



OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

Progress Report on Drinking Water Protection Efforts

Report No. 2005-P-00021

August 22, 2005



Report Contributors:

Ira Brass
Gwen Butler
Tim Roach
Michael Wagg

Abbreviations

CCR	Consumer Confidence Report
DWSRF	Drinking Water State Revolving Fund
EPA	U.S. Environmental Protection Agency
OIG	Office of Inspector General
PAM	Program Activity Measure
SDWA	Safe Drinking Water Act
T/M/F	Technical, Managerial, and Financial

Photo caption: A water tower in the South Central Regional Water District, Burleigh County, North Dakota (EPA OIG photo).



At a Glance

Catalyst for Improving the Environment

Why We Did This Review

We conducted this review to determine the progress made by the U.S. Environmental Protection Agency (EPA) and its partners to protect drinking water from contamination from source to consumer.

Background

The Safe Drinking Water Act (SDWA) Amendments of 1996 contain provisions to help States and water systems improve public health protection. The provisions include:

- Assessing water sources.
- Certifying system operators.
- Improving the technical, managerial, and financial capacity of water systems.
- Providing funding for infrastructure improvements.
- Providing funding to States.
- Keeping the public informed.

For further information, please contact our Office of Congressional and Public Liaison at (202) 566-2391.

To view the full report, click on the following link:
www.epa.gov/oig/reports/2005/20050822-2005-P-00021.pdf

To view a supplemental report with additional details, click on:
www.epa.gov/oig/reports/2005/20050822-2005-P-00021.A.pdf

Progress Report on Drinking Water Protection Efforts

What We Found

EPA and the States in this sample are making progress at helping water systems better reach Congress' goal of protecting drinking water from its source to the consumer. EPA worked to develop guidance and provide other assistance for States, and oversee State programs. The flexibility of the 1996 SDWA Amendments enabled States to better tailor drinking water protection approaches to meet their needs. Because of the SDWA Amendments of 1996: 86 percent of source waters are assessed and protection efforts are beginning; more water systems have trained and certified operators; water systems are receiving technical, managerial, and financial capacity assistance; water systems have access to low-interest loans; and consumers are receiving more information about their drinking water quality.

Although States have more flexibility to tailor programs to meet their needs, challenges remain. States reported budgets as being sufficient for current activities, though implementing new drinking water regulations and the effects of staff retirements are concerns. States face specific challenges in implementing certain SDWA provisions, but there are opportunities to help reduce those obstacles to achieving safe drinking water.

EPA's measures are generally related to outputs that measure specific program activities performed. The Agency links these activities to the long-term goal of "Clean and Safe Water." There are difficulties in measuring progress toward its long-term goal, however, because activity measures do not yet exist for all SDWA provisions. EPA has limited State reporting requirements, and the integration of various programs makes it harder to measure the impact of each program. Measuring the long-term outcomes of drinking water programs is important in determining whether programs produced intended results and public health is protected.

What We Recommend

Due, in part, to the breadth of this study, we are only making recommendations in two areas. We recommend that EPA identify methods to improve the Consumer Confidence Report, because we found this to be pertinent to all eight States covered by our review. We also recommend that EPA continue to develop measures for individual SDWA provisions. We encourage the Assistant Administrator for Water to support the drinking water program's efforts to develop indicators based on a logic model for the Public Water System Supervision Program.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

August 22, 2005

MEMORANDUM

SUBJECT: Progress Report on Drinking Water Protection Efforts
Report No. 2005-P-00021

FROM: Dan Engelberg /s/
Director of Program Evaluation, Water Issues

TO: Benjamin Grumbles
Assistant Administrator for Water

This is our final report on progress made by the U.S. Environmental Protection Agency (EPA) and its partners to protect drinking water from contamination. The cooperation of several EPA regions and States contributed significantly to this report. Their participation is appreciated.

This report contains findings that describe the issues identified by the EPA Office of Inspector General (OIG) and recommended corrective actions. This report represents the opinion of the OIG, and the findings contained herein do not necessarily represent the final EPA position. Final determinations on matters discussed in this report will be made by EPA managers in accordance with established audit resolution procedures.

The OIG issued a draft report on June 21, 2005, and a supplemental report on July 1, 2005, to EPA for review and comment. A response was submitted on July 21, 2005. EPA's response highlighted its efforts to identify program measures that better demonstrate the effectiveness of activities undertaken to protect drinking water quality and public health. EPA responded to the OIG recommendation that methods be identified to improve the Consumer Confidence Report by noting that it already plans to convene a working group to evaluate public information requirements under the Safe Drinking Water Act. The OIG has incorporated these comments, as well as the technical corrections and supplemental information provided by EPA, into the final report.

Action Required

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 90 calendar days of the date of this report. You should include a corrective action

plan for agreed upon actions, including milestone dates. We have no objections to the further release of this report to the public. For your convenience, this report will be available at <http://www.epa.gov/oig>. In addition to providing a written response, please e-mail an electronic version to roach.tim@epa.gov.

If you or your staff have any questions regarding this report, please contact me at (202) 566-0830 or Tim Roach at (312) 886-3026.

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Chapter 1

Introduction

Purpose

We sought to determine the progress made by the Environmental Protection Agency (EPA) and its partners to address Congress' intended goal in the 1996 Safe Drinking Water Act (SDWA) Amendments to protect drinking water from contamination. More specifically, we wanted to determine whether State programs are operating as planned and having the desired effect. Our study also sought to identify opportunities and challenges for future progress. This report details how successful EPA and its partners have been at ensuring:

- a. Drinking water sources are protected from contamination;
- b. Operators of public water systems are adequately trained and certified;
- c. Water systems have adequate technical, managerial, and financial (T/M/F) capacity;
- d. Water systems have adequate infrastructure;
- e. State resource funding levels support adequate oversight of drinking water systems; and
- f. The public is well informed about its drinking water quality.

Background

Congress passed the SDWA Amendments of 1996 to protect drinking water quality from its source to the consumer. These Amendments built upon the original 1974 Act and the major amendments of 1986 by modifying existing requirements or creating new initiatives. Some of the new or modified activities undertaken because of the 1996 Amendments include: assessing drinking water sources; training and certifying water system operators; assisting water systems with developing T/M/F capacities; funding water system infrastructure improvements; and informing consumers about the quality of drinking water. States receive additional funds from the Federal Government to implement these and other activities. Specific provisions of the SDWA Amendments are in Appendix A.

Efforts to implement these activities are believed to be more effective when integrated, meaning that they are interdependent and interlinked. For example, support for developing source water protection plans can be achieved when communities know of potential contaminant threats. If water system managers are knowledgeable of potential contaminants (as a result of the source water assessments), then they have an opportunity to implement source water protection plans or otherwise ensure that treatment can remove the contaminant. If there are contaminants, a certified operator is the one who needs to determine how to treat

the water. When water system improvements are necessary, the owners may apply for low-interest loans through the Drinking Water State Revolving Fund (DWSRF) that had been established by Congress. Finally, States can help water systems protect drinking water quality by assessing T/M/F capacities and providing assistance to water systems.

EPA, the States, and water systems share responsibilities for protecting drinking water. EPA is responsible for setting and enforcing national drinking water regulations, provides assistance and oversight for State programs, and provides some funding. A State may accept primary enforcement responsibilities (“primacy”) for its drinking water program under an agreement with EPA. The Navajo Nation, all States and territories (with the exception of Wyoming, as well as the District of Columbia and American Indian Tribes) have primacy. Water systems are responsible for operating within the requirements of EPA and State regulations.

To help pay the costs of State assistance and oversight of water systems, a national Public Water System Supervision grant provided an average of \$88.7 million per year to implement drinking water programs during the Fiscal Year 2000 to 2004 time period. When EPA first made this funding available in Fiscal Year 1976, States received approximately \$43.5 million (constant 2003 dollars). Federal and State funds support oversight and assistance activities to protect drinking water quality, such as conducting sanitary surveys, helping water systems maintain compliance, and undertaking enforcement actions.

Scope and Methodology

We performed our evaluation in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States. We conducted our field work from June 2004 to January 2005. We selected eight States for our review: Arkansas, Hawaii, Minnesota, New York, North Dakota, Oklahoma, Pennsylvania, and South Dakota. EPA regional offices identified these States, among others, as being successful in implementing the drinking water protection programs under review in this assignment.

We chose to conduct field work in States that are considered best cases because, if those States were all experiencing similar problems, it could potentially help point to national issues of concern. Since we focused on the States considered successful at implementing drinking water protection programs, the results of this study cannot be used to make general conclusions about drinking water protection for the nation as a whole.

As part of field work, we conducted structured interviews with managers and staff in the eight States selected for review. Prior to the start of field work, we interviewed one manager each from Indiana and Wisconsin to discuss drinking water program implementation challenges.

We interviewed staff and managers at EPA Headquarters and regional offices, and reviewed EPA guidance documents and other materials produced to assist States and water systems with implementing drinking water programs and activities. During site visits, we collected information related to State implementation of SDWA provisions, and met with operators of six water systems. We also interviewed representatives from non-governmental organizations that provide assistance to water systems (“third party assistance providers”), and ones that represent the States and the drinking water industry.

While a large-scale analysis of selected SDWA provisions has not been the focus of previous studies, some drinking water reports have been issued by EPA's Office of Inspector General (OIG), the Government Accountability Office, and the Association of State Drinking Water Administrators. Appendix B provides details on prior reports. Based on the Office of Ground Water and Drinking Water's response to the draft report, we made minor revisions to the report text. Appendix C contains the Agency response to the draft report.

Results in Brief

EPA, State, and third party activities indicate that water systems are receiving assistance to protect drinking water from its source to the consumer. EPA worked to develop guidance and provide other assistance for States, and oversee State programs. The States have been given flexibility in developing new approaches, in accordance with the 1996 SDWA provisions, and States have tailored programs to fit their needs. It is a sensible way for States and water systems to maximize limited resources. Also, the emphasis on stakeholder participation is an example of how citizens and interest groups could be drawn into the drinking water protection process.

Despite the progress made, challenges remain. These involve overall systemic issues, most notably funding and staffing limitations, as well as challenges unique to each activity. Further, the effects of assistance activities are not fully certain because the current method of measuring the success of drinking water protection activities is limited. Current measurement is tied to outputs which, while important, do not actually indicate whether water quality has improved. While we report about States' efforts to improve water system performance, we are unable to determine whether the programs have the desired effect of improving protection of human health. EPA and States are in the process of developing additional measures. This work is made difficult, however, by the integrative nature of the SDWA provisions, since numerous factors impact drinking water quality.

Our specific findings are discussed in Chapters 2 through 4, and additional details are provided in a supplemental report.

