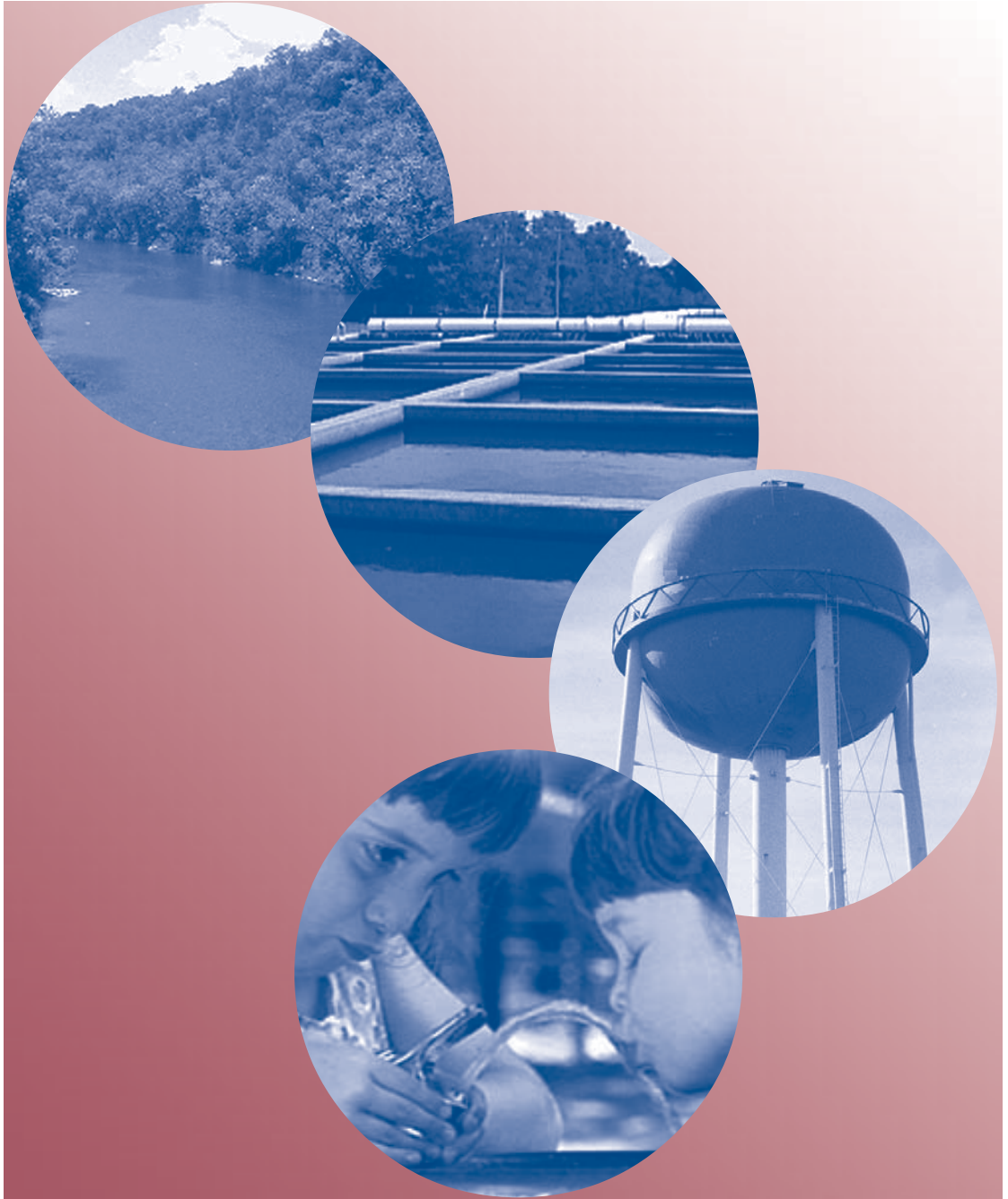




# The Drinking Water State Revolving Fund Program

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FINANCING AMERICA'S DRINKING WATER  
FROM THE SOURCE TO THE TAP



- REPORT TO CONGRESS

## Message from the Administrator

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Living in this great nation of ours, it is easy to take many routines of our daily life for granted. One of these is our daily action to turn on the tap for a glass of water to drink. We are fortunate that, throughout this country, local communities and private businesses operate public water systems that provide us safe and clean drinking water. Ensuring that our drinking water is safe from the source - be it a mountain lake or an aquifer - to the tap relies on the concerted efforts of thousands of public water system owners, operators and managers and staff of state drinking water programs.

Just as we rely on water from our taps, that water relies on infrastructure to carry it from its source to the plant where it is treated to remove contaminants and from the plant to the customers. Billions of dollars have been invested in our nation's water infrastructure and we must remain ever vigilant to ensure that it does not fall into disrepair that would result in contamination of our drinking water. In 2001, the Environmental Protection Agency released a survey of drinking water infrastructure needs which found that public water systems must invest \$151 billion in infrastructure improvements over the next twenty years to continue to provide safe drinking water to consumers. These needs are great, and can represent a particular burden for our nation's small water systems, which have a small customer base against which to distribute costs.

The 1996 Safe Drinking Water Act Amendments authorized the Drinking Water State Revolving Fund (DWSRF) grant program to help systems, especially those with great economic need, finance infrastructure improvements needed to protect public health and ensure compliance with drinking water standards. The programs are managed by states, who best know the needs of the systems under their jurisdiction. States have used DWSRF funds to help water systems make needed infrastructure improvements, develop programs to improve the management of water systems, and establish and expand programs that protect sources of drinking water.

The DWSRF has proven to be a success - communities across the country have benefitted from DWSRF assistance and states have strengthened their drinking water programs. As we look to the future and the challenges of aging infrastructure, increasing population, and threats to our water resources, the DWSRF should serve as a critical program in ensuring public health protection and will help each of us maintain confidence as we turn on the tap every day.



Christine Todd Whitman



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# The Drinking Water State Revolving Fund Program

Financing America's Drinking Water From the Source to the Tap

## Report to Congress

*United States  
Environmental Protection Agency*

*Office of Water  
(4606M)*

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## Executive Summary

In the 1996 Amendments to the Safe Drinking Water Act (SDWA), Congress authorized the Drinking Water State Revolving Fund (DWSRF) program — a new funding program to help public water systems make infrastructure upgrades necessary to ensure the continued provision of safe drinking water and help states undertake activities to support their drinking water programs. Under the DWSRF program, EPA awards capitalization grants to states, which in turn provide low-cost loans and other types of assistance to public water systems to finance the costs of infrastructure projects needed to achieve or maintain compliance with SDWA requirements. States are also authorized to set aside a portion of their capitalization grants to fund a range of activities including source water protection, capacity development, and operator certification.

This Report to Congress describes the progress that states have made in the DWSRF program since the first grant was awarded in March 1997. The report uses information provided to EPA by states through state fiscal year (SFY) 2001 (June 30, 2001). In its first five years, the DWSRF program has proven to be an important tool in helping states and public water systems address infrastructure needs and public health protection.

### ▼ Infrastructure Funding

Using funds made available through federal grants, state match, net bond proceeds, transfers from the Clean Water State Revolving Fund program (CWSRF), earnings and repayments, states provided public water systems with close to 1,800 loans totalling \$3.8 billion. This represented 72 percent of the available funds—\$1.4 billion remained available for loans. Loans in the program must have interest rates that are less than market rate and repayment terms of no more than 20 years. Weighted average interest rates for loans in the program have generally ranged between 2 and 4 percent. When compared to the 20 year Bond Buyer Index interest rate (a proxy for market rate), which ranged between 5.1 and 5.8 percent for the same period, it is apparent that loan recipients in the program benefited from a considerable subsidy.

Congress acknowledged that even the low interest rates made available through the program may not make these loans affordable for some systems. Therefore, the SDWA allows states to provide additional subsidies (e.g., principal forgiveness, negative interest rate loans) to systems identified as serving disadvantaged communities. States may also extend loan terms to up to 30 years for these systems. States determine which systems are disadvantaged in accordance with state-developed affordability criteria. Twenty-nine states have provided assistance to systems through a disadvantaged assistance program. Sixteen states offered principal forgiveness, 18 offered extended loan terms, and 10 offered both types of assistance.

**DWSRF Program at a Glance** (through June 30, 2001)

<b>Fund</b>	
Total Funds Appropriated*	\$4.4 billion
Total Funds Available to States	\$4.2 billion
Total Grants Awarded to States	\$3.6 billion
State Contributions	\$773 million
Net Leveraged Bond Proceeds (15 states)	\$1 billion
Total Amount Transferred from CWSRF (8 states)	\$147 million
Total Funds Available	\$5.2 billion
Total Loans Executed (#, \$)	1,776, \$3.8 billion
Loans to Small Systems (#, \$)	1,338, \$1.5 billion
Percent projects that have started construction	89%
Percent projects completed	46%

<b>Set-Asides</b>	<i>Reserved (% of grant awards)</i>	<i>Expended</i>
Set Asides Reserved	\$576 million (15.8%)	\$244 million
Administration and Technical Assistance	\$135 million (3.7%)	\$75 million
Small System Technical Assistance	\$54 million (1.5%)	\$24 million
State Program Management	\$147 million (4.0%)	\$68 million
Local Assistance and Other State Programs	\$240 million (6.6%)	\$77 million

\*Appropriations through FFY 2002 are \$5.3 billion

give priority to projects that are needed to protect public health and ensure compliance with the SDWA. While solutions to public health and compliance problems may require a system to address any of the four categories of infrastructure (transmission and distribution, treatment, source and storage), many projects require costly treatment solutions.

### ▼ Set-Asides

The 1996 Amendments also included several other new programs and requirements aimed at strengthening the technical, financial, and managerial capacity of public water systems and preventing contamination of sources of drinking water. The law allowed states to use up to 31 percent of their grants to support these types of activities. States must describe how funds are used in workplans, most of which range from one to three years.

Nationally, states have reserved approximately 16 percent of federal grants for these purposes, although on an individual state basis the amount reserved has ranged from 7 to 31 percent. Through SFY 2001, states had expended 43 percent of the \$576 million in funds they reserved to conduct set-aside activities.

The SDWA also placed a special emphasis on providing assistance to small systems serving 10,000 people or fewer, requiring that states provide a minimum of 15 percent of their available funding to small systems. States have far exceeded the requirement, with 41 percent of loan funds going to small systems. The actual percentage of loan agreements provided to small systems (75 percent) is considerably larger, which reflects the fact that the average dollar amount of loans to small systems is less than that for larger systems.

When looking at how funds have been directed in the DWSRF program, treatment represented the largest percentage of project costs (43%), followed by projects to address transmission and distribution needs (32%).

The law requires that states

EPA had concerns about slow progress in expenditures of set-asides, but expenditures have increased from 9 to 42 percent from SFY 1998 through 2001.

States have funded a wide range of activities through the set-asides that fall under several broad categories, such as:

- Enhancing the technical, financial, and managerial capacity of public water systems in an effort to make systems more sustainable and to promote long-term compliance with the law.
- Enhancing operator certification programs to ensure that operators of public water systems are properly trained in the operation of facilities and meeting requirements under the law.
- Providing technical assistance to small systems, which often have limited financial resources and face a great challenge in meeting new SDWA requirements.
- Facilitating partnerships with institutions of higher learning, water system professional and trade organizations, government officials, and the general public to carry the message of the importance of drinking water safety.
- Enhancing support for state drinking water programs to implement new programs and build existing programs in the areas of regulatory oversight, data systems, and source water protection.
- Promoting source water protection to manage potential sources of contamination and prevent pollution from reaching sources of drinking water.

### ▼ Financial and Programmatic Effectiveness

The report includes a discussion of several factors considered in an effort to gauge the progress and effectiveness of the program. In the last few years, states have worked hard to develop and implement successful programs. States have received 87 percent of the federal grants available to them and initiated construction on projects for 89 percent of the executed loan agreements. When considering the return on federal investment in the program, the numbers are impressive. States have used several sources to add funds to the program, exceeding the amount of federal dollars provided. After removing federal disbursements for set-asides, the national disbursements as a percent of net federal outlays for infrastructure projects is 160 percent. In other words, for every \$1 in funds drawn from the federal government, states have disbursed \$1.60 for project construction.

The SDWA requires that states give priority to projects that protect public health, ensure compliance with the SDWA, and help systems with the greatest economic need on a per household basis. EPA takes the view that all of the projects funded through the program will, in some way, benefit public health now and in the future. More than one-third of the agreements funded have gone to systems that are out of compliance with health-based drinking water standards, to develop projects that will return or bring them into compliance. With respect to addressing economic need, 26 percent of all loans have been provided to systems identified as disadvantaged. The program has also given many small systems access to infrastructure financing and technical assistance through the set-asides.

## ▼ Program Issues and the Future

As with any new program, states have faced challenges in implementing the DWSRF program. States have had to make decisions on how to direct funds and structure programs in a manner that addresses their highest priority needs and ensures that funds will be available to provide assistance in the future. At times, these goals can compete with one another, particularly in determining how much of the funding to direct to set-asides, and in making decisions on the types and amount of assistance provided to disadvantaged systems.

EPA has tried to work in partnership with states to identify solutions to several issues impacting implementation of the program. Addressing future challenges will likewise require partnerships between public water systems; local, state and federal governments; and the general public. These challenges include addressing drinking water infrastructure needs, ensuring the sustainability of public water systems, and ensuring the security of facilities. While the DWSRF primarily addresses the first of these challenges, it can also be structured and implemented in a manner that addresses the others as well.

For example, states are using DWSRF set-aside funds to implement capacity development strategies focused on improving the technical, financial, and managerial capacity of water systems. States can encourage use of tools that enhance sustainability such as rate structuring, asset management, consolidation, public-private partnerships, privatization (where appropriate), and use of affordable technology through their DWSRF set-asides or by including conditions within infrastructure loans. With respect to security, states can help systems assess their vulnerability to security threats and then take measures to address those threats.

The report discusses several issues that arose during the early years of program implementation as well as issues raised by states and other stakeholders that could benefit from changes to current law. For example, EPA agrees with stakeholders that have requested an extension of the flexibility to transfer funds between the two SRF programs. EPA has worked through many issues affecting the program using the support of a state/EPA work group on SRF implementation. The Agency has also worked to reach out and coordinate with other stakeholders and their representative associations and has developed reports and fact sheets to reach parties beyond state DWSRF program managers.

EPA looks forward to addressing other issues which may arise in the future and identifying ways to enhance implementation of this important public health program. While the program already supports many principles that guide how we look towards the future, states and EPA can work to enhance the DWSRF as a tool through which to encourage integrated use of all local, state, federal, and private sources of funding; promote use of innovative and efficient technology; encourage rates that are appropriate to cover the costs of supplying drinking water; promote comprehensive strategic planning; and help states to manage their public health programs.



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# Acronyms

ACH	Automated Clearing House
ASAP	Automated Standard Application for Payments
AWWA	American Water Works Association
CCR	Consumer Confidence Report
CWA	Clean Water Act
CWS	Community Water System
CWSRF	Clean Water State Revolving Fund
D.A.	Disadvantaged Assistance
DWNIMS	DWSRF National Information Management System
DWSRF	Drinking Water State Revolving Fund
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
FFY	Federal Fiscal Year
FR	Federal Register
GAO	General Accounting Office
GIS	Geographical Information System
HUD	U.S. Housing and Urban Development
IUP	Intended Use Plan
LA	Local Assistance
LOC	Letter of Credit
MTBE	Methyl Tertiary-Butyl Ether
NCWS	Non-Community Water System
NTNCWS	Non-Transient Non-Community Water System
PPL	Project Priority List
PWS	Public Water System
PWSS	Public Water System Supervision
RUS	U.S. Department of Agriculture's Rural Utility Service
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SDWIS/FED	Safe Drinking Water Information System/ Federal Version
SFY	State Fiscal Year
SPM	State Program Management
SRF	State Revolving Fund
SSTA	Small System Technical Assistance
TNCWS	Transient Non-Community Water System

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# I Introduction

The United States has one of the safest water supplies in the world. This fact is a testament to the efforts of thousands of people who at the local, state, and federal levels have worked to ensure that citizens have access to safe and clean drinking water. Ensuring that drinking water remains safe in the future is the shared responsibility of local citizens, private business, local government, and state and federal agencies.

In the 1996 Amendments to the Safe Drinking Water Act (SDWA), Congress authorized a new federal funding program to give states resources with which to address their most pressing public health needs. The Drinking Water State Revolving Fund (DWSRF) program represents the first significant federal source of funding for drinking water infrastructure administered by states. Through federal fiscal year (FFY) 2001, Congress appropriated \$4.4 billion for the program\*. With additional contributions, including state matching funds and proceeds from issuing bonds, states have made more than \$5.2 billion available for funding infrastructure projects needed to help protect public health and ensure compliance with the SDWA. States have also reserved \$576 million to fund activities and



## West Virginia

### Addressing Multiple Compliance Problems in West Virginia

Founded in 1888, the Town of Bramwell was home to coal barons and their fortunes during the early 1900's; most evidence of these past riches has all but disappeared. Bramwell's water system had several serious problems. The town originally had two sources of drinking water to serve its 273 customers. The primary source, a ground water well, had a treatment plant which did not need a full-time operator. The surface water source, an impoundment, was used only in emergencies. In 1996, the finished water tasted and smelled like petroleum and the well, determined to be contaminated, was taken offline and sealed. This left Bramwell relying solely on its surface source, which tended to dry up in the summer and during drought conditions. Additionally, the surface water treatment plant was over 30 years old and in poor condition despite the thousands of dollars spent to upgrade it and required a full time class II operator, which Bramwell could not afford. Because the plant had no operator, the town was under a boil water advisory for extended periods of time. On top of these problems, the system was losing 50% of its treated water due to a deteriorated distribution system.

Another small water system, the Bluewell Community System (serving 95 customers), was under an Administrative Order from the West Virginia Bureau for Public Health for state drinking water violations. The Bluewell water source was under the influence of surface contamination and did not provide the required filtration. To ensure that the residents in these two "run down" systems had access to a reliable and safe source of drinking water, a plan was developed to consolidate both systems with the Bluewell Public Service District (PSD), a well-operated system with an adequate water supply. A 32,000 foot water main was extended from the Bluewell PSD to Bramwell and the Bluewell Community System customers. The extension was also able to provide service to 36 new customers who were not previously connected to any public water supply. The project was funded by a \$1.3 million DWSRF loan as well as a \$1.25 million U.S. Housing and Urban Development Small Cities Block Grant.

\*Appropriations through FFY 2002 are \$5.3 billion.

programs that support drinking water programs, enhance water system management, and protect sources of drinking water.

In the SDWA Amendments, Congress required that EPA report on the status of state loan funds through FFY 2001. This Report to Congress describes the progress that states have made since the first grant was awarded in March 1997. This report uses information provided to EPA by states for the DWSRF National Information Management System (DWNIMS), an annual collection of DWSRF data based on a state fiscal year (SFY), which runs from July to June. Because the DWNIMS is used as the primary resource for information, except where noted otherwise, this report reflects data collected through June 30, 2001 (i.e., SFY 2001).

This report gives an overview of the DWSRF program and attempts to answer several questions, including:

- Why did Congress create the DWSRF program?
- What are the basic characteristics of the DWSRF program?
- How have states structured their DWSRF programs?
- What types of assistance are states providing, who is getting the assistance, and what are the dollars doing?
- How effective, both financially and programmatically, are state DWSRF programs?
- How are set-asides being used and what are they accomplishing?
- What issues have been associated with implementation of the program?
- What is the future of the DWSRF program?

This report reflects the national status of the program. One of the important things to understand is that there is no one DWSRF program—the national program is comprised of 51 DWSRF programs, one for each of the 50 states and Puerto Rico. Each is unique, which is to be expected given that the program is intended to give states flexibility with accountability. The main body of this report discusses the status of the national program. Chapters 2 through 4 provide background information on the national program and the structure and features of state programs. Chapters 5 through 8 provide detailed information on the status of state revolving loan funds, the types of activities funded by states, and an assessment of the financial and programmatic effectiveness of the program. Chapters 9 and 10 discuss the uses of funds set aside from state grants to conduct other programs and activities that support drinking water and health protection. Finally, Chapters 11 and 12 discuss some of the issues associated with implementation of the program and challenges for the future. Overviews of each states' program are provided in Appendix A. While the snapshots cannot tell the entire story of a state's program, they provide a starting point for further investigation. Appendix B provides the full suite of reports (national and state by state) generated by the DWNIMS reporting system, the national results of which are provided within the text of this report. Appendix C provides a list of all documents referenced in this report.



# 2

## Establishment of the DWSRF

The United States has more than 165,000 public water systems. These systems can be divided into three types: community, non-transient noncommunity, and transient noncommunity. Table 2-1 presents the definition of each type of water system, the number of systems, and the population served by those systems. The table shows that the universe of water systems is diverse. This diversity is apparent when looking at how systems are distributed as a function of the population they serve. The vast majority of systems are very small systems that serve fewer than 3,300 people. However, the majority of the population (81%) is served by the seven percent of community water systems that serve

**Table 2-1 Public Water System Inventory Data**

Active, current systems, from Safe Drinking Water Information System/Federal version (SDWIS/FED) FFY 01Q4 frozen inventory table.

<b>System size</b> by population served		Very Small 500 or less	Small 501-3,300	Medium 3,301-10,000	Large 10,001-100,000	Very Large >100,000	Total
<b>CWS</b>	# systems	31,262	14,241	4,498	3,432	350	53,783
	Pop'n served	5,094,790	20,096,911	26,092,461	96,516,416	116,344,551	264,145,129
	% of systems	58%	26%	8%	6%	1%	100%
	% of pop'n	2%	8%	10%	37%	44%	100%
<b>NTNCWS</b>	# systems	17,133	2,847	93	19	3	20,095
	Pop'n served	2,386,179	2,814,630	459,388	545,943	380,046	6,586,186
	% of systems	85%	14%	0%	0%	0%	100%
	% of pop'n	36%	43%	7%	8%	6%	100%
<b>TNCWS</b>	# systems	88,729	2,691	121	49	3	91,593
	Pop'n served	7,471,798	2,702,365	667,436	1,242,141	735,001	12,818,741
	% of systems	97%	3%	0%	0%	0%	100%
	% of pop'n	58%	21%	5%	10%	6%	100%
Total # systems		137,124	19,779	4,712	3,500	356	165,471

**CWS** = Community Water System: A public water system that supplies water to the same population year-round.

**NTNCWS** = Non-Transient Non-Community Water System: A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals which have their own water systems.

**TNCWS** = Transient Non-Community Water System: A public water system that provides water in a place such as a gas station or campground where people do not remain for long periods of time.

Note: Some numbers may not add exactly due to rounding.

more than 10,000 people. Many smaller water systems face challenges because they lack the economies of scale that systems serving larger communities have. Large systems may also face challenges in making upgrades to aging infrastructure. Some of these large systems can also be challenged by having to spread costs across a declining population base as residents move out of large cities.

A substantial amount of money has gone into building the infrastructure needed for our nation's water systems. Most of this capital spending has been financed through local sources, including water rates and tax revenues. Before the DWSRF program was established, the primary source of federal funding for drinking water was through the U.S. Department of Agriculture's Rural Utility Service (RUS), which focuses on building systems to serve rural communities. According to a General Accounting Office (GAO) report issued in 2001, between fiscal years 1991 and 2000, the RUS provided more than \$11.5 billion in grants and low interest loans for drinking water and wastewater infrastructure projects. The U.S. Department of Housing and Urban Development's Community Development Block Grant program provided \$4 billion in block grants for drinking water and wastewater over the same time period.

With passage of the Clean Water Act (CWA) in 1972, there was a recognition on the part of the nation and the federal government that many of our surface and coastal waters were in serious trouble. Many water bodies were not safe for fishing, swimming, or as sources of drinking water. In order to reduce loadings of pollutants to waterbodies, the federal government initiated the Construction Grants program to construct and upgrade wastewater treatment facilities throughout the nation. Between 1972 and 1990, EPA awarded \$50 billion in grants to communities to help them construct and improve their facilities for treating wastewater. Tremendous improvements in surface waters over the past 30 years are a direct benefit of investment through EPA's Construction Grants program.

In the late 1980's, Congress made a decision to replace the Construction Grants program with a new program that states could use to address their most critical water quality needs. The Clean Water State Revolving Fund (CWSRF) program was authorized in the 1987 Amendments to the CWA. The program replaced direct grants to municipalities with grants to states to establish revolving loan funds. States are responsible for setting priorities, selecting projects and managing the programs which fund the construction of projects for publicly-owned treatment works and projects to address estuarine and nonpoint source pollution problems.

#### **What is a revolving fund?**

Revolving funds are not unique to EPA. A revolving fund is essentially an account that is repeatedly expended, replenished, and then expended again. For the EPA programs, funds deposited into the SRF are loaned at low interest rates to eligible borrowers. Loan principal repayments and interest revenues are subsequently used to make new loans.\*

Since 1988, Congress has appropriated more than \$18 billion for the CWSRF program. With the federal dollars serving as seed money for their revolving funds, states have been able to provide more than \$34 billion in assistance to fund about 11,000 projects. The program is widely viewed as a successful partnership of federal and state government in addressing important environmental problems.

In 1996, the SDWA underwent significant revisions which included changes to EPA's approach for

\*A more technical definition identifies a revolving fund as an expenditure account that is credited with offsetting collections that are generated by, and earmarked to finance, a continuing cycle of business-type operations.

setting health-based standards for contaminants in drinking water. Fundamental to the framework for the SDWA Amendments was the recognition that drinking water protection is better achieved through a multi-barrier approach—by addressing protection from the source of drinking water to the tap. New programs were established to encourage practices that would enhance the management of water systems. States were required to develop programs to: (1) improve the technical, financial, and managerial capacity of water systems to ensure that they are sustainable, and (2) ensure that operators of such systems are adequately trained. Because preventing contamination of a drinking water source may be more cost-effective than treating a source that has been contaminated, the SDWA Amendments also required that states assess the potential sources of contamination for all drinking water sources within their borders.

Congress also recognized that there was a need for funding drinking water infrastructure to help systems protect public health and ensure compliance with the requirements of the Act. The SDWA Amendments established the DWSRF program to help states and public water systems advance drinking water protection. The state-run program is intended to help states finance high priority drinking water infrastructure projects.

The DWSRF program was modeled in part after the CWSRF program. However, there are significant differences between the two programs (Table 2-2, page 6). One of the most significant differences is the flexibility given to states to use a portion of their grant funds (i.e., set-asides) to help advance the other new programs authorized by the Amendments. States were also given additional authority to address the particular needs of disadvantaged communities for infrastructure funding. In order to help identify the infrastructure needs in the country, the SDWA Amendments required that EPA conduct a survey of drinking water infrastructure needs in each state. The results of the survey are used to determine the amount of funding each state receives from annual appropriations for the DWSRF program, with the condition that each state receive a minimum of one percent of the funds available to states.

