

South Dakota Department of Environment and Natural Resources

Implementing South Dakota's Capacity Assurance Plans for New and Existing Public Water Systems

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Introduction

The Safe Drinking Water Act (SDWA) amendments of 1996 authorize a Drinking Water State Revolving Fund (DWSRF) loan program to help public water systems finance the infrastructure needed to achieve or maintain compliance with SDWA requirements and to achieve the public health protection objectives of the Act. Section 1420(a) of the Act directs the Administrator of the U.S. Environmental Protection Agency (EPA) to withhold a portion of a state's allotment under § 1452 unless the state *"has obtained the legal authority or other means to ensure that all new community water systems and new nontransient noncommunity water system commencing operation after October 1, 1999, demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date of commencement of operations."* The Act also provided for withholding a portion of a state's DWSRF allocation unless the state developed and implemented a capacity development program to assist existing public water systems in acquiring and maintaining technical, managerial, and financial capacity by August 6, 2000.

Under the capacity development provisions of the SDWA Amendments of 1996, South Dakota was required to document that it had implemented by October 1, 1999, a fully functional program to ensure that new water systems demonstrate technical, managerial, and financial capacity. The documentation required included:

- A basis of authority for ensuring that all such systems demonstrate technical, managerial, and financial capacity;
- Identification of at least one control point in the new system development process at which the authority will be exercised; and
- A plan for program implementation that includes provisions for evaluating and verifying program implementation in the future.

States were required to have their strategies for assisting existing public water systems achieve and maintain capacity in place by August 6, 2000. Section 1420 of the SDWA amendments required that states consider, solicit public comment on, and include as appropriate the following in developing their strategies for existing water systems:

- A. The methods or criteria that the state will use to identify and prioritize the PWSs most in need of improving technical, managerial, and financial capacity.
- B. A description of the institutional, regulatory, financial, tax, or legal factors at the federal, state, or local level that encourage or impair capacity development.
- C. A description of how the state will use the authorities and resources of this title or other means to assist public water systems in complying with National Primary Drinking Water Regulations (NPDWRs), encourage the development of partnerships between public water systems to enhance the technical, managerial, and financial capacity of the systems, and assist public water systems in the training and certification of operators.
- D. A description of how the state will establish a baseline and measure improvements in capacity with respect to NPDWRs and state drinking water law.
- E. An identification of the persons that have an interest in and are involved in the development and implementation of the capacity development strategy (including all

appropriate agencies of federal, state, and local governments, private and nonprofit PWSs and PWS customers).

The state of South Dakota's strategies for ensuring the technical, managerial, and financial capacity of new and existing public water systems were detailed in the following documents: the New Water System Capacity Assurance Plan (September 1998) and the Capacity Development Strategy for Existing Public Water Systems (July 2000).

States are required to provide documentation showing ongoing implementation of their new systems and existing systems capacity development programs as of October 1 of each year. This report provides documentation of the implementation of a fully functioning capacity development program for new and existing public water systems in South Dakota as of October 1, 2007.

New Water System Capacity Assurance Program

Statutory and Regulatory Basis of Authority

The SDWA amendments of 1996 require states to demonstrate legal authority or other means to ensure the capacity of new water systems. According to EPA, "*legal authority or other means*" typically is demonstrated by reference to statutes, regulations, rules, or policies adopted by the state.

South Dakota introduced capacity assurance legislation during the 73rd Legislative Session in 1998. The bill was passed by the Legislature and signed by the Governor in February 1998. A copy of the statute has been provided in previous reports.

The capacity assurance statute gives the secretary of the Department of Environment and Natural Resources (DENR) the authority to promulgate rules to establish procedures where a supplier of water must demonstrate that a new system intending to be a public water system has the technical, managerial, and financial capacity to achieve and maintain compliance with all relevant local, state, and federal requirements.