Chapter 2

Progress Made Implementing SDWA Provisions

EPA and the States reviewed are making progress at helping water systems better protect drinking water from source to consumer. The progress described is related to the introduction of new drinking water protection requirements, based on the 1996 SDWA provisions. The relationship between activities and the goal of "Clean and Safe Water" is discussed in Chapter 4. Although States have primary responsibility for implementing drinking water protection programs, EPA worked to develop guidance, assist States, and oversee State programs. The flexibility of the 1996 SDWA Amendments enabled States to better tailor drinking water protection approaches to meet their needs. The States in our sample provided the following examples of how drinking water protection activities have increased:

- Source waters are now assessed and some protection activity is underway.
- More water systems have trained and certified operators.
- Water systems are now receiving T/M/F capacity assessments and assistance.

While Federal, State, and third parties are working to implement the SDWA provisions, the challenges presented in Chapter 3 indicate that there is still work to do. Details on the progress made regarding the SDWA provisions are outlined in the following chapters. Additional information about State and third party activities is available in a supplemental report.

Protecting Source Waters

Congress created a Source Water Assessment and Protection Program in the 1996 Amendments. "Source" refers to the areas from which public water systems receive supplies of drinking water, including rivers, lakes, or underground aquifers. The premise is that preventing contaminants from entering a drinking water supply is more efficient than trying to remove those contaminants later during the treatment process. The Amendments required each State to develop and implement a source water assessment program to analyze existing and potential threats, with the intent of spurring protection efforts.

EPA Efforts

Although source water assessment and protection activities typically occur at the State and local level, these activities proceed with support from EPA. Congress authorized EPA to allow the use of DWSRF set-aside funds for source water protection. From July 1, 1996, to June 30, 2004, States spent roughly \$138.5 million in set-asides on source water assessments and protection. EPA

also provides oversight. State primacy agencies had to have their source water assessment programs approved by an EPA regional office before they could begin work on their assessments. In addition, EPA provided States with guidance documents and source water program measures. The Agency also set national goals for the development and implementation of source water protection strategies (see Chapter 4).

EPA disseminates source water protection information to a range of stakeholders. In June 2003, EPA held a National Source Water Protection Conference that drew participants from 47 States, the District of Columbia, two Canadian provinces, utilities, technical assistance providers and the health care industry, among others. EPA's Office of Ground Water and Drinking Water is also compiling examples of good source water protection programs. The Agency has made 85 case studies of local source water protection programs and six multi-state case studies available on its Web site. Model protection ordinances for ground and surface water resources are also available from EPA.

EPA's Office of Ground Water and Drinking Water works with other Agency programs as well. In 2004, the Office of Ground Water and Drinking Water inaugurated a joint initiative with the Office of Underground Storage Tanks aimed at reducing the threat that leaking underground storage tanks pose to drinking water sources throughout the nation. This initiative has resulted in more of the leaking underground storage tanks located in source water protection areas being targeted for inspection.

State Efforts

Source water assessments had been completed for 86 percent of the nation's public water systems by February 2005. Seven of the eight States visited had completed their required source water assessments, while the eighth (Pennsylvania) had completed all but 6 percent of its assessments. The assessments have produced benefits for States. Two of the States (Minnesota and South Dakota) said they used the assessments to educate water system operators about drinking water sources. The assessments also provided New York and South Dakota with better data on potential contaminant sources.

Although the SDWA Amendments did not require utilities to develop source water protection plans, Congress intended for source water assessments to lead to protection. Congress also included provisions for establishing "voluntary, incentive-based" source water protection partnerships. We found that States were involved with source water protection, although it is difficult to determine the extent to which source water strategies have been implemented because States are not required to report this information (see Chapter 4).

Both Minnesota and Pennsylvania, for example, are engaged in source water protection activity:

- Pennsylvania's "Growing Greener" Program provides grants to fund local efforts to develop source water protection plans. Pennsylvania officials stated that local governments often lack the funding necessary for full source water protection (see Chapter 3).
- Minnesota staff work with local governments to develop source water protection ordinances.

Source water protection has also been the occasion for inter-agency cooperation at the State level:

- Staff at the North Dakota Department of Health use hydrogeologic information from the State Water Commission and the U.S. Geological Survey to help define source water protection areas.
- In Minnesota, liaison activity between the State Pollution Control Agency's Leaking Underground Storage Tank program and the Department of Health's wellhead protection work has been incorporated into the regulations associated with both programs.

Third Party Involvement

Third party assistance providers indicated involvement with source water protection as well. Arkansas Rural Water Association staff members have helped some water systems construct source water protection programs, while representatives from rural water associations in North Dakota and South Dakota reported promoting source water protection at the local level. A National Rural Water Association staff person stated that the Association has completed and is presently implementing approximately 100 Source Water Protection Plans. One hundred thirty-three additional Source Water Protection Plans are currently in progress.

Training and Certifying Water System Operators

After drinking water enters a treatment facility, the water system operators, who are responsible for monitoring, operating, and maintaining the system to meet water quality standards, represent a key protective barrier to contamination. Operator Certification Guidelines require that every community and non-transient non community water system¹ have at least one certified operator. States are

¹ A community water system is a public water system with at least 15 service connections or serves an average of at least 25 people for at least 60 days per year. A non-transient non community water system is a public water system that regularly supplies water to at least 25 of the same people for at least 6 months per year, but not year-round; examples include schools, hospitals and office buildings that have their own water systems. For the purposes of this report, we will collectively refer to both as "water systems."

responsible for adopting and implementing an operator certification program that meets the requirements of the Guidelines.

EPA Efforts

Although operator certification is a State-implemented program, EPA provides assistance by developing Guidelines (as required by the Amendments). The Agency also provides States and water systems with training materials through its Drinking Water Academy. EPA reviews State programs to see if they are consistent with the Guidelines and provides funding through the Expense Reimbursement Grant Program.

EPA has approved operator certification programs in all 50 States and Puerto Rico. Puerto Rico was the last to receive approval, having been approved on September 30, 2002. The Agency judges all of these programs to be consistent with its Operator Certification Guidelines.

Small system operators were reported as often lacking the time or resources necessary to attend training (see Chapter 3). The Expense Reimbursement Grant Program, funded from the national DWSRF appropriation, provided grants to States to help offset the cost of training small water system operators. As of December 2004, States had used \$14 million of the Expense Reimbursement Grant Program's allocation of \$135 million for such items as:

- operator fees
- training course fees
- development of new training courses
- tailoring of existing training courses
- per-diem reimbursements for unsalaried operators
- travel mileage
- grant program administration

State Efforts

Current reporting makes it difficult to determine, at a national level, the extent to which water system operators are certified. EPA recommends that States report the number of water systems required to have a certified operator and the number of water systems without an "Operator in Responsible Charge." While Arkansas' 2003 Operator Certification Report lists the number of water systems lacking a certified operator, Hawaii's Operator Certification Report for State Fiscal Year 2004 simply lists the number of public water systems that have at least one certified operator on staff. It is not clear how many of Hawaii's water systems *lack* a certified operator. Oklahoma's Operator Certification Report also omits any information about the number of water systems lacking a certified operator.

Nonetheless, States are still active in the operator certification arena. States are responsible for administering operator certification exams and developing training programs for water system operators. EPA's Operator Certification Guidelines provide States the opportunity to tailor programs to accommodate the needs of water systems. Small water system operators, for example, may not need the same level of training as do large system operators. Additionally, State drinking water program managers have flexibility in the design and administration of exams and training requirements. For example:

- Minnesota water system operators must take separate examinations for each water system classification and renew their certificates every 3 years.
- Pennsylvania's operator certification exam program consists of two general exams (wastewater and drinking water), a distribution exam, a wastewater collection exam, 14 technology-specific exams, and 2 exams specifically for small systems.
- Arkansas water system operators must attend 40 to 96 classroom hours for each license.
- New York requires exams to test operator competency at the end of each course the operator completes.

All eight States in this study received an allotment from the Expense Reimbursement Grant Program to support small system operator training activities. However, funding for this program was only authorized through 2003; once a State's grant monies are exhausted, that State must identify other sources of funding. An EPA staff member described several options: (1) use the DWSRF 2 percent set-aside for small system technical assistance; (2) make more use of State Rural Water affiliates or other drinking water organizations; or (3) consider operator certification and training a water system capacity building activity that can be supported through rate increases.

Third Party Involvement

Staff in all eight States reported that they contract or partner with third party organizations – such as State rural water associations, the Rural Community Assistance Program, and colleges and universities – to provide training for water system operators.

Acquiring Technical, Managerial, and Financial Capacity

Ensuring both that all new systems commence operations with T/M/F capacity and existing water systems develop these capacities is critical to their successful operation. Collectively, these three competencies are intended to prevent drinking water contamination or treat water so that it meets regulatory standards.

- *Technical* capacity is when a water system employs a certified operator, has an adequate water source, and adequate infrastructure.
- *Managerial* capacities are those that relate to ownership accountability, staffing, management, and communicating to customers.
- *Financial* capacity refers to revenue sufficiency, fiscal controls, and creditworthiness.

The linkages between these three competencies constitute a road map for protecting drinking water from its source to the consumer. For example, a water system with T/M/F capacity is one that has a certified operator that is knowledgeable of the system's operations as well as potential source contaminants. The system communicates with the public through annual Consumer Confidence Reports or, if a violation occurs, through Public Notices. Finally, a system with capacity is one that manages assets to cover operating costs, necessary repairs, and upgrades.

Congress intended for States to have the legal authority or other means to ensure that, after October 1, 1999, all new water systems could demonstrate T/M/F capacity. States without this authority would lose 20 percent of their DWSRF allotment. By August 6, 2000, States had to develop and implement a strategy to assist public water systems in acquiring and maintaining T/M/F capacity or lose 10 percent of the Fiscal Year 2001 DWSRF allotment. EPA reported that all 50 States and Puerto Rico met the 1999 and 2000 deadlines.

EPA Efforts

EPA's capacity development assistance activities include publishing guidance and handbooks, conducting training courses, and providing direct assistance through cooperative projects.

- Guidance documents available through the EPA Office of Ground Water and Drinking Water's Web site include information about: (1) small system T/M/F capacity building, (2) water affordability and rate-setting, (3) tribal systems, (4) variances and exemptions, and (5) treatment technologies.
- EPA's Drinking Water Academy has training courses for States and water systems that are designed to enhance T/M/F capacity knowledge.
- Staff members in EPA Regions 3 and 6 are participating in a capacity building activity known as the Area-Wide Optimization Program. This program is a strategy for targeting groups of higher-risk drinking water systems for assistance.