**Table 2-2 Comparison Between CWSRF and DWSRF Programs**

	<b>CWSRF</b>	<b>DWSRF</b>
Initiated	1988	1997
Authorization	\$8.4 billion (FFY 1989-1994)	\$9.6 billion (FFY 1994-2003)
Appropriations through FFY 2001	\$18 billion	\$4.4 billion
Assistance provided through SFY 2001	> \$34 billion	> \$3.8 billion
Eligible Uses of Fund (types of assistance)	Loans, Refinance, Insurance, Guarantee, Purchase Debt, Security for Leveraging, 4% grant for administration	Loans, Refinance, Insurance, Guarantee, Purchase Debt, Security for Leveraging
Loan Terms	Interest between 0% and market rate, 20 year terms	Interest between 0% and market rate, 20 year terms, 30 year terms for disadvantaged systems
Eligible Systems	Publicly-owned treatment works <i>Communities, individuals, non-profit groups, etc.</i>	Publicly and privately-owned community and non-profit noncommunity drinking water systems
Eligible Projects	Projects for wastewater treatment plants <i>Nonpoint source and estuary projects identified in state nonpoint source or comprehensive conservation and management plans</i>	Projects to upgrade/replace drinking water source, treatment, storage, transmission and distribution
Ineligible Projects	O&M	Dams, Reservoirs (unless for finished water), Water Rights (unless purchase through consolidation), O&M
Set-Asides	No	Yes, up to 31% of grant (for administering DWSRF, public water system supervision, source water protection, capacity development, operator certification programs)
Disadvantaged Assistance	No	Yes, up to 30% of grant (principal forgiveness), 30 year repayment terms
Transfers between SRFs*	Yes (up to 33% of DWSRF grant amount)	Yes (up to 33% of DWSRF grant amount)

\*Although the statutory provision sunset in FFY 2001, the ability to transfer was extended through the FFY 2002 appropriation and the FFY 2003 President's Budget request.

# 3

## DWSRF Basics

The authorizing legislation for the DWSRF program is in section 1452 of the SDWA Amendments, which were passed on August 6, 1996. Following passage of the Amendments, EPA moved rapidly to develop the DWSRF program so that states could receive funding from the FFY 1997 appropriation. EPA convened a work group of state and EPA staff in the fall of 1996, which released Interim Guidelines for the program on October 4, 1996 to give states the information they needed to begin developing programs. EPA subsequently held a series of public meetings with stakeholders to provide information about the program and to review the Interim Guidelines. Comments received during the period of public comment and from attendees of the public meetings were critical in developing the DWSRF Program Final Guidelines (EPA-816-R-97-005; 63 FR 59844), which were signed by the Assistant Administrator for Water on February 28, 1997.

The development of a regulation for the program was initiated in the spring of 1998. A work group of state and EPA staff participated in reviewing and commenting on drafts of the rule through 1998. A more complete draft of the rule was posted on the EPA website for a 45 day public comment period on April 12, 1999. An interim final rule was published in the *Federal Register* on August 7, 2000 (65 FR 48285). The Agency received no significant comments during the comment period and published a notice in the *Federal Register* on January 12, 2001 to indicate that the interim final rule stood as final (66 FR 2823). The regulations have been codified in the Code of Federal Regulations at 40 CFR Part 35, Subpart L.

The first DWSRF grant was awarded to the State of Georgia on March 6, 1997, and on May 22, 1997, Pennsylvania made the first loan in the program to the Borough of Williamsburg. By the end of FY 1997, 18 states had received their initial capitalization grant (Table 3-1). In the early stages of the program, many states needed time to make the necessary legislative and regulatory changes before they could receive a grant. States that had preexisting funding programs generally had a head start over states that had to develop a new program from the ground up.

### Pennsylvania

#### **First DWSRF Loan in the Nation – Borough of Williamsburg, Pennsylvania**

The Borough of Williamsburg has served its residents and parts of neighboring Woodbury and Catherine Townships with its water system for more than 90 years. For most of that time, water was supplied by two reservoirs located on Tussey Mountain. In the late 1960's, two ground water wells were constructed to supplement the reservoirs. In the 1980's, the reservoirs were abandoned due to *Giardia* contamination and the poor condition of the transmission lines. Even after the abandonment of the reservoirs, many of the existing lines were undersized and in poor condition, resulting in pressure, flow, and leak problems in some areas. The Borough received a \$4.2 million DWSRF loan in May 1997—the first DWSRF loan in the nation. The project included the installation of a booster pumping station, a 210,000 gallon water storage tank, eight miles of water mains, and the replacement of every water meter in the system. The project was completed in the spring of 1998.

**Table 3-1 Fiscal Year 1997 Capitalization Grants\***

FFY 1997 - 1st year of availability				FFY 1998 - 2nd year of availability				
10/1-12/31/96	1/1-3/31/97	4/1-6/30/97	7/1-9/30/97	10/1-12/31/97	1/1-3/31/98	4/1-6/30/98	7/1-9/30/98	
Georgia	Pennsylvania (p)	Washington (s)		Hawaii	Arizona	New Mexico	Nebraska	Kentucky
		Maryland (s)		Michigan (s)	Connecticut (s)	Minnesota	Connecticut (p)	Iowa
		Mississippi		Kansas	Oklahoma (p)	Washington (p)	New Hampshire (p)	Massachusetts (p)
		South Carolina		Maine	Utah	Nevada	Pennsylvania (s)	Indiana
		Idaho		Rhode Island (s)	New York	Rhode Island (p)	West Virginia	New Jersey
		Colorado			North Carolina (s)	Michigan (p)	Massachusetts (s)	Ohio
		South Dakota			Virginia (s)	Oregon	North Carolina (p)	Wisconsin
		Alaska (p)				Montana	Alabama	Arkansas
		Illinois					North Dakota	California
		Maryland (p)					Florida	Puerto Rico
		New Hampshire (s)					Wyoming	Missouri
		Oklahoma (s)					Louisiana	Delaware
		Tennessee						Alaska (s)
		Texas						
		Vermont						
		Virginia (p)						

\* (p=projects, s=set-asides, all others are complete awards)

**Table 3-2 National Set-Asides**

	FFY 1997	FFY 1998	FFY 1999	FFY 2000	FFY 2001	TOTAL
Appropriation	\$1,275,000,000	\$725,000,000	\$775,000,000	\$820,000,000	\$823,185,000	\$4,418,185,000
American Indian and Alaska Native Villages	\$19,125,000	\$10,875,000	\$11,625,000	\$12,300,000	\$12,347,700	\$66,272,700
Monitoring for Unregulated Contaminants	\$0	\$2,000,000	\$2,000,000	\$2,000,000	\$1,995,600	\$7,995,600
Small System Technical Assistance	\$0	\$0	\$0	\$0	\$0	\$0
Health Effects Studies	\$0	\$0	\$0	\$0	\$0	\$0
Operator Certification Reimbursement Grants	\$0	\$0	\$15,000,000	\$30,000,000	\$29,934,000	\$74,934,000
<b>Total National Set-Asides</b>	<b>\$19,125,000</b>	<b>\$12,875,000</b>	<b>\$28,625,000</b>	<b>\$44,300,000</b>	<b>\$44,277,300</b>	<b>\$149,202,300</b>
Funds Available to States, DC and Territories	\$1,225,875,000	\$712,125,000	\$746,375,000	\$775,700,000	\$778,907,700	\$4,268,982,700

### ▼ Program Overview

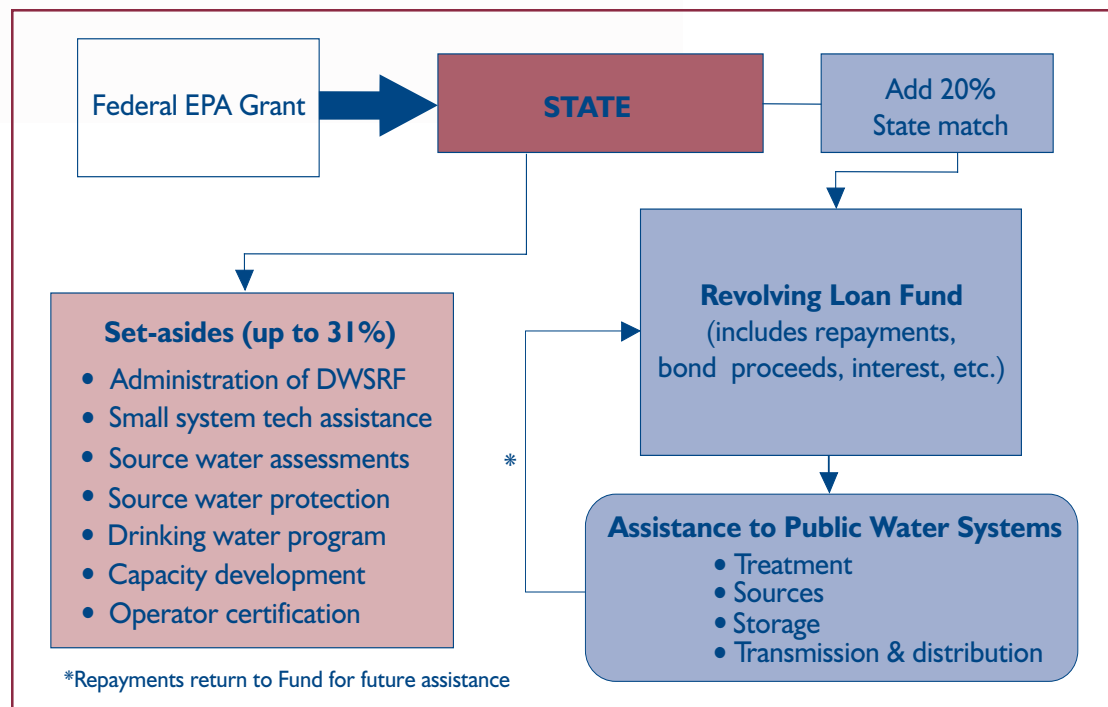
States are eligible to receive capitalization grants from funds annually appropriated by Congress. The national appropriation is reduced by national set-asides (Table 3-2). With the exception of FFY 1997, states receive a grant allotment that is proportional to the total state need identified in the most recent survey of drinking water infrastructure needs conducted every four years in accordance with the law (Table 3-3). For 1997, pursuant to the statute, states were allotted funds based on their allotment percentage for Public Water System Supervision (PWSS) grants. Results from the first needs survey, released in 1997, were used for FFY 1998 through FFY 2001 allotments. The first needs survey identified a 20 year national need of \$138.6 billion (1995 dollars). Results from the second needs survey, released in February 2001 (EPA 816-R-01-004), will be used to determine FFY 2002 through FFY 2005 allotments. The new survey identified a national need of \$150.9 billion (1999 dollars), with 20 year needs for individual states ranging from \$147 million (Hawaii) to \$17.5 billion (California).

States have two years in which to receive a grant—the year in which the funds are appropriated and the following year. In order to receive a grant, a state must agree to deposit matching funds equal to 20 percent of the grant into their state revolving loan funds. States distribute grant funds

**Table 3-3 State Allotment Percentages**

	PWSS Formula FFY 1997	1995 Survey FFY 1998- FFY 2001	1999 Survey FFY 2002- FFY 2005
Alabama	1.00%	1.19%	1.00%
Alaska	2.15%	1.00%	1.00%
Arizona	1.35%	1.02%	1.13%
Arkansas	1.00%	1.42%	1.08%
California	6.03%	10.83%	10.24%
Colorado	1.34%	1.35%	1.65%
Connecticut	1.70%	1.00%	1.00%
Delaware	1.00%	1.00%	1.00%
Florida	3.59%	2.90%	2.34%
Georgia	2.05%	2.14%	1.58%
Hawaii	1.00%	1.00%	1.00%
Idaho	1.13%	1.00%	1.00%
Illinois	3.07%	3.48%	3.73%
Indiana	2.05%	1.22%	1.17%
Iowa	1.34%	1.58%	1.84%
Kansas	1.12%	1.41%	1.15%
Kentucky	1.00%	1.52%	1.22%
Louisiana	1.63%	1.40%	1.00%
Maine	1.01%	1.00%	1.00%
Maryland	1.40%	1.00%	1.16%
Massachusetts	1.14%	3.85%	3.58%
Michigan	4.75%	2.94%	4.10%
Minnesota	3.35%	1.66%	1.98%
Mississippi	1.31%	1.16%	1.00%
Missouri	1.74%	1.34%	1.45%
Montana	1.18%	1.00%	1.00%
Nebraska	1.02%	1.00%	1.00%
Nevada	1.00%	1.00%	1.00%
New Hampshire	1.10%	1.00%	1.00%
New Jersey	2.23%	2.44%	2.30%
New Mexico	1.02%	1.00%	1.00%
New York	4.71%	6.33%	7.75%
North Carolina	3.67%	1.81%	1.76%
North Dakota	1.00%	1.00%	1.00%
Ohio	3.43%	3.20%	3.05%
Oklahoma	1.40%	1.44%	1.55%
Oregon	1.51%	1.48%	1.76%
Pennsylvania	4.24%	3.15%	3.22%
Puerto Rico	1.00%	1.44%	1.33%
Rhode Island	1.00%	1.00%	1.00%
South Carolina	1.18%	1.08%	1.00%
South Dakota	1.00%	1.00%	1.00%
Tennessee	1.02%	1.34%	1.01%
Texas	5.59%	7.58%	7.70%
Utah	1.00%	1.00%	1.00%
Vermont	1.00%	1.00%	1.00%
Virginia	2.34%	1.95%	1.38%
Washington	2.48%	2.69%	2.47%
West Virginia	1.00%	1.00%	1.00%
Wisconsin	3.31%	1.34%	1.98%
Wyoming	1.00%	1.00%	1.00%
District of Columbia	1.00%	1.00%	1.00%
Territories	0.33%	0.33%	0.33%

Figure 3-1 Structure of the DWSRF Program



between (1) the Fund, from which monies are used to finance infrastructure projects, and (2) set-asides, which finance other programs and activities (Figure 3-1).

States are required to develop an annual Intended Use Plan (IUP) that describes how funds in the program will be used, including a comprehensive list of infrastructure projects eligible for funding and a fundable list of the highest priority projects expected to receive funding in that year. This IUP must be made available for public review and comment prior to being finalized, and is required for receipt of a capitalization grant from EPA. States must also develop a biennial report describing how funds have been used.

In order to receive a capitalization grant, states must provide a number of assurances to EPA. States must show that they have the ability to manage the program and that they will comply with statutes and regulations applicable to the program. With the exception of funds used for set-asides, states must agree to deposit all program funds into their Fund and must agree to requirements related to the timing of providing assistance. The state must agree to use generally accepted accounting principles and to conduct audits in accordance with the Single Audit Act (per requirements of the Office of Management and Budget). As a best management practice, EPA encourages all states to conduct independent audits of their programs to ensure their financial integrity. The full set of requirements can be found in the program regulations.

States are also required to meet certain conditions to avoid withholding of DWSRF grant funds. The 1996 SDWA

#### What are the “Fund” and “Set-Asides”?

In this report we refer to a state’s revolving loan fund as the Fund. Set-asides refer to those grant funds that are not deposited into the Fund, but are instead used to support other drinking water activities. Use of the term “DWSRF program” refers to the state program and activities conducted through the Fund and/or set-asides.



Amendments included new requirements relating to state capacity development and operator certification programs (SDWA sections 1419 and 1420). States that fail to meet requirements related to the development and on-going implementation of these programs are subject to a withholding of DWSRF grant funds ranging from 10 to 20 percent. Conceivably, a state that fails to meet requirements for both programs could be subject to a withholding of 40 percent of their DWSRF grant. To date, because all states have met program requirements, none has been subject to grant withholding.

In order to give states flexibility to address their greatest public health and water quality priorities, Congress also gave states the ability to transfer an amount equal to 33 percent of their DWSRF grant to the CWSRF Fund, or an equivalent amount from the CWSRF Fund to the DWSRF Fund. A report to Congress on the use of the provision, *Implementation of Transfers in the Clean Water and Drinking Water State Revolving Fund Programs* (EPA 816-R-00-021), was released in October 2000. While the SDWA did not allow for transfers after September 30, 2001, Congress extended the provision for an additional year through EPA's FFY 2002 appropriation as requested by the Administration for FFY 2002 and in the FY 2003 President's Budget.

### ▼ Fund Assistance

To ensure that the most critical infrastructure needs are addressed, states are required to fund the highest priority projects pursuant to a priority system that reflects criteria provided for by law. States must give priority to projects that (1) address the most serious risks to public health, (2) are necessary to ensure compliance with the requirements of the SDWA, and (3) assist systems most in need on a per household basis.

The law allows states to provide funding to publicly- or privately-owned community water systems and non-profit noncommunity water systems for eligible projects. Entities that will create a new community water system to address a public health problem caused by unsafe sources of water can also receive assistance.

The law provided that funds could be used for projects of a type or category that the EPA Administrator determines would facilitate compliance with national primary drinking water regulations applicable to the system or otherwise significantly further the health protection objectives of the Act. The work group tasked with developing the initial guidelines for the program identified five basic categories of eligible projects (see Table 3-4). Other types of projects have been identified as ineligible for assistance from the Fund. The law specifically excluded expenditures for monitoring, operations, and maintenance and indicated that the DWSRF could not be used to fund projects where the primary purpose was

**Table 3-4 Eligible Project Categories**

#### **Treatment**

- Projects to maintain compliance with regulations for contaminants that cause acute and chronic health effects

#### **Transmission and Distribution**

- Installation or replacement of transmission and distribution mains

#### **Source**

- Rehabilitation of wells or development of sources to replace contaminated sources

#### **Storage**

- Installation or improvement of eligible storage facilities

#### **Consolidation**

- Consolidation of water supplies if a water supply has become contaminated or if a system is unable to maintain technical, financial, or managerial capacity

to facilitate growth. The Administrator identified additional types of projects as ineligible, including the construction or rehabilitation of dams and reservoirs (unless the reservoir is for finished water or part of the treatment process); water rights (except if owned by a system being purchased through consolidation); and projects needed primarily for fire protection.

With the exception of disadvantaged assistance, assistance provided in the form of loans must have interest rates that are between zero and market rates and repayment terms that do not exceed 20 years. With the exception of privately-owned systems, states may refinance existing debt where the debt obligation was incurred and the project was initiated after July 1, 1993. States can use Fund assets to issue bonds to increase the amount of funds available for assistance, provided that the net bond proceeds are deposited into the Fund. States may also use the Fund to purchase insurance or loan guarantees for debt obligations which help to reduce interest rates.

Assisting small systems and systems with economic need is a priority for the program. The law requires that states provide a minimum of 15 percent of available funds to systems serving 10,000 or fewer

persons. A state may use up to 30 percent of its grant to provide additional assistance to systems the state has identified as disadvantaged using criteria developed by the state. Assistance to systems that have been identified as serving disadvantaged communities—using state-determined affordability criteria—may receive additional subsidies in the form of principal forgiveness or negative interest rate loans. States may also provide extended loan terms of up to 30 years to systems serving disadvantaged communities.

All projects funded through the program must undergo an environmental review to ensure that they will not have a negative impact on the environment. States must also apply more than 20 federal laws and executive orders (i.e., federal cross-cutters) to, at a minimum, an identified group of projects receiving funding in an amount equal to federal funds. These recipients must, as a condition of receiving federal assistance, comply with laws such as the Endangered Species Act, the Archeological and Historic Preservation Act, and executive orders concerned with the protection of wetlands, floodplain management, and

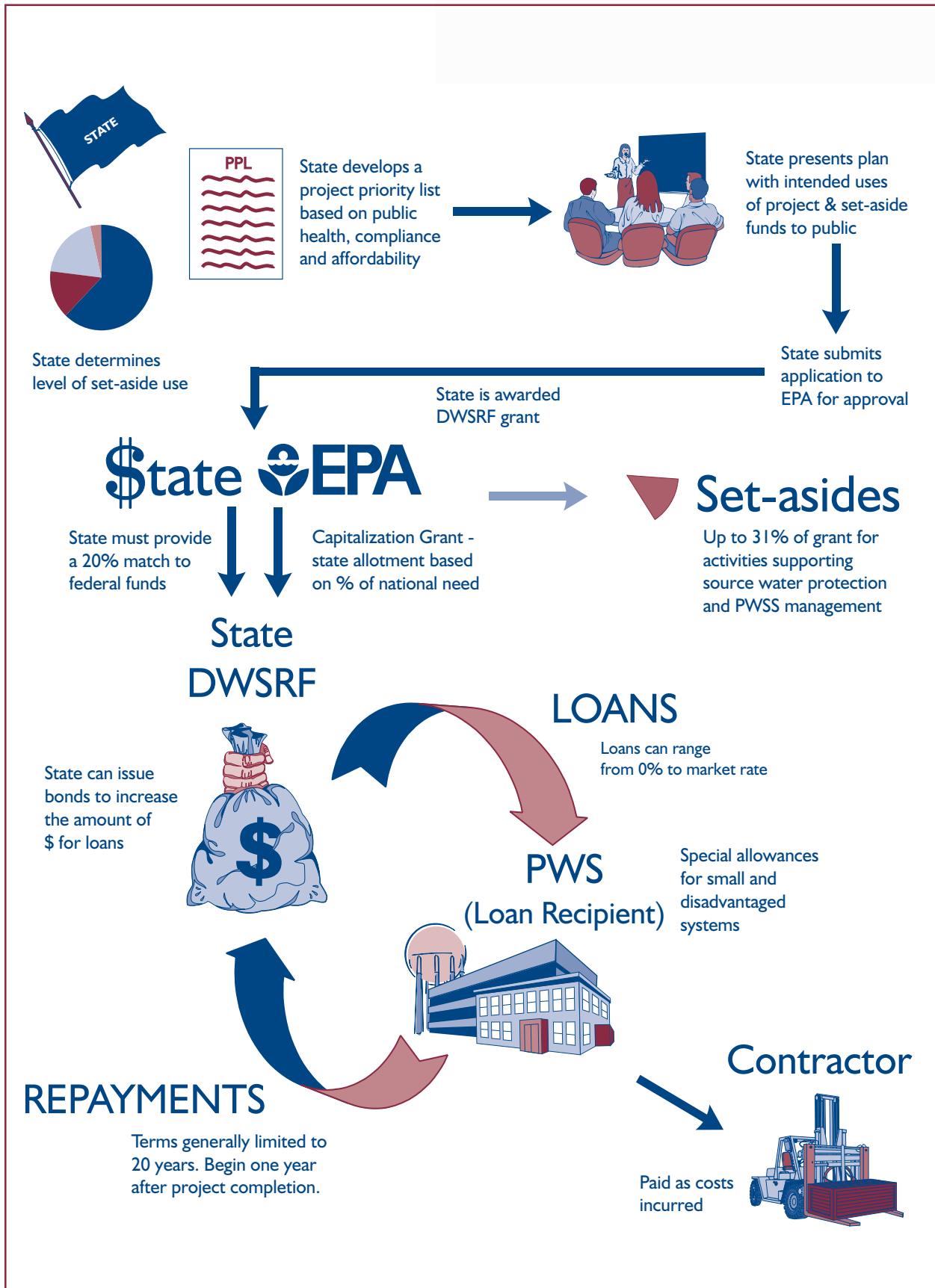
**Table 3-5 Set-aside Categories and Eligible Activities** **Maximum**

<b>Administration and Technical Assistance</b>	<b>4%</b>
<ul style="list-style-type: none"> <li>• Administer the DWSRF program and provide technical assistance to public water systems.</li> </ul>	
<b>Small System Technical Assistance</b>	<b>2%</b>
<ul style="list-style-type: none"> <li>• Provide technical assistance to small systems serving 10,000 people or fewer.</li> </ul>	
<b>State Program Management</b>	<b>10%*</b>
<ul style="list-style-type: none"> <li>• Administer the state PWSS program.</li> <li>• Administer and provide technical assistance through source water protection programs.</li> <li>• Develop and implement a capacity development strategy or an operator certification program.</li> </ul>	
<b>Local Assistance and Other State Programs</b>	<b>15%**</b>
<ul style="list-style-type: none"> <li>• Delineate and assess source water protection areas.</li> <li>• Provide loans to systems to acquire land or conservation easements.</li> <li>• Provide loans to systems to assist in voluntary, incentive-based source water protection measures.</li> <li>• Make expenditures to establish and implement wellhead protection programs.</li> <li>• Provide technical or financial assistance to systems as part of a capacity development strategy.</li> </ul>	

\* States must provide a dollar-for-dollar match for expenditures made under this set-aside.

\*\* No more than 10% per activity per capitalization grant.

Figure 3-2 Overview of the DWSRF



minority- and women-owned business enterprises. All recipients must comply with several specific federal anti-discrimination laws, including the Civil Rights Act and the Age Discrimination Act.

### ▼ Set-Aside Assistance

In order to provide states with the resources to address other programs that support drinking water protection, states have the option to use up to 31 percent of their grants to fund set-aside activities that support drinking water programs, enhance the management of water systems, or support programs that protect sources of drinking water. There are four categories of set-asides—each of which carries a limit on the amount of the capitalization grant that can be used for activities eligible under that set-aside (Table 3-5, page 12).

States must develop workplans describing how funds reserved from grants will be used. The workplans can cover more than one year, provided that the state can account for how funds will be spent. If a state does not have an immediate need for funds, but knows that it will in the future, it may reserve the authority to take funds associated with the set-aside in the future.

### ▼ Flow of Funds

On a macro level the program appears fairly simple—EPA provides grants to states, states make loans to recipients, recipients pay contractors, recipients repay loans to states, and states make more loans (Figure 3-2). However, a closer look is necessary because the flow of funds in the program is a complicated process. Therefore, it is important to have a general understanding of how funds cycle through the program (Figure 3-3). As noted before, states have two years in which to receive a grant award from a specific appropriation. States then have the earlier of 8 quarters after the grant award or 12 quarters after the allotment to take payments from the federal Treasury via an electronic funds transfer system (e.g., the Automated Clearing House (ACH) or Automated Standard Application for Payments (ASAP)). It is

Figure 3-3 Timeframes within the DWSRF Program

	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4	Fiscal Year 5		
<b>Appropriation/ Apportionment/ Allotment</b>	\$						
<b>Capitalization Grant Award</b>	Award in year of appropriations or following year						
<b>Payments</b>	Earlier of 8 quarters of grant award or 12 quarters of allotment						
<b>Binding Commitments</b>	Entered into within 1 year of payment equal to grant and match used for projects						
<b>Cash Draws</b>	As costs are incurred						
<b>Disbursements</b>	Generally follow the pattern of cash draws						
<b>Project Funding Process</b>	Loan Agreement - Start construction - Project completion - Begin repayment in 1 year						
	Repayment in 20 years						

important to note that, unlike most grant programs, a DWSRF program payment does not represent an actual transfer of cash from the Treasury to the state. It simply gives the state the ability to draw an amount equal to the payment when disbursing funds to recipients for incurred costs.

After taking a payment, a state has one year in which to make a binding commitment with a recipient to fund a project. In most cases, a binding commitment is concurrent with execution of a loan agreement, although the two steps are separate in some states. A state cannot disburse funds to a recipient prior to execution of the loan agreement. However, after the loan is executed the recipient can be reimbursed for approved costs that were incurred prior to execution of the loan agreement. A state can only draw funds from the Treasury based on a request for reimbursement of incurred costs by the recipient. A recipient must begin loan repayments no later than one year after completion of the project. Loan terms cannot exceed 20 years, except in the case of disadvantaged communities, which may have loan terms extended up to 30 years.