The statute also gives the secretary the authority to promulgate rules establishing procedures for DENR to issue certificates of approval to new water suppliers once a technical, managerial, and financial capacity review is completed. The rules specify that a new system intending to be a public water system, after October 1, 1999, may not operate until it has been issued a certificate of approval.

Rules

The administrative rules that establish the above procedures for new water systems became effective on November 18, 1998. The administrative Rules of South Dakota (ARSD) § 74:04:09:03 states "*Each new water system must demonstrate to the department that it has adequate technical, managerial, and financial capacity before it may provide water for human consumption*". A copy of ARSD 74:04:09 has been provided in previous reports.

Control Points

The authority to require new water systems to demonstrate adequate capacity is implemented at certain "*control points*". Using these control points, DENR has the ability to ensure that creating a new water system is the most appropriate alternative for providing water service, and that a newly created system, after October 1, 1999, will have adequate technical, managerial, and financial capacity on the first day of operation and over time.

The table below provides a summary of the control points where DENR can intervene in the development process to ensure new system capacity. The certificate of approval is DENR's final control point in the new water system capacity assurance process. All new community and nontransient noncommunity water systems that begin operation after October 1, 1999, are required to obtain a certificate of approval from DENR before beginning operation. The certificate of approval is used in conjunction with the other control points in the table.

Control Point	Capacity Assessed			Comments
	Technical	Managerial	Financial	
Plans and Specifications (includes review of construction requirements for wells)	Y			Currently required – these control points are already utilized. When coordinated, they will work together to help ensure new water system capacity.
Operator Certification	Y	Y		
Approval of Water Right permit	Y			
Eligibility and Approval of Grants and Loans (State Revolving Fund)			Y	
Certificate of Approval: <ul style="list-style-type: none"> ▪ Business Plan (includes facilities plan, management plan, and financial plan) ▪ Operation and Maintenance Manual ▪ Construction Inspection ▪ Notice of Completion 	Y	Y	Y	These will be required of new water systems commencing operation after October 1, 1999.
Banking Industry	Y	Y	Y	Banks assess the financial capacity of applicants during the loan eligibility and approval process. The banking industry has been informed of the upcoming new water system requirements. Some banks have indicated that they will NOT be making loans to a new water system unless a certificate of approval has been issued.
Consulting Engineers	Y	Y		The facilities plan and the operations and maintenance manual must be completed by a Professional Engineer, registered in the State of South Dakota.
Subdivision, zoning and land-use approvals (counties)	Y	Y		Counties can help DENR identify new proposed water systems when plats for new developments are submitted.

Nontransient Noncommunity (NTNC) Control Points

A new NTNC water system must submit the same information as a new community water system. However, the NTNC system is not required to submit the revenues, cash flow, and income and debt for the entire business, only the water system portion of the business.

Program Implementation

DENR is the state agency responsible for implementing the new water system capacity assurance requirements. DENR has two divisions, the Division of Environmental Services and the Division of Financial and Technical Assistance which are further broken down into programs. Information from a number of programs within DENR will be used to make capacity determinations.

- **Drinking Water Program.** The Drinking Water Program implements the provisions of the Safe Drinking Water Act. The control points this program will be responsible for are operator certification, plans and specifications, business plan, and operation and maintenance manual review. New water system capacity determinations will be made by the Drinking Water Program.
- **Water Rights Program.** The Water Rights Program implements water quantity regulations. Control points this program is responsible for are water right permits and well construction standards.
- **Water and Waste Funding.** This program is responsible for administering the Drinking Water State Revolving Fund loan program. The control points for this program are deciding financial eligibility, approving grants and loans, reviewing plans and specifications as well as operations and maintenance manuals.
- **Ground Water Quality Program.** This program is responsible for conducting source water assessments for all public water supply systems as required by the 1996 SDWA amendments. The control point for this program will be determining the susceptibility of the water supply system to contamination.

Because the above programs are located within the same department, formal collaboration arrangements are not necessary. The South Dakota public utilities commission (PUC) does not have the authority to regulate water utilities; therefore, they are not involved in the new water system capacity assurance process.