EPA must also annually review State implementation of capacity development strategies and withhold 20 percent of the DWSRF allotment from States not successfully documenting ongoing implementation of the capacity development strategy. The September 2003 EPA OIG report, *Impact of EPA and State Drinking Water Capacity Development Efforts Uncertain (2003-P-00018)*, noted that regional EPA staff made no withholding recommendations. EPA, however, committed to developing an assessment tool and program measures so that withholding determinations may be applied on a common set of national goals and measures. The Capacity Development Assessment Tool is projected to be complete by October 2005, and the Program Measures are supposed to be done by December 2006.

The eight States in this sample described ongoing implementation activities, which included approaches to assessing water system T/M/F capacities and providing assistance. State reports were less consistent about measuring water system improvements after capacity assistance was provided. Three States did not include information about measures in progress reports (South Dakota, Hawaii, and Arkansas). Four States (Minnesota, New York, North Dakota, and Oklahoma) reported progress with capacity assistance through drinking water compliance rates or reduction of systems in Significant Non-Compliance status. Pennsylvania, meanwhile, tracked water system changes over time using a quantitative and qualitative method. Additional information about State assessment activities is provided in the supplemental report.

State Efforts

The States in this study reported helping water systems by assessing T/M/F capacities through existing oversight activities, with some States being more involved than others. More importantly, State efforts to build water system T/M/F capacity are integrated into a variety of activities:

- Arkansas and North Dakota staff reported using sanitary surveys that contain questions about operator qualifications as well as the management, operations, and finances of public water systems. In Pennsylvania, results of the sanitary surveys are entered into a database as part of the process by which utilities are ranked for capacity assistance.
- All eight of the States visited required that systems have the requisite T/M/F capacities to maintain upgrades and pay back loans before they could receive DWSRF assistance.

State staff also described regulatory oversight functions as capacity building activities. In Minnesota, staff members collect water samples from water systems, and immediately provide technical assistance to any water system that has two positive bacteriological samples. In Hawaii, State drinking water staff members and staff from the Board of Water Supply collect and analyze chemical

samples for systems. North Dakota water system operators receive sample bottles through the mail. While the States in this sample reported progress at assessing T/M/F capacity and providing assistance, Chapter 3 describes some of the problems associated with providing this type of assistance.

Third Party Involvement

All eight States rely upon third parties to provide capacity assistance to water systems. Third party activities include:

- A manager at the North Dakota Rural Water Systems Association reported that during vulnerability assessments, Association staff passed on to the State any T/M/F issues they uncovered during water system visits. The Association also reported developing an operator handbook that has templates of sample plans, and water sampling test regimens.
- Oklahoma Rural Water Association staff members go to systems that are identified by State staff as having compliance problems. The Oklahoma Water Resources Board and the U.S. Department of Agriculture (Rural Development) assist with managerial deficiencies.
- Hawaii contracted with the Rural Community Assistance Corporation, as South Dakota did with the South Dakota Association of Rural Water Systems, to provide T/M/F assistance and training to small water systems.

Funding Infrastructure

Congress recognized that costly infrastructure repairs and upgrades were necessary for water systems to maintain compliance with drinking water regulations. Broken pipes in a distribution network can, after all, result in outbreaks of waterborne disease. To help finance infrastructure improvements, Congress established the DWSRF in the 1996 SDWA Amendments. The DWSRF offers low-interest loans to State-identified, high-priority drinking water infrastructure improvement projects. For a water system to receive DWSRF funds, it must be able to demonstrate it has the requisite T/M/F capacities to maintain upgrades and pay back a loan.

While States can finance infrastructure projects with their DWSRF allotments, they may also use a portion of this money to:

- develop and implement capacity development, source water protection, and operator certification programs;

- provide technical assistance to systems serving fewer than 10,000 people;
- administer the DWSRF program; and
- provide local assistance.

EPA reported that, as of June 2004, States had reserved 16 percent of their DWSRF capitalization grants to fund such activities.

EPA Efforts

EPA is responsible for the oversight of DWSRF funds, with States receiving annual allocations in proportion to the needs identified in EPA's periodic Needs Surveys (provided that each State receive a 1 percent minimum share). Each year, States prepare an Intended Use Plan detailing the projects that the State has prioritized for assistance, and then forward the plans to EPA regional offices for approval. All of the States visited had created Intended Use Plans.

EPA tracks the programmatic and financial use of funds in the program. As of June 30, 2004, States had provided nearly \$8 billion to drinking water projects. Some 83 percent of the funds available had gone to assist projects. While the average DWSRF utilization rate for the eight States visited (80 percent) was slightly less than the national average, the eight-State average is affected by Hawaii's comparatively low utilization rate (see Table 2.1).

Table 2.1: DWSRF Assistance Provided to Projects as a Percentage of Total Funds Available

State	Percent
Arkansas	82
Hawaii	32
Minnesota	89
New York	92
North Dakota	84
Oklahoma	67
Pennsylvania	99
South Dakota	97
Eight-State Average	80

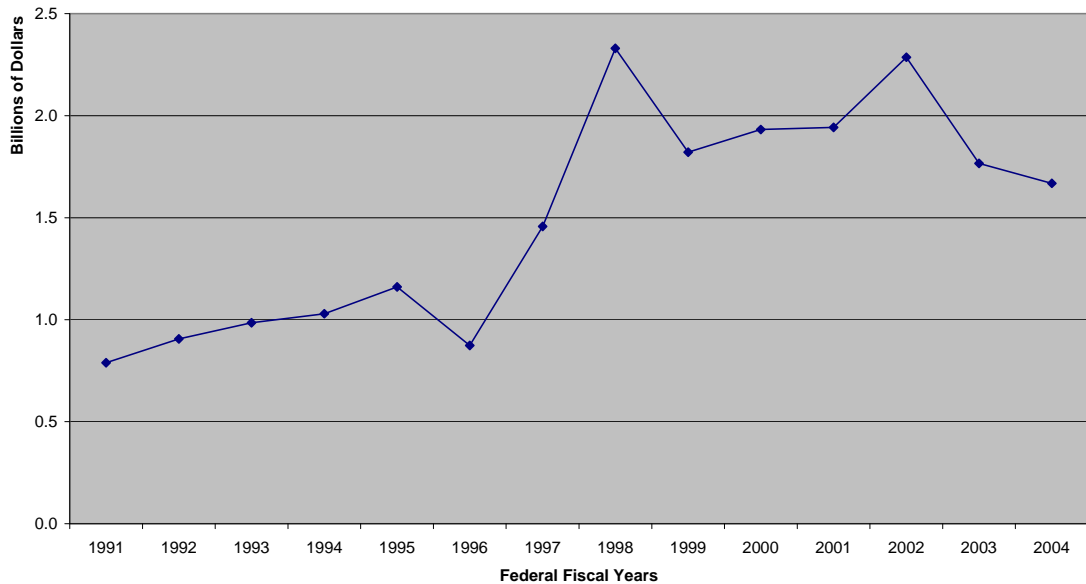
EPA also facilitates information sharing. The Agency has issued guidance on the DWSRF program in addition to several reports and fact sheets on select aspects of the DWSRF program. A national State/EPA workgroup meets to address ongoing implementation issues related to the DWSRF. The group's November 2003 meeting covered water system participation in the Drinking Water Needs Survey, innovative State infrastructure financing mechanisms, and indicators for environmental/public health benefits in the DWSRF program. In addition to the

training that the Agency offered to State and Regional staff in the past, EPA provides DWSRF information to States at an annual meeting.

Other Federal Agencies' Involvement

EPA is not the only Federal agency that funds drinking water infrastructure projects. The U.S. Departments of Agriculture, Commerce, Interior, and Housing and Urban Development all provided drinking water infrastructure funding prior to the 1996 SDWA Amendments. With the advent of DWSRF funding in Fiscal Year 1997, Federal contributions to infrastructure projects increased (see Figure 1).

**Figure 1 -- Total Funding - U.S. Environmental Protection Agency, U.S. Department of Agriculture - Rural Utilities Service, Economic Development Administration & Bureau of Reclamation - FY 1991-2004
(constant FY 2003 dollars)**



State Efforts

States supplement Federal infrastructure funds with their own monies. A November 2001 Government Accountability Office report, *Water Infrastructure: Information on Federal and State Financial Assistance* (GAO-02-134), identified 78 State drinking water infrastructure funding programs across the country. Six of the States visited have created infrastructure funding programs since 1996 (see Table 2.2).

Table 2.2: State Infrastructure Funding Programs (1996 – present)

State	Program	Description	Year Created
Arkansas	Water, Waste Disposal and Pollution Abatement Facilities General Obligation Bond Program	Provides bond issues for water supply projects	1997
North Dakota	Water Development Trust Fund	Funds long-term water development and management needs	1999
New York	Financial Assistance to Business Water Program	Funds construction, upgrades, improvements, or replacement of infrastructure, to provide water supplies to businesses	1996
	Pipeline for Jobs Fund Program	Provides funding for the creation, improvement, or extension of water supply facilities	1999
	Drinking Water State Revolving Fund - Hardship Assistance Program	Provides direct payments for projects in disadvantaged communities	1996
Oklahoma	Rural Economic Action Plan Grants	Provides grants to fund water line construction/repair, water treatment, and water acquisition	1996
Pennsylvania	Infrastructure Development Program	Makes grants and loans to eligible applicants	1996
	Small Water Systems Consolidation Construction Grant Program	Provides grants for construction of water system interconnections, and helps small systems pay for the improvements necessary to acquire systems	2000
South Dakota	Small Community Planning Grant	Provides small communities with up to \$4,000 to help cover costs associated with preparing an engineering study and report	1997

Most States have also attempted to coordinate infrastructure funding sources. An October 2003 EPA report found that 45 States were coordinating water or wastewater infrastructure funding. Such coordination can produce efficiency gains. For example, Arkansas has a Water and Wastewater Advisory Committee that meets monthly to review preliminary engineering reports from systems seeking State or Federal assistance; coordination of funding requests has reduced delays associated with preliminary project approvals in Arkansas from 2-3 years to 60-90 days. Oklahoma's Funding Agency Coordinating Team, meanwhile, helped streamline the funding application process by creating common environmental/engineering report checklists that all Team partners now employ.

States can use other means to ensure that water system infrastructure is adequate. All of the States visited exercise authority over infrastructure through the plan review and approval process. Systems must have their construction plans approved by State staff before they can make significant changes to their facilities. All of the sample States require that systems have the requisite T/M/F capacities to maintain upgrades and pay back loans before they can secure DWSRF assistance. Three States noted that systems had to have rate structures in

place before they could receive DWSRF loans. Oklahoma systems, for example, cannot receive DWSRF loans if they have declining rate structures in place.

