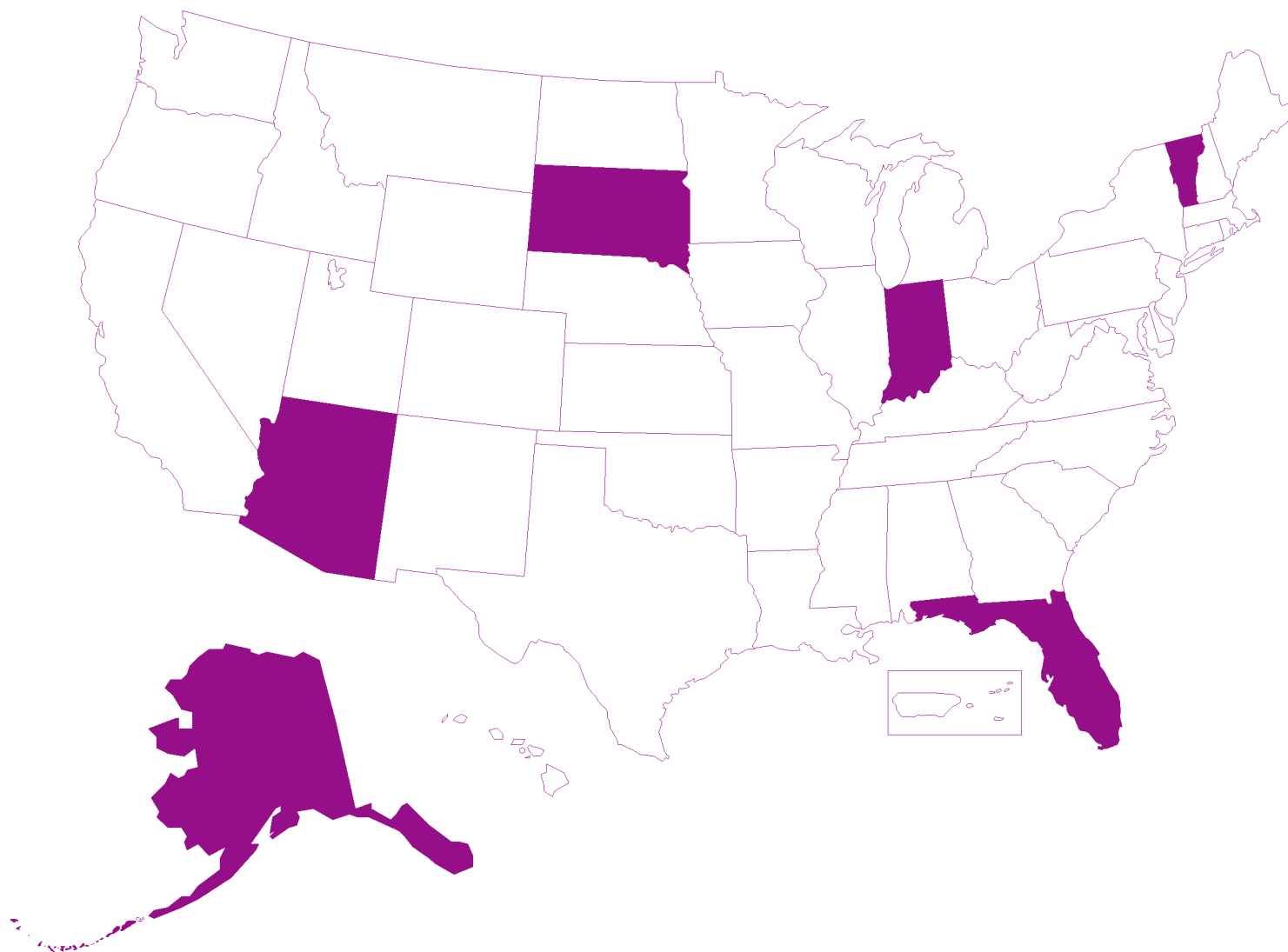




The Drinking Water State Revolving Fund Program

Case Studies in Implementation II. Capacity Assessment



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The 1996 SDWA Amendments establish a strong new emphasis on preventing contamination problems through source water protection and enhanced water system management. Capacity development is an essential component of the Act's new preventative focus. Water system capacity is the ability to plan for, achieve, and maintain compliance with applicable drinking water standards. For a system to have "capacity," adequate capability in three key areas—technical, managerial, and financial—is necessary. The capacity assessment process for DWSRF loan applicants provides a valuable opportunity for States to work with systems to assure public health protection, compliance and financial viability.

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I. Introduction

The 1996 Safe Drinking Water Act (SDWA) Amendments authorized the Drinking Water State Revolving Loan Fund (DWSRF) Program, which provides states with funding to address important drinking water projects that are needed to ensure public health protection and compliance with SDWA. In an effort to ensure that funds are used wisely and efficiently, the Amendments limit the assistance which states can provide to drinking water systems that cannot comply with the Act. Section 1452(a)(3)(A)(i) specifies that “no assistance shall be provided to a public water system that does not have the technical, managerial, and financial capability to ensure compliance with the requirements of this title.” The section also prohibits state assistance to any system “in significant noncompliance with any requirement of a national primary drinking water regulation or variance (unless) the use of the assistance will ensure compliance.”

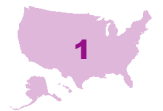
The SDWA Amendments also establish requirements for the owners and operators of drinking water systems in the area of technical, managerial, and financial capability (known collectively as “capacity”). Under §1452(a)(3)(B), if a system lacks capacity, its owner or operator must agree to “undertake feasible and appropriate changes in operations (including ownership, management, accounting, rates, maintenance, consolidation, alternative water supply, or other procedures) if the state determines that the measures are necessary to ensure that the system has the technical, managerial, and financial capability to comply with the requirements of this title over the long term.”

