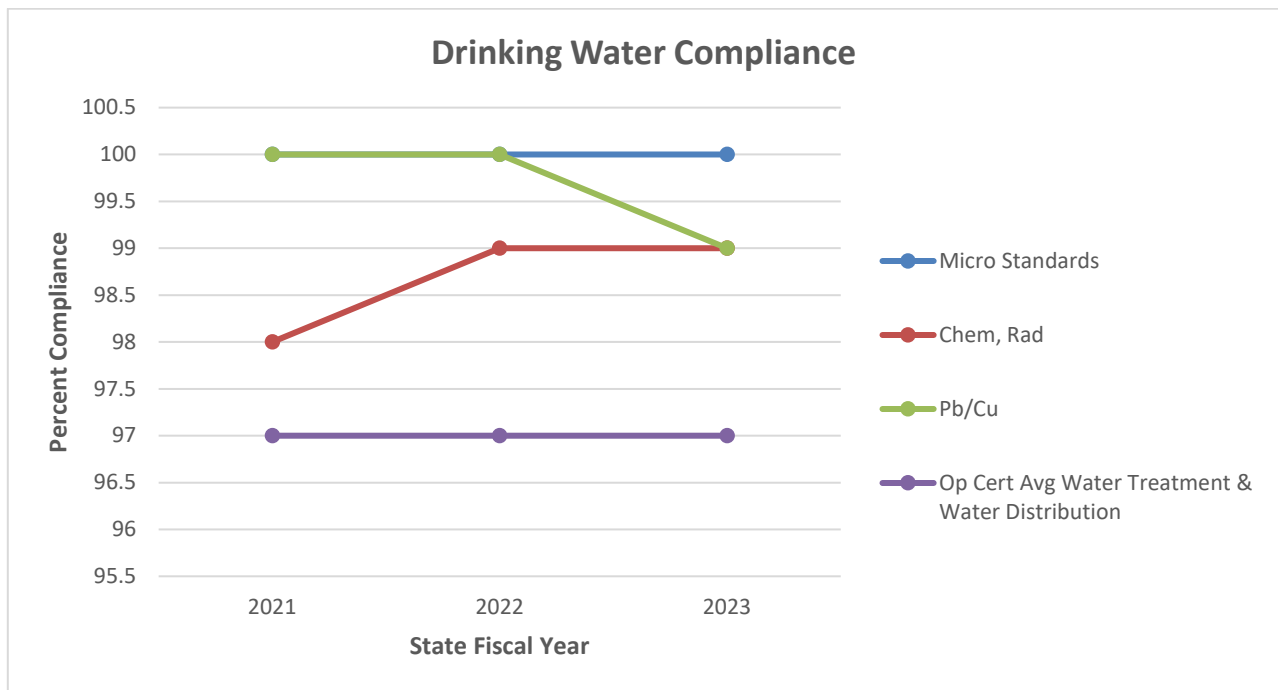


Figure 1. Percent of systems in compliance with Microbiological (Micro) Standards, Chemical/Radiological levels (Chem, Rad), Lead and Copper Maximum Contaminant Levels (Pb/Cu) and Operator Certification Water Treatment and Water Distribution. These values are the averages of all quarters of the State Fiscal Years noted.

- **Drinking Water State Revolving Fund Applicants** - All water systems that apply for Drinking Water State Revolving Fund loans are required to complete capacity self-assessment worksheets. The self-assessment process requires a system to make a thorough review of its technical, managerial, and financial capabilities. When received, the information is evaluated to determine if the water system has adequate capacity to qualify for funding. The results of that evaluation and any requirements and/or recommendations are passed on to the applicant and to the Water and Wastewater Funding Program for further review. Funding is not provided to systems that do not have adequate technical, managerial, and financial capacity unless the funding will correct the identified deficiencies.

- **Technical Assistance Providers** - The two main sources of technical assistance to small water systems are the South Dakota Rural Water Association and Midwest Assistance Program. In addition to providing technical assistance, the South Dakota Association of Rural Water Systems conducts all of the operator certification training classes throughout the state. In response to a renewed focus on compliance, South Dakota Association of Rural Water Systems and the Drinking Water Program have been focusing specifically on compliance assistance. Periodic meetings and correspondence discussing system compliance issues are shared between each organization. Systems now are offered help by both drinking water staff and rural water circuit riders in a coordinated manner to assist systems achieve completing the necessary regulatory requirements.

Additionally, DANR has utilized set aside money through the state revolving fund loan program to contract with Midwest Assistance Program. Midwest Assistance Program staff has been doing follow-up work with systems that are using state revolving fund loan monies. The follow-up work is seen as an improvement to our previous process as a way to ensure that items identified in the capacity self-assessment worksheets are being completed. Another partner in our capacity efforts are staff from the six regional planning and development districts in the state.

Small Water System Training Activities

The Department continues its efforts to assist water systems in best asset management practices so they can achieve and maintain success in compliance to the Safe Drinking Water Act. Nationally, EPA has provided grant funds to technical assistance providers specifically targeting compliance assistance for small water systems. South Dakota has coordinated the efforts by these national technical assistance providers to best serve systems in South Dakota. In FY2014, the DENR partnered with the Environmental Finance Network to host a series of Small Water System Asset Management Workshops. The Small Water System Asset Management Workshops were comprised of multiple rounds of training for water systems interested in bettering their asset management. In FY2018, training consisted of workforce management, rate setting, and planning for capital expenses. In FY2019, training focused on strategic planning for small systems. Due to COVID 19, FY20 training has been delayed until FY21. The Department believes that in offering these small system trainings we are better meeting the needs of water systems in helping them strengthen their financial, managerial and technical capacities.

Public Information

This report will be made available to the public by posting it on the DANR's website, which is <http://DANR.sd.gov/des/dw/capacity.aspx>.

Summary

EPA approved South Dakota's revised Capacity Development Strategy in 2022. While the strategy is a "living document," it continues to work to improve the technical, managerial, and financial capacity of public drinking water systems in South Dakota. The capacity development program is still evolving. The Drinking Water Program's database has been the main tool utilized in identifying systems in need of assistance. Efforts have been put forth to increase public awareness of capacity development and many systems have completed assessments of the technical, managerial, and financial aspects of their drinking water systems. Technical assistance providers such as the South Dakota Rural Water Association and Midwest Assistance Program have been working with water systems to solve technical issues and educate board members and water operators on various aspects of operating and managing their systems. New public water systems are required to demonstrate technical, managerial, and financial capacity before they can begin serving water as a community water system. The overall quality of drinking water in the state remains good and should only improve as capacity development awareness increases, training continues, and new tools are developed to assist public drinking water systems.