To date, relatively little DWSRF loan principal has been repaid. Nationwide, just 6 percent of DWSRF principal was repaid between July 1, 1996, and June 30, 2004. Since most projects take 2 to 3 years to complete, with repayments beginning no more than 1 year after project completion, it understandably will take some time for DWSRF loans to be repaid. As of June 30, 2004, the eight States visited had repaid, on average, 7 percent of the DWSRF loan principal (see Table 2.3).

Table 2.3: Percent of DWSRF Loan Principal Repaid

State	Percent
Arkansas	1
Hawaii	3
Minnesota	6
New York	9
North Dakota	4
Oklahoma	10
Pennsylvania	9
South Dakota	10
Eight-State Average	7

Funding Protection Activities

Various issues related to funding, such as the DWSRF, have already been discussed in this chapter. Comments from State staff about resources largely revolved around the challenge of balancing new responsibilities in a climate of resistance to increasing staff or budgets. These issues are discussed in Chapter 3.

Informing Public about Drinking Water Quality

Congress intended for water systems to promptly notify consumers when a system exceeds allowable contaminant levels by issuing Public Notices. Congress also intended that drinking water consumers be informed annually about the quality of water they drink. To meet these goals, Congress directed EPA to revise rules that public water systems must follow regarding the form, manner, frequency, and content of a Public Notice; and establish rules that require community water systems to provide their customers with annual Consumer Confidence Reports (CCRs) about water quality.

EPA Efforts

EPA assists States and public water systems by providing materials useful for developing and implementing the Public Notification and CCR rules. EPA also

developed software applications (CCRWriter and CCRiWriter) to help water systems create CCRs, although State staff noted that these reports are difficult for consumers to use when trying to learn about the quality of their drinking water (see Chapter 3).

While we were unable to locate national compliance rates for the Public Notification Rule, we did find compliance rates for the Consumer Confidence Rule in EPA’s National Public Water System Compliance Report. National compliance with the CCR Rule was 87 percent in 2002, the most recent year available.

State Efforts

States are responsible for enforcement and oversight of the Public Notification and CCR requirements. All eight States reviewed provide assistance, such as training or consultation, to help water systems comply with these requirements. For example:

- North Dakota's public water systems receive a packet each February that details CCR requirements. State staff also customized the sample Public Notices that EPA provides in its Public Notification Handbook. A Public Notice template is included in the Notice of Violation letters sent to utilities.
- Staff in Minnesota, Arkansas, New York, and South Dakota reported assisting water systems by preparing CCRs or providing information that can be incorporated into the reports.

We only located compliance rates for the Public Notification Rule in North Dakota. In 2003, 88 percent of North Dakota water systems required to submit public notices to customers did so. Compliance rates for the CCR were generally higher in the eight States reviewed than for the nation as a whole, as shown in Table 2.4:

Table 2.4: 2002 CCR Rule Compliance Rate for Eight States Reviewed in Comparison to National Average

State	Compliance Rate
Arkansas	97
Hawaii	100
Minnesota	99
New York	97
North Dakota	100
Oklahoma	88
Pennsylvania	71
South Dakota	91
National Average	87

State staff members are also implementing a variety of programs that further educate consumers about drinking water. Minnesota's Department of Health partnered with a group of non-profit organizations to develop the Drinking Water Institute. This Institute is designed to help teachers integrate drinking water topics into school curricula. Arkansas publishes quarterly newsletters, and New York has expanded its drinking water Web sites. South Dakota staff reported participating in water festivals where some primary school students get the opportunity to participate in various water science activities. Staff in Hawaii reported assisting the University of Hawaii in developing educational materials on rainwater catchment systems.

Third Party Involvement

Third party organizations have partnered with States to assist water systems with CCR reporting requirements. For example, Pennsylvania staff partnered with the Pennsylvania Rural Water Association to create a half-day CCR training program. The South Dakota Association of Rural Water Systems produces a CCR template, assists systems with CCR Rule violations, and provides systems with Public Notice information.

Conclusions

The variety of activities and approaches to improving drinking water protection, as described in this chapter, indicates that EPA, the States, and the third parties interviewed during this study are providing assistance to water systems in protecting drinking water from its source to the consumer. Source water assessments are mostly complete, and efforts are underway in some States to move to implementation of source water protection plans. Both community and non-transient non community water systems (such as schools and hospitals) are now required to have certified operators. T/M/F capacity assistance for water systems has also become more formalized. The DWSRF funds a portion of State drinking water protection activities and provides low-interest loans to high priority water system improvement projects. Consumers are receiving more information about the quality of their drinking water through CCRs. While staff in the States visited discussed the progress they have made implementing their programs, there are still ongoing challenges, as discussed in Chapter 3.

Chapter 3

Challenges Remain Regarding SDWA Implementation

State staff and managers noted challenges related to the implementation of provisions in the 1996 SDWA Amendments. Key challenges are related to funding and resource concerns. Specific challenges also remain with the implementation of certain SDWA provisions. Since many challenges relate to resource constraints, EPA's role in changing conditions may be limited. Nevertheless, opportunities exist to help reduce the obstacles to ensuring that safe drinking water is available to consumers.

State Funding and Staffing Challenges

Staff and managers in seven of the eight States in our review reported that their programs could be impacted by new drinking water regulations and staff retirements. The drinking water branch manager in Hawaii reported having stable funding, yet staff vacancies and the State rule development process will make it difficult for the State to meet its oversight requirements.

While the DWSRF set-asides help pay for staff and third party assistance contracts, these funds did not eliminate all problems. The challenges described by some of the State staff mirror trends reported by the Association of State Drinking Water Administrators in its April 2003 report, *Public Health Protection Threatened by Inadequate Resources for State Drinking Water Programs*:

- State legislatures do not want drinking water programs to hire staff and later face funding crises if the DWSRF is not funded by Congress.
- State attempts to access DWSRF set-aside funds for implementation activities are met with significant competition from high-profile infrastructure needs.
- Staffing caps prevent new hiring even if Federal dollars are available.

By the Association's estimates, drinking water funds covered 78 percent of drinking water program expenses in 2002 but will only meet 62 percent of expenses by 2006. Using the self assessment tool developed by the Association of State Drinking Water Administrators, Arkansas' staff reported that they are 20 staff positions below the levels needed for full program implementation. To meet current workload requirements, managers eliminated or curtailed some outreach and education programs and reduced the frequency of sanitary surveys.

While State staff reported having sufficient or stable funding for current activities, the effects of staffing shortfalls in Hawaii can serve as a potential indicator of the

impacts of resource shortages. In 2004, a draft EPA end-of-year report noted that the State had 6 vacancies in its 35-person drinking water protection branch. The draft report stated that Hawaii had met approximately 30 percent of its sanitary survey goals for State Fiscal Years 2002 and 2003 before exceeding performance goals by 10 percent in 2004. EPA attributed the performance shortfall to an increasing demand for rule development and implementation. Other States also reported resource-related issues:

- Indiana's drinking water branch chief reported that the program's funding has been static. Needs were met by shifting staff.
- Pennsylvania officials indicated that upcoming staff retirements will affect their drinking water program. By June 2005, all of the experienced regional managers and several field engineers will have retired. Staffing caps, coupled with the fact that new staff require years of training, make it difficult for the State to fill vacancies.

To help defray the costs of additional work associated with implementing the SDWA provisions, States can "set aside" up to 31 percent of the annual DWSRF capitalization grant. All of the States in our sample reported using set-asides, but these additional funds did not eliminate staffing and funding shortfalls for various reasons:

- In North Dakota, stakeholder groups sought to maximize the availability of infrastructure loan funds by not supporting the use of set-asides for program activity.
- An Oklahoma manager reported that, until recently, most DWSRF set-asides had been banked because the State could not hire people.
- South Dakota officials reported that additional Federal dollars would not solve their staffing challenges because a State staffing cap is in place.
- Hawaii staff reported not drawing upon on all available set-asides because of concerns that the DWSRF may not be a permanent funding source.

States can develop fee systems to help them defray the costs of implementing drinking water protection activities. Customer-based fee systems are already in place in four States. Monthly fee costs to consumers in Arkansas, Minnesota, and Oklahoma ranged from 25 to 43 cents, with managers in Arkansas and Minnesota seeking further fee increases of 10 cents per month. South Dakota staff noted that their fees range from \$10 for non-community water systems to a maximum of \$40,000 for community water systems. Managers in Arkansas, Minnesota, and Oklahoma reported that fees support staff and pay for water sampling and/or analysis. These fees, in fact, have allowed Minnesota's drinking water program to not rely upon State general revenue funds. Some 50 percent of Minnesota's drinking water protection budget comes from user fees.

Effect of New Regulations on States

Four States reported that the additional compliance and enforcement oversight work that accompanies new drinking water regulations will affect their ability to implement drinking water protection activities.

- With each new Federal regulation, Pennsylvania staff reported that they were “losing ground.” While new regulations allow water suppliers a measure of flexibility, such flexibility shifts the burden of compliance determinations squarely to the drinking water program.
- New York staff reported that new regulations will constrain resources. The State needs to develop a priority scheme for each county department to determine what work will and will not be done.
- An Oklahoma manager noted that 70 to 80 percent of surface water systems will be out of compliance with the Disinfection Byproduct rule. The implementation of new regulations will result in less time for training and enforcement actions.
- The drinking water programs in Pennsylvania, New York, and Hawaii invest staff resources in developing State versions of new Federal drinking water regulations. These resources are then not available for other activities.

The use of third parties, such as State Rural Water affiliates or other organizations, is one approach to providing assistance that can help with State staffing issues. The ways in which third parties provide assistance to water systems are described in Chapter 2. In addition, the flexibility afforded States when adopting new drinking water regulations does not always result in reduced staff workloads. States have the option to develop regulations that are equal to or more stringent than EPA’s, but this process requires investment of State staff resources that are not spent helping water systems.

Water System Resource Shortages

State staff also reported that water systems face resource challenges. For example:

- North Dakota staff noted that the cost of infrastructure upgrades was an impediment to water systems, especially small ones.
- New York staff reported that small systems may not have the resources to pay for training. Public officials, they said, did not recognize the importance of a certified operator and continuing education requirements.

- Staff in Arkansas, Hawaii, Oklahoma, and South Dakota all cited a lack of adequate compensation for water system operators.

State staff noted that the obstacles water systems face can be addressed through outreach and the continued application of the SDWA's provisions:

- In North Dakota, the Rural Water Systems Association conducts water board training to increase managerial competencies, and uses rate analyses to identify financial problems.
- In Oklahoma, utilities applying for DWSRF loans can use a portion of the DWSRF to help pay for the up-front engineering costs associated with making an application for DWSRF funding.
- In South Dakota, the State established a grant program which supports the initial planning/engineering work necessary for new projects in small communities.