EPA’s February 1997 Guidelines and April 1999 Draft Program Rules provide additional guidance regarding these requirements. The Draft Program Rules require each state to describe in its capitalization grant application the process it will use to assess the capacity of systems that seek assistance

to ensure their compliance with the SDWA. If a state provides assistance to systems that lack capacity, it must describe the process it will use to ensure that each system makes the “feasible and appropriate changes in operations” necessary for long-term compliance with the Act. If a state provides assistance to systems “in significant noncompliance with any requirement of a national primary drinking water regulation or variance,” it must describe the process it will use to ensure that the systems return to compliance.

This document examines the programs that Alaska, Arizona, Florida, Indiana, South Dakota, and Vermont have developed to evaluate the capacity of systems applying for Drinking Water State Revolving Fund (DWSRF¹) assistance. It describes each state’s capacity evaluation process, including the documentation that systems must supply and the procedures the state follows to evaluate and document capacity determinations. The descriptions of projects in each state include examples of “feasible and appropriate changes” required of systems that lacked capacity prior to receiving loans and the ramifications (where specified) of failing to make those changes.

EPA is providing this information to generate ideas among states for modifying capacity assessment procedures. In selecting states for the report, the Agency wished to summarize a practicable number of state programs while maintaining a representative cross-section of EPA’s ten regions. The Agency notes that there are numerous other state programs that could have been featured in this report and encourages readers to visit other states’ websites for additional examples of assessment tools.



¹For consistency, the acronym DWSRF is used throughout the paper even though some states use another acronym to refer to their program.

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II. State Summaries

Alaska

The Alaska Department of Environmental Conservation (ADEC) administers the state's DWSRF program. ADEC's Division of Facility Construction and Operation performs the capacity assessment of all loan applicants. Although the state is considering expanding assistance to privately owned systems, at this time, the state provides loans only to municipal systems (18 AAC 76.210). ADEC used an EPA-approved "decision tree" process to assess system capacity from 1997 to 1999. To better meet the administrative needs of the state, Alaska now uses a worksheet-based assessment process to evaluate capacity in DWSRF loan applicants. When this report was prepared, the state had awarded two loans using the new assessment process.

Capacity Evaluation Process

Alaska's DWSRF application process is described in state regulations at 18 AAC 76.225 et. seq. The regulations specify the documentation that must be submitted by the system and the evaluation criteria that the state uses to assess applicants' capacity.

Data Collection

Under 18 AAC 76.225, systems must submit:

1. A complete application.
2. A resolution adopted by the applicant's governing body that authorizes the application.
3. A description of the proposed project.
4. An analysis of the feasibility of the project identifying necessary permits and the cost.
5. Documentation of dedicated source of repayment revenue.

6. Certification of a separate account to receive and administer state funds.
7. A financial capability assessment form demonstrating the system's ability to repay the loan and to operate and maintain the system after completion of the project.
8. Certification that the system can legally incur the debt.
9. Plans and specifications prepared by a registered engineer.

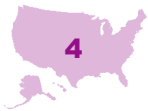
As listed under 18 AAC 76.240, the required financial capability assessment form (item 7, above) requires documentation of the following factors, where applicable:

1. Certification of debt service requirements and debt service coverage test.
2. The applicant's:
 - Ability to assess and collect revenues for the project.
 - Debt repayment history.
 - Current and overall structure of debt repayment.
 - Revenue bond credit rating.
 - Financial statements.
 - Financial history.
 - Recent levels of debt retirement, operations, or similar fund balances.



- Compliance with state and federal environmental laws.
- Levels of financial reserves and prospective judgments from litigation.
- Adherence to past and current debt resolutions.
- Capital improvement plan and proposed debt issuance program.

3. A utility rate feasibility study.
4. Any litigation or threatened litigation that may affect the applicant's ability to repay.
5. The demand for the project.
6. Demographic and economic trends in the proposed service area.



Along with the required submissions, the state requires completion of a capacity assessment worksheet. The worksheet is designed to educate potential loan recipients about state and federal capacity assessment requirements and to provide information that the state will need to adequately assess capacity and award loans. It is organized by the three components of capacity and consists of a series of questions with documentation requirements (e.g., financial records and feasibility studies) to help reviewers determine capacity (see Appendix A, Attachment 1).

To evaluate the technical capacity of loan applicants, ADEC has developed questions concerning existing facilities, existing water source, peak pressure and demand, certified operators, and compliance history. The questions considered in the evaluation of financial capacity address total user charge revenues and total system expenses, other revenue sources, fairness and affordability of user

charges, cash budgeting, preparation and use of annual and capital budgets, and periodic financial audits. Questions concerning managerial qualifications and experience, organizational structure, compliance history, training programs, preventative maintenance programs, record-keeping, public outreach, and system ownership are considered to evaluate managerial capacity. Additional information or documentation must be submitted as necessary to fully answer the questions and assist the state in the evaluation.

Capacity Evaluation

When a system has completed and submitted all of the capacity evaluation materials required by rule and in support of the capacity assessment worksheet, ADEC begins the evaluation process. Evaluations are conducted by staff engineers in the Division of Facility Construction and Operation and by representatives of the local government entity applying for assistance. After reviewing all of the materials, ADEC prepares a report in the same format as the worksheet documenting its determinations for each area of capacity.