Table 4-1 Features of State DWSRF Programs

State	Program Features												
	Loan Program						Disadvantaged Assistance Program			Set-Aside Program			
	Leveraged	Coordinated DWSRF with Other Federal and State Funds	Funds Private Systems*	Assessed Fees (on top of Retired State Match Bonds)	Transferred Funds from CWSRF	Provides Principal Forgiveness*	Provides Loan Terms ≥20 Years*	Provides Lower Interest Rates*	Small Systems Assistance*	State Program Technical	Local Assistance - source water delineation and assessments*	Local Assistance - source water protection loans*	Local Assistance - capacity develop. or watershed protection activities*
AL	●	●	●	●	●	●			●	●	●	●	●
AK	●	●	○	●	●	●			●	●	●	●	●
AZ	●	●	●	●		○	○	●	●	●	○	●	●
AR			●	●			●		●	●	○	●	●
CA			●	●			○	●	●	●	○	●	●
CO	●								○	●		●	●
CT	●		●	●					●	●		●	●
DE		●	●	●			●	●	●	●	○	●	●
FL		●	●	●		●	●		●	●		○	●
GA			○	●		●		●	●	●	○	●	●
HI			○	●					●	●		○	●
ID		●	●			○	○	○	●	●		●	●
IL			○		●					●			
IN	●	●	●	●				●	○	○	●		
IA	●	●	○	●	●				●	●	○		
KS	●			●	●				●	●			
KY			○				○	●	○	○	●	●	●
LA			●	●					●	●		○	●
ME	●	●	●	●		●	●	●	●	●	●	●	●
MD		●	●	●		●	●	●	●	●	○	●	●
MA	●	●	●			●	●		●	●		●	●
MI	●	●	○			●	●		●	●		●	●
MN	●	●	○	●		●			●	●		●	●
MS				●					○	●			
MO	●		○	●					●	●			
MT		●	○	●	●		●	●	●	●			●
NE		●	○	●	●	●	●	●	●	●	○		
NV			●	●		○	○		●	●	●	●	●
NH		●	●	●		●			●	●	○	●	●
NJ	●		●		●				●	●			
NM			○				○	●	●	●	○	●	●
NY	●	●	○	●		●	●	●	●	●	○	●	●
NC		●		●					●	●		●	●
ND	●		○	●	●				●	●			
OH			●	●	●				●	●		●	●
OK			●						●	●	○	●	●
OR		●	●			●	●	●	●	●	○	●	●
PA		●	●				●		●	●		●	●
PR			○						●	●			
RI			●	●				○	●	●			
SC			○	●			●	○	●	●			
SD		●	●	●	●			●	●	○			
TN		●				○	○		●	●		●	●
TX			○	●	●	●	●	●	●	●	○	○	●
UT		●	●	●		●		●	●	●		●	●
VT		●	●			●	●	●	●	●	○	●	●
VA		●	○			●	●	●	●	●	○	●	●
WA		●	●	●			●	●	●	●	○	●	●
WV		●	○	●			●	●	●	●		●	●
WI		●	○		●			●	●	●		●	●
WY				●				○	●	●		●	●

● = Program feature utilized as of June 30, 2001 as reported in DWNIMS  
 ○ = For columns with \*, program feature established, but not utilized as of June 30, 2001

# 4

## Features of State Programs

This chapter reviews several features of state programs including a discussion of how the programs are structured administratively and financially. The chapter also reviews how states support their programs in providing required matching funds and additional funds to help operate programs. Finally, this chapter reviews how states are working to coordinate their DWSRF programs with new or preexisting state funding programs or other federal financial assistance programs. Table 4-1 shows additional features of state programs that are discussed throughout the report.

### ▼ Administrative Structure

As noted previously, there is no one model for how states have established their DWSRF programs. The number of agencies involved in administering the program can vary from one to more than three. However, in every state, in accordance with the law, the authority to establish assistance priorities and related activities of the DWSRF program, other than financial administration of the Fund, resides with the state agency having primary enforcement responsibility (i.e., primacy) for administration of the state's PWSS program. In most cases the primacy agency is located within a state's Health or Environment Department. Table 4-2 shows the agencies involved in administering each of the 51 programs. In some cases, as a financial management matter, the primacy agency is not the EPA grant recipient, but the agency remains responsible for setting program priorities.

In the majority of states, the primacy agency cooperates with other state agencies to help manage the program. States are required to develop agreements with other relevant agencies to clearly identify the roles and responsibilities of each agency in running the program.

In many states, the DWSRF program is being managed out of the same agency that oversees the CWSRF program. Other DWSRF programs are cooperating with the agency that oversees the CWSRF program, primarily in the areas of financial management or environmental reviews. In New York, the Environmental Facilities Corporation, which manages the CWSRF program, assists the Department of Health in financial management and accounting for loans.

In some cases, the complexity of a state's program will require the participation of another state agency. For example, states that issue bonds (i.e., leverage their grants) to increase the amount of funding for projects will typically require the participation of a state agency to facilitate issuance of bonds. In Maine, the Municipal Bond Bank works with the state Department of Health to manage additional funds made available through leveraging.

Many states are implementing their DWSRF programs in coordination with state grant and loan programs that were in existence prior to establishment of the DWSRF program. Twenty-five states

Table 4-2 Agencies Implementing the DWSRF Program

State	Agency	DWSRF Primacy	DWSRF Grantee	DWSRF Financial Management	CWSRF Financial Management	DWSRF Environmental Reviews
Alabama	Department of Environmental Management	X	X	X	X	X
Alaska	Department of Environmental Conservation	X	X	X	X	X
Arizona	Department of Environmental Quality Water Infrastructure Finance Authority	X	X	X	X	X
Arkansas	Department of Health Development Finance Authority Soil and Water Conservation Commission	X	X	X	X	X
California	Department of Health Services State Water Resources Control Board	X	X	X	X	X
Colorado	Department of Public Health and Environment Water Resource and Power Development Authority	X	X	X	X	X
Connecticut	Department of Public Health Department of Environmental Protection	X	X	X	X	X
Delaware	Dept. of Health & Social Services Department of Natural Resources & Environmental Control	X	X	X	X	X
Florida	Department of Environmental Protection	X	X	X	X	X
Georgia	Department of Natural Resources Environmental Facilities Authority	X	X	X	X	X
Hawaii	Department of Health - Safe Drinking Water Branch Department of Health - Wastewater Branch	X	X	X	X	X
Idaho	Department of Environmental Quality	X	X	X	X	X
Illinois	Environmental Protection Agency	X	X	X	X	X
Indiana	Department of Environmental Management State Budget Agency	X	X	X	X	X
Iowa	Department of Natural Resources Finance Authority	X	X	X	X	X
Kansas	Department of Health and Environment Department of Administration - Development Finance Authority	X	X	X	X	X
Kentucky	Department of Natural Resources & Environmental Protection Cabinet Infrastructure Authority	X	X	X	X	X
Louisiana	Department of Health & Hospitals Department of Environmental Quality	X	X	X	X	X
Maine	Department of Human Services Municipal Bond Bank Department of Environmental Protection	X	X	X	X	X
Maryland	Department of the Environment - Water Quality Financing Admin. Department of the Environment - Water Management Admin.	X	X	X	X	X
Massachusetts	Department of Environmental Protection Water Pollution Abatement Trust	X	X	X	X	X
Michigan	Department of Environmental Quality Municipal Bond Authority	X	X	X	X	X
Minnesota	Department of Health Public Facilities Authority - Dept. of Trade and Economic Development	X	X	X	X	X
Mississippi	State Department of Health Department of Environmental Quality	X	X	X	X	X
Missouri	Department of Natural Resources	X	X	X	X	X
Montana	Department of Environmental Quality Department of Natural Resources & Conservation	X	X	X	X	X
Nebraska	Department of Environmental Quality Department of Health and Human Services	X	X	X	X	X



**Table 4-2 Agencies Implementing the DWSRF Program** *(continued)*

State	Agency	DWSRF Primacy	DWSRF Grantee	DWSRF Financial Management	CWSRF Financial Management	DWSRF Environmental Reviews
Nevada	Department of Human Resources	X	X	X		X
	Department of Conservation & Natural Resources				X	
New Hampshire	Department of Env. Services - Water Supply Engineering Bureau	X	X	X		
	Department of Env. Services - Wastewater Engineering Bureau				X	X
New Jersey	Department of Environmental Protection	X	X			X
	Environmental Infrastructure Trust			X	X	
New Mexico	Environment Department	X			X	X
	Finance Authority		X	X		
New York	Department of Health	X	X			X
	Environmental Facilities Corporation			X	X	
North Carolina	Department of Environment and Natural Resources	X	X	X	X	X
North Dakota	Department of Health	X	X			X
	Municipal Bond Bank			X	X	
Ohio	Environmental Protection Agency	X	X			X
	Water Development Authority			X	X	
Oklahoma	Department of Environmental Quality	X	X			X
	Water Resources Board			X	X	
Oregon	Department of Human Services	X	X			X
	Economic and Community Development Department			X		
	Department of Environmental Quality				X	
Pennsylvania	Department of Environmental Protection	X				X
	Infrastructure Investment Authority (Pennvest)		X	X	X	
Puerto Rico	Department of Public Health	X	X			
	Infrastructure Finance Authority			X	X	
	Environmental Quality Board					X
Rhode Island	Department Of Health	X				
	Department of Environmental Management					X
	Clean Water Finance Agency		X	X	X	
South Carolina	Department of Health and Environmental Control	X	X		X	X
	Budget and Control Board			X		
South Dakota	Department of Environment & Natural Resources	X	X	X	X	X
Tennessee	Department of Environment & Conservation	X	X	X	X	X
Texas	Natural Resource Conservation Comm.	X				
	Water Development Board		X	X	X	X
Utah	Department of Environmental Quality	X	X	X	X	X
Vermont	Department of Env. Conservation - Water Supply Div.	X	X		X	X
	Department of Env. Conservation - Facilities Engineering Div.			X		
	Economic Development Authority			X		
	Municipal Bond Bank			X		
Virginia	Department of Health	X	X			X
	Resources Authority			X	X	
Washington	Department of Health	X	X			
	Department of Ecology				X	
	State Dept. of Community, Trade and Econ. Development			X		
	State Public Works Board			X		X
West Virginia	Bureau for Public Health	X	X			X
	Water Development Authority			X	X	
	Environmental Protection				X	
Wisconsin	Department of Natural Resources	X	X			X
	Department of Administration			X	X	
Wyoming	EPA Region 8	X				
	Department of Environmental Quality					X
	Office of State Lands & Investments			X	X	
	State Loan Investment Board		X			

reported other state funding programs in the DWNIMS. States with preexisting programs had an advantage at the beginning of the program since they already had the structure and staff needed to implement the program.

### ▼ Program Staffing and Funding

As a condition for receiving assistance a state must demonstrate that it has adequate personnel and resources to manage the DWSRF program. EPA has not established a baseline number of personnel that it believes is necessary to operate a program, but rather evaluates each program on its own merits. The number of staff implementing the program varies widely. Fewer than 10 people manage a successful program in Kansas while close to 40 manage a much larger and equally successful program in New York.

Many states have, however, experienced difficulties in attracting and maintaining the number of staff that they would like to have in managing the program. Several programs have been affected by state-imposed hiring freezes. Many states that have been able to hire have had difficulties offering salaries that are competitive with the private sector.

As is the case with the CWSRF program, states have concerns about having sufficient funds to manage the program. States may use up to four percent of their grant to pay for administration of the program. While, in the absence of additional funds from the state, many programs have elected to impose fees on borrowers, it may lessen the affordability of assistance for certain borrowers.

As reported in DWNIMS, 32 states have imposed fees on borrowers (Appendix B-12). Fees can be applied in one of two ways—they can be paid directly by the borrower (i.e., on top of the loan) or they can be included as principal within the loan. Table 4-3 shows the income that has been generated from fees and their uses through SFY 2001. States may use income derived from either type of fee to help administer the DWSRF program or for other activities eligible under the Fund or set-asides. Income derived from fees placed on top of the loan can also be used to provide match required under the program. There are additional limitations placed on fees included within loan principal; the most important of which is that fees cannot be charged to disadvantaged communities receiving principal forgiveness. While most states are using fee income to help administer their programs on an ongoing

basis, many are choosing to accumulate fees to ensure that they will have funds available to administer their programs in the event that federal capitalization grants cease.

States have also provided additional state contributions to help implement their programs. Through SFY 2001, more than \$1 million in additional state contributions have been expended to supplement funds made available from the DWSRF administrative set-aside and fee income. Figure 4-1 shows the annual expenditures on administration and the sources of the funds.

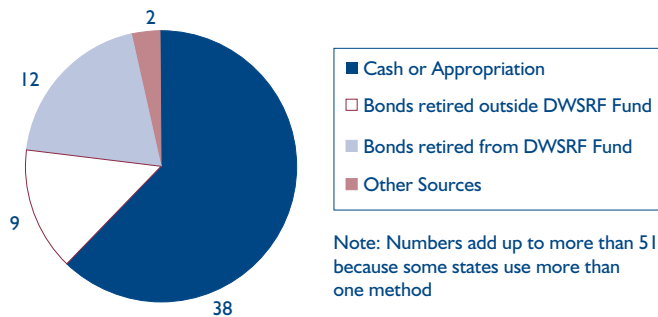
**Table 4-3 Sources and Uses of Fees (in millions)**

<b>Total Fee Income</b>	<b>\$20.98</b>
Included in Loans	\$12.14
On top of Loans	\$7.94
Interest Earnings on Fee Account	\$0.90
<b>Total Expenses from Fees</b>	<b>\$8.12</b>
To Administer Fund	\$8.01
State Match	\$0.00
Other Eligible Purposes	\$0.11
<b>Balance of Fee Income</b>	<b>\$12.86</b>

### ▼ State Matching Funds

As a condition of the grant, states are required to provide matching funds equal to 20 percent of the EPA grant for deposit into the Fund. States may obtain match from one or more of several sources (Figure 4-2). The most common means of obtaining match is from state appropriations. Bond proceeds are the second most prevalent source of match. Bonds issued to obtain match can be in the form of general obligation bonds or revenue bonds. General obligation bonds are typically issued by the state and are repaid using general revenue from the state. Revenue bonds are typically issued by the state DWSRF program and are repaid using interest earnings from the Fund. It is important to note that the use of DWSRF-backed bonds reduces the growth of the Fund since interest earnings go to repay

**Figure 4-2 Sources of State Match (# of States)**



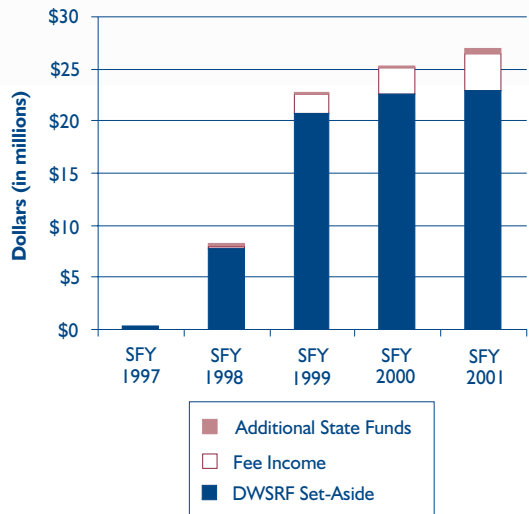
matching funds at the time of the grant. They have the option of depositing match into the Fund at any time, but no later than when federal funds are drawn to pay incurred costs. Match deposited into the Fund prior to its use can earn interest, which must be used for Fund purposes. States may also elect to establish a Letter of Credit (LOC) within the state and withdraw funds only when they are needed for disbursement to a recipient. Use of a LOC method allows the state to maintain its funds in the state treasury until needed—interest earnings on funds held within the state’s treasury are not deposited into the Fund. When funds are needed for disbursement, state and federal funds are drawn proportionally to ensure that federal funds are not used more rapidly than state funds. An exception to this is in the case of set-asides, for which states draw 100 percent federal funds.

Although it was a greater problem early in the program, several states have had trouble obtaining match. In some cases, matching funds are tied to a larger state bond issue which must receive voter approval. In other cases, state legislatures have been slow to provide matching funds through appropriations.

### ▼ Direct Loans vs. Leveraging

The majority of states have established direct loan programs whereby loans are made to recipients using available federal funds, state match, interest earnings, and repayments. In some states, the demand for

**Figure 4-1 Sources of Annual Administrative Expenses**



bondholders rather than to provide additional loans. Finally, although it has not been done to date, states with preexisting state-funded loan programs may pledge repayments associated with loans made under those programs provided that the repayments are deposited into the Fund.

States must demonstrate that they have

financial assistance exceeds the availability of funding. Several states have decided that the immediate demand for funding is so great that the program should increase the amount of funding available through the issuance of bonds. Through SFY 2001, 15 states had used leveraging in their programs (Table 4-4).

The decision to leverage using bonds must be well thought out. Demand must be sufficient to ensure that the funds are used within the timeframes outlined by the Internal Revenue Service. Generally, subsidized bond proceeds are used for public entities. States that wish to fund private systems must exercise caution to ensure that subsidized bonds do not lose their tax-exempt status. The financial strength of the recipients is also of a greater concern in a leveraged program since a strong loan portfolio promotes a good bond rating, which translates to a lower interest rate. Interest rates charged in leveraged programs tend to be slightly higher than those in direct loan programs because the interest rates reflect the increased costs of funds as a result of issuing bonds. Some states that issue bonds offer loans made from bond proceeds to borrowers with greater financial strength and offer direct loans to smaller, less creditworthy, and/or private recipients.

Some states with leveraged programs have also made use of the practice of cross-collateralization, whereby the funds from one SRF program can be used to secure the other SRF from revenue shortfalls (i.e., defaults) (Table 4-4). Generally, state bond issues can be used to support the other SRF program with the condition that revenues from the bonds be allocated to the respective funds in the same portion as they were used for security for the bonds. Use of the provision, provided for by Congress in the 1999 Appropriations Act, has had a significant positive impact on state SRF programs, particularly state DWSRF programs. Rating agencies have given states with cross-collateralized programs better credit ratings, which translate into lower bond interest rates. Some DWSRF programs have indicated that, without the flexibility afforded by cross-collateralization, they would be less able to implement a leveraged program to reach drinking water borrowers.

An alternative to cross-collateralization which also provides additional security and can positively impact bond interest rates is short-term cross-investment, which is allowed under the investment provisions of both SRF programs (Table 4-4). Using cross-investment, a state may use available funds from one SRF program to help cure a bond default in the other SRF program by “investing” funds in the other SRF program temporarily to cover the deficiency. Funds

**Table 4-4 States Using Leveraging**

States	Cross-Collateralization	Cross-Investment
Alabama		
Arizona	X	
Colorado	X	
Connecticut	X	
Indiana		
Iowa	X	
Kansas		
Maine		X
Massachusetts	X	
Michigan		X
Minnesota	X	
Missouri	X	
New Jersey	X	
New York		X
North Dakota	X	

are repaid to the lending SRF once the borrower SRF has recovered from the default. The likelihood of a state having to exercise cross-collateralization or cross-investment to cover a default is viewed as slim because most states typically have several other levels of security that would be exhausted first.

### ▼ Coordination of Funding Programs

The DWSRF program is not the first program in any state to finance drinking water needs. The RUS has been funding drinking water projects for small, rural communities for many years and the U.S. Department of Housing and Urban Development has a Community Development Block Grant program which has funded water infrastructure. Additionally, many states had preexisting grant and loan programs or have instituted programs complementary to the DWSRF to provide assistance to public water systems.

While competition can be effective at helping a potential recipient get an affordable financing package, it can create problems when programs have worked with a system to prepare it for funding only to lose it at the last moment to another funding program. Many states have determined that it is more practical to develop coordination committees that work together to identify the best funding solution for a project. These committees meet together periodically to discuss projects and develop funding packages. Some states hold funding fairs at which potential customers can learn about the various funding programs and submit preapplications for assistance. In Maine, the Department of Health Services (the DWSRF lead agency) holds regular meetings with the Maine Municipal Bond Bank (the financial partner in implementing the DWSRF), the state RUS affiliate, the Department of Economic and Community Development, and the CWSRF Program (within the Department of Environmental Protection) to streamline the financial assistance efforts of all the agencies. The status of each agency's assistance capabilities and the projects each intends to fund are discussed at these meetings. Other issues discussed include the projects for which funds are not immediately available, the overall state funding needs for drinking water and clean water projects, and the ability and need for co-funding of projects.



#### Coordinating Funding in Texas

The City of El Paso Public Service Board (PSB) received a \$15.3 million DWSRF loan to expand the Jonathan Rogers Water Treatment Plant. The DWSRF loan will be used to finance 32.5% of design capacity to serve city residents. The remainder of the design capacity will be financed through a \$14.9 million grant from the North American Development Bank (NADBank) and local funds. In addition to the DWSRF loan and the NADBank grant, the El Paso Water Utilities will contribute \$4.5 million toward the water project. The El Paso PSB proposes to expand the Jonathan Rogers Water Treatment Plant from 40 to 60 million gallons per day and construct 32,000 linear feet of 42-inch diameter water transmission main. The water plant expansion will allow provision of water to Colonia Areas within El Paso County, in addition to conserving ground water resources and improving regional water supplies.

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# 5

## Financial Status

This chapter provides a detailed breakdown of the financial status of the DWSRF program at the national level. Subsequent chapters review the types of assistance and the types of systems and projects that have received assistance. In order to effectively inform the public about how funds are being distributed among projects and set-asides, EPA has requested that states provide a table describing the sources and uses of DWSRF funds within their IUPs. This chapter follows that format.

### ▼ Sources of Funds

Through SFY 2001, the primary contributors to funds available for projects have been federal capitalization grants and state match, although in some states, significant additional funds have been made available through leveraging (Appendix B-1).

#### ► Capitalization grants

Through SFY 2001, Congress had appropriated \$4.418 billion for the DWSRF program. After accounting for national set-asides (Table 5-1) and funds reserved for the District of Columbia and Territories, \$4.212 billion was available to states for capitalization grants. States have received \$3.648 billion, or 87 percent of the funds available for grant awards. Grants for FFY 2000 funds had not yet been made to 8 states and 33 states had not yet been awarded FFY 2001 funds\*.

#### ► State match and additional state contributions

As noted earlier, states are required to provide a 20 percent match on their capitalization grants. States are required to demonstrate that they will be able to provide match, but are not required to deposit the funds into the Fund until they draw federal funds. Through SFY 2001, states had deposited \$773.4 million for state match (Appendix B-2). This reflects an overall 21 percent of the grants as some states provide more match than required.

**Table 5-1 Capitalization Grants (through FFY 2001)**

	FFY 1997	FFY 1998	FFY 1999	FFY 2000	FFY 2001	TOTAL
Appropriation	\$1,275,000,000	\$725,000,000	\$775,000,000	\$820,000,000	\$823,185,000	\$4,418,185,000
National Set-Asides	\$19,125,000	\$12,875,000	\$28,625,000	\$44,300,000	\$44,277,300	\$149,202,300
Grants to DC and Territories	\$16,703,200	\$9,471,300	\$9,926,800	\$10,316,800	\$10,359,500	\$56,777,600
Available Grants to States	\$1,239,171,800	\$702,653,700	\$736,448,200	\$765,383,200	\$768,548,200	\$4,212,205,100
Awarded Grants to States	\$1,239,171,800	\$702,653,700	\$736,448,200	\$765,383,200	\$485,708,700	\$3,929,365,600

\*Through September 30, 2001, the capitalization grants awarded totaled \$3.929 billion.

Matching funds have been provided from several sources (Table 5-2). In some states, match has been obtained using more than one of the sources. Thirty-eight states have obtained match through state appropriations. Twelve states have derived match from bonds totaling \$111.2 million that are retired using the interest payments from loans and interest earnings on investments of the Fund. Nine states have obtained state match from bonds that are retired using funds that are not from the DWSRF program and two states have obtained match from other sources.

**Table 5-2 Sources of State Match (in millions)**

Source of Match	
Cash or Appropriation	\$546.4
Bonds retired outside Fund	\$113.7
Bonds retired using Fund	\$111.2
Preexisting Loans	\$0.0
Other Sources	\$2.2
<b>Total Match</b>	<b>\$773.4</b>

Several states have been able to get additional state contributions to assist their programs. For example, at the beginning of the program, the state legislatures in Kansas and New York appropriated \$5 million and \$66 million, respectively, to help meet a high demand in the early years of the program. States have the option of depositing these funds into the Fund and using them as credit for future match or they may choose to maintain accounts separate from the Fund. Because of use and reporting requirements attached to monies deposited into the Fund, many states have elected to keep additional state contributions outside of the Fund to maintain flexibility in their use.

#### ► **Bond proceeds made available by leveraging**

States may use the assets of the Fund as a source of revenue or security for the payment of principal and interest on revenue or general obligation bonds issued by the state in order to increase the amount of funds available for assistance. The net proceeds of the sale of bonds must be deposited into the Fund. Through SFY 2001, 15 states had issued bonds in their programs (Table 5-3). The gross proceeds for bonds issued in the national program were \$1.520 billion. After considering the cost for issuing bonds, the net bond proceeds were \$1.485 billion. States must deposit funds in debt service reserves to provide security on the bonds. While these funds are not immediately available for projects, they are released back to the Fund as the bonds are repaid. Through SFY 2001, \$434.3 million was being held in debt service reserves. As bonds are repaid, the total amount of bonds outstanding in the program decreases. The amount of bonds outstanding in the program is \$1.473 billion.

#### ► **Interest earnings**

While states may not hold monies with the sole purpose of earning interest, a state may earn interest on monies deposited into the Fund prior to disbursement of assistance. This includes funds held in reserve accounts that are used as security for bonds or guarantees. Through SFY 2001, states had earned \$130.5 million in interest on Fund accounts.

#### ► **Transfers from the CWSRF**

The SDWA gave states the flexibility to transfer an amount equal to 33 percent of their DWSRF grant to the CWSRF program, or an equivalent amount from the CWSRF to the DWSRF program for deposit into the Fund. The provision in the law included a sunset date of September 30, 2001, after which transfers would not be allowed. As part of the FFY 2002 Appropriations Act, Congress extended the provision for one additional year and the President's FY 2003 Budget proposal extended for another year. Through SFY 2001, eight states had made use of the transfer provision (Table 5-4). These states



**Table 5-3 Bond Proceeds Through Leveraging (in millions)**

State	Gross Bond Proceeds	Net Bond Proceeds	Debt Service Reserve	Bond Proceeds Available for Projects	Bond Principal Repaid	Bonds Outstanding
Alabama	\$68.4	\$62.0	\$14.3	\$47.7	\$1.4	\$67.0
Arizona	\$8.0	\$7.9	\$2.5	\$5.4	\$0.2	\$7.8
Colorado	\$122.3	\$121.3	\$35.3	\$86.0	\$4.7	\$117.6
Connecticut	\$29.6	\$29.6	\$16.3	\$13.3	\$0.0	\$29.6
Indiana	\$73.7	\$70.0	\$0.0	\$70.0	\$0.3	\$73.4
Iowa	\$25.3	\$24.5	\$13.9	\$10.6	\$0.0	\$25.3
Kansas	\$127.0	\$123.9	\$54.2	\$69.7	\$1.9	\$125.0
Maine	\$4.8	\$4.7	\$0.02	\$4.7	\$0.4	\$4.4
Massachusetts	\$160.9	\$160.9	\$62.6	\$98.3	\$3.2	\$157.7
Michigan	\$153.3	\$151.1	\$70.2	\$80.9	\$0.0	\$153.3
Minnesota	\$21.5	\$21.1	\$1.8	\$19.3	\$0.9	\$20.6
Missouri	\$69.0	\$68.2	\$12.2	\$56.0	\$1.4	\$67.6
New Jersey	\$63.4	\$59.7	\$1.9	\$57.8	\$0.7	\$62.7
New York	\$580.5	\$568.1	\$148.7	\$419.4	\$30.8	\$549.7
North Dakota	\$11.9	\$11.8	\$0.4	\$11.4	\$0.7	\$11.2
<b>Total</b>	<b>\$1,519.6</b>	<b>\$1,484.8</b>	<b>\$434.3</b>	<b>\$1,050.5</b>	<b>\$46.6</b>	<b>\$1,472.9</b>

transferred a total of \$147.2 million from their CWSRF programs to their DWSRF Funds. The amount transferred ranged from \$5.4 million in Illinois to \$66.2 million in New York. Most states have elected to transfer repayments because the transfer process is more expeditious. Only \$12.1 million of the transfers to date have been federal dollars.

#### ► Loan repayments

Most projects take from two to three years to complete, and repayments must begin no later than one year after completion of the project. Therefore, it takes some time before loan repayments begin flowing back to the Fund. Many of the repayments to date are likely from loans that were made to

**Table 5-4 States Using Transfers\***

State	Dollars Transferred (in millions)	Transfers as a % of DWSRF Grants
Alabama	\$12.9	27%
Colorado	\$8.0	14%
Illinois	\$5.4	4%
Maryland	\$10.6	28%
Montana	\$8.8	20%
New Jersey	\$20.9	25%
New York	\$66.2	27%
Wisconsin	\$14.3	20%
<b>Total</b>	<b>\$147.1</b>	<b>20%</b>

\*All transfers from CWSRF to DWSRF

refinance debt since they are not subject to a construction period. Through SFY 2001, the loan principal repayments were \$103.7 million and interest earnings on loans were \$111.9 million, for a total of \$215.6 million in principal and interest.