Certificate of Approval

All new community and nontransient noncommunity water systems that begin operation after October 1, 1999, must obtain a certificate of approval before beginning operation. This includes water systems that do not meet the definition of community or nontransient noncommunity water systems at start-up, but are designed to ultimately meet that definition.

The secretary of DENR issues a certificate of approval. It certifies that a new water system has demonstrated adequate technical, managerial, and financial capacity and can begin operation. The certificate of approval is valid as long as the water system is operated in accordance with the approved business plan, operations and maintenance manual, plans and specifications, and in compliance with the state and federal Safe Drinking Water Acts. A new water system that begins operation after October 1, 1999, that has not been issued a certificate of approval may be subject to civil penalties in the amount of five hundred dollars per day.

In order for a new water system to obtain a certificate of approval, several documents must be completed and submitted to DENR for review. These include:

- A new water system application (which includes documentation that a valid water right permit has been obtained);
- A business plan, which includes a facilities plan, a management plan, and a financial plan;

- Plans and specifications;
- An operation and maintenance manual;
- Source water quality test results; and
- A notice of completion.

Each of the items listed above can be considered a “*control point*” in the new water system capacity assurance process. If any of the above items are not submitted to DENR for review or are not approved by DENR, a certificate of approval will be denied. DENR has developed a New Water System Planning Manual for potential new water system owners. This manual describes the new water system application process, provides a description of the steps that must be completed to obtain a certificate of approval, and includes the forms that must be submitted to the department.

The business plan elements reviewed by DENR to ensure new water system capacity include:

1. Technical Capacity

- **General Information.** A description of the new water system and identification of the area to be served.
- **Extent of the Water Supply System.** A description of the nature and extent of the area to be served and provisions for extending the water supply to include additional areas. This shall include population and land use projections and forecasts of water usage.
- **Assessment of Drinking Water Standards Compliance.** An assessment of current and expected drinking water compliance based on monitoring data from the proposed water source.
- **Alternate Plans.** A description of the alternatives considered (including interconnections with existing water systems) and the reasons for the approach selected to provide water service to the area. The description shall include the technical, managerial, financial, and operational reasons for the selected approach.
- **Engineering Description.** A description of the facilities to be constructed, including the construction phases and future plans for expansion. The description shall include an estimate of the full cost of any required construction, operation, and maintenance.

2. Managerial Capacity

- **Authority and Ownership.** Documentation that the applicant has the legal right and authority to take the measures necessary for the construction, operation and maintenance of the water system. It shall include evidence of ownership indicating the applicant is the owner of the system or, where the applicant is not the owner, legally enforceable management contracts or agreements.
- **Operating Plan.** A plan that describes the tasks to be performed in managing and operating the system. The operating plan shall consist of administrative and management organizational charts, plans for staffing the system with certified operators, and an operation and maintenance manual.
- **Operation and Maintenance Manual.** The manual shall contain the following items:
 - A description of the facilities;
 - An explanation of startup and normal operation procedures;
 - A routine maintenance program;
 - Records and reporting system;
 - Sampling and analyses program;
 - Staffing and training requirements;
 - Identification of pollution sources at the water supply;
 - Safety program;
 - A plan for tracking unaccounted-for water;
 - Emergency plan and operating procedures; and
 - Manufacturer's manuals.

- **Credentials.** Documentation of credentials of the water system operator, cooperative agreements or service contracts.

3. Financial Capacity

- **Financial plan.** The plan shall describe the system's projected revenues, cash flow, income and debt for meeting the costs of construction and the costs of operation and maintenance for at least five years from the date the applicant expects to begin operation.

New Water System Capacity Assurance Plan Evaluation

DENR has an extensive *FoxPro*TM database that contains the following information on public drinking water systems:

- System information;
- Source/facility information;
- Microbiological data;
- Turbidity/enhanced surface water treatment rule information;
- Violation tracking;
- Chemical data;
- Lead and copper data; and
- Operator certification information.