The report also outlines the “feasible and appropriate changes in operation” systems must make to ensure that they will be able to comply with all drinking water regulations as a result of the DWSRF loan. Systems deemed to be significant non-compilers (SNCs) also sign a *Safe Drinking Water Act Compliance Agreement*, (see Appendix A, Attachment 2). The agreement indicates the actions the system must take to come into compliance and sets a schedule for their completion.

ADEC has established 11 financial assistance conditions under 18 AAC 76.245 to which all assistance recipients must adhere. The conditions are designed to ensure a fair process (e.g., documentation of a competitive bidding process for all loans of \$50,000 or more) and financial viability and management capability over the long term (e.g., use of generally accepted accounting principles and preparation and submission of an operation and maintenance manual). To confirm compliance ADEC can, “in its discretion, make site visits to inspect construction progress and to determine compliance with 18 AAC 76.200 - 18 AAC 76.265.”

For More Information Contact:

Alaska Department of Environmental Conservation
Kevin Colanado, phone (907) 269-7696

www.state.ak.us/dec/dfco/dec_mlns.htm

Project Descriptions

Two systems for which ADEC approved loans lacked technical capacity, but the systems will achieve compliance with the Surface Water Treatment Rule (SWTR) as a result of the loans. According to ADEC's capacity assessment:

System A currently has disinfection treatment facilities for three sources. At this time, two of the three sources are unfiltered and only receive chlorine disinfection treatment. Source 1 is of lower quality than the other sources, and is treated using the existing 3.5 mgd filtration system at the water treatment plant. Source 1 is expected to only be used as an emergency water source to supplement the unfiltered water sources. The plan process appears adequate to meet the Surface Water Treatment Rule for effluent turbidity and Giardia removal; however, the treatment plant will need to be evaluated to ensure full compliance with the Surface Water Treatment Rule before System A is allowed to use Source 1 as a primary or secondary source.

System A is constructing the necessary contact tanks, related upgrades, and disinfection facility improvements to achieve compliance. When the project is complete, it is anticipated that all primary water sources will satisfy the SWTR by meeting either the disinfection and filtration requirements or by meeting all filtration avoidance criteria. ADEC and System A have signed a *Safe Drinking Water Act Compliance Agreement*.

System B also lacks the technical capacity to comply with the SWTR. According to ADEC's capacity evaluation:

System B does not meet all capacity requirements for their treatment facilities. System B currently utilizes a surface source impoundment with no filtration and has not pursued filtration avoidance.... Gaseous Chlorination is currently the only treatment that System B's water receives.

System B's proposed project will provide a new water treatment facility consisting of ozonation followed by slow sand filtration that will allow the system to comply with current and future federal and state drinking water regulations.

Arizona

The Arizona Water Infrastructure Finance Authority (WIFA) administers the state's DWSRF. WIFA coordinates with the Arizona Department of Environmental Quality (ADEQ) and the Arizona Corporation Commission (ACC) in implementing the program. The state provides assistance to publicly and privately owned water systems.

Capacity Evaluation Process

Data Collection

To receive a loan, systems on the list must provide evidence of capacity through the submission of the following documentation:

Technical Capacity

- A copy of each feasibility study, engineering report, design memorandum, set of plans and specifications, and other technical documentation related to the proposed project.
- Copies of the resumes or biographies of, or related information about, the certified operators, system employees, or contractors employed by the applicant to operate and maintain the existing facilities and the proposed project.
- A description of the service territory, including maps.
- A description of the existing physical facilities.

Financial Capacity

- A description of the system's dedicated revenue source for repaying financial assistance (including the amount of money collected through the source for each of the previous 5 fiscal years), an estimate of the amount that will be collected for the current fiscal year, and a projection of the amount that will be collected for each of the next 5 fiscal years.
- An estimate of the project costs, including planning, design, construction, annual operation, maintenance, and replacement costs.



- A copy of each financial statement, audit, or comprehensive financial statement from the previous 5 fiscal years.
- A copy of each budget, business plan, management plan, or financial plan from the previous 3 fiscal years and the current fiscal year.
- A summary of current user fees for drinking water or wastewater services, including any resolutions passed by the governing body of a political subdivision.
- The most recent capital improvement plan or other plan explaining proposed infrastructure investments.
- Copies of documentation relating to outstanding indebtedness, including official statements, financial assistance agreements, and amortization schedules.
- The number of connections to be served by the proposed project.



Managerial and Institutional Capacity

- Copies of resumes, biographies, years of experience, terms of office, and related information pertaining to the owners, managers, chief elected officials, and members of the applicant’s governing body.
- A list of professional and outside services retained by the applicant for the proposed project.

Arizona also requires documentation of legal capability. An applicant must provide information showing that it is legally authorized to enter into indebtedness. Privately owned systems must demonstrate debt authorization from the ACC.

For More Information Contact:

**Water Infrastructure Finance Authority
(WIFA) of Arizona
Greg Swartz, phone (602) 230-9770**

In addition to providing the above information, all applicants must complete a *WIFA Project Finance Application*. The application requests information regarding budgets, project engineering reports, feasibility studies, and capital improvement plans. Local borrower information, demographic data, detailed project information, and more detailed financial information, such as audited financial statements or annual reports, are also required.

Capacity Evaluation

System capacity is assessed after the project priority list has been determined. The first step is completion of a “Due Diligence Review” by a team of WIFA staff members and staff members from the ADEQ, the ACC, and the Arizona Department of Water Resources. A series of yes/no questions guide the due diligence reviewer in analyzing applicants for financial assistance. Negative answers (either yes or no responses depending on the question asked) require a narrative explanation. Each team member reviews information submitted by the system. Team members may interview systems directly, if necessary, to obtain further information. Due Diligence Reviews usually take only a few days to complete.