Other Challenges Involving Key Individual Activities

Protecting Source Waters

While source water assessments are essentially complete in the States visited, State staff noted that it has been difficult to implement source water protection programs:

- Pennsylvania officials stated that local governments often lack the funding necessary for full source water protection. Funding is particularly lacking for the purchase of land and conservation easements.
- Staff in both Oklahoma and North Dakota noted that rural water systems lack jurisdictional control over land use decisions.
- South Dakota staff stated that they have no control over whether individual communities decide to pursue "full" source water protection; full protection remains a "tough sell" in many parts of the State.

Until recently, State source water protection work was also complicated by the fact that EPA had not issued final measures for the source water protection program. In March 2005, however, EPA published guidance to assist States in defining protected water sources.

Even though there are impediments to protecting water sources, State staff also described efforts to encourage water systems to implement protection programs:

- Pennsylvania holds free “watershed academies” for local officials, which include instruction on the elements of source water protection. A source water protection guidebook and template are also available on both the State Web site and CD-ROM.
- North Dakota staff reported that both education efforts and the source water assessments themselves have raised awareness of water resource issues. This heightened awareness has, in turn, led communities to become more involved in source water protection activities.

Training Water System Operators

Although every State in our sample has an EPA-approved operator certification program in place, the water systems that they serve still face challenges related to operator training and retention.

- A lack of adequate compensation for water system operators, especially at small systems, makes it difficult to attract and retain operators.
- Small system operators may lack the time or resources necessary to attend training.
- Management is reluctant to give water system operators time for training beyond that which is necessary to pass the state certification exam.

Nonetheless, there are efforts underway to reach out to water systems. Minnesota staff, for example, reported that they had added locations for operator training and testing throughout the State. Oklahoma instituted on-line training for water system operators; this option has a 75-percent utilization rate.

Developing T/M/F Capacities

States in our sample reported that most challenges to implementing capacity development strategies occurred at the water system level rather than at the level of the State or EPA.

- Water systems may not be interested in developing managerial and financial capacities until they are required to do so for a DWSRF loan.
- Elected officials and municipal employees have many other responsibilities besides water system maintenance.
- There is a lack of guidance on what constitutes “adequate” managerial and financial capacity.
- Geographic isolation may make it difficult for some water systems to consolidate infrastructure.

These impediments indicate that outreach needs to remain a long-term commitment for States. In fact, States and third parties are pursuing outreach opportunities.

- Arkansas requires utilities to create long-range system plans, although these plans need not be formally submitted for review.
- North Dakota staff members attend city council meetings if a water system operator is not adequately addressing problems.
- In Oklahoma, the Community Resource Group meets with water boards to discuss managerial and financial capacity issues.

Minnesota and New York are taking a different approach, having State staff and third parties serve as the T/M/F information sources for water systems rather than working to get all systems to develop these competencies. Other examples of State and third party assistance are provided in Chapter 2.

Providing Adequate System Infrastructure

Infrastructure maintenance is the most costly investment a water system will make. It is also important. Broken pipes in a distribution network can result in waterborne disease outbreaks; a pipe leaking one gallon per minute will waste 525,600 gallons of water in a year's time. The cost of improving the nation's drinking water infrastructure is also significant. In 2002, EPA estimated an annual drinking water infrastructure funding gap of \$7.7 to \$22.3 billion. DWSRF appropriations met, at most, 10.2 percent of estimated annual infrastructure needs in Fiscal Year 2003.

Cost is not the only challenge facing State infrastructure programs. While staff in every State reported having authority to approve water system construction plans as part of a permit review process, State staff can seldom intervene prior to the occurrence of a drinking water violation. In addition, State staff reported that the 4 percent DWSRF set-aside for loan administration will not be large enough to continue covering the costs of managing the DWSRF. Staff in three States (Arkansas, Hawaii, and South Dakota) indicated that the loan application process and associated Federal requirements can also be onerous.

Nevertheless, States continue to address the problems that small communities face:

- South Dakota's Small Community Planning Grants support the initial planning/engineering work necessary for new projects in small communities.
- Oklahoma uses a portion of the DWSRF to assist small water systems in the preparation of DWSRF loan applications.

- Pennsylvania created its own revolving loan program in 1988 to address the environmental and public health needs of poorer communities.

Ensuring the Public Is Informed

In the eight States visited, staff reported that the primary consumer communication vehicle – the CCR – is difficult for consumers to use when trying to learn about the quality of drinking water or that they do not receive feedback from consumers about the CCR. State staff cited several reasons for this difficulty in understanding CCRs:

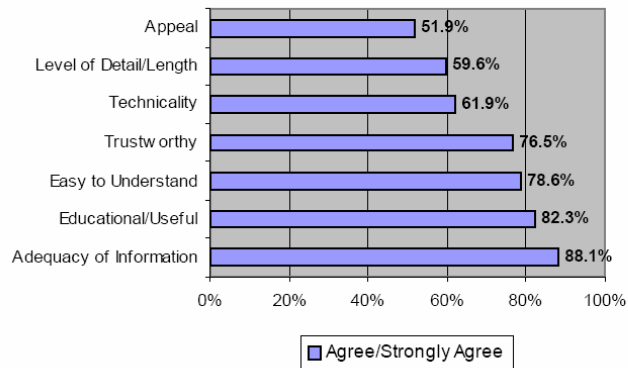
- The language in reports is either too complex or contains too much information for the average reader.
- There is a lack of consumer interest in CCRs.
- Providing information about drinking water quality may not be a priority for water system managers.

Data from EPA’s 2002 and 2003 Safe Drinking Water Hotline Annual Reports indicate that CCRs generate some public interest, though the number of CCR-related inquiries is a small proportion of all inquiries received (7 percent in 2002 and 8 percent in 2003). A large water system in Hawaii described its own experience with consumer inquiries. The Honolulu Board of Water Supply staffed a “help line” to answer questions regarding the CCRs when the reports were first distributed in 1999, but the water system reported receiving so few inquiries that it decided to quit staffing the hotline.

An EPA analysis of a 2003 Gallup survey indicates that CCRs fail to reach the entire drinking water community because too little effort is made publicizing the report requirements and the report’s availability to the public, not because consumers are apathetic. While respondents to the Gallup survey indicated that the CCRs were helpful and adequate (see Figure 2), State staff expressed concern that the reports’ language was either too complex or contained too much information for the general reader. The American Water Works Research Foundation also found that most of the reports they reviewed used technical language at a 13th grade level.

Figure 2

Satisfaction with CCR*



Even so, both State and EPA staff suggested several opportunities for progress in the future:

- An EPA staff person reported that the Agency intends to conduct a followup to the Gallup survey, and suggested that water systems should use CCRs as a marketing tool.
- New York staff recommended funding research into the effectiveness of the CCR.
- Minnesota staff suggested using a national work group to review issues associated with CCRs.

While State staff reported that the CCRs can be difficult to understand, limited feedback from consumers and water systems in this eight-State sample does not permit any conclusions about the efficacy of the present regulation.

Conclusions

While progress has been made in helping water systems improve their performance, challenges still exist. State resource shortages are an ongoing concern. Resource constraints are not likely to be resolved through Federal grant increases in the current environment of Federal deficits. State drinking water staff and managers described various ways to address problems. They also indicated that the flexibility Congress intended for States is resulting in some useful approaches to solving the ongoing challenges with drinking water protection.

Recommendation

Of the various SDWA provisions reviewed in this study, the eight States only expressed similar concerns about the CCR's ability to inform consumers. These

concerns either were related to the clarity of the reports or the lack of feedback from consumers. Since our study was broad and the State sample selection was too small to permit national generalizations, this Chapter only makes a recommendation in this area. Specifically, we recommend that the Assistant Administrator for Water:

- 3-1 Identify methods to improve the CCR through the National Drinking Water Advisory Council or other work group.

Agency Response and OIG Evaluation

EPA responded to Recommendation 3-1 in a July 21, 2005, letter to the OIG (see Appendix C). The Agency stated that it will convene a working group to the National Drinking Water Advisory Council, in the fall of 2005, to evaluate public information requirements under the SDWA. The focus of this working group will be on the message and delivery of the public education materials that water utilities distribute when lead action levels are exceeded. We consider these actions to be appropriate for the recommendation and encourage this working group to also consider public education issues more broadly.

Chapter 4

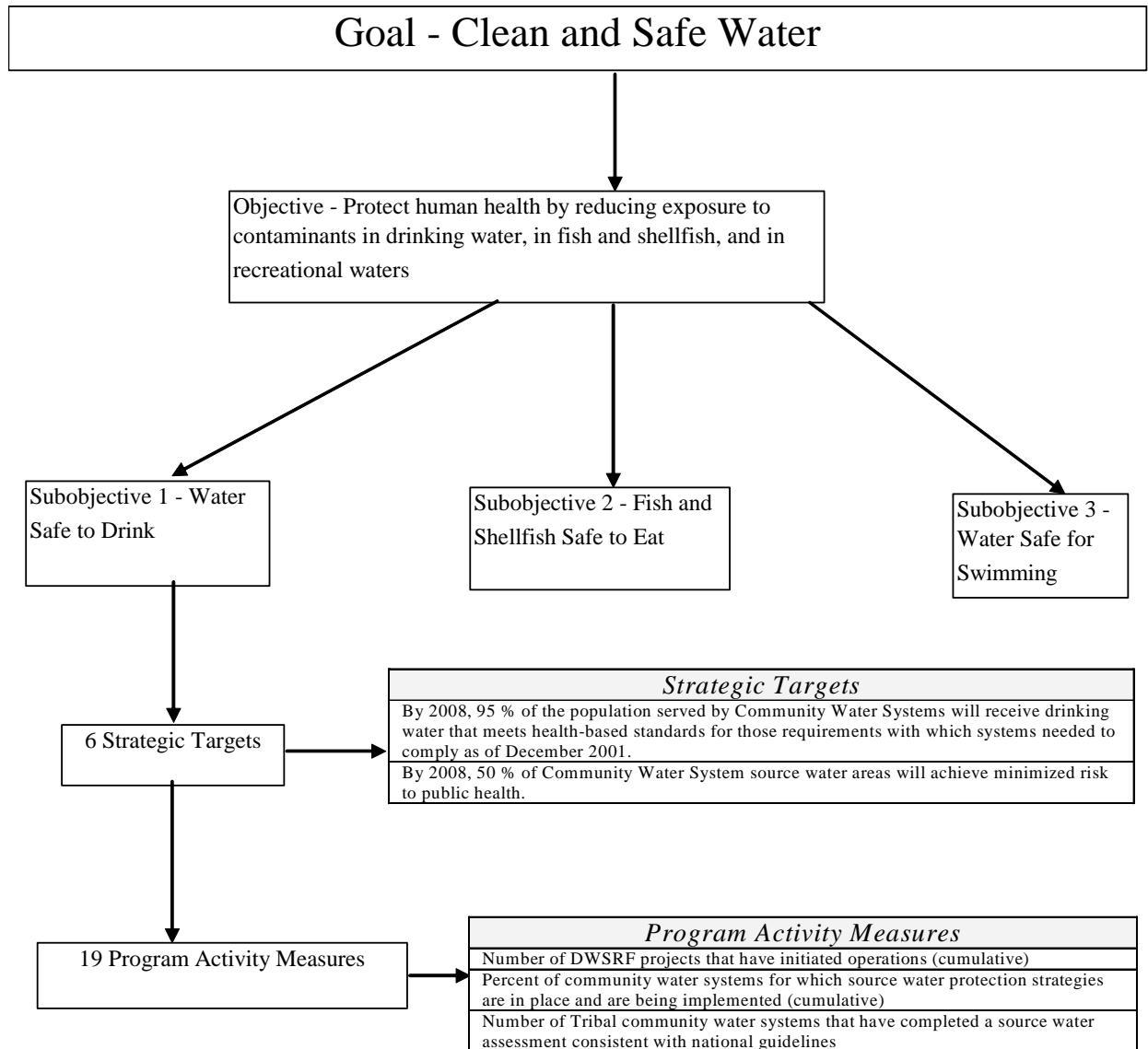
Current Performance Measures Leave Extent of Progress Uncertain