Data on new water systems will be entered into a database that contains the following information:

- General new water system information;
- Developer and Engineer contact information;
- Date the application/business plan, operation and maintenance manual, construction schedule, and notice of completion were received;
- Date the certificate of approval was issued.

In order to evaluate the success of the new water system capacity program, the Drinking Water Program's database can be queried for compliance information on the new water systems. This information can be compared to see how the compliance rates of existing water systems compare to new water systems. If new water system compliance rates are greater than existing water system compliance rates, the program can 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 compliance rates.

Implementation of a Fully-Functioning New Water System Capacity Assurance Plan

New Community and NTNC Water Systems Status

As of September 29, 2008, the Department has issued certificates of approval for nineteen new community public water systems since the program was implemented. Some of these systems do not yet meet the criteria to be considered a public water system. Twenty-six additional systems have been identified that are going through the approval process. The systems that have been approved since October 1, 2007 are listed below:

Sheridan Lake Highland Estates (EPA ID# 4602285) is a subdivision about 3 miles west of Rapid City, in Pennington County, South Dakota. At full build out the development will have a total of 30 lots. The water source is a 125 foot crystalline aquifer well.

This system has demonstrated that it has undergone a planning process to ensure that it will have adequate capacity. With increasing drinking water regulations, planning is critical for successful operation of a water system.

Capacity Development for Existing Public Water Systems

In developing South Dakota's capacity strategy for existing systems, the Department identified the following tools that were in place to help identify public water systems most in need of improving technical, managerial, and financial capacity:

- DENR's Drinking Water Database: this database contains information on monitoring, operator certification and violations;
- Significant Noncompliers (SNC) list compiled by EPA and DENR;
- Enhanced Sanitary Survey Information: The Department recently completed a new survey form to be used for all community water systems. The new form is more comprehensive and includes questions on managerial and financial issues;
- Operator Certification Program: As of July 1, 2000, all Community and NTNC water systems are required to have a certified operator;
- Drinking Water State Revolving Fund loan applications;
- Consumer Confidence Reports;
- Reports from Technical Assistance Providers;
- Enforcement actions and
- Source Water Assessments: completed in 2003.

Several other tools have been developed or will be initiated in the future to help systems maintain capacity including:

- Capacity Self-Assessments – worksheets that systems can complete on their own or with the help of technical assistance providers to identify areas relating to capacity that are in need of improvement and;
- Board Training – board training materials are available such as RCAP's Board Training Manual and the National Training Center for Small Communities' Drinking Water Short Course for Local Officials;
- Water system planning manuals, similar to the New Water System Planning Manual, that are specific to each type of water system;
- Public education materials such as news releases, water bill inserts, public meetings, and education through public schools;
- Drinking Water Handbook to help water system operators and managers understand complex compliance and regulatory issues;
- Drinking Water State Revolving Loan Fund set-asides for technical assistance.

Establishing a Baseline and Measuring Improvements

South Dakota currently has certain measures in place that will be used to set a benchmark to gauge the success of the capacity development program. These include:

- **Drinking Water Program Benchmarks:** The Drinking Water Program within DENR currently tracks certain measures/benchmarks each quarter. These measures will be used as important indicators to gauge the success of South Dakota's Capacity Development Program including:
 - 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).
- **Significant Noncompliance (SNC) List:** An ongoing evaluation of the SNC list will help the state understand whether capacity program activities are effective over time.
 - **Number of Certified Operators:** Monitoring the number of systems with certified operators is a tool in measuring the management capabilities of water systems.
 - **Annual Compliance**
The overall quality of drinking water available to South Dakota public water system consumers remains good. At the end of the 4th quarter of State FY 2008, 97.8 percent of the public water systems were in compliance with the drinking water standards for total coliform. Over 96 percent met all chemical, radiological, and turbidity standards; 99 percent met all lead and copper standards, and 96 percent met the water distribution operator certification requirements. These monitoring parameters have shown slight improvement over the last few years and has remains high. We are striving to continue the high compliance levels by continuing to partner with and focus on capacity development activities by DENR with support of South Dakota Rural Water Systems and Midwest Assistance Program.