Next, the Project Finance Committee (comprised of a certified engineer and five members of WIFA’s Board of Directors) reviews all information submitted by the system and obtained during the Due Diligence Review. When the final review is complete, the Committee may recommend “feasible and appropriate changes,” if necessary, and refer the project/loan to the WIFA Board of Directors.

The Board, comprised of 12 members which represent a variety of water system industry constituents, ultimately reviews all loans. Following a review of the project and system capability (including past compliance with the SDWA and state rules and regulations), the Board can approve the loan and recommend modifications, or deny the loan.

Project Descriptions

System A provides water service through two physically separate systems that need extensive rehabilitation to satisfy an ADEQ Consent Order. A loan for approximately \$620,000 was requested to construct a new well, pressure tank, and storage tank for system A(1), a storage tank and booster pump for system A(2), and to extensively rehabilitate and replace distribution system piping for both

systems. Concerns about System A's financial capacity were raised during the Due Diligence Review. WIFA staff recommended limiting the loan to \$600,000 and prioritizing and phasing improvements to ensure the system's ability to repay the loan. Staff further recommended a Deed of Trust and other security (i.e., life insurance) as available. The WIFA Board approved a 20-year loan for \$600,000.

Florida

The Florida Department of Environmental Protection (DEP) administers the DWSRF for the state. Two bureaus in DEP's Division of Water Facilities share the responsibility of assessing capacity for the purposes of awarding loans. The Bureau of Water Facilities Regulation (BWFR), through its Public Water System Supervision program (PWSS), is primarily responsible for evaluating technical and managerial capacity. The Bureau of Water Facilities Funding (BWFF) focuses on financial capacity, but also looks at the other elements of capacity through operator certification, and the review of facility plans and sanitary surveys. The state provides assistance to publicly and privately owned water systems.

Capacity Evaluation Process

Data Collection

Florida Administrative Code Chapter 62-552 requires applicants to submit:

- Plans and Specifications.
- A Water Facilities Plan.
- A Request for Inclusion on the Priority List for Drinking Water Facilities.
- A Loan Application.

Besides the submissions required by the rule, DEP uses data from sanitary surveys to assess capacity. DEP has developed a Drinking Water Manual which contains checklists, worksheets, and application forms. The manual serves as a guide for loan applicants as they develop materials necessary for the assessment of capacity, and for DEP staff in the data collection process. The manual is available online at: www.dep.state.fl.us/water/wff/pubs/dwmanual/toc_pic.htm.

To assess water system capacity, DEP primarily relies on information in the water facilities plan (including the capital financing plans) and in the sanitary survey results of systems. The information discussed below, gathered from these sources, is used for the assessment.

Technical Capacity

- A detailed description of the current system and the proposed project, including maps of the planning area.
- The system's expectations about meeting federal and state drinking water regulations and future water demand.
- A discussion of alternatives investigated.
- Documentation of operator certification.
- A description of the source and an evaluation of how susceptible it is to contamination.
- Storage capacity, treatment type, and maintenance schedules and procedures.
- Documentation of system compliance history.

Financial Capacity

- Other revenue sources (if applicable).
- Cash budgeting.
- Water system rate setting frequency.
- Actual/projected revenues and debt coverage.
- Information on median household income, size, etc. of population served.
- Total annual project costs for a 5-year period.
- Existing and anticipated debt for a 5-year period.
- Projected annual operations, maintenance, and replacement costs; debt service and other expenses of the utility (providing DWSRF dedicated revenues) for existing facilities; DWSRF proposed project(s); non-DWSRF



proposed projects (if any); and the sum of all existing and planned facilities.

- Projected annual operating, non-operating, and other utility revenues, assuming all planned projects are constructed according to reported schedule.
- Explanation of how any net loss will be covered to keep the utility financially self-sufficient for the next several fiscal years.
- Average water system charges, fees, and assessments.
- Information on prior and parity liens.
- Loan repayment reserve requirements.
- Certification by the project sponsor's chief financial officer or by an authorized official that the project sponsor has the financial capability to ensure adequate construction, operation, and maintenance of the water system.



Managerial Capacity

- Identification of the system owners and manager.
- Description of the system's organizational structure.
- Demonstration of a reliable chain of decision makers in the operation of the facility.
- Documentation of written policy guidances.
- Compliance history.

For More Information Contact:

**Florida Department of Environmental Protection, Division of Water Facilities
Tim Banks, phone (850) 488-8163**

www.dep.state.fl.us/water/wff/dwsrf/default.htm

- Emergency preparedness plan.
- Copies of contracts or agreements that provide auxiliary power or backup water to or from the system.
- Sampling plans.

Capacity Evaluation¹

Technical Capacity

Technical capacity is evaluated jointly by the PWSS program (BWFR) and the BWFF Operator Certification program. The PWSS program assesses technical capacity based on data from sanitary surveys and water facilities plans. The Operator Certification program ensures that the individuals employed to operate the system are properly licensed and have demonstrated the knowledge and abilities necessary, based on the system's unique characteristics, to properly operate the system. Staffing requirements for the system are monitored through reviews of monthly operating reports and periodic inspections by the district office responsible.

Financial Capacity

BWFF is primarily responsible for the financial capacity review. A system's financial capacity is evaluated through the Capital Financing Plan (see Appendix A, Attachment 3) and the loan application.

Managerial Capacity

The PWSS program uses sanitary surveys to determine managerial capacity. Capacity is evaluated through plant records (including monthly operating reports), chemical reports, and staffing levels. Adequacy of record keeping, the use of written policy guidances, and the system's compliance history are also considered. The Water Facilities Plan is reviewed for documentation of organizational structure, operator certification, and a demonstrated chain of decision makers.