### ▼ **Uses of Funds**

The uses of DWSRF funds are limited to activities that are eligible under the Fund and activities eligible under the set-asides. This section identifies both the intended use of funds and the actual use (obligation or expenditure) as of June 30, 2001.

#### ► **Set-asides**

States are allowed to reserve up to 31 percent of their capitalization grants for set-aside activities. These funds are not deposited in the Fund, but are held and tracked in separate accounts. States have reserved \$575.7 million of their capitalization grants for set-aside activities (Appendix B-19). Nationally, this represents 15.8 percent of grants awarded, although the amount reserved at the state level varies from 6.7 percent to 31 percent. Through SFY 2001, states had expended \$244.6 million for set-aside activities (Appendix B-20). This represents 42.5 percent of the funds that have been reserved. While the amount appears to be low, in many cases this is a result of the ability of states to develop multi-year workplans in which they account for how funds will be expended. In some states, however, the progress of set-aside expenditure has been impacted by problems experienced in getting the programs established. Additional information on the use of set-asides can be found in Chapters 9 and 10.

#### ► **Fund assistance**

States are required to make binding commitments within one year of taking a payment from the federal Treasury (which gives states the authority to draw funds based on incurred costs). Through SFY 2001, states had entered into binding commitments totaling \$4.040 billion. However, a more useful figure is the amount of loans that have been executed, as that represents when funds are available to assist recipients. In most states, the execution of a loan agreement is equivalent to a binding commitment. Through SFY 2001, states had entered into \$3.764 billion in loan agreements (Appendix B-7). Additional details on the types of assistance are provided in Chapter 6. States disbursed \$2.195 billion of the total loans made to recipients to cover incurred costs.

#### ► **Repayment of state match and leveraged bonds**

States use the Fund to repay bonds issued for state match or bonds issued to fund additional projects. States may only use interest earnings of the Fund and the interest portion of repayments to retire state match bonds. Both the principal and interest portions of repayments and interest earnings of the Fund may be used to retire leveraged bonds. Through SFY 2001, states had repaid \$1.5 million in state match bonds, \$46.6 million in leveraged bonds, and \$120.5 million for interest on bonds.

### ▼ Funds Available for Assistance

Table 5-5 provides a summary of the data discussed in this chapter. As of June 30, 2001, the total sources of funds for the DWSRF program were \$6.399 billion. The sources include capitalization grants awarded, state match, transfers from the CWSRF, net bond proceeds, interest earnings on investments and loans, and loan principal repayments.

The total uses of funds in the program were \$5.219 billion. They included current binding commitments (i.e., loans that have not yet closed), executed loan agreements, repayments for leveraged and match bond principal and interest, debt service reserves, and amounts reserved for set-asides.

The funds made available for projects include all sources less funds reserved for set-asides, debt service reserves, and interest and principal repaid on bonds. Through SFY 2001, the total funds made available for projects were \$5.221 billion (Appendix B-3). The total funds that were uncommitted and available for projects was \$1.181 billion, or 23 percent of the funds made available for projects. In their annual IUPs, states must demonstrate that all funds will be committed to projects identified on their priority lists.

**Table 5-5 Summary of Sources and Uses (in millions)**

<b>Sources</b>	
Capitalization Grants	\$3,648.4
State Match	\$773.4
Transfers	\$147.2
Net Bond Proceeds	\$1,484.7
Investment Interest Earnings	\$130.5
Loan Principal Repayments	\$103.7
Interest Earnings on Loans	\$111.9
<b>Total Sources</b>	<b>\$6,399.8</b>
<b>Uses</b>	
Binding Commitments	\$276.0
Loan Agreements	\$3,764.3
Bond Principal Repaid	\$48.1
Debt Service Reserve	\$434.4
Interest Paid on Match and Leveraged Bonds	\$120.5
Amounts Reserved for Set-Asides	\$575.8
<b>Total Uses</b>	<b>\$5,219.1</b>
Funds Made Available for Projects	\$5,221.0
Funds Uncommitted (for Projects)	\$1,180.7
Sources - Uses (or funds immediately available for projects or other uses)	

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# 6

## Types of Fund Assistance

This chapter provides a discussion on the types of assistance that states have provided to water systems from the Fund. It includes information on the conditions that recipients of assistance must meet, the weighted average interest rates of the assistance states have provided, and the use of disadvantaged assistance by states.

### ▼ Conditions for Receiving Assistance

As discussed earlier, DWSRF assistance may only be provided to eligible recipients for eligible projects. In addition, there are other national conditions that recipients must meet in order to receive assistance. States may also impose additional conditions on recipients.

Systems must be able to demonstrate that they have a dedicated source of revenue, or in the case of privately-owned systems, adequate security to ensure repayment of assistance. Systems must also have the technical, financial, and managerial capacity to ensure compliance with the SDWA. States have developed different strategies for assessing the capacity of systems. A description of the methods used by six states was included in the EPA report, *Case Studies in DWSRF Implementation - Capacity Assessment*, EPA 816-R-00-004 (July 2000). The methods used by states will change over time as states implement capacity development strategies required by the SDWA. If a system lacks adequate capacity, a state may assist the system provided that it agrees to undertake changes to ensure that it will achieve technical, financial, and managerial capacity.

Finally, a system cannot receive assistance if it is in significant noncompliance with any national primary drinking water regulation or variance unless such assistance will address the cause of the noncompliance and return the system to compliance. Assistance may also be provided for a project unrelated to the cause of noncompliance if the system is on an enforcement schedule or has a plan for returning to compliance.

### ▼ Types of Fund Assistance

Through SFY 2001, 1,776 assistance agreements had been executed for a total of \$3.764 billion. Although the law provides for other types of assistance, loans are the predominant type of assistance provided through state DWSRF programs (Table 6-1). For some states, loans are made through the purchase of a separate debt instrument that the community must enter into as a

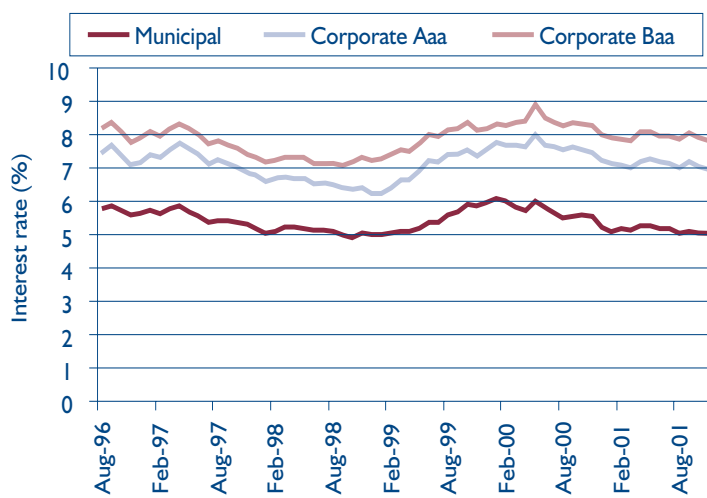
Table 6-1 Types of Fund Assistance

	Number of Agreements	Dollars
Loans	1,670	\$3.314 B
Short-term Refinance	24	\$57.7 M
Long-term Refinance	82	\$392.6 M
Guarantee/Insurance	0	\$0
<b>Total</b>	<b>1,776</b>	<b>\$3.764 B</b>

condition for receiving assistance. The second most common type of assistance is refinancing of existing short- or long-term debt. Of the total agreements, 106 were for refinancing of short- or long-term debt in the amount of \$450.3 million, or 12 percent of the total assistance provided (Appendix B-10). While states can also use funds to provide guarantees or purchase insurance, none had made use of these types of assistance through SFY 2001. States can include costs that were incurred prior to execution of a loan within the loan provided that the costs were authorized by the state. Ensuring that systems can be reimbursed for these pre-approved costs is important to those states which have short construction seasons (e.g., Alaska) or which conduct financing at specific times of the year (e.g., New Jersey).

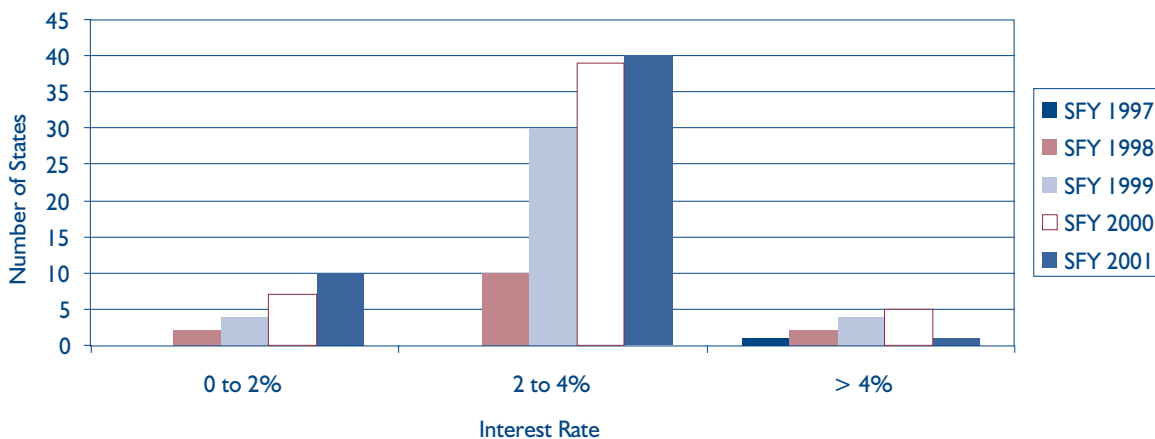
The repayment period for loans cannot exceed 20 years (except for disadvantaged loans). Although some states provide for shorter repayment periods, most loans have repayment terms of 20 years. Non-disadvantaged loans must have interest rates that are between zero and market rate. States are responsible for identifying the market rate against which they will set their interest rate. In states that provide assistance to privately-owned systems, states may have one market rate for public borrowers and another (typically higher) for private borrowers. EPA has asked states to report their market rates in the DWNIMS. Across all years of the program, market interest rates identified by states have ranged from 2.5 to 8 percent.

**Figure 6-1 Monthly Bond Buyer Index**



States use different methods for determining their interest rates. Most states set their interest rate based on some percent of the rate that states are charged for borrowing—typically the 20 year General Obligation Bond Buyer Index. Figure 6-1 shows the monthly 20 year Bond Buyer Index tracked by the Federal Reserve. Some states have established a set interest rate which is charged to all borrowers in the program while others have floating rates that are based on

**Figure 6-2 Annual DWSRF Weighted Average Interest Rates**



economic need, loan repayment period, or some other factor. States are asked to provide a weighted average interest rate on all loans executed in each state fiscal year. Weighted interest rates have ranged from 0 to 6 percent for all years (Figure 6-2) with most programs charging interest rates that range from 2 to 4 percent (Appendix B-11). Rates have decreased slowly over the past three years. When compared to the 20 year Bond Buyer Index, the program has provided subsidies equivalent to 11 to 26 percent grants.

The law allows states to refinance debt that was issued after July 1, 1993, for publicly-owned systems only. Most states regard refinancing as a low priority, although in some cases the savings afforded through refinancing debt can be significant, particularly for systems that have issues related to affordability. Generally, however, refinancing was more common early in the program.

### ▼ Disadvantaged Assistance

States are allowed to provide additional subsidies to systems identified as serving disadvantaged communities. Subsidies that are in the form of negative interest rate loans or principal forgiveness are limited to an amount equal to 30 percent of the state's capitalization grants. States can also extend loan terms to up to 30 years for disadvantaged communities.

States are responsible for defining which systems are disadvantaged using affordability criteria which they must release for public comment. In accordance with the law, EPA released a report in February 1998 on how states could consider affordability in their state programs—*Information for States on Developing Affordability Criteria for Drinking Water* (EPA 816-R-98-002). EPA also released a report in July 2000 on disadvantaged programs developed by several states, *Case Studies in DWSRF Implementation - Disadvantaged Communities* (EPA 816-R-00-005).

Not all states have developed disadvantaged assistance programs, and for those that have, not all programs offer principal forgiveness. EPA has decided that if a state makes an assessment of the disadvantaged status of a community in determining the terms of assistance, then the state is deemed to have a disadvantaged program. Using this definition, the DWNIMS shows that 29 states have developed disadvantaged assistance programs (Figure 6-3). Of the 29 states with programs, 16 states provided principal forgiveness and 18 states provided loan terms of up to 30 years. Ten states provided both principal forgiveness and 30 year terms. Five states had disadvantaged programs, but provided neither



### Providing Disadvantaged Assistance in Wisconsin

The City of Ashland, located in northern Wisconsin on the south shore of Lake Superior, is home to more than 8,600 residents. Historically, Ashland was a shipping port for nearby iron ore mines. Its 100 year old surface water slow sand filtration system, drawing from Lake Superior, was unable to consistently produce finished water of acceptable quality under current turbidity standards. The city received a \$2.3 million DWSRF loan to build a 2 million gallon per day membrane microfiltration plant and replace the old filters. Ashland also qualified for a disadvantaged interest rate of 1.782% because its population was less than 10,000 residents and the adjusted median household income (MHI) was less than 80% of Wisconsin's adjusted MHI. The project also addressed other treatment violations with the installation of new chemical feed systems to improve the uniformity of the added chemical concentrations and purchasing a new supervisory control and data acquisition system to provide continuous system monitoring and control from multiple city locations.

principal forgiveness or 30 year terms. These states offer lower interest rates to recipients identified as disadvantaged. Table 6-2 shows the breakdown of disadvantaged assistance.

**Table 6-2 Disadvantaged Assistance (D.A.)**

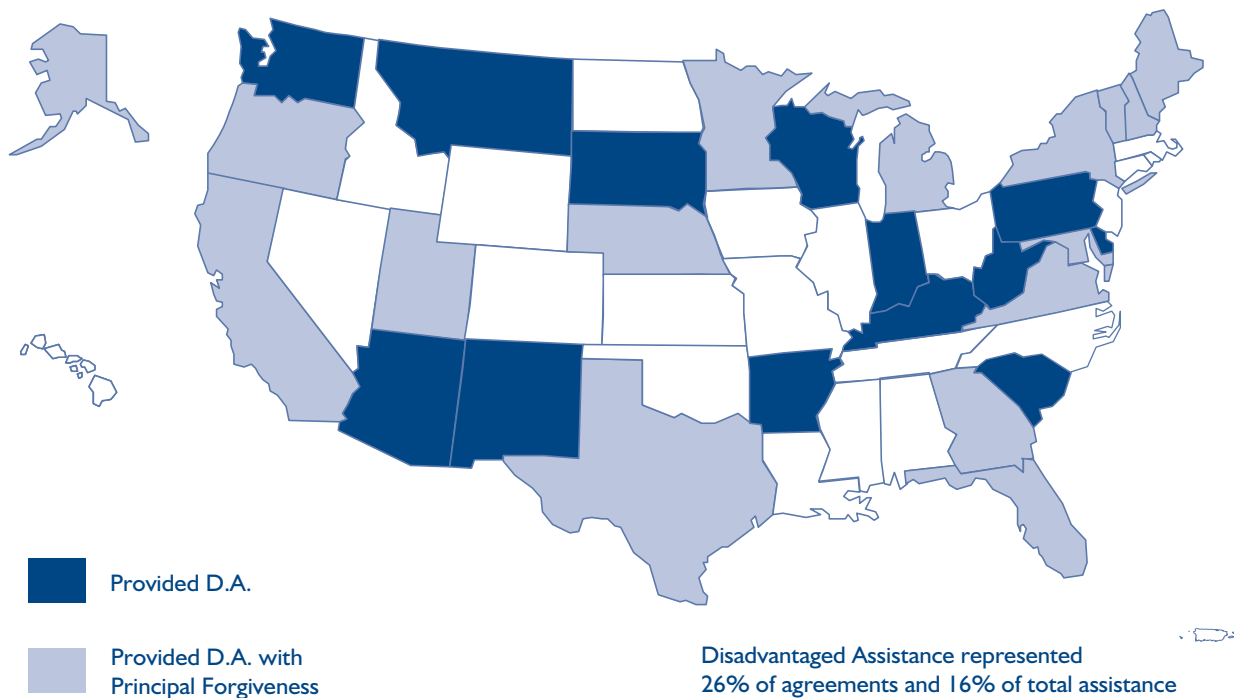
	Number of Agreements	Dollars
Total D.A.	455	\$618.9 M
D.A. including principal forgiveness	187	\$213.7 M
D.A. with >20 year terms	185	\$218.4 M

*\* Some recipients receive both principal forgiveness and extended terms*

For the purposes of determining compliance with the limitation that no more than 30 percent of funds be used to provide disadvantaged

subsidies, states only consider the amount of principal that is forgiven from assistance agreements. Nationally, an amount equal to 2.6 percent of the capitalization grants have been used for principal forgiveness. When looking only at those states that have offered disadvantaged assistance that included principal forgiveness, an amount equal to 5.7 percent of their capitalization grants were used to forgive principal on loans. No state has used the full 30 percent allowed by the law, although three states have used between 15 and 20 percent (Appendix B-15).

**Figure 6-3 Disadvantaged Assistance (D.A.)**





# 7

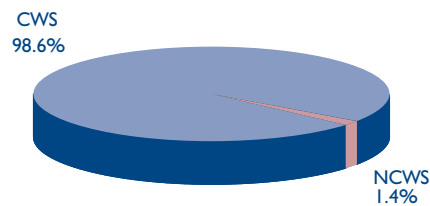
## Recipients and Projects Receiving Assistance

The types of systems receiving assistance and the types of projects being funded are as varied as the universe of public water systems itself. The DWNIMS collects information that captures the diversity of assistance being provided through the state programs. EPA has collected state aggregate data—not data on individual projects. However, in this chapter, and throughout this report, examples are provided of the types of problems that are being addressed by specific projects and the benefits afforded by these projects.

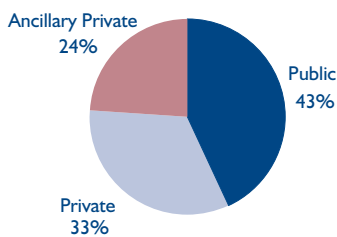
### ▼ Types of Systems

State DWSRF programs can provide infrastructure assistance to publicly- and privately-owned community water systems and non-profit noncommunity water systems. Although there are a greater number of noncommunity water systems, the vast majority of assistance has been provided to community water systems, which serve a much greater population (Figure 7-1).

**Figure 7-1 Assistance to CWS and NCWS (% Loans)**



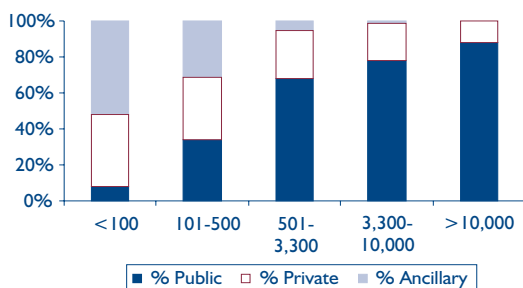
**Figure 7-2 CWS Ownership**



The universe of drinking water systems differs significantly from that of wastewater – where almost all treatment works are publicly-owned. For drinking water, about 43 percent of community water systems are publicly-owned and are usually under the authority of local government (Figure 7-2). The remaining community water systems reflect different types of private ownership. Thirty-three percent are systems where the primary business purpose is water supply, such as investor-owned utilities and systems held by

homeowner’s associations. The remaining 24 percent of privately-owned systems are considered ancillary water systems - where the primary purpose of the business is not water supply. Most of the ancillary community water systems are mobile home parks. However, ownership profiles look different when the population served by the system is considered (Figure 7-3). Almost 90 percent of the systems serving 10,000 or more people are under public ownership. As the

**Figure 7-3 CWS Ownership by Size**



population served by a system decreases, the percentage of water systems under private ownership increases. Because there is such diversity of ownership in the drinking water industry, a one-size fits all approach is not always appropriate in identifying challenges and potential solutions to those challenges.

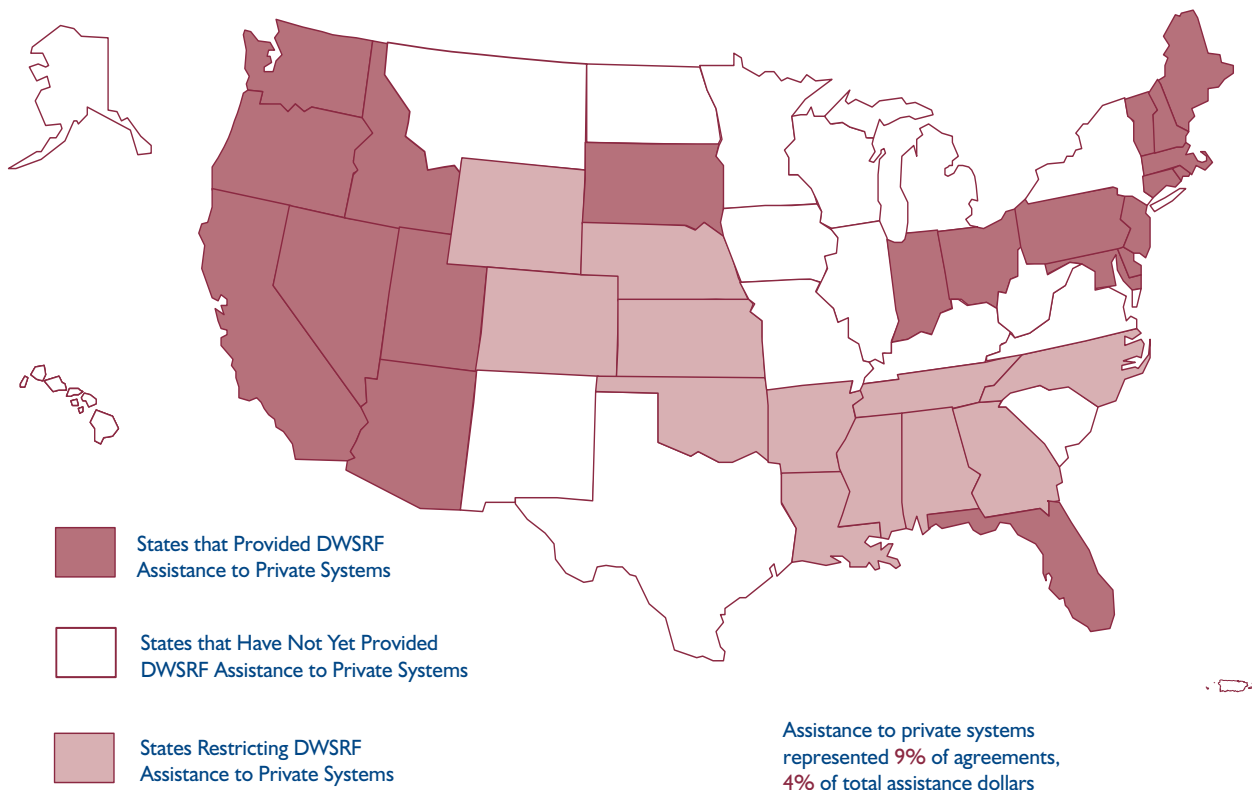
Although the law gives states the authority to provide assistance to private systems, not all states have done so (Figure 7-4). Several states have state legislative or regulatory restrictions on providing assistance to private systems. A few others have made a policy decision to restrict assistance to private systems due to concerns about endangering the tax-exempt status of bonds issued to provide state match. Among the states that do not have these restrictions, some have yet to provide assistance to a privately-owned system. These states have indicated that they have not had any demand from privately-owned systems for assistance or that they have been reluctant to provide assistance to these systems due to concerns about the creditworthiness of applicants. Publicly-owned



### Funding Private Systems in Florida

Tradewinds Utilities is a small private water system in central Florida. In October 1998, the Department of Health (DOH) asked the system to sponsor a project in an area with multi-family housing units regulated by DOH and served by water with extensive microbiological contamination. Tradewinds received a \$590,000 low interest loan to construct an elevated storage tank and approximately 6,185 feet of water lines to the area. This was Florida's first loan to a private, investor-owned utility. Florida requires all systems receiving DWSRF assistance to maintain a repayment reserve fund in case they encounter difficulties in making loan payments. Because Tradewinds is a private system, it was required to establish a repayment reserve that was 6 percent more than that required of publicly-owned systems. Construction was completed in November 1999.

Figure 7-4 Assistance to Privately-owned Systems



systems generally have the full faith and credit of the utility or community backing its loan. States funding private systems may have to put in additional effort to ensure a similar level of security for these loans.

The assistance provided to private systems does not reflect the inventory data for those systems. While 57 percent of the nation’s community water systems are privately-owned, only nine percent of DWSRF assistance agreements have been provided to privately-owned systems (Appendix B-14). The states that have been successful in funding private systems (see box) use a variety of methods for assessing credit—some contract the service out and others do it in-house. EPA continues to be concerned about the failure of many states to fund privately-owned systems and will continue to work to raise the comfort level of states in providing assistance to privately-owned systems and address issues that are causing states to restrict funding to these systems.

**States with Greatest Number of Loans to Private Systems (shown as a percent of all loans)**

- Arizona - 54%
- Washington - 30%
- Florida - 30%
- Pennsylvania - 28%
- Vermont - 23%

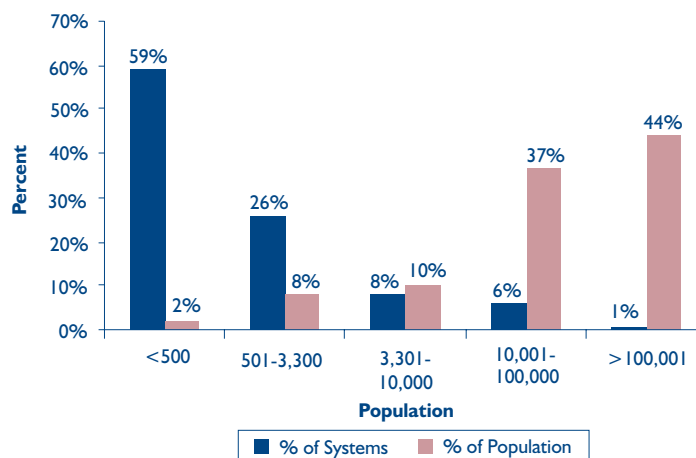
Public water systems operated on American Indian lands and in Alaska Native Villages can receive direct grants from EPA through the national set-aside reserved for that use. However, these systems are also eligible for assistance from state DWSRF programs, with the exception that a specific project cannot receive both a DWSRF loan and a Tribal set-aside grant. There are many challenges involved in providing assistance to Tribal systems associated with their legal status. However, a few states have worked to implement procedures to facilitate the funding of these systems, which often have serious public health needs. Arizona was the first state to provide a DWSRF loan to a Tribal government for its water system.

**▼ Size of Systems**

Eighty-one percent of the population is served by the seven percent of total community water systems that serve more than 10,000 people. However, the majority of water systems serve fewer than 3,300 people (Figure 7-5). Systems that serve small populations face challenges in responding to infrastructure needs and regulatory requirements, because they lack the economies of scale that are available to large water systems, which can spread costs over a larger population base.

However, where there are challenges, there are also opportunities to introduce practices that can bring efficiencies to the drinking water industry and/or reduce the number of these small systems. For example, consolidating management or the physical assets of a water system with another system can reduce burdens on the utilities and customers by leveraging the systems’ economies of scale. Consolidation could be especially attractive for small systems that are in close proximity to another system.