EPA's current drinking water program performance measures leave the extent of progress uncertain. EPA's 19 Drinking Water Program Activity Measures (PAMs) for Fiscal Year 2006 are generally focused on program activities rather than long-term outcomes. Further, measuring long-term outcomes is difficult because (a) EPA has limited State reporting requirements, and (b) the integration of drinking water protection activities makes it difficult to isolate the effect of any one provision on compliance rates. Despite these difficulties, efforts are underway to develop measures. In March 2005, EPA issued final guidance on source water program measures. EPA is also developing measures for capacity development activities. Measuring long-term outcomes may help to determine if the program's results justify further funding.

EPA's Current Performance Measurement System

EPA's efforts to ensure "Clean and Safe Water" include three sub-objectives that focus on reducing exposure to contaminants in drinking water, in fish and shellfish, and in recreational waters. As outlined in Figure 3 below, Sub-objective 1, "Water Safe to Drink," aims to quantify human health protection with six numeric Strategic Targets and 19 PAMs. The example Strategic Targets and PAMs provided under Sub-objective 1 illustrate the difference between numeric targets and measures of program activity.

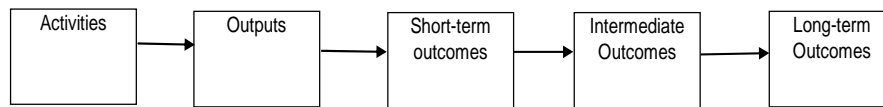
Figure 3 - Relationship between EPA Goals and Program Activity Measures



The Agency’s PAMs are used to monitor progress toward program implementation. The PAMs, collectively, are designed to help EPA ensure that 95 percent of the population served by community water systems receives water that meets all applicable health-based drinking water standards by 2008 (Sub-objective 1). The 95-percent compliance rate is an integral part of EPA's larger "Clean and Safe Water" goal.

EPA's performance measurement system mirrors the “Simple Logic Model” (see Figure 4).

Figure 4 - Logic Model*



*The "Simple Logic Model" pictured in Figure 4 is adapted from McLaughlin & Jordan (1999).

A logic model is a diagram or flow chart that shows how a program should work in theory. The "Simple Logic Model" describes how actions (*activities*) result in the delivery of products, goods, and services (*outputs*). Activities and outputs lead to a series of changes or benefits (*outcomes*), of which there are three types:

- *Short-term outcomes* - Most closely associated with program outputs
- *Intermediate outcomes* - Changes that result from short-term outcomes
- *Long-term outcomes* - A program's final impact

EPA's PAMs measure program activities, which, in turn, support Sub-objective 1 ("Water Safe to Drink"). EPA's Office of Enforcement and Compliance Assurance has described compliance measures like Sub-objective 1 as intermediate outcomes. These intermediate outcomes support EPA's long-term goal of "Clean and Safe Water."

While PAMs have been established for a number of drinking water protection activities, they do not yet exist for all SDWA provisions. For example, none of the Agency's 19 PAMs address operator training or CCRs. While it is clear that the States in our sample have been active in both of these areas since 1996, progress is typically reported in terms of outputs, not long-term outcomes or results.

Given the logic model's potential to better connect outputs to outcomes, an effort is presently underway to develop such a model for the Agency's Public Water System Supervision (PWSS) Program. EPA's Logic Model Development Work Group recognizes that the Agency's current Strategic Targets and PAMs do not fully communicate program accomplishments. The Work Group believes that a logic model will help EPA develop better measures for program accomplishments. They believe that a logic model will also help EPA: (a) develop better baseline measures, and (b) clarify how external factors (those factors outside the Agency's control or influence) affect its performance.

Measuring the Extent of Progress Uncertain

Measuring progress with respect to long-term outcomes is difficult for two reasons. First, EPA has limited State reporting requirements. The reporting requirements shown in Table 4.1 are generally focused on outputs from program

activities, not long-term outcomes or results. Only the capacity development reporting requirement makes mention of outcomes (see Table 4.1).

Table 4.1: Selected SDWA Reporting Requirements

SDWA Activity	Reporting Requirements (Outputs)	Required or Recommended for Reporting
Source Water Assessment Program	States submit a source water assessment program.	Required
	States report number of assessments completed.	Required
Source Water Protection	States report percentage of source water areas that have source water protection strategies implemented.	Recommended
Operator Certification	States submit their operator certification programs to EPA for review and approval.	Required
	Annual Operator Certification Program Submittal – States report number of water systems required to have a certified operator and number of water systems without an Operator in Responsible Charge.	Recommended
Capacity Development	With each year's capitalization grant application, States must summarize the results of assessments of system T/M/F capacity conducted in the preceding year. This information should include summary statistics on the numbers, types, and sizes of systems assessed and the outcome of the assessments. It should also include any changes the State is planning to make to assessment methodology.	Required
Infrastructure	Intended Use Plan – A plan that identifies the intended uses of the funds available to the State loan fund. <ul style="list-style-type: none"> • List of projects • Criteria to distribute the funds • Financial status and short / long-term goals of State loan funds 	Required
Consumer Confidence Reports	Water systems certify to States that they have issued CCRs to their drinking water customers.	Required

In addition, the reporting of recommended information is inconsistent across States. While Arkansas' 2003 Operator Certification Report lists the number of water systems lacking a certified operator, Hawaii's Operator Certification Report for State Fiscal Year 2004 simply lists the number of public water systems that have at least one certified operator on staff. Oklahoma's Operator Certification Report also omits any information about the number of water systems lacking a certified operator. Had all States followed the recommended reporting format, EPA might be able to use this information to help reach 95-percent compliance with drinking water regulations.

Second, the integration of drinking water protection activities makes it difficult to isolate the effect of any one provision on compliance with drinking water regulations. Three States (Hawaii, New York, and South Dakota) claim that high compliance rates are evidence of adequate system T/M/F capacity. However, the

integrative nature of the SDWA provisions makes it difficult to isolate the effect of any one provision on compliance rates. While systems that are in compliance with drinking water regulations may be systems with adequate T/M/F capacity, other factors can also influence system compliance. CCRs, for instance, may foster public support for the rate increases necessary to maintain adequate water system infrastructure.

Despite Uncertainty, Efforts Made to Better Measure Performance

EPA and States are trying to better measure SDWA outputs and outcomes. The Agency is developing measures for source water protection and capacity development. Pennsylvania, meanwhile, is using both quantitative and qualitative methods to track changes in water system capacity over time. Oklahoma developed a method to review the effects of infrastructure improvement projects as well. Oklahoma staff members rank DWSRF loan applicants for assistance. After projects are completed, the staff members return to re-evaluate the water system and determine the extent to which DWSRF funding contributed to public health protection and SDWA compliance

Source Water Protection – In March 2005, EPA issued final guidance on source water program measures in response to recommendations from the OIG for such measures. The guidance establishes three measures for source water protection implementation that will aid efforts to report progress.

T/M/F Capacity – EPA is developing measures for capacity development activities in response to OIG recommendations. A capacity development tool, due out in October 2005, promises to help EPA's regional offices better assess State capacity strategies for new and existing drinking water systems. EPA also expects to issue a national capacity development plan by December 2005. This strategy, together with the capacity development tool, will support the development of new capacity development program measures.

In Pennsylvania, staff members use a Two Tier rating system to measure the effectiveness of the State's capacity development program over time. Tier I ratings are quantitative in nature. If a system does not have a capital budget plan in place, for example, it receives five points. In addition, State field staff members use their familiarity with systems to generate more subjective Tier II rankings of system capacity needs. If system scores improve over time, then the system's T/M/F capacity is likely improving as well. Table 4.2 provides an example of how Pennsylvania water systems are rated. Lower Tier I scores demonstrate improvement as do Tier II scores, which grade from "high" (meaning the system should receive "high" priority for capacity assistance) to "low."

Table 4.2: Example of Capacity Assessment Rating – Knoxville Borough Water Department, Tioga County, Pennsylvania

2001	2002	2003
Tier I - 30	Tier I – 20	Tier I – 15
Tier II - high	Tier II - medium	Tier II – low

Infrastructure – An effort is being made to better measure the impact of drinking water infrastructure improvements as well. The SDWA Amendments require that States prioritize DWSRF projects that are necessary to ensure compliance with the requirements of the Act. The SDWA Amendments also require that States prioritize projects that address serious risks to public health, but it is difficult to assess how effective the DWSRF program is in delivering these public health benefits. In Oklahoma, however, State staff have taken additional steps to measure the extent to which DWSRF-funded infrastructure projects foster public health protection and SDWA compliance

As the SDWA requires, Oklahoma staff rank applicants for DWSRF funding in the State’s annual Intended Use Plan. Those projects that receive sufficiently high scores receive funding. After DWSRF-funded projects are completed, however, the same ranking system is also used to re-score these projects. The State reports the percent point reduction for each project, thereby allowing one to see the extent to which DWSRF funding contributed to infrastructure projects that foster public health protection and SDWA compliance.