Project Descriptions

System A is a good example of a small water system that will meet capacity requirements as a result of a loan. The system came to DEP's attention because of a series of monitoring and reporting

¹DEP is currently working on a more formalized means of assessment such as evaluation worksheets.

(M&R) violations. The system was poorly maintained and had serious problems with the reverse osmosis units that were treating its wells. DEP found the system to lack technical and managerial capacity. Financial capacity was also a concern, but it was determined that the system would be financially solvent after a rate increase. System A was issued a consent order which required the system to physically interconnect with another system. The consent order also required a state-appointed receiver. The loan will be used to pay for such construction costs as piping to connect the systems. The Grant/Loan Agreement requires the system to implement recommended operational procedures and conduct frequent inspections in conjunction with sanitary surveys.

Indiana

Indiana's DWSRF program is managed jointly by the Indiana Department of Environmental Management (IDEM) and the State Budget Agency. Their respective authorities are outlined in state statutes and further described in a Memorandum of Understanding (MOU) between IDEM and the Budget Agency. IDEM evaluates technical and managerial capabilities. It has the authority to deny funding to applicants on the project priority list (PPL) that do not or cannot demonstrate technical and managerial capacity. The State Budget Agency determines the financial capacity of each political subdivision or water system (private or not-for-profit) and can deny funding to applicants that do not or cannot demonstrate financial capacity. The Budget Agency also prepares and executes each Financial Assistance Agreement (IC 13-18-21-6).

Capacity Evaluation Process

Data Collection

To assess the capacity of eligible systems, Indiana relies primarily on the information in the Loan Application, Due Diligence Form, and Preliminary Engineering Report.

To be placed on the PPL, a public water system must complete a loan application. Indiana's loan application contains two yes/no questions that address capacity: (1) Does your system currently possess capacity? and (2) If not, will capacity be achieved after implementation of your community's DWSRF project? If the system responds *no* to either question, and the financial assistance requested

through the DWSRF will not directly provide the resources to meet the capacity criteria, the system must submit a plan which describes the steps it will take to ensure adequate capacity (Draft FY 1999 IUP). In establishing the PPL, IDEM relies on the community's self-assertion on the loan application that no deficiencies exist.

For each project on the PPL, the applicant must complete a comprehensive due diligence form (327 IAC 14- 6-1). The due diligence process "provides financial disclosures advising the state of economic matters related to the political subdivision and their ability to repay the loan" (327 IAC 14-2-10). The questions on the form range from general inquiries about the size and type of system to detailed questions concerning customer base and outstanding debt through 2025.

Applicants are also required to prepare a preliminary engineering report for each project on the PPL. The report must summarize the project, discuss possible alternatives to the project, provide environmental information, and describe the public participation process and the required public hearing (327 IAC 14-7-1). The report provides much of the technical and managerial information used to assess capacity.

A preliminary design summary will be added as a component of the DWSRF loan application. This summary will contain a detailed description of system components (i.e., treatment plant and water mains) including the quantities and associated sizes/capacities being proposed for SRF funding.

Capacity Evaluation

The first step in the evaluation of a system's capacity is a meeting to discuss the development of the preliminary engineering report and inform the



For More Information Contact:

Indiana Department of Environmental
Management (IDEM), Office of Water
Management
Larry Lazard, phone (317) 233-5962

[www.state.in.us/idem/owm/planbr/dwsrf/
geninfo.html](http://www.state.in.us/idem/owm/planbr/dwsrf/geninfo.html)

applicant of the items that it must include. At least one representative of the community and one representative of the engineering firm that is going to construct the project must attend the meeting.

Once the preliminary engineering report is submitted, IDEM begins its review and assessment of the loan application and supporting documentation.

Technical Capacity

To assess technical capacity, licensed professional engineers on staff evaluate all of the project's engineering-related components. First, they check for a valid construction permit. If a permit is in place, IDEM next reviews:

- The preliminary engineering report.
- The system's ability to meet quantity requirements.
- The results of bacteriological and chemical sampling.
- Compliance with the wellhead protection rule (for ground water systems).
- The results of sanitary surveys to assess the adequacy of the infrastructure and the condition of the system and its components.
- Documentation of a designated certified operator in responsible charge for all systems serving more than 100 persons.²

Financial Capacity

Financial capacity is assessed by the Budget Agency staff, primarily through a review of the system's due diligence form. Reviewers search for evidence of a dedicated source of repayment and the ability of the system to repay each loan according to its terms and conditions.

Managerial Capacity

As with technical capacity, IDEM reviews the preliminary engineering report to assess a system's managerial capacity. In addition, it is recommended that the system owner be identified and that the membership of the utility board be described (e.g., are positions paid or voluntary, are members elected

or appointed, etc.). Systems are also encouraged to submit a chart that shows the hierarchy of staff positions and a summary of the training plan that is being implemented for staff at all levels of certification. In its assessment of managerial capacity, IDEM will look for demonstrated interactions with external entities (e.g., membership in professional trade associations, interaction with the community through public meetings, etc.).

At the time this report was written, Indiana had not denied a loan to any system because of deficiencies in technical, financial, or managerial capacity and only the standard terms and conditions in the state's Financial Assistance Agreement had been applied.

South Dakota

The South Dakota Department of Environment and Natural Resources (DENR) administers the DWSRF program for the state through the Board of Water and Natural Resources. Its administration includes capacity assessments of systems applying for loans. The evaluation process involves several DENR offices including the Drinking Water Program and the Water and Waste Funding Program. Drinking Water Program staff are primarily responsible for the assessment of capacity. Water and Waste Funding Program staff also conduct technical and financial reviews of water systems. After the capacity review is complete, DENR representatives present project and funding recommendations to the Board for final approval. The state provides assistance to publicly and non-profit privately owned water systems.