In addition to the measures listed above, the volume of capacity activity will be tracked including the following:

- The number of capacity assessments completed;
- The number of site visits for technical assistance;
- Number of training sessions given; and
- Number of Enhanced Sanitary Surveys completed.

Using DWSRF Set-Aside Programs to Help Ensure the Technical, Managerial, and Financial Capacity of Existing Systems

The state of South Dakota is using set-asides available from the Drinking Water State Revolving Fund as authorized under §1452(k)(1)(B) to help water systems with capacity issues. The objectives of these set-asides are to bring non-complying systems into compliance and improve water system operations. The Small Community Planning Grant (SCPG) set-aside program assists communities serving a population of 2,500 or fewer in performing engineering studies of their infrastructure needs. The planning grant will reimburse 80 percent of the cost of an engineering study, with the maximum grant for any project of \$6,000. The objective of this program is to provide an incentive for small communities to begin planning for needed infrastructure improvements before a crisis situation develops. In 2004, the SCPG program was expanded to include utility rate analysis and review. Communities conducting a utility rate analysis and review study may receive reimbursement of 80 percent of costs up to \$1,600.

Another Capacity Development set-aside fund was established in 2008 which funds a contract with Midwest Assistance Program to provide more in-depth follow-up of capacity self-assessments that are completed by DWSRF loan applicants. The state will continue to use technical assistance providers from the South Dakota Association of Rural Water Systems (SDARWS), the Midwest Assistance Program (MAP), and the regional planning districts

Additionally, there is a renewed emphasis on compliance with our partners at the SDARWS. With the added focus on compliance established through the proposals EPA awarded to National Rural Water Association, the focus has reached down to the state level. We are sharing compliance issues and SDARWS is including these when scheduling the work of their circuit riders. By sharing this information, we are sending a consistent and coordinated message to systems in helping them achieve

or return to compliance with the regulatory requirements. SDARWS submits quarterly report information to the drinking water program summarizing the technical assistance that was provided by their staff so that we are aware of the assistance that has been provided to various systems in South Dakota.

Assessing the Technical, Managerial, and Financial Capacity of DWSRF Loan Applicants

The Drinking Water Program performs the capacity review for DWSRF loan applicants. Applicants are required to submit capacity assessment worksheets and a financial spreadsheet as part of the loan application process. The financial spreadsheet provides information on the water utility's finances for the current year and projections for the following four years. Information from the capacity assessment worksheets and financial spreadsheet, as well as the Department's public water system database, compliance sampling results, sanitary surveys, consumer confidence reports, violation history, and operator certification information are used by the reviewer to complete evaluation forms on the water system's capacity. Although a water system may have the required capacity to continue with the DWSRF loan process, the reviewer's comments on the evaluation forms are used to make recommendations to encourage the water system to improve its capacity.

Loan applicants that are unable to demonstrate adequate technical, managerial, and/or financial capacity are ineligible to receive a drinking water SRF loan, unless the loan is for a project that will help ensure that the system has capacity. If it has been determined that a system lacks capacity, a letter is sent to the system outlining the changes that must be made to meet the requirements for the loan. Water systems can obtain assistance with the loan application process or other capacity issues from DENR staff, the local planning and development districts, and technical assistance providers including SDARWS and MAP. When the applicant has demonstrated that the requirements have been met, the loan application will be reconsidered.

Communities applying for a DWSRF loan may receive loan subsidies if they meet certain criteria. The Board of Water and Natural Resources has provided for a two-percentage point reduction in interest rates as a subsidy for disadvantaged communities. Zero-percent interest loans are available for disadvantaged communities with a median household income less than 60 percent of the statewide median household income.