**Figure 7-5 Population Served as a Function of System Size**



The SDWA placed a special emphasis on providing assistance to small systems serving 10,000 people or fewer. States must provide a minimum of 15 percent of their available funding to small systems. States have more than met the requirement, with 41 percent of the funds that have been provided nationally through loans going to small systems. The actual percentage of loan agreements (75%) provided to small systems is considerably larger. This is due to the fact that the average dollar amount of loans to small systems is smaller than that for larger systems. While several states have not met the requirement for funding small systems, this is primarily because they have not executed many loans.

While the law established a population size of 10,000 or fewer as small for the purposes of the DWSRF program, many in the drinking water industry do not consider a system that serves 10,000 to be a small system. In fact, the majority of public water systems serve populations of less than 500. When breaking out assistance across a greater number of population ranges, one can see that the greatest number of agreements have been made in the 501-3,300 population range (Figure 7-6, Appendix B-16). The percentage of assistance provided to the various size categories of systems

Figure 7-6 DWSRF Assistance by System Size

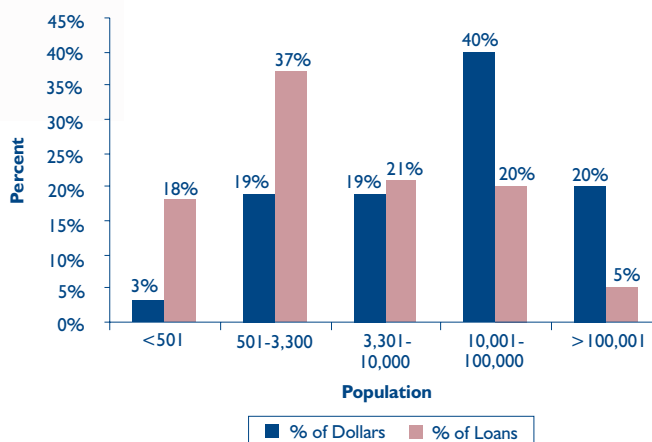
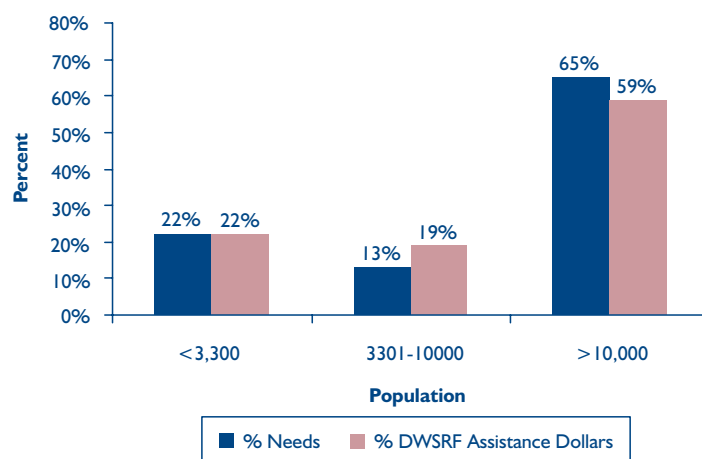


Figure 7-7 Comparison of Needs to Assistance by System Size



## North Dakota

### Funding a Small Water System in North Dakota

The Southeast Water Users District received DWSRF assistance to provide water service to the City of Havana, North Dakota. Havana has a population of 124 and a land area of 0.6 square miles. The \$60,000 loan was used to construct transmission and distribution lines necessary to rectify Havana’s pressure problems and bacteriological compliance problems under the Total Coliform Rule.

### Funding a Large Water System in Wisconsin

The City of Oshkosh, located in central Wisconsin on Lake Winnebago, had a 100-year-old surface water system that was vulnerable to microbial contaminants. To address this threat, a new 16 million gallon per day treatment plant was planned, designed, and built with DWSRF loans totaling \$25.6 million. This new plant, which has four dual-media filters, two ozone contractors, chemical handling facilities, and plant administration space, ensures safe water for the city’s 55,000 residents. The entire cost of the project was \$29 million, and Oshkosh was scheduled to receive its final DWSRF loan of \$3.5 million to complete the project.



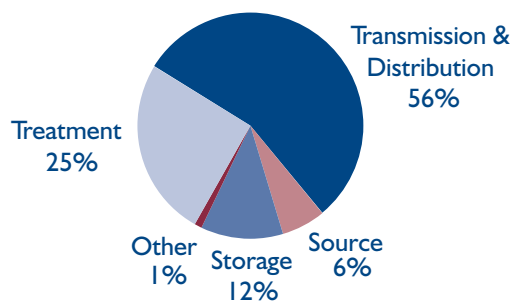
largely agrees with national needs numbers identified by the 1999 Drinking Water Infrastructure Needs Survey (Figure 7-7).

States have faced challenges in providing assistance to small systems. These systems tend to be less sophisticated than many larger systems and often have issues related to technical, financial, and managerial capacity. Some very small systems may not even be aware of the infrastructure improvements needed to ensure the continued supply of safe drinking water. States have had to work hard to simplify and streamline requirements to help small systems through the loan application process. States are also entering into partnerships with organizations that work with small systems to help them identify projects and work through the application process. States are using set-aside funds to provide capacity development assistance and are also working to introduce financial and infrastructure assessment elements into sanitary surveys of drinking water systems conducted by the states.

### ▼ Categories of Projects - Infrastructure

The DWNIMS collects state aggregate data on several categories of projects, including the project categories used in the 1999 Needs Survey. The Needs Survey collected information on four major construction categories which correspond to the primary components of a drinking water system: source; transmission and distribution; treatment; and storage. In addition to these construction categories, the DWNIMS collects data on project costs associated with purchasing systems, restructuring a system, or acquiring land needed to locate the facilities. Through SFY 2001, states reported that they had provided funding to more than 1,846 projects. The number of projects is greater than the number of loan agreements because some loans are made for more than one project.

**Figure 7-8 Needs by Category (% Dollars)**

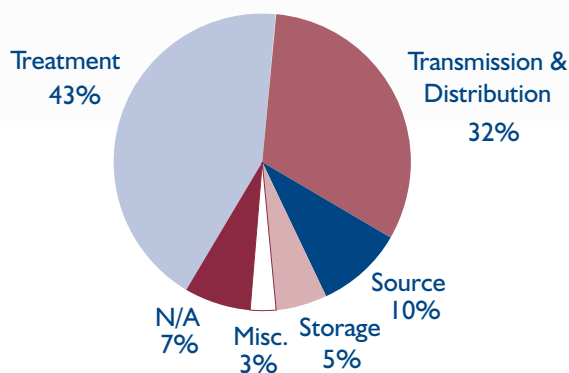


The Needs Survey showed that the majority of needs are associated with transmission and distribution assets (Figure 7-8). This finding reflects that most of the assets of a water system are associated with the transmission pipes that move water from the source to the treatment plant and the distribution pipes that move treated water from the plant to the customers. Projects under this category may include the installation or replacement of pumps, valves, backflow prevention devices, service lines, and water meters. In DWNIMS,

## North Carolina

### Replacing Inadequate Distribution Lines in North Carolina

Chimney Rock Village, located in North Carolina's Rutherford County, is a community with a population of only 137 people. Until 1998, it was served by privately-owned Chimney Rock Water Works. The Water Works had only an emergency operator appointed by the North Carolina Utilities Commission and was under an Administrative Order to replace its spring source which was under the direct influence of surface water with a new source of supply and replace its undersized water lines. In 1998, the Village purchased the water system in order to be eligible for state assistance. Due to the limited number of customers and excessive water rates, funding for the needed projects from rate increases was unfeasible. The Village received a \$182,230 DWSRF loan to comply with the Administrative Order. The project included developing and connecting previously drilled wells to the system so that the spring water sources could be abandoned. The Village was also able to replace its undersized lines. The project was successfully completed and brought the Village into compliance.

**Figure 7-9 DWSRF Assistance by Category (% Dollars)**

EPA asked states to report whether an agreement addressed one or more of the construction categories and the dollar amount associated with that component. The total number of components identified is greater than the number of agreements because most projects typically address more than one construction category. Fifty-one percent of the total components identified addressed transmission and distribution while 34 percent addressed a treatment component.

Although transmission and distribution needs were the most frequently addressed construction category, the picture changes when looking at funding directed at the projects (Appendix B-13). Treatment projects comprised 43 percent (\$1.612 billion) of the total construction costs while transmission and distribution made up only 32 percent (\$1.184 billion) of the total costs (Figure 7-9). The law requires that states give priority to projects that are needed to protect public health and ensure compliance with SDWA. Many projects that are needed to address these statutory criteria will require a treatment solution as opposed to solutions provided through the other categories. Treatment projects can include projects needed to address microbial contaminants, which, if left unaddressed, can result in serious and, in some cases, immediate health problems. Projects addressing microbial contaminants might include filtration of surface water sources and disinfection with chlorine-based compounds. Removal of chronic contaminants such as organic chemicals may require aeration and/or treatment by granulated activated carbon to reduce concentrations to safe levels. Treatment can also address secondary contaminants like iron and manganese, which can affect the taste and color of water. The solutions to these violations often pursue a treatment course, but may also involve other categories of infrastructure.

Storage projects (\$199.1 million) include those needed to construct or rehabilitate elevated and ground level storage for treated water. The category also includes installation of covers for treated water reservoirs to bring them into compliance with the Interim Enhanced Surface Water Treatment Rule. Water systems need to have sufficient storage to provide an adequate supply of treated water to the public during periods of variable demand. The storage must enable the system to maintain minimum pressures to ensure that contaminants are not

## South Dakota

### Addressing Nitrates in South Dakota

Situated in Minnehaha County, the City of Brandon is just a few miles from Sioux Falls, South Dakota's largest city. As Sioux Falls' population grew by 25% over the past 10 years, the City of Brandon grew even faster: from about 3,500 people to 5,700. Brandon's four existing wells had limited capacity and drew from a shallow aquifer high in nitrates. To remedy the nitrate problem and increase supply, the city investigated drawing water from a deeper, cleaner aquifer. Although water in the deeper aquifer is low in nitrates, it has high levels of iron and manganese. The city decided to drill a fifth well in the deeper aquifer and blend this water with the existing supply to reduce nitrate levels. The city needed to build a new water treatment plant to remove the iron and manganese. In 1998, Brandon received a \$1.95 million DWSRF loan to drill the additional well and to construct a new treatment plant using oxidation and filtration technology. Construction was completed in November 1999 and the new plant went online in early 2000. The project came in \$70,000 under budget.

introduced into the distribution system. The optimal storage capacity is generally based on the population served by the system and requirements that a state may have to ensure that systems have an adequate emergency supply in case of an interruption of service.

Drinking water is obtained from ground water or surface water sources. Projects needed to address surface water sources include constructing or rehabilitating surface water intake structures. Projects designed to address ground water sources include drilled wells, wellhead pumps, and spring collectors. States provided \$355.3 million in funding for capital projects addressing sources of drinking water. Projects intended to protect sources of drinking water from contamination are not eligible for assistance from the Fund, but can be addressed through various set-asides as described in Chapters 9 and 10.

Information on several other miscellaneous project categories is also collected. Planning and design is a necessary component of any capital improvement project. States have funded planning and design in many different ways. Most frequently, the costs of



### **Funding Regionalization in Michigan**

Michigan awarded three loans totaling \$17.4 million to the community of Wixom. Located about 35 miles outside of Detroit, Wixom has a population of 6,700. Before the DWSRF loans, Wixom had eight separate water systems: several small subdivisions, apartment complexes, and regional business developments had their own (unreliable) water systems. The DWSRF loans were used to extend distribution mains, build elevated storage tanks, provide a new pump station, and loop and connect systems so that all the systems could be tied into the Detroit Regional Water System, which serves about 80 communities.

planning and design are rolled into construction costs for the infrastructure improvements.

However, a few states have made loans solely for the cost of planning and design. States have provided \$20.5 million in loans that are solely for planning and design through the Fund. Planning and design funding for small systems has also been provided through set-asides in the form of loans or grants.

EPA is also tracking the costs for acquiring land that is needed for the purposes of locating eligible project components. At \$12.2 million, the costs for land acquisition have not been significant. This is likely due to the fact that most of the construction that has taken place has been on land that is already owned by the utility. Land that is needed to protect sources of drinking water is not eligible for purchase using the Fund. A separate set-aside allows water systems to take loans to acquire land or conservation easements to protect their drinking water source.



### **Funding Consolidation in Indiana**

Prairieton is a community of 350 people in central Indiana. In 1999, the Prairieton Water Company was under an Administrative Order due to nitrate maximum contaminant level (MCL) violations. Given its small population, the best available solution for Prairieton was to hook up to the Indiana American Water Company, a much larger system. Indiana American serves 700,000 people in 35 cities and towns. A \$500,000 DWSRF loan was awarded in January 2001 to fund Prairieton's connection to Indiana American. Because Prairieton has a median household income of only \$11,973, it qualified for the lowest available interest rate of 2.9%. This loan allowed Prairieton to abandon its existing plant and connect to Indiana American with the residential water fee remaining steady at \$25 per month. Residents began receiving water from Indiana American in May 2001.

Some states are using their DWSRF programs to encourage efficiencies in the drinking water industry. Consolidation, regionalization, and restructuring are three activities that can address the large numbers of public water systems that serve very small populations throughout the country. To facilitate consolidation of utilities, the costs needed to purchase a public water system are eligible for DWSRF assistance. Costs needed for restructuring, which could include changes in the organizational or management structure, accounting or rate systems, or other activities that would improve the technical, financial, and managerial capacity of a water system, are also eligible for assistance. States have provided \$59.5 million and \$24 million for the costs of purchasing systems and restructuring, respectively. States have also executed 157 agreements for \$458.7 million to facilitate consolidation projects which have resulted in the elimination of 325 systems.

### ▼ Categories of Projects - Programmatic

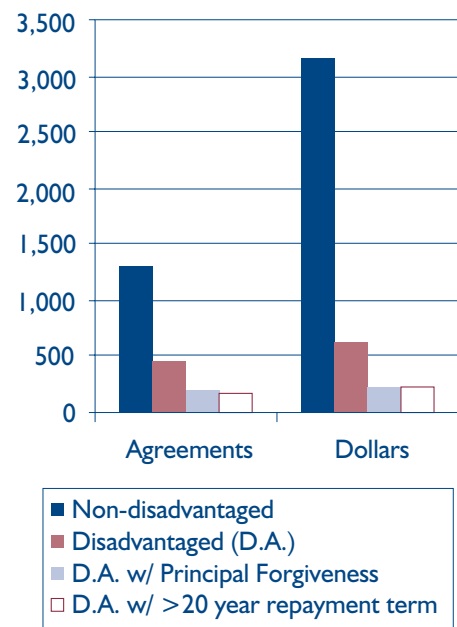
EPA has also collected project data for several categories that reflect DWSRF programmatic priorities and issues (Appendix B-14). The three priority criteria in the SDWA for the DWSRF program are protection of public health, compliance with requirements of the Act, and ensuring affordability. Almost all projects funded through the program will protect public health, by either addressing an immediate threat, or by taking preventative measures to ensure that the public is protected. Likewise, all projects ensure that the system will maintain compliance with the requirements of the Act. However, some projects receive assistance to address an existing violation of health based drinking water standards. The DWNIMS asks states to report on the number of loan agreements that are funding a project to help a system come into compliance. More than one-third of the agreements were made to systems to address existing compliance problems. Projects funded by these agreements will help to ensure safer drinking water for the more than 10 million people in SFY 2000 and 7 million people in SFY 2001 served by the systems.

Because all DWSRF loans are made at interest rates that are at or below the market interest rate, they can provide relief to water system customers who would be subject to even greater rate increases to ensure

#### A Note on Population Numbers

The DWNIMS collects numbers on the population benefitting from assistance for several of the data elements. It is important to note that these figures may include double counting if a system receives more than one loan agreement from a state over a period of years. For example, if a city received a loan in 1998 to correct a compliance problem and another loan in 2000 for a different project addressing a different compliance problem, the population for that city would be counted twice. Because states cannot double count in the annual data collection, it is sometimes better to look at annual rather than cumulative numbers for population.

Figure 7-10 Type of Assistance





repayment of debt incurred to fund infrastructure improvements. As noted above, however, a state may provide additional subsidies to water systems it has identified as serving disadvantaged communities. Approximately 26 percent of the total loan agreements have been provided to these systems. Forty-one percent of the disadvantaged assistance agreements included forgiveness of principal and 38 percent extended loan terms beyond the standard 20 year term (Figure 7-10).

There are more than 16 million households that obtain their drinking water from sources other than public water systems. The vast majority of these households receive water from drilled or dug ground water wells. Although state or local governments have imposed requirements on these wells, they are not regulated by the SDWA. There are instances where it may be desirable to extend service

from a public water system to households served by wells that have become contaminated and unsafe.

However, there are cases where a public water system is not located near the homes served by contaminated wells and the SDWA requires that DWSRF assistance be provided only to public water systems. States asked EPA to consider how these important public health problems could be addressed by the DWSRF program. EPA issued a policy in December 2000 which allowed states to provide



### Providing Disadvantaged Assistance in New York

The Village of Unionville had a water supply that was antiquated and portions of the system were in dire need of replacement. Village officials had begun working with the U.S. Department of Agriculture's Rural Development (RD) Office to obtain financial assistance for the project as early as 1991. When it became apparent that the RD grant would be insufficient to meet total project costs, the Village turned to the Environmental Facilities Corporation and the DWSRF to make the project possible. The DWSRF co-funded the project with the Village receiving \$823,370 in subsidies from the DWSRF. The Village also received a \$450,970 loan from the DWSRF combined with a \$475,760 grant from RD toward the total project cost of \$1,750,000. By bringing together both federal and state resources, the Village could move forward. Through replacement of old mains, and the installation of new pumps and a well, the risk of microbiological contamination has been greatly reduced.



### Extending System Service to Households in Tennessee

Mount Pleasant, south of Nashville, a community with a population of 4,278, had antiquated water lines that served 15 residential customers. These water lines had galvanized pipes which allowed rust to leach into the water supply. The water system also had high unaccounted-for water losses. Mount Pleasant received a one-time \$71,300 DWSRF loan to replace and extend its water lines. The interest rate on the loan is 3%, which is based on the town's small population and low average annual pre-tax household income. Once the water lines were extended, 15 additional customers were added to the system who had previously drawn water from private, contaminated wells.

### Providing Safe Drinking Water to Households in Virginia

Coal mining in the Red Root Ridge area in Tazwell County led to serious water quality and quantity problems. One family depended on a cistern to supply its water after two wells failed. Even with a cistern, the family purchased drinking water and had insufficient water for bathing and laundering. The local fire department often brought them water, but the cost was high and they sometimes ran out of water. A \$416,000 DWSRF loan was provided to Red Root Ridge for a waterline extension project. The project was completed in May 2000 to provide safe water to 63 families, including the family that depended on a cistern.



assistance to an entity that was not currently a public water system, if the assistance would result in the creation of a federally-regulated community water system. States have reported funds that have been used to create new public water systems. Through SFY 2001, 46 loan agreements totaling \$84.6 million had been made that resulted in the creation of new systems. These new public water systems are subject to requirements to ensure that they have adequate technical, financial, and managerial capacity, and that they will not contribute to unreasonable growth.

Finally, as noted earlier, many states have funding programs that complement the DWSRF program—federal funding is also available through the RUS and Department of Housing and Urban Development. Many states have developed coordination groups to maximize use of funding and to help develop the best funding packages available for potential recipients. States have been asked to report on the number and amount of projects they fund using monies from

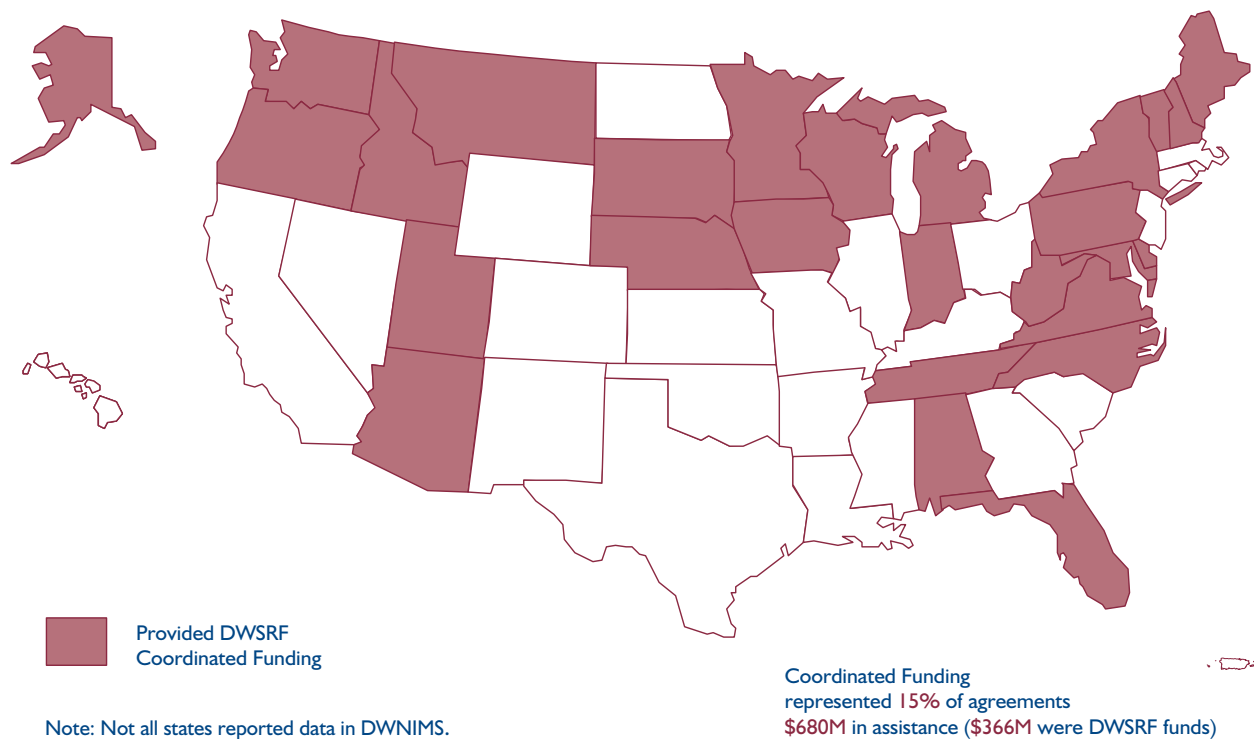


## Maine

### Coordinating Funding in Maine

Maine's Winter Harbor is a disadvantaged community with approximately 200 residential customers. With the average annual water bill exceeding \$300 and the average annual household income just over \$19,000, the average family's water bill is almost 2% of their annual pre-tax income. The water system in Winter Harbor was privately-owned and poorly managed. It was one of the last unfiltered surface water systems in Maine and had limited storage, old water mains, and high unaccounted-for water. Funds from the Rural Development Agency of the U.S. Department of Agriculture paid for an eminent domain takeover and the water system became a public water district. In 1997, Winter Harbor received a DWSRF loan of \$1.1 million and a U.S. Housing and Urban Development (HUD) Community Development Block Grant of \$400,000 to install two new wells, a new pump station, treatment plant, glass line, and storage tank. Winter Harbor was given maximum assistance with 75% of the funds on principal forgiveness and 25% of the funds on a 0% interest loan over 30 years. In 1999, the community received another DWSRF loan of \$180,000 and a HUD Community Development Block Grant of \$400,000 to replace nearly half of the water mains.

Figure 7-11 Coordinated Funding



more than one source (Appendix B-18). Although some states that have coordinated funding failed to report their data, 27 states did report that they had funded projects using multiple funding sources (Figure 7-11). In these states, 15 percent of the DWSRF agreements were coordinated. The total dollar amount in these coordinated agreements was \$679.7 million, of which \$366.3 million (54%) was DWSRF funding.

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# 8

## Financial and Programmatic Effectiveness

Nationally, the DWSRF program has been effective in providing financial assistance for needed drinking water projects. When looking at effectiveness on a state by state basis, some states have been challenged in implementing their programs due to various barriers, which will be discussed in a later chapter. The activities conducted using the infrastructure Fund and the set-asides are integral components in the greater mission of drinking water and public health protection. This chapter primarily deals with the financial and programmatic effectiveness of the Fund and, as such, the measures that are discussed within this chapter focus on the Fund as a separate entity. Many states are using the set-asides to directly support the activities of the Fund. The effectiveness of the set-asides in assisting the Fund and other parts of the drinking water program will be discussed in the following chapter.

Before beginning, it might be helpful to discuss what it means to be financially or programmatically effective. It is difficult to point to any one indicator that will clearly identify one way or another that the program is or is not effective. In a way, it depends on who is asking the question. As an example, for Congress, the most important question might be — How much assistance is being provided for every federal dollar appropriated? For an EPA staff member, the question might be — How much of the funds that are available have states committed to loans? For a state DWSRF program manager, the question might be — How are we doing in getting the projects built and the facilities in operation to address specific compliance requirements? Obviously, there are many questions that one might ask in order to come to some conclusion about effectiveness.

From a financial standpoint, the program's effectiveness might be assessed by answering questions such as:

- Are states taking the money that Congress has appropriated?
- Are states making loans?
- Are projects getting built and are loans getting repaid?
- What other funds have been invested in the program?

From a programmatic standpoint, the questions one might ask to determine if the program is effective include:

- Is the program protecting public health?
- Is the program helping systems maintain compliance with drinking water standards?
- Are disadvantaged communities benefitting from the program?

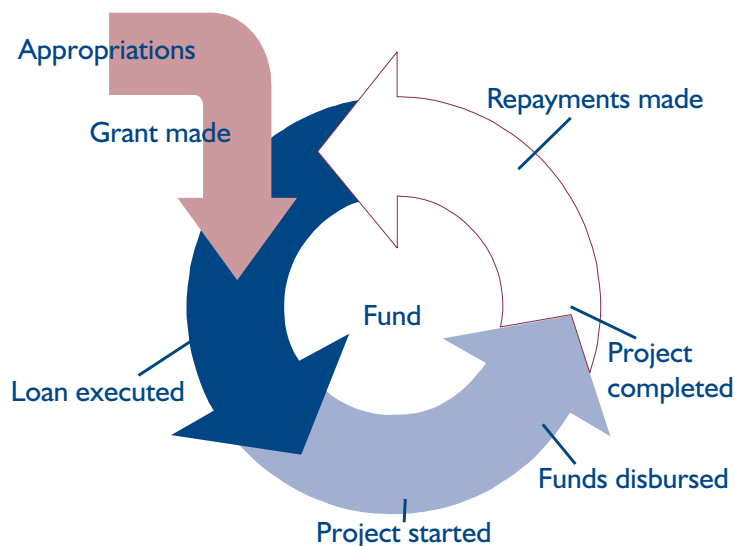
Finally, since this is a revolving fund, it is important to ask how EPA and states are working to ensure that funds will be available into the future. Throughout this chapter, progress is discussed as measured against one or more of three values: the amount of federal capitalization grants, the amount of funds available, and the amount of assistance provided.

### ▼ Financial Effectiveness

As noted in an earlier chapter, there are many steps that must be taken before funds are actually used to build a project. In determining how the program is progressing, several milestones have been identified that can help to tell the story (Figure 8-1). EPA has also developed several financial indicators to help assess the health of national and state programs. EPA worked with its state partners to finalize the indicators, which were in large part based on indicators developed for the CWSRF program. While no single indicator can identify a state program as successful or unsuccessful, taken as a suite they

paint a picture of the relative health of a state's program. One important thing to note about the data presented in this report is that it provides a picture of the program's status through SFY 2001. Many of the indicators discussed below can vary depending on the time period covered by the underlying data. For example, a state could enter into a large loan agreement the day after the data is reported. This would not be reflected in the data or the indicators.