For the purposes of its program, DENR defines the elements of capacity as follows:

Technical Capacity: The physical infrastructure of the water system, including but not limited to the source water adequacy, infrastructure adequacy, and technical knowledge. Does the treatment system work the way it is supposed to? Is the system providing the safest and cleanest water possible and required by law to customers right now, and will it be able to in the future?

Financial Capacity: The financial resources of the water system, including but not limited to revenue sufficiency, credit worthiness, and fiscal controls. Basically, does the system have a



²Note that this requirement may change once Indiana finalizes its rules for operator certification.

budget and enough revenue coming in to cover costs, repairs, and replacements?

Managerial Capacity: The management structure of the system, including but not limited to ownership accountability, staffing and organization, and effective linkages. In simpler terms, does the system have a capable and trained staff? Does it have an effective management structure?

Capacity Evaluation Process

Data Collection

Both the system and DENR provide information to evaluate the capacity of a system applying for a loan. Systems must complete an application form and Part I of the Capacity Assessment Worksheet. DENR has made the worksheets available to public water systems via its website (www.state.sd.us/denr/des/drinking/capacity.htm). DENR completes Part II of the Capacity Assessment Worksheet by using the information provided by the system and augmenting it with data from state databases (i.e. monitoring and violations data, sanitary survey results, microbiological data etc.).

The evaluation process begins when a system submits an application for DWSRF funds. The application form includes a budget sheet, questions regarding proposed methods of financing and repayments, and general utility and project information. It requires the system to submit financial planning, legal, and engineering documentation (e.g., recent audits, articles of incorporation, a facilities plan).

Part I of the Capacity Assessment Worksheet contains a series of “yes/no” questions and is organized according to the three components of capacity (see Appendix A, Attachment 4):

Technical Capacity

Systems are asked questions on present and future water supply, the water supply source, treatment, and other system infrastructure (i.e., pumping, storage, distribution).

Financial Capacity

Systems are asked questions about financial planning, rates, and billing. They are also required to submit a budget worksheet, provide information from the previous and current year, and make financial projections for the next 3 years.

Managerial Capacity

Systems are asked about operator certification, continued training and educational opportunities, and knowledge of technical assistance opportunities. In addition, there are questions concerning management structure and capability, regulatory compliance programs, policies, system maintenance, emergency procedures, and safety measures.

To complete Part II of the Worksheet (see Appendix A, Attachment 5), DENR staff review state databases for system information, source/facility information, microbiological data, turbidity/enhanced surface water treatment rule information, violations, chemical data, lead and copper data and information, laboratory certification information, and data concerning operator certification. Staff also review compliance data and results from past sanitary surveys.

This part of the Worksheet requires state staff to answer questions about the technical and managerial capacity of the system. All of the financial information is provided by the system.

Capacity Evaluation

DENR reviews the information using an evaluation form comprising several yes/no questions that is organized into the three components of capacity. Both the evaluation form and Part II of the worksheet provide space for reviewers to comment. If the answer to any question is “no,” the reviewer is asked if a DWSRF loan would ensure the correction of the problem. The final question in each section asks the reviewer if the system “does” or “does not” have capacity in the component being reviewed.

Technical Capacity

The reviewer is asked to evaluate the system’s capacity (treatment, storage, pumping and distribution facilities) to meet current and future drinking water treatment requirements and water quantity demands, and to protect existing sources. Space is provided for the reviewer to list requirements and recommendations.

Financial Capacity

The reviewer is asked if the system produces and uses an annual budget and if it is audited periodically. Several questions examine the system’s budget, including: Do revenues cover expenses? Is the operating ratio greater than 1.0? Are the rates



less than or equal to 1.5 percent of the county's average annual median household income (MHI)?

Managerial Capacity

The reviewer is asked to evaluate whether the system meets all state operator certification requirements; if the system has had any violations of drinking water regulations within the past 2 years (and the relation of those violations to managerial deficiencies); and if the system has adequately maintained required records, distribution system histories, and compliance information.

The evaluation concludes in one of three ways: (1) Funding Recommended, (2) Funding Recommended with Requirements, or (3) Funding Denied. Requirements may include creating a source water protection plan or developing a cross-connection control program, written operating procedures, or a rate adjustment plan. Of the eleven loans that had been issued at the time of this report, applicants have either been recommended for funding or for funding with requirements.

Following the final determination, DENR notifies the system of the assessment results by mail and describes the requirements to which the system must agree for the state to issue the loan. The state ensures that systems lacking capacity undertake the "feasible and appropriate" recommendations through contractor support and may condition future financial assistance on the implementation of the recommendations. For example, a system that lacks technical capacity because of inadequate storage may be denied full funding if storage needs are not addressed.

Project Descriptions

DENR determined that System A possessed adequate capacity. Funding was recommended but

DENR also recommended that the system complete several activities to maintain capacity:

- The system should develop a source water protection plan after receiving the results of a source water assessment conducted by DENR, as required by the SDWA.
- EPA is developing new requirements involving disinfection and disinfection by-products. The system will have to re-evaluate its disinfection process once the disinfectant/disinfection by-products rule is finalized.
- A valve exercise program should be started for the water system. This program will help ensure that the system's valves operate properly during an emergency.
- A cross-connection control program should be started for the water system. Cross-connection control inspection at each service connection will help prevent the back-siphoning of water from customer taps into the water lines.
- The amount of unaccounted-for water should be calculated monthly.
- A plan to periodically increase water rates should be developed. It is much easier to provide for small, planned rate adjustments, than it is to implement a large rate hike when a crisis hits. Rates must be kept current with the increasing costs of providing water.