EPA also hopes to tie DWSRF activity to compliance at the national level. In Fiscal Year 2007, EPA will begin tracking, as part of the PAM process, the number of DWSRF projects that return systems to compliance. None of the Agency's Fiscal Year 2006 PAMs had explicitly connected program activities to compliance with drinking water quality regulations.

Program Assessment Rating Tool Underscores Importance of Performance Measures

The Program Assessment Rating Tool highlights the importance of performance measures. The tool was developed by the Office of Management and Budget to assess and improve program performance. When the 2006 Budget was formulated, the tool was used to determine whether programs produced their intended results. The President has recommended significant spending reductions or outright elimination of programs that fail to demonstrate results.

The Office of Management and Budget’s recent Program Assessment Rating Tool review of EPA's DWSRF program underscores the importance of demonstrated program results. The review found that while the DWSRF's public health goals were clear, EPA did not link annual DWSRF performance goals to public health protection. The Congressional Budget Office cited this failure when it considered

the savings associated with the elimination of Federal grants for wastewater and drinking water infrastructure in the February 2005 edition of *Budget Options*.

Conclusions

Although the SDWA provisions are integrative in nature, it is vital that an effort continue to be made to measure the outcomes associated with individual SDWA provisions. EPA's work on outcome measures is part of a larger effort to connect program activities to drinking water protection goals. Because drinking water protection resources are limited at the Federal, State, and system levels, it is important that efforts to improve water system performance be evaluated for their effectiveness. Performance measurement can help decision makers determine whether activities are producing their intended results and where scarce resources should be invested.

Recommendation

We recommend that the Assistant Administrator for Water:

- 4-1 Continue to develop measures for individual SDWA provisions like capacity development. We encourage the Assistant Administrator for Water to support the drinking water program's efforts to develop indicators based on a logic model for the Public Water System Supervision Program.

Agency Response and OIG Evaluation

EPA responded to Recommendation 4-1 in a July 21, 2005, letter to the OIG (see Appendix C). We revised the recommendation based on its comments. The Agency noted that it is currently engaged in a number of efforts to identify measures that better demonstrate the effectiveness of activities undertaken to protect drinking water quality and public health. EPA's Office of Ground Water and Drinking Water is focusing on identifying measures that address program outcomes. Many individual Agency programs, meanwhile, have developed internal measures, some of which are focused on program outputs, that help EPA staff understand where additional efforts are needed. We consider these actions to be appropriate for the recommendation.

**Specific Provisions of 1996 SDWA Amendments
(Public Law 104-182)**

<p>Source Water Assessment, §1453(a)</p> <p>States are required to conduct a source water assessment of all public water supply systems within their jurisdiction and to make this information available to the public.</p> <p>Source Water Protection Program, §1454(a)</p> <p>A State may establish a source water quality protection partnership program with an owner or operator of a Community Water System, municipal or local government, to assist in the local development of a voluntary partnership to reduce the presence of contaminants in drinking water, obtain financial or technical assistance, or develop strategies for long-term source water protection.</p>
<p>Operator Certification, §1419(a)</p> <p>EPA must establish guidelines specifying the minimum standards for operator certification and recertification for operators of community water systems and non-transient non community water systems.</p> <p>Operator Certification Expense Reimbursement Grant, §1419(d)</p> <p>Provides reimbursement for the costs of training and certification for persons operating systems serving 3,300 persons or fewer.</p>
<p>Capacity Development</p> <p>§1420(a)</p> <p>To avoid losing a portion of the DWSRF grant, States must have the legal authority or other means necessary to ensure that new systems demonstrate T/M/F capacity prior to commencing operation.</p> <p>§1420(c)(1)(C)</p> <p>To avoid losing a portion of the DWSRF grant, States must develop and implement a strategy to assist public water systems in acquiring and maintaining T/M/F capacity.</p>
<p>State Resources, §1443 (a)(7)</p> <p>Authorizes \$100,000,000 for each of fiscal years 1997 through 2003 for the Public Water System Supervision Program.</p>
<p>State Revolving Loan Funds, §1452(a)(2)</p> <p>Authorizes EPA to award capitalization grants to States, which in turn may provide low cost loans and other types of assistance to eligible public water systems to finance the costs of infrastructure projects needed to achieve or maintain compliance with SDWA requirements.</p>
<p>Public Notification, §1414(c)(4)</p> <p>Each community water system is to mail to each customer of the system at least once annually a report on the level of contaminants in the drinking water purveyed by that system (i.e. CCR).</p>

Prior SDWA-Related Reports

Organization	Title	Date Issued
EPA OIG	<i>Source Water Assessment and Protection Programs Show Initial Promise, But Obstacles Remain</i> (Report No. 2005-P-00013)	March 2005
	<i>States Making Progress on Source Water Assessments, But Effectiveness Still to be Determined</i> (Report No. 2004-P-00019)	May 2004
	<i>Impact of EPA and State Drinking Water Capacity Development Efforts Uncertain</i> (2003-P-00018)	September 2003
Association of State Drinking Water Administrators	<i>Public Health Protection Threatened by Inadequate Resources for State Drinking Water Programs</i>	April 2003
Government Accountability Office (GAO)	<i>Water Infrastructure: Information on Financing, Capital Planning, and Privatization</i> (GAO-02-764)	August 2002
	<i>Drinking Water: Key Aspects of EPA's Revolving Fund Program Need to be Strengthened</i> (GAO-02-135)	January 2002
	<i>Water Infrastructure: Information on Federal and State Financial Assistance</i> (GAO-02-134)	November 2001
	<i>Drinking Water: Spending Constraints Could Affect States' Ability to Implement Increasing Program Requirements</i> (GAO/RCED-00-199)	August 2000
	<i>Safe Drinking Water Act: Progress and Future Challenges in Implementing the 1996 Amendments</i> (GAO/RCED-99-31)	January 1999

Agency Response to Draft Report

MEMORANDUM

SUBJECT: Progress Report on Drinking Water Protection Efforts
Assignment No. 2004-000317, Draft Report

FROM: Benjamin H. Grumbles
Assistant Administrator for Water

TO: Nikki Tinsley
Inspector General

Thank you for the opportunity to comment on your Office's draft report, *Progress Report on Drinking Water Protection Efforts*. I will respond briefly to the overall results, with more detailed technical comments attached.

The report provides a fair overview of the range of tools that were made available to states by the 1996 Amendments to the Safe Drinking Water Act (SDWA). Notwithstanding some of the budgetary and programmatic obstacles states have faced, we believe the flexibility made available by the Act has proven to be critical in helping them to implement programs in a manner that speaks to their individual needs.

With flexibility, however, comes accountability. Your report encouraged EPA to continue to develop and establish measures for the drinking water program. We are currently engaged in a number of efforts to identify better measures for demonstrating the effectiveness of activities carried by EPA and states to protect drinking water quality and public health. For the purposes of supporting EPA's strategic plan, we are focused on identifying high-level measures that speak directly to the outcomes that result when activities are used in a coordinated fashion. Many of the individual programs have also developed internal measures, some of which are focused on outputs that help program managers understand where additional effort is needed.

Your draft report formally recommends that EPA identify methods to improve Consumer Confidence Reports (CCR) using the National Drinking Water Advisory Council (NDWAC) or another work group. We agree with you that CCRs provide important information to customers about the source of their drinking water, contaminants that have been detected in their drinking water, and how the detected levels compare to drinking water standards. Our review of information from Gallup Surveys and the Safe Drinking Water Hotline indicates that the CCRs are being read by some customers. However, there is always room for improvement.

In the fall of 2005, EPA is convening a working group to the NDWAC to evaluate public information requirements under the SDWA. The working group's primary focus will be on providing recommendations to EPA and strategies to improve the message and delivery of public

education materials distributed by water utilities when a lead action level is exceeded under the Lead and Copper Rule. However, EPA is also looking for suggestions on how it can better assist utilities with risk communication challenges related to drinking water. Water utilities and States have indicated a need for assistance in implementing risk communication principles when dealing with public health issues related to drinking water. We expect that efforts carried out by this working group will also help the Agency develop information to improve CCRs.

Thank you again for the opportunity to comment on the draft report. If you have questions regarding our comments, please contact Cynthia C. Dougherty, Director, Office of Ground Water and Drinking Water, at (202) 564-3750.

Attachment

Comments on Draft IG Report
Progress Report on Drinking Water Protection Efforts

Evaluation Report

At a Glance

- 3rd paragraph, last sentence. The drinking water program is focused on improving drinking water quality so that public health is protected. Would recommend adding “and public health protected” to the end of the sentence.
- Sidebar, 3rd bullet under Background. The bullet should be re-worded to more accurately capture intent. Recommend: “Improving the technical, managerial, and financial capacity of water systems”.

Chapter 1

- page 1, under Purpose, bullet b. Please add “and certified” at the end of the phrase (Operators... are adequately trained and certified)
- pages 1 and 2, under Background, 2nd paragraph: Would recommend modifications to some of the sentences to more clearly indicate realistic roles. Water system managers are more likely to take action to address potential contaminants than operators. Would recommend changing 3rd sentence to “If water system managers are knowledgeable of potential contaminants (as a result of the source water assessments), then they have an opportunity to implement source water protection plans or otherwise ensure that treatment can remove the contaminant.”
- page 2, 1st full paragraph. Please note that the Navajo Nation has primacy for drinking water.

Chapter 2

- page 4, paragraph under EPA efforts. This paragraph seems to be combining both assessment and protection activities without making any distinction between the two. It is incorrect to imply the same level of funding and oversight for assessment and protection activities. We made a similar comment in responding to the IG report *Source Water Assessment Program Shows Initial Promise, But Obstacles Remain*.

We recommend that the report clearly distinguish between the Source Water Assessment Program (SWAP), i.e., the program Congress authorized under Section 1453 of the Safe Drinking Water Act (SDWA), and source water protection strategies and activities, which are voluntary at the national, state and local levels. The draft report should use the term SWAP only to refer to assessment program activities. All other activities should be referred to as source water protection. This difference comports better with SDWA’s statutory approach and the general use of these terms in the field.

- page 5. 2nd paragraph. The Source Water Assessment and Protection Programs Guidance was published in 1997 at the initiation of the program. It does not appear to be so timely in discussing where we are now. I would recommend also talking about how the Office of Ground Water and Drinking Water is reaching out beyond its own program to encourage use of other tools to protect sources of drinking water. A suggested paragraph is provided below. Alternatively, you could talk about how we are working with Clean Water Act programs to make sure that drinking water sources are identified and protected by water quality standards and associated CWA programs (we have Strategic Plan measures to drive progress).