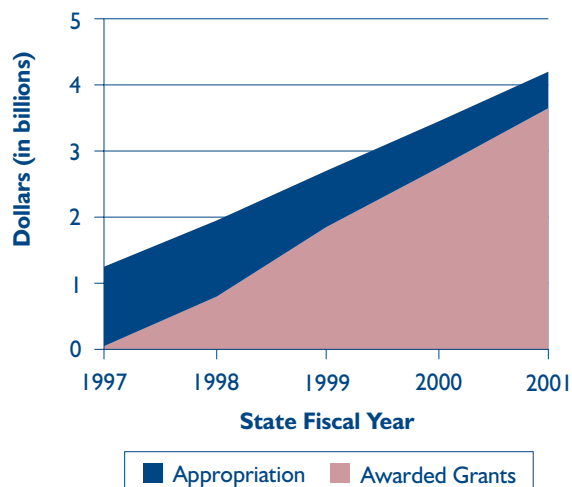
Figure 8-1 Milestones in the DWSRF Process



### ► Are states taking the money that Congress has appropriated?

Through FFY 2001, Congress appropriated \$4.418 billion for the program. Of this amount, \$4.212 billion was available to states for capitalization grants. The remainder of the national appropriation was used for various national set-asides, including funds for Indian Tribes and Alaska Native Village systems and operator certification reimbursement grants. Through SFY 2001, states had applied for and received \$3.648 billion in grants, or 87 percent of available grants (Figure 8-2). The law affords states two years in which to receive a grant. Thirty-three states received part or all of their FFY 2001 grants in the first year of availability. Some have questioned why all states do not receive their grants in the first

Figure 8-2 Cumulative Appropriations and Awards



year, given the demand for funding. In the first year of the program only 18 states received a grant. The number has increased since then, but many states are on an established schedule and work to develop their IUPs, grant applications, and requests for projects at the same time every year and thus are not in a position to accelerate their process to receive funds earlier. Some states also establish schedules by which they can receive funds from two appropriations within one grant agreement.

### ► Are states making loans?

Before states even have the grant funds in hand, they are working to identify projects for funding. States must enter into binding commitments with recipients in accordance with a timeframe established in their grant agreements. In most states, this binding commitment is the same as assistance provided in the form of a signed, executed loan agreement. While the legal requirement is that states enter into binding commitments, when assessing progress of the program, EPA believes it is more important to look at the actual loans that have been executed to determine when the funds are made available to the recipient. From SFY 1997 to SFY 2001, the states have made considerable progress in executing loans for projects. The cumulative assistance provided as a percentage of the funds available has increased from one percent in 1997 to 72 percent in 2001 (Figure 8-3, Appendix B-4). The assistance provided as a percentage of federal funds shows that the federal return is 123 percent. This is consistent with the progress shown during the first five years of the CWSRF program. Although the majority of states have executed loans for more than one-half of their available funds, considerable variability exists among the states (Figure 8-4). States with low percentages have faced challenges in implementing their programs, which are further discussed in Chapter 11. As of June 30, 2001, \$1.4 billion remained available for loans.

Figure 8-3 Utilization of Funds

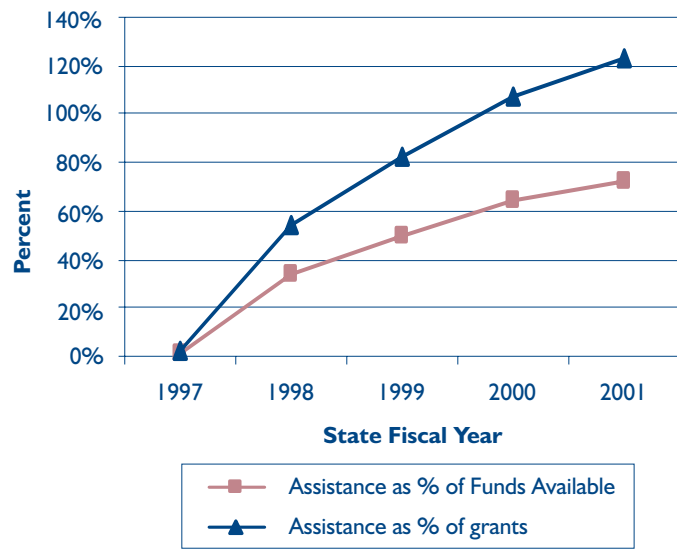
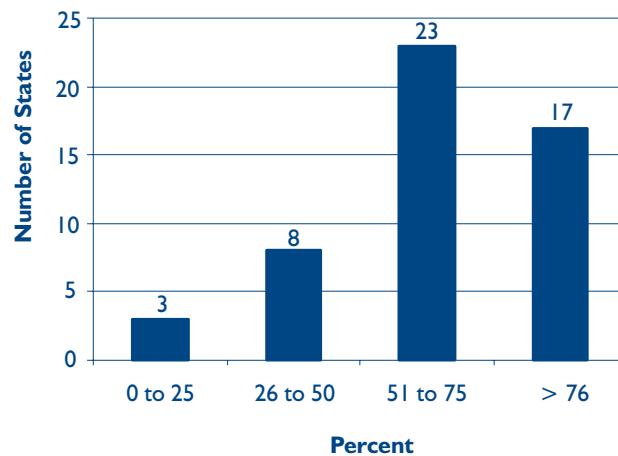


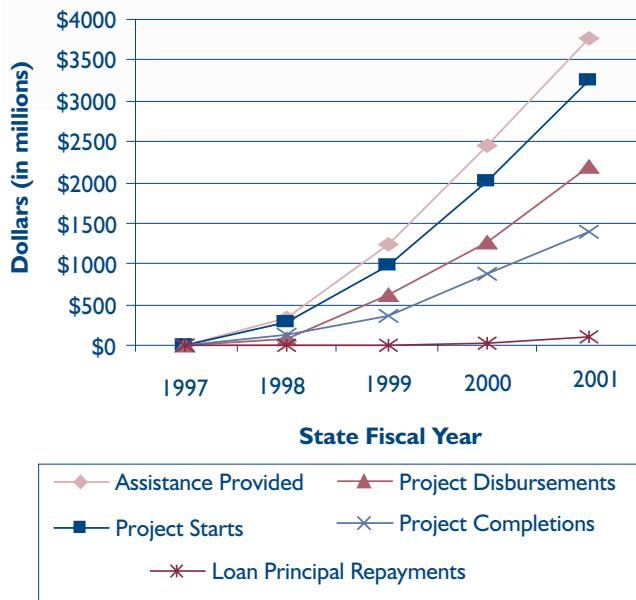
Figure 8-4 Assistance as a % of Funds Available



### ► Are projects getting built and are loans getting repaid?

Once a loan has been executed, states are focused on making sure that the projects get underway and are completed. In many grant programs, including EPA's wastewater construction grants program, there were concerns that projects were taking far too long to be built. In the DWSRF program, states have a

Figure 8-5 Project Status Milestones



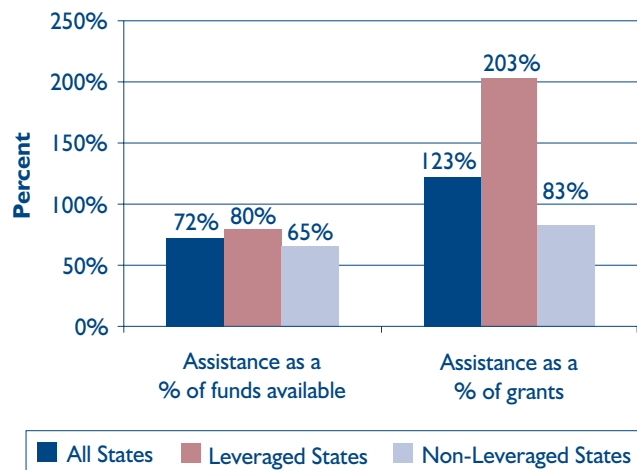
vested interest in ensuring that projects are completed because repayments are required to begin no later than one year after the project is completed, although some states require repayments to begin once the project has started construction (or closed the loan). Indicators that show project progress include project starts, project disbursements, and project completions (Figure 8-5, Appendix B-9). To date, projects have been started for approximately 89 percent of loan agreements that states executed. While EPA does not collect information on specific projects funded through the program, the general sense is that projects take anywhere from one to four years to complete. While small projects may take less time, and some large projects may take more, the average

construction period is probably around three years. As construction proceeds, monies are disbursed to recipients based on incurred costs. States have disbursed 58 percent of the funds in executed loan agreements to recipients to cover costs (Appendix B-8). Projects have been completed for 46 percent of the agreements, and because some states required repayments to begin before construction is completed, principal repayments have been initiated on 46 percent of the projects (Appendix B-9). At three percent, the actual amount of loan principal repaid as a percentage of the assistance provided is low, but this will increase with time as the program matures (Appendix B-8). This can be demonstrated by looking at the more mature CWSRF program. Repayments have increased steadily throughout the life of the CWSRF program to the point where, in SFY 2001, loan principal repayments of \$1.2 billion were nearly equal to the program’s FFY 2001 appropriation of \$1.35 billion.

► **What other funds have been invested in the program?**

The amount of funds added to the program above and beyond the federal contribution is significant. Funds have been added from states through the required 20 percent match, additional state contributions, earnings, transfers from the CWSRF program, and proceeds from bonds issued for leveraged programs. As noted earlier, 15 states have used leveraging at some point in their program to add \$1.050 billion in net bond proceeds available for projects. Leveraging has allowed several states to fund more than twice the amount of projects they would have been able to fund through capitalization grants alone. Some have pointed

Figure 8-6 Utilization of Funds Leveraged vs. Non-Leveraged Programs





to leveraging and asked why all states do not use the practice to increase the funds available for projects. It is important to recognize that leveraging only makes sense if a state has sustained loan demand that significantly exceeds the funds available. Also, a state needs to have the necessary management and financial expertise to operate a leveraged program, which is significantly more complex than a non-leveraged program. When looking at some of the financial indicators, it is useful to separate out those states that are leveraging from those that are not to see if there are any differences. Figure 8-6 shows that the assistance provided as a percentage of federal capitalization grants is significantly greater for leveraged states (203%) vs. non-leveraged states (83%). The assistance provided as a percent of funds available is not as different—80 percent for leveraged states vs. 65 percent for non-leveraged states (Appendices B-5 and B-6). One of the financial indicators developed by EPA looks at the estimated additional DWSRF assistance that is provided as a result of leveraging. The total amount added for the 15 states using leveraging is \$526.1 million. Through SFY 2001, four states had not yet achieved additional benefits through leveraging. States that issue bonds must work hard to execute loan agreements for the greater amount of funding. If projects fail to proceed in accordance with a state's anticipated schedule, this can cause problems. At least two states that experienced difficulties in executing loans decided to suspend leveraging until they have enough projects ready to proceed.

When looking to judge the success of the program from the ability of the program to exceed the federal investment, EPA considers the cumulative DWSRF assistance that has been disbursed against the federal draws from the Treasury. EPA uses these figures, rather than the assistance provided as a percentage of federal grants awarded, because they capture activities that have actually occurred. The assistance provided as a percent of the grants awarded would include funds that had not been obligated to projects and loan funds that had not yet been disbursed for construction costs. Using total disbursements and federal Treasury draws for activity from the Fund (i.e., excluding non-administrative set-asides), the disbursements as a percent of net federal outlays is 160 percent. Values for individual states were as high as 518 percent. States with a value greater than 100 percent have disbursed more to projects than they have drawn in federal funds for projects, which is accomplished through the disbursement of state match and other monies in the Fund (e.g., bond proceeds, earnings). The significant range of values observed for some of the indicators is reflective of the fact that, early in the program, the highly variable nature of the data makes it difficult to apply financial indicators. The indicators will become more useful and relevant when the data have a more historical basis.

### ▼ Programmatic Effectiveness

Some of the elements described in the previous section also speak to programmatic success in that public health protection cannot occur if states are not executing loans and building projects. However, clearly assessing the programmatic effectiveness of the program for public health benefits is somewhat more difficult, primarily because no baseline exists against which to assess progress.

#### ► Is the program protecting public health?

Examples provided on the following two pages and throughout this report show how the program is financing projects that will protect public health now and in the future. EPA takes the view that all of the projects that will be funded through the program will in some way benefit public health. Replacing an aging distribution system will help to ensure that line breaks that could introduce contaminants into the water supply do not happen. Consolidating a system with poor management with a viable system


# Assuring Public Health and Compliance

## Surface Water Treatment Rule

Williston, population 14,500, is located in the Northwest corner of **North Dakota**, 18 miles from Montana and approximately 65 miles from the Canadian border. The community was having problems meeting the Interim Enhanced Surface Water Treatment Rule and turbidity requirements, so they designed a plan to improve their treatment processes. The Williston project is a multi-phase water treatment plant improvement project. Phase 1, funded by a \$3.6 million DWSRF loan, includes filter rehabilitation, transfer pump improvements, instrumentation and control upgrades, backflow prevention devices, electrical upgrades, replacement of the traveling water screen, and raw water pump upgrades. The Phase 2 project includes, among other things, improved pre-treatment.

## Coliform and E.coli

The Harrybrooke condominium complex in New Milford, **Connecticut** has had significant problems with its drinking water supply since 1996. Due to contamination from its septic system, Coliform bacteria and *E. coli* were routinely detected in the raw water supply. As a result, numerous violations were issued by the Connecticut Department of Public Health, and the management of the complex frequently had to issue boil water notices to protect the residents. In November of 1997, the 45 condominium owners applied for DWSRF funds. A \$330,000 DWSRF loan enabled the system to disconnect its well, install 2,700 feet of water main, and install a service line to connect to a large regional water utility (United Water Company). The residents of the complex no longer receive boil water notices and now enjoy a safe supply of drinking water.



## Addressing Microbial Contaminants

## Cryptosporidium and Giardia

The City of White Salmon in **Washington** provided drinking water to a residential population of 3,500 from Buck Creek, an unfiltered surface water source and tributary to the White Salmon River. The only treatment provided was simple chlorine disinfection. The city had numerous water quality issues that triggered boil water advisories, including consistent turbidity standard violations, sediment deposits, and rodent access to breached air vents in storage reservoirs. In 1993, the City of White Salmon, the City of Bingen, and the Port of Klickitat signed an agreement to create a Multi-Jurisdictional Water Utility Consortium (MJWC) to address water supply needs over the next 20 years. After instituting an extensive water quality monitoring program, the city found *Cryptosporidium* oocysts and *Giardia* cysts in the water supply. In the summer of 1999, a boil water advisory went into effect until an alternate water supply could be developed (June 1999-August 2000). The MJWC set a goal of having the first two ground water production wells online by March 2002 with a deliverable capacity of 2.60 million gallons per day to meet the projected 20 year growth. This new ground water source will replace Buck Creek as the primary source (Buck Creek will serve as an emergency backup supply only). The project will also fund a booster station, distribution mains, and reservoir storage. Of the project's total \$7.6 million price tag, \$4 million was funded by a DWSRF loan. The first well is online and the second is scheduled to be completed in 2002.

## Surface Water Treatment Rule

The City of Elizabethton, **Tennessee** received a \$2 million DWSRF loan with a term of 20 years and interest rate of 2.67% to complete improvements to the Big Springs Water Treatment Plant and install approximately 13,000 linear feet of 12-inch waterline along Max Jett Road. The plant had been operating in noncompliance with the provisions of the Tennessee Surface Water Treatment Rules because of two outstanding issues. The first was the plant's lack of availability of filter-to-waste capabilities. Filter-to-waste provisions protect the consumer from small diameter pathogens such as *Cryptosporidium* and *Giardia lamblia*, among others. The second was the plant's inadequacy to treat highly turbid water. Plant improvements included filter media replacement, new instrumentation and controls, new pumps, a backwash basin, a new chlorination system, additional clarification equipment, and modifications to the existing building. This project provides a safe and reliable drinking water source to approximately 13,150 residents of the City of Elizabethton and the surrounding community.

### Radium

Mount Pleasant, in the southeast corner of Iowa, has a population of approximately 8,000 people. It is home to several industries including Goodyear and HON Industries as well as direct mail houses and Iowa Wesleyan College. The water system in Mount Pleasant drew water from three Jordan aquifer wells and a surface water intake on the Skunk River. Treatment at the wells consisted of aeration, filtration, and chlorination, while surface water treatment included aeration, coagulation/flocculation, clarification, activated carbon addition, gas chlorination, filtration, and fluoridation. Storage and pressure for the wells was provided by two ground storage tanks, two elevated storage tanks, and three clearwell storage tanks.

The city had several water problems: the Jordan aquifer is highly mineralized; the water system had been experiencing exceedances of the radium maximum contaminant level (MCL) for several years; and customers expressed displeasure with the iron content and hardness of the treated water. To comply with the radium MCL, the system needed to upgrade its treatment plant. Mount Pleasant received a \$5.9 million DWSRF loan, which, when combined with utility reserve funds, was enough to finance their needed improvement project. Mount Pleasant installed electrodialysis reversal units and a ground storage reservoir. Construction of the project was completed in 1999. In addition, the utility decided to change the Oakland Mills plant on the Skunk River from an active source to an emergency standby source to eliminate the need for surface water treatment in Mount Pleasant. Mount Pleasant is now meeting the standard for radium, and the citizens of Mount Pleasant are “very pleased” with their treatment plant upgrade and the improved quality of their finished water.

### Nitrates

Abilene, Kansas received a \$1.4 million DWSRF loan which partially financed a \$7.8 million water treatment plant. Abilene now sells water to Dickinson Country Rural Water District No. 2, whose wells had nitrate problems and were under the influence of surface water from the Smoky Hill River. The treatment facility is the first reverse osmosis treatment facility in the state of Kansas, and provides for softening, nitrate removal, and iron and manganese removal. The project serves a total population of 7,700.

### Total Trihalomethanes


Mississippi's coastal city of Pascagoula is a deep-water port that is home to manufacturing, shipbuilding, international trade, and a U.S. Naval Station. The water system serving the city's 35,000 residents was having trouble meeting the total trihalomethanes (TTHMs) maximum contaminant level. The TTHMs were the result of chlorine being used to control the color of the water. The system also experienced high levels of hydrogen sulfide in the water.

To address these issues, the city decided to build three reverse osmosis water treatment plants that would also have ozone filters to treat for hydrogen sulfide.

DWSRF loans were used for the construction of all three plants: \$1.3 million for the first plant; \$1.2 million for the second; and \$1.5 million for the third plant. When the first plant opened, the city was so proud of the results that they gave away bottles of their water and had “before” and “after”

samples to show the marked difference in the quality of their drinking water.

The city is currently in the process of building their third and final plant.



## Addressing Chemical Contaminants

### Lead

The Clinton Public Works Authority in Oklahoma provides drinking water to residents in six subdivisions. Many homes in these communities were served by cast iron, dead-end lines with leaded joints. Clinton had problems with inadequate water availability to individual households (pressure violations), stale water caused by dead ends (bacteriological violations), and lead contamination from lead jointed cast-iron water mains. To address these problems, the system replaced the inadequate drinking water distribution lines. The project included replacing the existing substandard lines with new PVC water lines; constructing a loop trunk line to supply this area; restoring affected drives and streets; and replacing fire hydrants, valves, and appurtenances. A \$644,000 DWSRF loan paid for most of the \$963,700 project – the difference was paid for by the water system. Construction started in January 2000 and was completed in April 2001.

will help ensure that the system is properly maintained and operated. Rehabilitating a ground water source to increase flow will help to ensure that pressure in the distribution system is maintained, thus removing the danger of backsiphonage within the system. However, it is not possible or feasible to point to the program and conclude that 10,000 people are less ill today than before systems received assistance.

► **Is the program helping systems maintain compliance with drinking water standards?**

Although the results may not be discernible in the compliance and enforcement tracking systems maintained by states and EPA, evidence suggests that the program has helped to return systems to compliance with national primary drinking water standards. More than one-third of the agreements and funds provided have gone to systems out of compliance with health-based standards for projects that will return or bring them to compliance. Some states are working closely with their enforcement staff to make sure that systems that are identified as being in violation of a standard know that the DWSRF is available for financial assistance. It should be noted that there is some concern in the drinking water industry that the program appears to be focused on what are considered the “bad players” - the thought being that systems which are out of compliance will get the benefits of low interest loans while more proactive systems are left seeking funding from less affordable sources.

► **Are disadvantaged communities benefitting from the program?**

The third statutory focus of the program was to help systems with the greatest economic need. All states must consider the financial status of applicants



**Funding Consolidation in Ohio**

One objective of the DWSRF program in the state of Ohio is to consolidate small systems into larger, regional systems so they may benefit from economies of scale and better protect public health. The Orchard Mobile Home Park is located in Knox County, a rural area between Columbus and Cleveland. Orchard owned and operated a water system that served its 150 residents. In 1999, Orchard was awarded a \$89,836 DWSRF loan to abandon its well and hook up to the larger Mt. Vernon Water System. The connection was successful and the park is now part of the larger system.



**Returning Systems to Compliance in Idaho and Wyoming**

Castle Mountain Creeks Subdivision is a small development of 200 homes in Idaho’s mountains approximately 45 miles north of Boise served by a surface water system. In addition to lacking flow to sufficiently meet demand, the system did not meet the requirements of the Surface Water Treatment Rule – the system chlorinated the water, but did not filter it. A voluntary Consent Order that detailed the steps the subdivision would take to bring the system into compliance was signed with the Idaho Department of Environmental Quality. An engineering firm was hired to prepare a report on the options available to the subdivision. After consideration of the alternatives, a year-long pilot study was conducted on-site. Upon completion of the pilot study, the subdivision was awarded a \$400,000 DWSRF loan to design and construct a diatomaceous earth pressure filtration system, a pipeline chlorine contact chamber, and a new 100,000 gallon storage tank. The project was completed under budget at a cost of \$323,341.

Wyoming’s Bridger Valley Joint Powers Board provides water to 3,300 people residing in several small communities. Bridger Valley had been under an EPA Administrative Order for its numerous turbidity violations. The filtration plant was severely inadequate – the plant had 12 inches of filter media which was 22 inches under the state-designated minimum amount. The system received a \$6 million DWSRF loan to enable it to construct a new filtration plant to come into compliance with SDWA and state requirements.

in prioritizing projects. Many states have also used the flexibility afforded by the law to provide additional subsidies to systems they had identified as disadvantaged using their own affordability criteria. Twenty-six percent of all agreements have been made to systems identified as disadvantaged (16% of the loan dollars). Repayment terms have been extended to up to 30 years in 10 percent of the total agreements and principal forgiveness has been provided in 11 percent of the total agreements (some of the agreements may have had either or both types of assistance). However, since the program must offer loans that are at or below the market interest rate, all borrowers receive an economic benefit from participating in the program. In fact, a grant equivalency for the program can be calculated. Table 8-1 shows the grant equivalency for a range of DWSRF interest rates and market rates. The national weighted average interest rate of DWSRF loans made in SFY 2001 was 2.4 percent and the 20 year Bond Buyer Index market rate was 5.3 percent. Therefore, a loan made at the average DWSRF interest rate of about 2.5 percent provided the same subsidy that the recipient would have benefited from if it had received a grant for 23 percent of the project's cost, and financed the remaining amount at a 5.5 percent market interest rate.

**Table 8-1 Grant Equivalence of DWSRF Loans**

DWSRF Interest Rate	Market Borrowing Rate for Local Share								
	4.0%	4.5%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%
0.0%	32%	35%	38%	40%	43%	45%	47%	49%	51%
0.5%	28%	31%	34%	37%	40%	42%	44%	46%	48%
1.0%	25%	28%	31%	34%	36%	39%	41%	44%	46%
1.5%	21%	24%	27%	30%	33%	36%	38%	41%	43%
2.0%	17%	20%	24%	27%	30%	33%	35%	38%	40%
2.5%	13%	17%	20%	23%	26%	29%	32%	35%	37%
3.0%	9%	13%	16%	20%	23%	26%	29%	31%	34%
3.5%	4%	8%	12%	16%	19%	22%	25%	28%	31%
4.0%	0%	4%	8%	12%	16%	19%	22%	25%	28%
4.5%	NA	0%	4%	8%	12%	15%	19%	22%	25%
5.0%	NA	NA	0%	4%	8%	12%	15%	18%	21%

Beyond the statutory criteria that states had to consider in prioritizing projects for funding, the law had a focus on providing assistance to small systems and also placed a strong emphasis on ensuring that systems have technical, financial, and managerial capacity to operate sustainably. This report has already discussed how small systems have benefited through the program. Their participation has exceeded the expectations of the program and states should be applauded for their efforts to prepare these systems for assistance and move them through the process. The capacity development requirements tied to receipt of assistance have focused state attention on the needs of utilities in these areas and many states have conditioned assistance to ensure that the systems have put measures into place to improve their ability to effectively manage their facility. The next chapter on set-asides also highlights how states are using the entire DWSRF program to target assistance in these areas. Assistance from the Fund has also been used

in some states to eliminate smaller systems through physical consolidation. States are also looking to ways to use funds to help restructure systems to facilitate managerial consolidation where physical consolidation is not feasible.

### ▼ Stewardship of the Program

The DWSRF program is envisioned as being a perpetual source of funding for states to finance needed drinking water projects, the idea being that after several years of federal capitalization, state programs should be able to provide assistance using the repayment stream from earlier loans. While states are responsible for ensuring that this actually happens, EPA is responsible for overseeing state programs to ensure that they are meeting the intent of Congress and to identify where technical assistance may be needed to ensure that the states can provide assistance into the future.

### ► Are states working to ensure that funds will be available into the future?

The flexibilities Congress provided in the DWSRF program, which allows for set-asides and principal forgiveness, complicates this vision somewhat in that heavy use of these provisions could leave less money available to revolve through the loan Fund. States must make considered decisions about how they will allocate funds to ensure that the dual program goals are met - protecting public health and ensuring that a long-term source of funding is maintained. Judging by how states have used funds, EPA believes that each state has considered its needs and determined the best mix of funding. Nationally, states have reserved approximately 16 percent of the grant funds for set-aside activities and only 2.6 percent of the grants have been used to forgive principal on disadvantaged loans. Although the numbers may vary on a state level, it would appear that states are implementing their programs in a manner that will ensure long-term access to funding.

One additional financial indicator assesses how well states are doing at maintaining the contributed capital of their Funds. This net return value is computed by subtracting the state match bond principal repayments and principal forgiven from the Fund's retained earnings. Positive return values indicate that expenses in the Fund are covered by revenues, even after match bonds are repaid or principal is forgiven. Nationally, the net return for the program stands at \$27.3 million.



### Providing Disadvantaged Assistance in Alaska

The City of Cordova is a fishing community on Prince William Sound in the Gulf of Alaska. The typical winter temperatures range from 17 to 28° F, and summer temperatures range from 49 to 63° F. Fifteen percent of the 2,454 residents are Alaska Native or part Native, and the city has an active Village Council. The city was under a compliance order from the state to upgrade its water treatment system to meet the requirements of the Surface Water Treatment Rule (SWTR). Cordova faced the possibility of having to use the antiquated Eyak Lake water filtration plant, which was problematic because: the plant was expensive to operate and maintain due to high energy costs in Cordova; the plant would have required extensive upgrades to meet the requirements of the SWTR; and a boil water notice and/or bottled water provision may have still been necessary for compliance.

Instead, Cordova applied for DWSRF funds. In 1998 and 1999, Cordova received a total of \$2.5 million in DWSRF loans for the construction of access roads, contact tanks, and distribution mains. The loan included \$1,155,000 in principal forgiveness because the city qualified as a disadvantaged community. The city also received two state grants totaling \$2.4 million. Without all of this assistance, residents would have faced a \$51 monthly water bill. With the subsidy, the monthly rate was kept to \$39. Construction was substantially complete in 2000 and operations began February 1, 2000. The system is now in compliance with the SWTR.