System B was determined by DENR to have "marginal" technical capacity and was therefore recommended for "funding with requirements." In a letter to the system regarding the assessment results DENR explains:

System B currently does not have enough storage to meet peak day demands. An additional 291 users are to be added to the water system in the future. The addition of the new 550 gpm well will alleviate some of the current storage problems; however, adding additional storage should be the next water project System B undertakes. When demands exceed the capacity of the storage facility, inadequate flow or pressure in the system can result. This can affect the consumer's use of the water supply and create opportunities for non-potable liquids to enter the system



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**[www.state.sd.us/denr/des/drinking/
capacity.htm](http://www.state.sd.us/denr/des/drinking/capacity.htm)**

through cross-connections. Prolonged interruptions in water service represent a public health hazard. Additional funding from this department may be denied if additional storage is not included in the next water project.

DENR also made the following recommendations to System B:

- The system should develop a source water protection plan after receiving the results of a source water assessment that will be conducted by the department.
- A qualified pump contractor should inspect all pumping equipment annually to identify potential problems and perform maintenance. This will help extend the life and reliability of the system's pumps.
- To prevent water main breaks, a routine program for leak detection should be conducted and a record of distribution repairs should be kept.
- A cross-connection control program should be started for the water system.
- Written procedures for routine and emergency system operations should be developed. These written procedures may be as simple as a one-page list of instructions. They should cover items such as daily operations/inspections, start-up and shut-down procedures, and response to equipment failure and other emergencies.
- A plan to periodically increase water rates and keep them current with the costs of providing water should be developed.

Vermont

The Water Supply Division (WSD) of the Department of Environmental Conservation (DEC) is primarily responsible for implementing the policies and procedures of the DWSRF program. However, the Vermont Municipal Bond Bank makes determinations of financial capacity for municipal systems, and the Vermont Economic Development Authority (VEDA) makes fiscal capability determinations for private systems (24 V.S.A. §4756). The Bond Bank and VEDA make loans on behalf of the state.

Capacity Evaluation Process

Data Collection

WSD assesses system capacity based on information from these documents:

1. Project Priority List Application/Letter of Intent - contains a series of yes/no and short answer questions on capacity issues to aid WSD in screening loan applicants (see Appendix A, Attachment 6).
2. Loan Application - requires the applicant to complete a capacity questionnaire and provide additional information regarding proposed project financing in addition to that applied for from the DWSRF.
3. WSD Records (i.e., sanitary surveys, water quality documents, etc.).

Information obtained from these documents that factors into the eligibility decision includes:

Technical Capacity

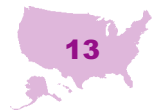
- Water quality monitoring.
- Source water protection.
- Determinations of groundwater under the influence of surface water.
- Sanitary survey recommendations.

Financial Capacity

- Current and projected water rates.
- Delinquent accounts.
- Financial planning.
- Payment of lawful fees.

Managerial Capacity

- Compliance status with current requirements for an O&M manual.
- Operator certification.
- Long-range planning.



- Identified responsible officials.

Capacity Evaluation

To determine whether capacity-based conditions are needed in the loan agreement, WSD developed a form for staff to complete while reviewing loan applications (see Appendix A, Attachment 7). The form, similar to the capacity questionnaire in the loan application, requires the staff reviewer(s) to answer 17 yes/no answers and provide documentation in support of each response. Vermont's 17 standard loan conditions correspond to the questions on the form (see Appendix A, Attachment 7). The corresponding condition is applied to a loan agreement if the reviewer provides a negative response.

Vermont has never denied assistance on account of capacity deficiencies, but the state often places conditions on loans in an effort to improve a system's technical, managerial, or financial capacity. For example, if a system lacked a certified operator, its loan agreement would require the hiring of such a professional by a specified date and so eliminate that deficiency in managerial capacity. Similarly, a system that lacked an annual budget would be required to develop one and submit a copy to WSD by a set date.

Vermont is working with New England Rural Water Association (NERWA) to track loan conditions and to develop templates and other tools to help systems demonstrate compliance with each condition. All loan conditions are entered into a database maintained by WSD. None of the longer term conditions have come due for any of the loan agreements that have been issued (approximately 20 as of the writing of this report, with several more very close to being issued), and all of the shorter term condi-

tions (e.g., a bacteriological sampling plan) have been met.

If a system fails to comply with the terms and conditions of a loan agreement, the state can "call the loan" (i.e., collect from the system's assets). Conversations with Vermont's DWSRF contact indicate that, because of all the technical assistance that is now offered to systems, the state believes it will never have to call a loan.

Project Description

System A received a \$360,000 no-interest loan for the interconnection of, and improvements to, two water systems. The preliminary engineering study and final design were also financed under the loan. The term of the loan is 20 years, with \$18,000 payable each year following the issuance of a certificate of completion.

Due to capacity deficiencies identified by the reviewer, 8 of the state's 17 standard conditions were placed on the loan. For example, the system did not have a long-range plan for facility improvements and operation and maintenance, so the state made plan development a condition of the loan. Because the system had not completed water quality monitoring as required by Vermont's Water Supply Rule, another loan condition required that such monitoring be completed by January 1, 1999. As of the writing of this report, System A had satisfied all of the conditions that had come due under the loan agreement.