EPA is communicating the importance of source water assessments as a tool to assist in the implementation of drinking water standards. The Agency is also reaching out to other programs to provide them information about how their authorities can help protect sources of drinking water. For example, in 2004 the Office of Ground Water and Drinking Water and Office of Underground Storage Tanks entered into a Memorandum of Understanding aimed at reducing the threat that leaking underground storage tanks (USTs) pose to drinking water in communities throughout the nation. EPA is encouraging that EPA Regional staff and states target UST compliance inspections in source water areas.

- page 6, paragraph under Third Party Involvement. The draft report states that “A National Rural Water Association staff person stated that the Association has completed and is presently implementing approximately 100 Source Water Protection Programs”. This number is inaccurate and low, unless they’re just talking about the few states mentioned earlier in the same paragraph (Arkansas, North Dakota and South Dakota). You may wish to incorporate the following info on the NWRA partnership:

There are 47 wellhead technicians operating in 48 states (not AK or HI), resulting in close to 10,000 CWSs with wellhead protection plans.

As of March 2005, 19 source water protection specialists were working in 361 project areas across the country. There will soon be source water protection specialists in 34 states. This should increase the systems served to approximately 1900, and increase the population served by NRWA specialists to roughly 6.5 million.

- page 6, 1st paragraph under EPA efforts (for Op Cert), last sentence. It would better to refer to the “Expense Reimbursement Grant Program” when discussing the program and refer to it as a grant when you are referring to specific grants to states.
- page 7. 1st paragraph. Would rewrite first paragraph to clarify information.

“Small system operators were reported as often lacking the time or resources necessary to attend training (see Chapter 3). The Expense Reimbursement Grant program, funded from the national DWSRF appropriation, provided grants to States to help offset the costs of training small water system operators. As of December 2004, States had used \$14

million of the Expense Reimbursement Grant Program's allocation of \$135 million for activities including: ...[bulleted list]"

- page 7, 1st paragraph under State Efforts. Would recommend putting "Operator in Responsible Charge" in quotes because it seems more like a term of art.
- page 7. 1st full paragraph. As noted before, recommend referring to "Expense Reimbursement Grant Program".
- page 8, 9. General Comment. It is unfortunate that the IG did not focus on the value that the New Systems Program under the capacity development program has had. It would have been interesting to hear how the eight states have developed programs to ensure that new systems have adequate capacity, and are therefore less likely to become problems at a later time.
- page 8, 1st full paragraph, item (3): re-word to read: "consider operator certification and training a water system capacity building activity that should be supported through a system's overall operating budget".
- page 10. 2nd bullet under State Efforts. Oklahoma is not unique. All states are required to evaluate a utility's technical, financial and managerial capacity as a condition for funding under the DWSRF program - it's in the law and regulations for the program.
- page 11, 2nd paragraph. This paragraph makes it seem like the only activities eligible under the DWSRF set-asides are related to source water protection. This is not accurate. Also would recommend giving a sense of how funds have been taken for set-asides. Would recommend changing first sentence as follows. "While states can fund infrastructure loans with their DWSRF allotments, they may also use a portion of this money to support their drinking water programs, activities that enhance water system management (e.g., capacity development, operator certification, technical assistance) and source water protection. Through June 2004, States had reserved 16% of their DWSRF grants to fund these types of activities."
- page 11, 1st paragraph under State Efforts, first sentence. Should note 1% statutory minimum. "EPA is responsible for the oversight of DWSRF funds, with States receiving annual allocations in proportion to the needs identified in EPA's periodic Needs Surveys (provided that each State receive a 1% minimum share).
- page 11, 1st paragraph under State Efforts, last sentence. States must develop an IUP every year. Recommend be changed to "All of the States visited had created ~~an~~ Intended Use Plans."
- page 11, 2nd paragraph under State Efforts. This paragraph lacks relevance because it gives no sense of what the percentages are related to and the table is mislabeled. Table 2.1 should be renamed to "DWSRF Assistance Provided to Projects as a Percent of Funds Available". Recommend rewriting paragraph as follows.

“EPA tracks the programmatic and financial use of funds in the program. Through June 2004, states had provided close to \$8 billion for 3,800 drinking water infrastructure projects. States had used 83% of the total funds available in the program to provide project assistance. The average DWSRF utilization rate for the eight States visited (80%) was slightly less than the national average; though this average is affected by Hawaii’s low utilization rate of 32% (see Table 2.1).”

- page 12, 1st paragraph. The report should expand on what EPA has done (which is considerable). Recommend adding a sentence after the first sentence. “The Agency has developed reports and fact sheets to share state experiences in the program. EPA has also provided extensive training on financial and programmatic issues to state staff working in the DWSRF and Clean Water SRF programs.”
- page 16. 1st and 2nd paragraph. The two paragraphs appear to be redundant. At a minimum, the first sentences in each paragraph are repetitive.
- page 16, Conclusions, 3rd sentence. The current wording makes it sound like a new class of systems just came into effect. For clarity, recommend that sentence be reworded as follows. “All community and nontransient noncommunity water systems (such as schools and hospitals) are now required to have certified operators, and those operators are required to take the appropriate training to ensure proper system operations.”
- page 16, Conclusions, 4th sentence. The creation of formal state capacity development programs is enabling them to provide more targeted assistance. Therefore, recommend that sentence be changed to reflect this. “Water systems are receiving more targeted T/M/F capacity assistance.”

Chapter 3

- page 17, 2nd bullet. As stated, this is not clear and may not fairly represent concerns we have heard. Recommend rewriting as “There is tension between using the DWSRF set-asides to fund staff and programs and using funds for water system loans.”
- page 20, 2nd paragraph under Protecting Source Waters. The report states that “Until recently, State source water protection work was also complicated by the fact that EPA had not issued final measures for the source water protection program”. It is an overstatement to say that protection work was complicated by this. It is more accurate to say that EPA’s ability to report on what has been accomplished was more difficult until parties agreed on appropriate national measures.

You might want to consider changing last sentence to the following to more completely describe the issue. “EPA’s guidance for reporting on source water assessment and protection measures, issued on March 7, 2005, will help States set defined measurable goals for their source water protection programs, which is a key building block to overall state watershed approaches.”

Chapter 4

- page 25, 1st paragraph, last sentence. Sentence seems too absolute - there might be more gray than black & white. “Measuring long-term outcomes may help to determine if the program’s results justify further funding.”
- page 26, paragraph in middle of page. Would edit sentence to more completely describe purpose of measure. “The PAMs, collectively, are designed to help EPA ensure that the public’s exposure to contaminants in drinking water is reduced by ensuring that 95...”
- page 27, 4th paragraph. It appears that maybe something was lost in the editing process. This paragraph has no context - and hasn’t been discussed previously. It’s difficult to tell if it’s referring to a greater Agency effort of the effort in the OGWDW Drinking Water Protection Division to create a logic model for the Public Water System Supervision Program.
- page 28, in Table 4.1, Capacity Development row. We are uncertain of the source of the current information in the table. On June 1, 2005, the program released new reporting content which is not reflected in the current description. We recommend the text be changed to reflect the current requirements.

“States report annually on their targeted efforts to improve the technical, managerial, and financial capacity of public water systems, which includes a discussion of the broad range of activities designed to assist systems. EPA issued new, streamlined reporting content to states on June 1, 2005 to more effectively and timely evaluate program implementation, focusing on outcomes. The reports are due to EPA within 90 days of the state or federal fiscal year.”

- page 28, in Table 4.1, Infrastructure row. The DWSRF program also requires a Biennial (or Annual) Report that reports on the actual use of funds. EPA also collects annual DWSRF programmatic and financial information from states to help report on the program.
- page 28, 1st paragraph under table. Would delete last part of the sentence (after “information”) or edit to more clearly state intent. It’s dubious whether use of a reporting format will help us reach the 95 percent compliance rate.
- page 29, Under T/M/F Capacity, 3rd sentence. Please reword to clarify that we are developing a Capacity Development Strategic Plan, not a strategy. Also our assessment tool will assist the regions in assessing the **New Systems Program** as well as the Existing Systems Strategies. This is not reflected in the paragraph.
- page 30, 3rd paragraph under Infrastructure. EPA had always collected information on the number of DWSRF projects that return systems to compliance; it’s just that it will now be formally reported as part of the PAM process.

- page 31, recommendation 4-1. Similar to the comment on page 27. If this is about the PWSS logic model, then the text is written too broadly. If it is focused on the PWSS effort, the second sentence should read “We encourage the Assistant Administrator for Water to support the drinking water program’s efforts to develop indicators based on a logic model for the Public Water System Supervision program.
- page 32, Capacity Development Row: To avoid DWSRF withholding, states are also required to have a program to ensure that new systems have capacity (see SDWA 1420(a)). Please add sentence to reflect this fact. “States must also have the legal authority or other means necessary to ensure that new systems demonstrate TMF capacity prior to operation.”

Supplemental Report

- page S-1, 1st paragraph under Outputs/Outcomes. Virginia’s wellhead program was approved by EPA in June 2005, so text should be amended to indicate that all 50 states now have approved wellhead programs.
- page S-1, 2nd paragraph under Outputs/Outcomes. 2nd sentence refers to Oklahoma prohibiting “open-top reservoirs”. It is more likely that they closed “open-top finished water reservoirs” - not the big raw water supply reservoirs, which are likely not covered. As an aside, it’s dubious whether covering finished water reservoirs qualifies as “source water protection”.
- page S-2, 1st paragraph under Outputs/Outcomes. Per earlier comments, recommend that report update source water assessment data. The last sentence should be corrected to reflect accurate information on NRWA (see comment for page 6). Also, the last sentence should be changed to indicate that plans “are being implemented” because it is an on-going process.
- page S-4, 1st paragraph: According to Table B-1, all eight states (not seven) had some form of an operator certification program prior to the 1996 amendments.
- page S-5, 1st paragraph under Changed Activities. 2nd sentence. “Additionally, Congress authorized the Federal Expense Reimbursement Grant program”
- page S-18, Needs Estimates. You might want to update report to reflect new Needs Survey (released in June 2005). Total 20 year needs were \$277 billion (in 2003 dollars).
- page S-21, 1st paragraph. Table E-2 is mislabeled - it should be “Cumulative Percent Expended” To give a more complete story, would recommend changes to text.

“All States rely on DWSRF set-aside funding to implement their drinking water protection activities. Through June 2004, the eight States reserved \$247.2 million for set-asides, which was 23.7% of their grants (compared to national average of 16%). Table E-

2 lists the cumulative percent of the reserved set-aside funds that had been expended by the States through June 2004. ...”.

Distribution

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