Some states, particularly those with leveraged programs, have developed cash flow models to help them make program decisions. Early in the program, EPA distributed a simple model that would allow a state to vary several factors including set-aside amounts, disadvantaged assistance, loan interest rates and repayment terms, and bond usage so that they could see the impact of their decisions on the long-term health of the Fund. This model had initially been developed to help EPA conduct budget projections for the CWSRF program. It was extended for use for the DWSRF program, but was not user-friendly, and was not widely used by states.

In 2000, EPA distributed a new, more powerful model which uses the information states have provided through the DWNIMS for historical data on which to build projections. The model, based in Microsoft Excel, is user-friendly and includes all the potential features of a DWSRF program. EPA has helped several states to use the model and conducted training for state staff in EPA regional offices during 2001. A few states have incorporated use of the model into the planning they do as part of the IUP process.

► **Is EPA working to ensure that state programs are effective and sustainable?**

In addition to developing modeling tools like the one described above, EPA has taken additional actions to ensure that states have the information they need to effectively manage their programs. In many respects, EPA views its oversight role as a means for supporting state programs. When issues are identified in state programs through reviews, the Agency is able to direct assistance to state programs to help them successfully resolve them. In large part, because states often learn best from other states, the efforts of EPA are focused on sharing information about successful elements of state programs with other states. This has been accomplished through the development of fact sheets, case study reports, newsletters, and participation in national conferences. The Agency also helps to sponsor an annual SRF workshop organized by the Council of Infrastructure Financing Authorities. The Agency has also conducted four major training efforts for states - all of which took place in multiple EPA regions:

- 1997 - program start-up and general implementation
- 1999 - financial program management
- 2000/2001 - program management
- 2001 - financial modeling

In January 2002, the GAO released a report, *Drinking Water: Key Aspects of EPA's Revolving Fund Program need to be Strengthened* (GAO-02-135), which was critical of elements of EPA's oversight of state DWSRF programs. EPA is working to address the issues raised in the report. EPA Regional staff work closely with state program staff and conduct annual reviews of state programs to ensure that the states are in compliance with the regulations and terms and conditions of their grant agreements. The EPA Office of Water also works in partnership with the EPA Office of the Inspector General to ensure that the financial integrity of the program is maintained. EPA has encouraged states to conduct independent financial audits of their Funds as a best management practice. Currently 43 states conduct an independent financial audit or have a Single Audit that is the equivalent of an independent audit. The Inspector General will periodically conduct audits for states that do not have independent audits and will also review the quality of independent audits.

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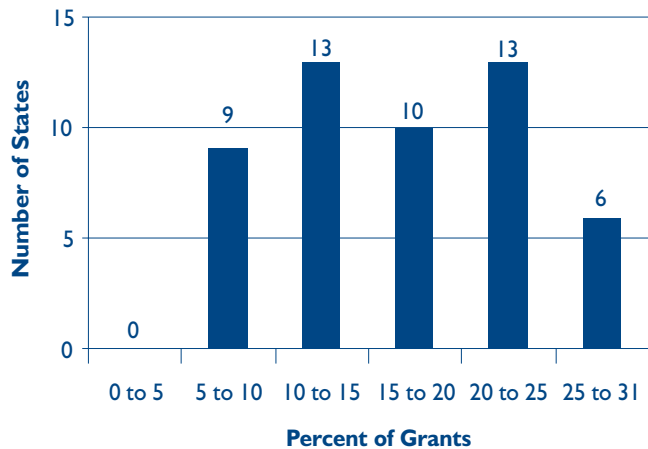
# 9

## Status of Set-Aside Funds

The previous chapters largely dealt with a description of the status of the Fund, which provides infrastructure assistance for drinking water projects. But, when looking at the DWSRF program, that tells only part of the story. The major difference between the CWSRF program and the DWSRF program is that Congress gave states the flexibility to use their programs to address other activities and measures needed to protect drinking water and public health. Each state may set aside up to 31 percent of its capitalization grant to conduct activities and establish and implement programs that place a strong emphasis on preventing contamination problems through source water protection and encourage better system operations through enhanced water systems management. Although the need to address infrastructure projects through the Fund is great, all states have recognized the importance of preventative measures and have set aside some portion of their grants for these activities. This chapter discusses how funds have been directed in the set-asides. The subsequent chapter provides examples of the many types of activities that states have funded using the flexibility afforded to them.

Through SFY 2001, 15.8 percent (\$575.8 million) of the total amount of funds that have been provided to states through capitalization grants has been allocated to set-aside activities. States have reserved anywhere from 6.7 to 31 percent of their total grants for set-asides (Figure 9-1, Appendix B-19). The DWNIMS does not track activities conducted under individual grants; rather, it tracks activities that occur in any given fiscal year. However, EPA also tracks the amount of each set-aside states have reserved from each grant through its grant and financial management systems using the distinct accounting codes associated with each of the four categories of set-asides. The greatest amount of set-asides was reserved from the FFY 1997 appropriation, primarily because of the availability of a one-time set-aside to conduct source water assessments. States reserved 20 percent of the FFY 1997 appropriation and have reserved about 14 percent of each subsequent year's appropriations.

**Figure 9-1 Funds Reserved for Set-Asides**



States must describe how they will use set-aside funds in workplans, most of which range from one to three years. Funds cannot be reserved if a state cannot identify a specific use for them. With the exception of set-asides associated with the local assistance category, states can reserve the authority to reclaim funds they have not reserved from a future grant as long as they do not exceed the cumulative

caps on the set-aside category (see box, page 61). Through SFY 2001, states had expended \$244.6 million, or 42.5 percent of the total funds that had been reserved (Appendix B-20). On a state by state basis, states had expended anywhere from 7 to 77 percent of the funds they had reserved (Figure 9-2). EPA has had concerns about the slow progress in spending set-aside funds, but the progress has improved considerably through time, increasing from 8.7 to 42.5 percent from SFY 1998 to SFY 2001 (Figure 9-3). Because funds are expended in accordance with a workplan, it is reasonable to expect that roughly one-half to one-third of the funds will be unspent in any given year.

### ▼ Administration and Technical Assistance

States may reserve up to 4 percent of their allotment to administer the DWSRF program and provide technical assistance to public water systems. Nationally, states have reserved \$135.4 million (3.7 percent of their grants) for these activities (Figure 9-4, Appendix B-21). Forty-two of the states have reserved the full 4 percent available under the set-aside.

States have expended \$75.3 million of the amount that has been reserved. At 55.6 percent, the set-aside has the highest expenditure level of any of the four categories. On a state basis, states have expended from 10 to 100 percent of the funds they have reserved for the category. Funds have predominantly been used to cover the costs of administering their DWSRF programs. Only four states have used funds to provide technical assistance to public water systems.

### ▼ Small System Technical Assistance

States may reserve up to 2 percent of their grants to provide technical assistance to small systems that serve 10,000 or fewer people. Nationally, states have reserved \$54.2 million (1.5 percent of their grants) for this category (Figure 9-5, Appendix B-22). Twenty-three states have reserved the entire amount available, while only two have not reserved any funds.

States have expended 44.8 percent of the funds that have been reserved for the set-aside, with individual state expenditures ranging from zero to 100 percent. The \$24.3 million expended to date has gone for a

Figure 9-2 Funds Expended for Set-Asides

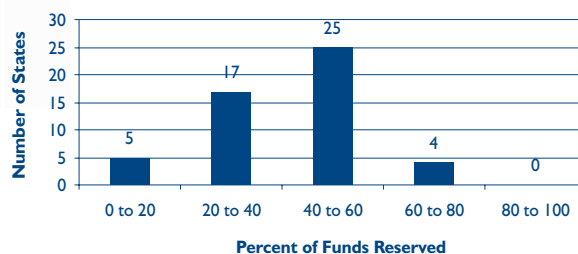


Figure 9-3 Cumulative Set-Aside Expenses

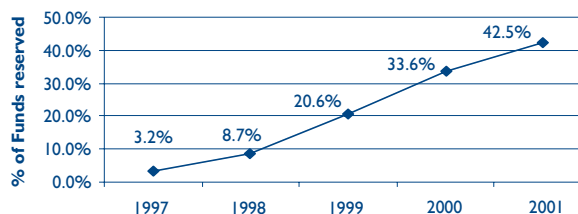


Figure 9-4 Administrative Set-Aside

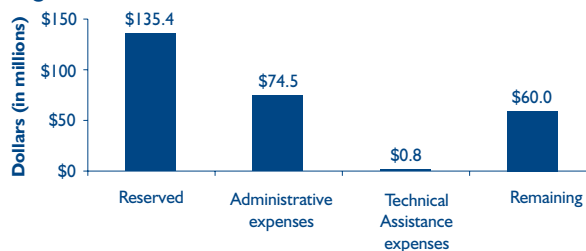
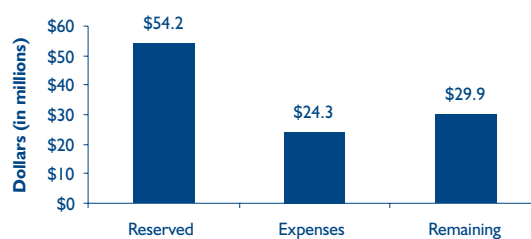


Figure 9-5 Small System Technical Assistance Set-Aside



### Reserving Authority for Set-Aside Activities

A state is receiving a \$10 million grant in FFY 1998. The state may take up to 2 percent of its grant to provide small system technical assistance. The state has determined that it needs \$100,000, or 1 percent, to fund a circuit rider program and elects to reserve the authority associated with the remaining 1 percent allowed under the set-aside for future use. In FY 2000, the state decides to implement a program to provide small grants to help systems conduct planning and design for infrastructure projects. The state will also receive a \$10 million grant for FY 2000. The state will use \$200,000, or 2 percent, of the grant to conduct these activities and will also recover the remaining authority associated with its FY 1998 grant—an additional \$100,000. Therefore, technically the state will take \$300,000, or 3 percent, of its grant to conduct small system technical assistance. While the state will exceed the 2 percent statutory cap for the grant, it will not exceed the cap when calculated on the basis of the cumulative grants that have been received. EPA takes the view that this approach is preferable to having states reserve funds in abeyance with no immediate use. In this way, states may target funds where they are most needed and can maintain flexibility to address new programs in the future.

wide range of activities. States have used the funds for activities which include planning grants to systems, visits from technical assistance providers and circuit riders, and training. Many states have contracted activities to state rural water affiliates since these technical assistance providers are accustomed to working with small systems. To get a sense of how many systems are benefitting from assistance, EPA asks states to report on the number of systems that are reached through the technical assistance. The systems that can be counted include those that receive direct assistance, including but not limited to face-to-face meetings and attendance at workshops/conferences. It does not include systems reached by indirect

assistance (e.g., mass mailings, media, internet). A system may, however, be counted if it receives extended assistance via phone, fax, e-mail, or interactive internet communication. States have reported assisting more than 55,000 water systems. It is important to recognize that this includes double counting of systems that receive more than one instance of assistance over multiple years. However, it serves to give an idea of the connections that states have made with public water systems using the set-aside.

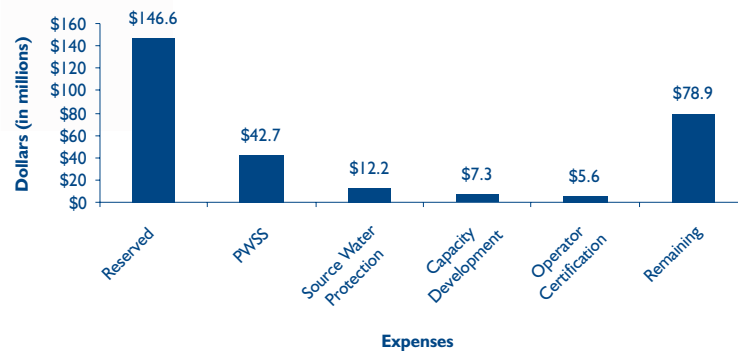
### ▼ State Program Management

States can reserve up to 10 percent of their allotment for programs and activities that help strengthen the programs they administer to protect drinking water and public health. There are four general activities eligible for assistance under the set-aside category. States can use funds to supplement funding for their PWSS programs. The PWSS program, funded in part by federal PWSS grants, is the program through which state drinking water programs exercise their primary enforcement authority for carrying out national primary drinking water regulations. States can also use funds under the set-aside to develop and implement their capacity development and operator certification programs, the requirements of which were added or substantially upgraded through the 1996 SDWA Amendments. Finally, states can use funds to administer a source water protection program through which they can provide technical assistance to public water systems to prevent contamination of sources of drinking water.

Nationally, states have reserved \$146.6 million (4 percent of their grants) for state program management activities (Figure 9-6, Appendix B-23). Nine states have reserved the full amount allowed and seven states have reserved none of the funds under the set-aside.

States have expended \$67.8 million (46.2 percent) of the total funds reserved under the set-aside. Most of the funds (\$42.7 million) have been used to supplement the PWSS program. Twenty-nine of the 44 states reserving funds for this category spent funds for this activity. Over the past several years, approximately \$93 million has been made available annually to states and tribes for carrying out their PWSS programs through federal PWSS grants. In the last two years, states have expended more than \$15 million annually from this set-aside to supplement their programs as they work to strengthen their base programs and implement new regulations.

**Figure 9-6 State Program Management Set-Aside**



States have spent \$12.2 million to supplement their source water protection programs. Over the past few years, states have been focused on conducting required assessments of all sources of drinking water in their states. Eighteen of the states have used funds under this set-aside to support that effort and to begin to promote protection activities. For example, Massachusetts uses funds under the set-aside to provide small grants (not to exceed \$45,000) to public water systems and technical assistance providers to implement protection measures.

States have spent \$7.3 million developing and implementing capacity development programs required in the 1996 SDWA Amendments. The program is focused on helping public water systems achieve and maintain adequate technical, financial, and managerial capacity to ensure that they are able to provide safe drinking water to their customers. States were required to obtain the authority to ensure that no new public water systems could be developed which lacked capacity. States were also required to develop strategies to address capacity issues for existing public water systems. The failure to meet these requirements would have subjected a state to a withholding of DWSRF grant funds. Fortunately, none of the states were subject to withholding for failing to meet the requirements. Twenty-one of the 44 states reserving funds in this category have used funds to develop and implement their programs. With all state strategies approved as of October 2000, EPA expects that states will increase use of this set-aside to implement new activities under their strategies. While annual expenses for the PWSS activity stayed flat from SFY 2000 to SFY 2001, annual expenses under the capacity development set-aside increased by more than one-third.

Finally, states have spent \$5.6 million to develop and implement their operator certification programs. Most states have had programs to certify operators for public water systems for many years. However, the requirements of state programs varied widely. The 1996 SDWA Amendments required that states develop comprehensive programs in accordance with guidance developed by a workgroup with representatives from EPA, states, and stakeholder organizations. States that failed to develop programs for approval would be subject to withholding of their DWSRF grants. State operator certification programs required under the law are still undergoing review by EPA. However, 42 programs had been approved through December 2001, and EPA does not anticipate withholding funds from any states.

Twenty-three of the 44 states reserving funds under the state program management set-aside have spent funds to assist their operator certification programs.

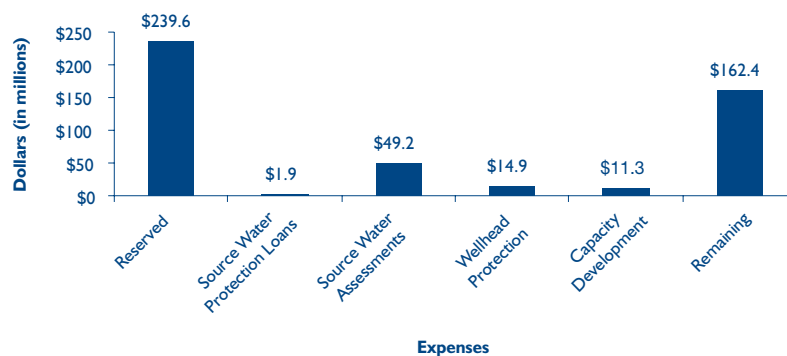
The state program management set-aside differs from the other categories by requiring states to provide an additional dollar for dollar match in order to access the funds. The law allowed states to use the matching funds and additional funding provided on state PWSS grants in fiscal year 1993 as a basis for determining a credit towards meeting the match, with the condition that at least 50 percent of the match be provided from current overmatch on PWSS grants, state in-kind services, or new funding. States may provide the match at the time of the grant award or at the time expenditures are made. Through SFY 2001, states had provided \$127.4 million in match as new funding or in-kind services. This amount exceeds the expenditures to date by \$59.6 million.

### ▼ Local Assistance and Other State Activities

States may use up to 15 percent of their capitalization grants to fund a variety of activities that support source water protection and enhance the technical, financial, and managerial capacity of public water systems. There are five general activities eligible under the set-aside category. States may use no more than 10 percent of the set-aside on any one activity. Two of these activities are loan programs that address source water protection. Two additional activities address source water protection for surface water and ground water sources and a final activity provides for financial and technical assistance to public water systems in support of a capacity development strategy.

Nationally, states have reserved \$239.6 million (6.6 percent of their grants) for this set-aside category (Figure 9-7, Appendix B-24). While six states have reserved the full 15 percent, every state has reserved funds under this set-aside in order to access a one-time set-aside from FFY 1997 grants.

**Figure 9-7 Local Assistance and Other State Programs Set-Aside**



States have expended \$77.2 million (32.2 percent) of the amount of funds reserved under the set-aside. Most of the funds (\$49.2 million) have been spent to support source water assessments. The 1996 SDWA Amendments required that each state conduct an assessment of the sources of drinking water for all public water systems in order to determine their vulnerability and susceptibility to potential sources of contamination. States were required to develop source water assessment plans for EPA approval and expend the funds in accordance with those plans. Therefore, almost all states took the full 10 percent allowed under the law from the FFY 1997 appropriation to support this activity. States have subsequently made adjustments to their original intended allocation of funds under the category, but EPA estimates that close to \$112 million in funds were allocated for the activity. Thus, states have expended approximately 43 percent of the funds they intended to use for assessments. Most states will likely complete assessments by the end of 2003.

Two of the activities eligible under this set-aside category have not been a success to date. States may use funds to provide loans to public water systems to either purchase land or conservation easements needed to protect sources of drinking water or to implement voluntary, incentive-based source water protection measures. While several states have developed programs (12 states for land acquisition and easements; 5 states for protection measures), only three states (Maine, Vermont, and Kentucky) have managed to make land acquisition loans. These three states have made eight loans totaling \$1.9 million which have protected 1,400 acres of land. No states have made loans to fund protection measures. In many cases, public water systems are not interested in taking out loans to conduct these activities and the CWSRF program proves to be a more attractive source of funding by which to achieve similar goals. EPA hopes that activity under the loan programs will increase as assessments are completed and public water systems determine actions they must take to protect their sources of drinking water. EPA is also encouraging public water systems to enter into partnerships with land trust and conservancy organizations to identify and manage critical protection areas.

The activity that allows states to use funds to develop and implement wellhead protection programs to protect ground water that serves as a drinking water source has been more widely used. In part, this is due to the fact that many states had already developed wellhead protection programs and did not have to develop a program from the ground up. Twenty-six states have spent a total of \$14.9 million to fund protection activities. Many states have used funds to develop education programs intended to heighten awareness of the general public and local leaders on the importance of protecting the aquifers that provide the water they drink. Now that states are fully implementing source water protection programs (of which wellhead protection is a component), some states have expressed concerns that there does not appear to be a similar opportunity to use funds to address activities similar to those conducted under wellhead protection for surface water sources.

The final activity under this set-aside category allows states to use funds to provide technical and financial assistance to public water systems as part of their strategy for addressing the capacity of new and existing systems. Assistance has been provided by both state staff and third party contractors. Seventeen states have spent a total of \$11.3 million on this activity. As with the activity addressing capacity development under the state program management set-aside category, spending has increased for this activity over time as states implement their strategies. States have indicated that they have assisted more than 5,600 water systems using funding from the set-aside.

# 10

## Set-Aside Activities Funded

The flexibility provided to states to fund a wide range of activities using set-asides to help support their drinking water programs made it difficult to develop a tracking system similar to that developed for information on infrastructure projects. While the previous chapter summarized state use of funds in accordance with the categories of set-asides identified in the law, reality does not break down so cleanly. In many cases, states can fund an activity using more than one of the set-asides. In reviewing state IUPs, Annual/Biennial Reports, workplans and other promotional information EPA identified several areas in which states are focusing their efforts, including (1) enhancing technical, financial, and managerial capacity of systems; (2) enhancing operator certification programs; (3) providing technical assistance to small systems; (4) facilitating partnerships; (5) improving public outreach; (6) supporting drinking water programs; and (7) promoting source water protection.

### ▼ Enhancing Technical, Financial, and Managerial Capacity

By enhancing system operations and ensuring the technical, financial, and managerial capacity of public water systems, states can promote greater long-term compliance with the SDWA. As required by the SDWA Amendments, all states are implementing programs to ensure that new systems have capacity and have developed strategies to ensure that other water systems within the state obtain and maintain capacity. From on-site technical assistance to managerial training and direct financial support, states are funding a wide range of activities to promote system capacity.

#### Enhancing Technical, Financial, and Managerial Capacity

##### Challenges

- Maintaining or improving capacity of small systems that lack economies of scale
- Improving operation and management skills of small system operators
- Ensuring adequate capacity for DWSRF loan eligibility

##### Solutions

- Use holistic approach to address technical, financial, and managerial deficiencies
- Provide incentives to promote consolidation and regionalization
- Establish training and technical assistance programs for small systems



### ► Reducing the number of systems through consolidation and regionalization

Almost 60 percent of community water systems serve fewer than 500 people. These very small water systems often lack the economies of scale that develop with a larger customer base to maintain adequate capacity. Consolidation and regionalization of systems results in lower facility, operation, and treatment costs. Some states, including Pennsylvania and Utah, have separate funding programs to promote

consolidation. These programs help to increase the number of customers per treatment facility while raising revenues and reducing treatment costs.

Pennsylvania offers a program that provides incentive grants to encourage regionalization and consolidation of small systems. In addition, grants are offered to systems to study the feasibility of regionalization and consolidation and to implement recommendations from these feasibility studies or other consolidation projects. The program requires grant recipients to achieve adequate technical, managerial, and financial capacity.

In 1998, Utah initiated a \$1 million study with monies from its Drinking Water Board, Community Impact Board, and Community Development Board for its Regional Water Planning Initiative. The Initiative recognized that many of Utah's small water systems share the same water sources, and sometimes water treatment needs, often with contiguous or even overlapping service areas. Management Plans developed on a county-by-county basis discuss possibilities of joint source protection efforts, sharing of managers, operators, equipment, and facilities (existing and proposed), and especially consolidation of water systems. Plans were developed for 24 of Utah's 27 counties, with only the three largest counties not participating. For many of the small water systems, recommendations were made to regionalize or to consolidate with neighboring systems to broaden the base of revenues and other resources and to improve cost-effectiveness. Those water systems with a record of noncompliance who choose not to accept the recommendations in their respective county's Water Management Plan are ineligible to receive DWSRF loans from the state. The highest profile success of the Initiative has been in the unincorporated areas of Summit County that surround Park City, host of a number of 2002 Winter Olympics events. Approximately 10 to 15 small water systems in this area historically have litigated over shared water sources and have competed in common service areas oftentimes with redundant distribution system facilities. Under the umbrella of the new county water agency, the Mountain Regional Water Special Service District, five of the 10 to 15 systems in the county were consolidated into the District in 2001 with likely consolidation of the others by 2002.

► **Training operators and managers to improve technical, financial, and managerial skills**

States such as Vermont, Tennessee, and Hawaii used DWSRF set-aside funds to offer various training programs at reduced costs to improve the operation and management of systems. Through a grant to the Northeast Rural Water Association, Vermont offers several types of assistance to small systems including on-site training and management assistance. Specifically, training and assistance is provided on all SDWA compliance related topics, on any aspect of project development and the DWSRF loan process, and on identifying and applying for other sources of funding. Tennessee used set-aside funds to contract with the Fleming Training Center to provide operator and management training programs. The Center offers programs on all aspects of water system operations including cross connection control, water laboratory workshops, and chemical addition seminars. As part of its capacity development strategy, Hawaii entered into a contract with the Rural Community Assistance Corporation to provide training courses to more than 100 managers and 300 operators representing municipal and private water systems throughout the islands. Training included assistance in preparing water system distribution operators for the distribution system operator certification exam.



### ► Assessing system capacity to determine DWSRF loan eligibility

The DWSRF program requires that loan applicants have the technical, financial, and managerial capacity to ensure compliance with the requirements of the SDWA. Some states, such as Idaho and Texas, have used set-aside funds to facilitate the capacity assessment of their loan applicants. Idaho developed a screening tool which walks the reviewer through a series of indicators to assess the capacity of potential borrowers. The Environmental Finance Center at Boise State University was contracted to prepare the actual capacity assessments of the applicants. Texas used set-aside funds to hire a contractor to assist with providing assessments of, and on-site assistance to, prioritized systems to move them toward compliance on a voluntary approach. Assessments are also conducted for the applicants who must demonstrate they have developed the capacity, or will through funding, to operate a viable successful system before the DWSRF may be used to finance improvements.

### ▼ Enhancing Operator Certification Programs

Ensuring the knowledge and skills of public water system operators is considered an important, cost-effective means to promote public health protection. Proper operations and maintenance by qualified operators can also prevent premature depreciation of drinking water infrastructure. Therefore, it is essential that operators of public water systems have adequate training. The 1996 SDWA Amendments required each state to implement programs that meet minimum requirements for the certification and recertification of operators of community and nontransient noncommunity water systems. States have used DWSRF set-asides to fund a number of operator certification training and implementation activities.

### ► Expanding operator certification classes and programs

By expanding operator certification classes and programs, many states such as Georgia, Texas, and Nebraska are furthering SDWA objectives and facilitating the certification process. Supporting the enhancement of training opportunities allows states to ensure proper system operation. Georgia entered into a contract with Georgia Water and Wastewater Institute (GWWI) to provide training of water, wastewater, and laboratory analysts in FY 2000. In one year, more than 1,000 students attended 80 training courses held by the Institute. GWWI expanded its training methods to include participation in Georgia Water and Pollution Control Association District Meetings, Spring, Fall, Annual, and Industrial Conferences, and provided on-site assistance to water and wastewater personnel.

Early training opportunities for potential operators in Texas are offered through a water system curriculum in high schools to encourage entry into the water supply business. The state hopes

#### Enhancing Operator Certification Programs

##### Challenges

- Reaching operators of small, rural systems in remote locations
- Providing affordable training and certification programs

##### Solutions

- Leverage existing educational outlets to expand number of certification courses offered
- Provide on-site training opportunities
- Subsidize cost of training and certification or offer financial assistance to operators



to bring more qualified operators to the industry by providing early training and certification. Nebraska contracted with several organizations to enhance training opportunities. As a result, the Nebraska Environmental Training Center now provides specialized one-day workshops for continuing education units designed to teach water treatment operations, associated operation and maintenance costs, and chlorination and fluoridation processes. Funds also supported a mentor program for small systems and teleconference registration assistance to qualifying systems.

#### ► Partnering with universities, colleges, and extension services

Partnering with universities, colleges, and extension services allows states to provide unique opportunities for systems operators wishing to continue their education. Continuing education is critical in ensuring that owners and operators of water systems are knowledgeable about the newest technologies and regulations affecting the water industry. New Jersey contracted with Rutgers, the State University of New Jersey, to reduce the cost for operators taking courses that fulfill continuing education requirements. Under this program, licensed operators receive a discount on course tuition.

#### ▼ Providing Technical Assistance to Small Systems

Small water systems often face a great challenge in meeting new SDWA requirements because these systems often lack the resources to properly train operational and managerial personnel. They also typically have extremely limited financial resources and a small customer base. Small systems benefit from a variety of programs aimed to make operations safer and more efficient. Many states are using set-aside funds to provide on-site technical assistance, staff circuit rider programs, offer training sessions for managers and operators, and provide assistance identifying and applying for funding from various sources.