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[www.anr.state.vt.us/dec/watersup/
dwsrf.htm](http://www.anr.state.vt.us/dec/watersup/dwsrf.htm)

III. Conclusion

A review of the criteria and processes used by six states to assess the capacity of loan applicants indicates that states are not rejecting systems for loans based strictly on technical, financial, or managerial deficiencies. Such deficiencies are being handled through loan terms and conditions, which detail the required “feasible and appropriate changes” to meet the requirements of the SDWA. Some state contacts noted that future loans may be denied based on capacity, but until rules are final and a baseline established (for all systems, not just new systems), it will be very difficult to deny a loan to a system based on its capacity.

The states reviewed in this report evaluate similar information to assess capacity (see Figure 1), although how the information is obtained and used varies. For example, some states require specific information by law (i.e., annual budgets and facility plans), while others obtain similar information through questions on a loan application or from state records on the system. Similarly, some states consider certified operators to be an indication of technical capacity, others consider them an aspect of managerial capacity, and still others consider them an aspect of both.

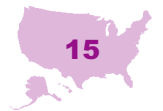
Due to the potential repercussions that a system’s lack of financial capacity may have on the lender, in this case the state, the financial assessment is more involved than the technical and managerial review for a DWSRF loan. The financial assessment typically requires detailed documentation of a sound financial history and projections for the future, in addition to basic questions on an application form. As a result, some states have a separate agency (e.g., the Budget Agency in Indiana) that conducts the financial assessment. Florida’s Bureau of Water Facilities Funding assesses financial capacity, while the Bureau of Water Facilities

Regulation evaluates technical and managerial capacity. Both bureaus, however, have the power to place conditions on loans, if necessary. Vermont further defines these roles for municipal and private systems. The Municipal Bond Bank assesses the financial capacity of municipalities, and the Vermont Economic Development Authority completes the financial assessment of private-sector applicants.

Assessment procedures also vary by state. Alaska, Arizona, South Dakota, and Vermont use capacity assessment worksheets to guide reviewers (and in the case of Alaska, loan applicants) through the assessment process. The process used in Arizona and Vermont leads the reviewer through a series of yes/no questions which correspond to a list of loan conditions. The corresponding conditions are applied to the loan agreement in any area where the reviewer’s response was negative.

South Dakota’s capacity review process is an example of effective data gathering. The state uses worksheets to facilitate the review of capacity, but it shares the collection burden with the applicant. This efficiency most likely stems from the state’s well-developed capacity development program and proven dedication to comprehensive assessment. A portion of South Dakota’s set-aside dollars is devoted to employing contractors to help water systems complete Capacity Assessment Worksheets and implement any recommendations (“feasible and appropriate changes”) that are attached to the loan.

As indicated in Figure 1, a number of the states reviewed, including Arizona, Florida, Indiana, South Dakota and Vermont, use sanitary survey results as a key factor in assessing capacity. Florida, for example, relies on sanitary survey records for information on applicants’ existing physical facilities, compliance history, emergency operating procedures, and other aspects of capacity. A new



sanitary survey guidance, published by EPA in April 1999, recommends that surveys include a section on water system management and operation with questions on management structure, planning, staffing, O&M manuals and procedures, funding, and administrative records. The guidance manual also explains that the purpose of a sanitary survey is “to evaluate and document the capabilities of the water system’s sources, treatment, storage, distribution network, operation and maintenance, and overall management...” [Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) EPA 815-R-99-016 April 1999 or online at www.epa.gov/safewater/mdbp/pdf/sansurv/sansurv.pdf] Sanitary surveys developed under these guidelines are excellent capacity assessment tools and may substitute for a more complicated or fragmented method of information acquisition.

States assess system capacity at different points in the application process. Capacity considerations are factored into Vermont’s initial determination of system eligibility through the priority list application and other means. This pre-screening of applicants limits the number of assessments that the state must conduct. The final assessment of system capacity comes later, when the results can be used to identify the loan conditions necessary to improve a system’s capacity. The DWSRF Program Coordinator explained that an assessment later in the process works for Vermont because systems are not denied funding strictly due to deficiencies in capacity. South Dakota, on the other hand, conducts a preliminary assessment of capacity as part of a pre-application process for a DWSRF loan. In this way, the state limits the number of loan applications that it must process.

There was not much evidence of enforcement provisions if a system fails to meet its obligations under a loan agreement. Arizona includes enforcement provisions in loan documents and coordinates with the ACC for non-governmental water systems. Indiana’s rules require any system that fails to satisfy the conditions of its agreement to immediately repay all outstanding principal and accrued interest on the loan. Other states are not so prescriptive. Conversations with the states indicate that, because the DWSRF program is so new and many states are just beginning to make loans, enforcement

has not been much of an issue. If the loans have conditions, most of them have not yet come due.

It is likely that most states will change the process they use to evaluate the capacity of systems seeking DWSRF assistance as programs mature and states develop capacity development strategies to address all public water systems. (As noted previously, many states have yet to define benchmarks for capacity.) States are encouraged to share information about their programs and the lessons learned through their regional EPA DWSRF or capacity development coordinators, through newsletters addressing both programs, and through presentations at conferences and annual meetings.

Additional information about capacity development and its relationship to the DWSRF program can be found on the DWSRF program website at www.epa.gov/safewater/dwsrf.html



Appendix A

Attachment 1: Alaska's Capacity Assessment Worksheet

Attachment 2: Alaska's SDWA Compliance Agreement

Attachment 3: Florida's Capital Financing Plan Worksheets

Attachment 4: South Dakota's Capacity Assessment Worksheet (Part I)

Attachment 5: South Dakota's Capacity Assessment Worksheet (Part II)

Attachment 6: Vermont's Priority List Application/Letter of Intent

Attachment 7: Vermont's Staff Capacity Review Form and Standard Loan Conditions