#### ► Assisting small systems in applying for DWSRF funding

Small systems comprise the majority of community water systems in the nation. While these systems may have difficulty providing adequate documentation for DWSRF loan eligibility, they have the greatest need for funding. Programs in states such as New York and New Hampshire have facilitated the application process for small systems. New York used set-aside funds to expand its peer assistant program—the Small Water Systems Program. Although the main goal of the program is to provide information and publications that allow systems to complete applications on their own, direct assistance is also available. The program includes providing guidance to communities applying for funding from the DWSRF and other sources, calculating project costs, preparing budgets, selecting projects, preparing engineering

#### Providing Technical Assistance to Small Systems

##### Challenges

- Providing assistance to small systems in remote locations
- Preparing required documentation for DWSRF loan eligibility

##### Solutions

- Hire circuit riders to provide on-site assistance
- Offer off-site technical assistance (i.e., online or via telephone)
- Organize peer support relationships between small and large systems



reports, and filing for disadvantaged loan status. New Hampshire has worked with several contractors to provide a range of services throughout the state to facilitate the loan application process. Programs include assistance in completing applications for DWSRF funding and other sources, education and outreach, on-site visits to identify the needs and deficiencies of the system, and project management, coordination, and inspection assistance.

► **Providing assistance for developing engineering reports and design plans**

Small systems often lack the resources to hire an engineering firm to prepare the plans and specifications and other documentation necessary to be eligible for DWSRF loans and other types of assistance. Many states, including South Carolina, Virginia, Missouri, and Oregon use DWSRF funds to assist small systems through grants to hire private contractors or by offering the assistance of qualified state staff. South Carolina has a multi-level planning and development program. The program reviews sanitary surveys, water quality sampling results, compliance schedules, operating budgets and rates, and information concerning future needs. The second phase involves detailed evaluation of the viability of the system. Management, operations, facilities, and financial plans are analyzed and improvement plans for technical, financial, and managerial problems are offered. The third phase involves assisting in the completion of a business plan to ensure future viability through detailed facilities engineering reports, management structure recommendations, and financial plans that include the identification of construction costs if DWSRF or other funding is needed.

Virginia offers planning and design grants to private and public small community water systems. Grants are provided to small, rural, financially-stressed community water systems serving fewer than 3,300 persons for up to \$25,000 per project. Projects include preliminary engineering reports, design of plans and specifications, performance of source water quality and quantity studies, and the drilling of test wells. Missouri and Oregon also provide engineering service grants aimed at very small systems. These grants fund the cost of preparing an engineering report (up to \$10,000), which is then used to determine if the system is eligible for DWSRF loans or other sources of funding.

► **Helping small systems assess and enhance capacity**

By assisting small systems with capacity assessment, some states such as Delaware and Wisconsin are helping to increase the efficiency and viability of small systems. Delaware developed a technical assistance program for small system capacity development. The program, designed and implemented by the Delaware Rural Water Association, provides hands-on assistance to systems throughout the state on matters including safety issues, emergency response preparedness, leak detection, and budget planning. Financial assistance training is also available to all DWSRF applicants through the program. Similarly, Wisconsin, in conjunction with the Wisconsin Rural Water Association, scheduled visits to targeted small systems and provided assistance with preparing consumer confidence reports, operator certification, SDWA compliance issues, and operations and maintenance. Educational sessions on these and other topics affecting small systems were also offered through the University of Wisconsin.

▼ **Facilitating Partnerships**

Partnerships are an essential tool for states and water systems because participants aid each other and mutually benefit. Duplication of effort is avoided by partnering with other entities in the state with similar goals. Furthermore, the consolidation of financial resources allows states to provide even greater assistance to water systems. Several states have used set-aside funds to establish partnerships between

agencies within the state and with other entities such as universities and trade organizations. Other states are using the funds to encourage partnerships between systems (particularly small systems) for purposes of enhancing capacity.

### ► Partnering with colleges, universities, and extension services

Colleges, universities, and extension services offer technical expertise and training capabilities to states and water systems on a wide range of technical, financial, and managerial topics. Many states are directing set-aside funds to local colleges and universities to obtain these services through an existing framework. Kentucky works with universities on system analyses for water systems throughout the state. The

University of Cincinnati was contracted to conduct a distribution system study to validate an EPA Model.

Northern Kentucky University was contracted to evaluate a plant and distribution system and conduct extensive water testing at the system for a one year period. Montana contracted with the Montana State University to create a CD-ROM training device on source water

assessment and delineation procedures. Nevada contracted with the University of Nevada for various activities. The Reno Cooperative Extension is in charge of source water protection education and distance training for operators. Activities included creating a web page, gathering and coordinating source water information to make available in a “clearinghouse” website, and using existing models to further develop education programs. The Las Vegas branch of the extension has also been contracted to provide assessments of the Colorado River and Lake Mead.

### ► Partnering with water system professional and trade organizations

Organizations such as the American Water Works Association (AWWA), the National Rural Water Association and the Rural Community Assistance Programs have provided technical assistance to water systems of all sizes for many years. Through partnerships with these and other organizations, several states have greatly expanded the types of assistance offered and the number of systems that receive assistance. Florida contracted with the Florida Rural Water Association and the Florida Association of Community Action to offer a range of technical assistance to small systems. Services provided include assisting with the preparation of DWSRF loan documents, providing capacity assessments to small systems and designing plans for improving capacity, assisting with the development of business plans, developing and implementing source water protection programs, and helping with on-site technical issues. In Oklahoma, the Rural Water Association has been working to ensure that at least 200 assistance visits are made annually to small systems throughout the state to help improve operational and managerial abilities to meet SDWA requirements. Assistance has resulted in improved compliance rates and enhanced managerial attributes.

#### Facilitating Partnerships

##### Challenges

- Providing adequate training and technical assistance to meet diverse needs
- Avoiding duplication of effort

##### Solutions

- Leverage resources by combining funds with other agencies and organizations
- Use existing frameworks and expertise



Indiana utilized the expertise of technical assistance providers to conduct various activities funded through DWSRF set-asides. The Indiana Section of the AWWA and Rural Water Association are responsible for staffing a toll-free helpline and conducting technical assistance workshops throughout the state. Nebraska established a “Two-percent Team” to bring technical assistance partners together to address system capacity needs. The team meets monthly and identifies systems that need assistance by reviewing violation notices, expanded sanitary surveys, or applications for DWSRF or other financial assistance. The team includes the Nebraska Environmental Training Center which conducts workshops on water treatment operations, chlorination, and fluoridation, and the Midwest Assistance Program, which provides systems with a financial self assessment tool. Other partners include the League of Nebraska Municipalities, the Nebraska Rural Water Association, and the Nebraska Section of AWWA.

### ▼ Improving Public Outreach

Support of the public is vital to address and prevent threats to drinking water quality. One of the goals of the SDWA Amendments is to provide better information to the public on the quality of drinking water. The Amendments emphasize public information and the consumer’s right-to-know to ensure that drinking water program implementation by states is responsive to public needs. States have used set-asides to fund a variety of public outreach initiatives.

#### ► Conducting outreach at conferences

States wish to promote the benefits of the DWSRF program to as many systems as possible. Several states utilize a variety of promotion opportunities at conferences that are held throughout their state.

Louisiana DWSRF staff regularly attend the Louisiana Municipal Association’s annual convention, the Louisiana Police Jury Association’s annual convention, and the Louisiana Rural Water Annual Training and Technical Conference to distribute DWSRF information to interested parties. Louisiana DWSRF staff present funding opportunities at training sessions throughout the state. South Carolina also uses conferences attended by utility personnel as an effective means to market the

DWSRF program. Conferences are held by the South Carolina Rural Water Association, the South Carolina American Water Works Association, the South Carolina Municipal Association, the South Carolina Association of Counties, and the South Carolina Association of Special Purpose Districts.

#### Improving Public Outreach

##### Challenges

- Informing the public about health concerns from drinking water
- Promoting the DWSRF as an important source of funding
- Educating key decision makers on drinking water issues

##### Solutions

- Conduct public awareness campaigns statewide
- Develop outreach materials
- Provide targeted training for local government officials and water system professionals



**► Publishing educational materials**

Many states publish materials to promote drinking water program awareness. These are often in the form of mailings or newsletters. Louisiana sends mailings to all systems and engineers across the state and promotes the DWSRF program in the state's Safe Drinking Water newsletter, "The Water Funnel," distributed quarterly. Delaware created a quarterly newsletter through set-aside funding. The newsletter is mailed to all public water systems in Delaware and interested stakeholders, to inform the drinking water system community of regulations, requirements, and other beneficial information. Washington has created a quarterly newsletter, "Water Tap," which provides information on drinking water topics such as the DWSRF program, application deadlines, and public hearing notification. Special issues of the newsletter highlight the successes of the state's DWSRF program.

**► Conducting public awareness campaigns**

Several states have tried to involve the general public in, and educate the public about drinking water issues by conducting public awareness campaigns. New Mexico has established "Water Testing Fairs" throughout the state. The fairs allow the New Mexico Bureau of Water to have direct contact with the public at scheduled fair exhibitions. Pamphlets on health effects and other pertinent information are distributed. Alabama conducted three "Drinking Water Awareness Celebrations" in the state to emphasize the need to protect and appreciate safe drinking water. Held in conjunction with National Safe Drinking Water Week, the celebrations included drinking water taste tests and poster and coloring contests to encourage awareness among students. News media provided coverage of the events and the water system with the best tasting water competed nationally in Washington, D.C. Georgia contracted with the Carl Vinson Institute of Government at the University of Georgia to establish communication and coordination mechanisms among water programs, local government officials, and others involved in water resource management. The result of the contract will be a watershed management guidebook.

**► Enhancing drinking water websites**

Websites can be very effective vehicles for disseminating information about drinking water programs to water systems and the general public. Several states, including Kentucky, Florida, and Pennsylvania have established websites to provide information on the DWSRF program. Kentucky's website separates information for the general public and information for professionals, including consulting engineers, water system managers and operators, and researchers. The site includes information about the state's DWSRF program and detailed information on state regulations, certified labs, analytical methods, drinking water treatment tips, and links to related sites. Florida's website provides information about the DWSRF program including a calendar of events, procedures for getting a loan, application materials, and frequently asked questions.

Pennsylvania's website provides information on the DWSRF program including set-aside workplans, project priority lists, and links to a loan calculator which allows borrowers to compare DWSRF interest rates with interest rates of other financing sources. It also has self assessment guides and budgeting worksheets for different types of systems, including municipally-owned and mobile home park-owned systems. A webpage for operators has also been created to provide information to operators. The webpage includes a calculator for common process control calculations, an advertisement section to buy or sell equipment and supplies, and a section to ask questions and exchange ideas or address problems experienced by operators.

### ► Informing local government and water system officials

States recognize that reaching and educating key decision makers such as local officials, water board members, and system owners is essential for ensuring that systems have the resources to ensure adequate capacity. Mississippi entered into a four year contract with the Mississippi State University Cooperative Extension Service to provide coordination and material support needed to conduct technical training sessions for board members and managers of small water systems in the state. Board members and managers were given training on the legal, decision making, and system oversight responsibilities of their positions, and the basic technical and managerial skills necessary to fulfill those responsibilities. The state provided 1,800 participants with training at 67 separate training sessions. To address the fact that more than half of the state’s population relies on ground water, North Carolina used funds to increase public knowledge of the benefits of wellhead protection. One-day seminars on wellhead protection were conducted across the state and training was provided to local community leaders on the importance of wellhead protection and the methods available for use within wellhead protection plans.

### ▼ Supporting Drinking Water Programs

Many states have used set-aside funds to enhance their drinking water programs by hiring additional staff to support their PWSS, operator certification, capacity development, and source water protection programs, and by providing additional resources to implement new drinking water regulations. States have also used funds to enhance their oversight of system compliance, improve their data systems, and assist systems with preparing consumer confidence reports.

### ► Enhancing oversight of system compliance

As part of their primacy responsibilities, states are required to ensure that their systems comply with national primary drinking water regulations and must have a program in place to conduct sanitary surveys of their systems. The sanitary survey is a valuable tool for assessing the adequacy of a water system in producing and distributing safe drinking water. Colorado used funds to increase the scope and frequency of sanitary surveys, capacity development reviews, and investigation and response to incidents of non-compliance. More than 200 system site visits have been made under a state noncommunity drinking water system sanitary survey initiative using local health departments as part of the state’s capacity development program.

This effort will eventually involve annual sanitary surveys of approximately 800 noncommunity ground water systems. New Mexico developed a Statewide Drinking Water Assessment planning process to identify and provide information on the needs of the state’s public water systems through sanitary surveys and other sources of information.

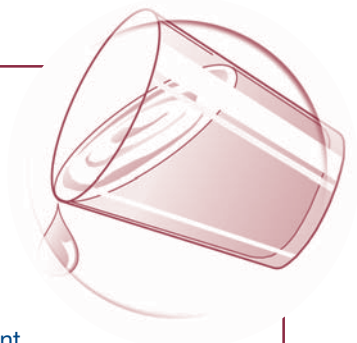
#### Supporting Drinking Water Programs

##### Challenges

- Implementing and complying with new drinking water regulations
- Conducting adequate oversight of water systems
- Maintaining drinking water data management systems

##### Solutions

- Hire additional state staff to help implement new regulations
- Decentralize sanitary survey responsibilities and increase scope of surveys
- Purchase or improve data management systems



Oregon used funds to contract with County Health Departments to help public water suppliers with sanitary surveys, water quality problems, reporting, and regulatory consultation. Utah used funds to continue to perform core functions of the PWSS program such as sanitary surveys, plan reviews, and ground water source protection. The state also awarded \$75,000 in grants to 12 local health departments to conduct sanitary surveys.

► **Improving state data systems**

The Safe Drinking Water Information System (SDWIS), designed by EPA to help states run their drinking water programs, houses three major categories of information: inventory, sampling, and compliance monitoring data. States use SDWIS to help meet EPA quarterly reporting requirements and increase efficiency. West Virginia used DWSRF set-aside funds to update the SDWIS data management system. Information gathered through the program helps the state planning and policy team to manage sanitary survey reports, follow-up on violation and enforcement actions, map information through the use of geographical information system (GIS) tools, and interact with state, tribal, and local governments. Other states, including Delaware, Maryland, and Virginia, have used set-aside funding to purchase or improve SDWIS data management systems. Presently, Delaware is adopting the SDWIS program to clean up current data and facilitate data migration. The state is generating electronic monitoring schedules for systems to track violations and enforcement actions.

States are also using set-aside funds to develop data systems to track information for other parts of their programs. Montana entered into a contract to create a GIS database of water system sources using existing latitude/longitude information and to train PWSS staff in the use of Internet interactive mapping applications. Pennsylvania is developing a networked data management system to support certification activities such as testing and continuing education. Texas developed an integrated data applications package to give the PWSS program the capacity to satisfy the data and tracking needs of both the state and EPA. Massachusetts is developing a comprehensive GIS database of public water supply sources and their protection areas, land use, and potential contaminant sources.

► **Helping systems prepare consumer confidence reports**

The SDWA Amendments require water systems to prepare annual consumer confidence reports (CCRs) which provide consumers with information on their drinking water sources, the level of any contaminant found in local drinking water, the likely source and potential health effect of any contaminant in the local drinking water supply, and other consumer protection documentation. The consumer greatly benefits from these reports, but many systems do not have the resources or personnel to complete the required reports. To meet SDWA requirements and protect consumers, many states, including Arkansas and Rhode Island, used set-aside funds to help systems complete the reports. Arkansas, in conjunction with the Arkansas Rural Water Association, has provided extensive assistance to systems in completing CCRs including the review and critique of drafts and reminders to systems regarding deadlines for compliance. Rhode Island contracted with the New England Water Works Association and Maine Rural Water to provide assistance to small systems in the areas of system operation and CCR preparation.



## ▼ Promoting Source Water Protection

Taking positive steps to manage potential sources of contamination and prevent pollutants from reaching sources of drinking water is often more efficient and cost-effective than treating drinking water later. Each state has developed a comprehensive Source Water Assessment Program to assess the source of every public water system within the state. The source water assessment results provide the information necessary for water systems to seek help from states in protecting source water, or initiating local government protection efforts. Many states are using set-asides to fund a variety of source water protection measures including educational outreach programs, incentive-based programs for water systems to create and improve source water protection areas, land acquisition and conservation easements, and programs to ensure wellhead protection.

### ► Educating the public on the benefits of source water protection

Upon completion of source water assessment activities, the SDWA Amendments require all water systems to demonstrate the condition of their water source to the public. States such as Pennsylvania and California have developed educational programs for water systems and the public on the importance of source water protection and the funds available to improve source water quality through protection measures.

Pennsylvania’s program is comprised of several elements. The state has created a web page to provide the public with assessment schedules, summary reports for completed assessments, and general information on source water protection. A grant

program supports source water protection projects throughout the state and information on the application process and available funding is provided on the state web page. Grants provided to communities assist local coalitions in community-based education efforts and help to promote communication and networking activities. Information and training are provided through 10 to 12 local coalitions annually. Other grant recipients focus on educating children through museum exhibits, school materials on source water protection, and a “Hydro Mania” festival.

California also uses funds to promote source water protection education activities. Funds support presentations to local and professional organizations on implementation of the source water protection program. A technical and policy advisory committees for source water protection was also created. The state’s website provides guidance for delineating and assessing source water protection areas, electronic forms to complete assessments, results of completed assessments, and information on funding opportunities.

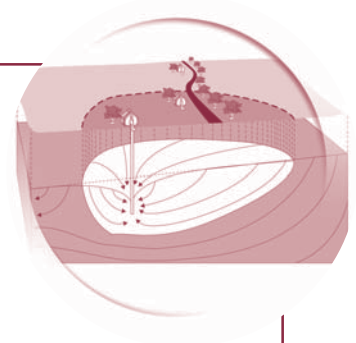
### Promoting Source Water Protection

#### Challenges

- Managing potential sources of contamination
- Gaining public support for source water protection

#### Solutions

- Provide assistance for conservation easements or acquisition of land
- Implement wellhead protection programs
- Promote protection through websites, schools, and community-based activities



**► Funding incentive-based programs for water systems to create and improve source water protection areas**

Several states, including Massachusetts, Texas, and California, are focusing protection efforts on providing assistance to local communities and water systems to undertake local source water protection initiatives. Such an approach emphasizes the implementation of local land use controls, ordinances, and management measures. Massachusetts expanded a well-developed source water protection program by instituting a technical assistance and land management grant program. Project funding is prioritized based on need. Projects supported by these funds include: planning riparian buffer zones at agricultural sites; addressing the management of existing protected lands and public access issues; designing pesticide and chemical storage facilities; educating the public; coordinating and improving emergency response; and developing a local surface water protection plan. The state supports the acquisition of land for source water protection when deemed financially cost-effective.

Texas developed a loan program for systems to implement best management practices to protect their drinking water sources. The types of projects eligible for funding include: land acquisition, implementation of land use ordinances, hazardous waste collection programs, and public outreach activities. California has reserved more than \$8 million from its capitalization grants to support loans for community water systems to implement measures to protect vulnerable drinking water sources from contamination. The types of projects eligible for funding include: hazardous waste collection programs, education on best management practices, closure of abandoned wells, and fencing out cattle from intakes, tributaries, or reservoir boundaries.

**► Acquiring land and conservation easements**

Conservation tools such as land acquisition and conservation easements can protect a water supply by preventing pollution-generating activities from occurring in critical areas, and can provide community benefits such as preserving open space, enhancing recreational opportunities, and reducing flood damage. Unlike purchasing the land through acquisition, a conservation easement is a legal agreement between a landowner and a government agency that permanently protects the land by limiting the amount and type of development that can take place while the landowner continues to own it. Several states, including New Hampshire, Vermont, and Kentucky, have established loan programs for land acquisition and conservation easements for source water protection.

New Hampshire provides loans to systems to purchase land or conservation easements to protect vulnerable drinking water sources from contamination. Applications received by the state identified a demand for more than \$1.5 million in projects. A contract with the Society for the Protection of New Hampshire's Forests provides technical assistance to water systems in prioritizing projects for land acquisition and facilitating purchases. New Hampshire identified protection of sources of drinking water as a priority and budgeted \$1.5 million in state grants as a 25 percent match to help communities purchase land. Vermont established a program to provide loans to municipally-owned systems for the purchase of land or conservation easements. The state has made a total of \$200,000 in loans to 3 systems. One loan, to the Town of Bradford, purchased a tract of farmland within Zone I of the system's source protection area. The purchase was a high priority because the Town's source protection plan identified high risk land use activity on the property. Kentucky also established a loan program for land

acquisition or conservation easements. The site must be within a delineated source water or wellhead protection area and the acquisition must be consistent with approved county water supply plans. The state made a \$360,000 loan to a system to acquire 180 acres.

### ► **Implementing wellhead protection programs**

Nearly 80 percent of community water systems use ground water for their primary source of supply. Wellhead protection promotes pollution prevention and management techniques to protect ground water sources of drinking water. States such as Michigan, Maryland, and Illinois used funds to support the proper abandonment of wells. Improperly decommissioned wells and treatment facilities provide a direct conduit for contaminated surface water and treatment byproducts to enter ground water. Recognizing these potential threats and developing measures to prevent them is an important part of any source protection program.

Michigan developed and is implementing a statewide Abandoned Well Management Program with the support of set-aside funding. The program helps water systems manage abandoned wells identified inside delineated wellhead protection areas and in areas where municipal water service was extended into areas previously served by on-site wells. The program combines a statewide education program with demonstration projects to promote this new program. At least 210 improperly abandoned wells were properly capped with the help of two full-time staff and two student assistants hired through DWSRF set-aside funds. In addition, a state environmental bond program provides grant money (with a 25 percent local match requirement) to communities to locate and properly seal abandoned wells within delineated wellhead protection areas.

Maryland implemented a wellhead protection program that provides grants to local communities to support the creation of wellhead protection areas. Funds support the distribution of information to all water suppliers and local government officials on the availability of DWSRF funding for source water protection. Funds may be used to support technical analyses of wellhead areas including dye tracing, estimation of areas contributing recharge to the ground water, and any approved method for establishing a wellhead protection area. Illinois has established a well recharge area delineation program focused on Illinois' Priority Groundwater Protection Planning Regions. This program will delineate the five year recharge areas for community water system wells which utilize unconfined aquifers within these regions. With the help of several public universities, the information gained will be included in the Illinois EPA Internet GIS database.

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## Implementation Issues

Any new program of this magnitude can be expected to have its share of growing pains; and the DWSRF program is no exception. States have faced, and continue to face, challenges which affect the implementation of their programs. Some of these challenges affect the progress of their programs and others impact their programmatic decisions. This chapter discusses some of the challenges that states have encountered in implementing their programs and other obstacles and barriers they perceive as affecting their programs. The chapter also discusses some of the issues and resolutions to these issues.

### ▼ Challenges Impacting Utilization of Funds

In reviewing the status of state DWSRF programs, EPA often refers to the rate of fund utilization or “pace” of the program. Chapter 8 outlined several of the milestones associated with providing assistance to recipients and completing projects. A program with good pace is deemed to be one that is efficient and timely in providing assistance to recipients. The measure used to assess the utilization of funds is the assistance that has been provided as a percent of the funds available. As was noted in Chapter 8, while the national average for that measure through SFY 2001 was 72 percent, there were several states that exhibited lower utilization rates. There is no one reason for slower pace in some states - the causes are multiple and, in some cases, unique to each state.

States that had preexisting programs or were implementing the DWSRF through the same agency used for the CWSRF program generally got off to a faster start because they had the administrative structure in place to handle the funds and were comfortable operating a loan program. These states also benefitted because, in working to obtain legislative authority, they typically only had to amend existing legislation rather than introduce new bills. States that had to develop new programs and obtain new legislative authority took longer to get moving. In fact, only 18 states received funding in the first year of availability for their FFY 1997 grants, and 14 of those received funds in the final month of that fiscal year (Table 3-1). Sixteen states received their first grant in the final month of availability for the funds (September 1998).

Obtaining the state match needed to receive a grant was a significant issue for some states early on, even though the law provided states with additional time to provide match for the FFY 1997 appropriation. For a few states, the challenge of obtaining match has proven to be a continuing problem, which could increase in light of recent state budget constraints. States that were unable to receive state appropriations for match were forced to go to the bond market to issue bonds to provide match. In many cases, these bond issues require voter authorization which can further slow progress in a state’s program. Rhode Island and Louisiana have both faced serious problems in obtaining match, affecting their ability to provide assistance since states are required to provide state funds proportionally with federal funds. California and Maine are among the states that must obtain voter approval for bonds issued to provide

match. In California, the delay caused by issues associated with the match placed the state in danger of losing its FFY 1997 funds.

Obtaining adequate staff to implement programs has been another challenge for some states. Staffing problems have been caused by hiring freezes, internal reorganizations, and salary imbalances between the state and private sector that make it difficult to hire qualified staff. Many of these challenges are state-level problems that the federal government cannot fix. However, in a few instances, EPA has issued letters to state leaders informing them of the Agency's concerns about the state's ability to manage the program and the potential impact this would have on their ability to receive future federal grants. In some cases, these actions have helped states understand and reduce state-level hurdles.

Another factor that has the potential to impact utilization of funds in all states is a natural outcome of a program that focuses on the needs of smaller systems. Smaller systems frequently need more time and assistance to identify what projects they need to complete and to prepare to receive assistance. In many cases a system will rank high on a state's priority list because it has a serious public health problem, but the system has not done the planning and design work they need to complete before they can be considered for a loan. Overcoming the challenges presented by smaller systems has required hard work and creativity on the part of the states. States have put additional resources into working with smaller systems and, as described in Chapter 10, have used their set-aside funds to help small systems prepare for funding. As state capacity development programs continue to improve, and as more systems are aware of the requirements associated with the DWSRF program, states should be able to move the smaller systems toward funding more quickly.

When approaching a particular state that is exhibiting slower progress in using funds, it is important to try to understand the root causes in order to determine potential solutions to problems. EPA will use financial indicators developed using data from its data system as a starting point for investigation rather than as an endpoint. For example, California's utilization of funds through SFY 2001 stood at 28 percent, which is much lower than the national average of 72 percent. However, the figure represented a large increase from the previous year's value of 4 percent and it appears that the state is on track for continuing improvement. In the final two months of SFY 2001, the state closed eight loans for \$60 million, which represented 50 percent of the agreements and 66 percent of the funds provided in that fiscal year. Upon investigation, there have been several contributing factors to the slower pace in the state:

- The California Department of Health did not have a preexisting financial assistance program and had to develop legislation for passage by the state's General Assembly. The state received its FFY 1997 grant in September 1998 (the final month of availability).
- Although the program was able to secure match from the state's general fund for the first two grants, DWSRF staff had to spend considerable time and energy working on a multi-billion dollar bond referendum which included match for future DWSRF grants. Passage of the bond issue in March 2000 gave the staff time to increase their focus on implementing the program.
- During the initial years of the program the state took the time to establish clear procedures so that it

would be able to more effectively run the program in the long-term.

- The state has focused its attention on smaller systems which require significant assistance to prepare for funding.

An additional example is the State of Arkansas. Utilization of funds in the state increased slightly from the SFY 2000 figure of 22 to 25 percent through SFY 2001. Upon investigation, two major causes were identified, neither of which are in and of themselves serious problems or within the state's control. The state had entered into binding commitments with two projects which ranked number 2 and 3 on the state's first fundable list of projects. However, prior to receiving loans, both projects (totaling \$24 million) were beset by legal problems. The state has worked to help mediate the disputes and was able to close one of the loans and partially fund the other. The second factor affecting the state's pace has been, unexpectedly, its success in coordinating funding. Arkansas is a good example of a program that coordinates funding with other state and federal sources of funds. A state Water/Wastewater Advisory Committee meets monthly and reviews projects that have requested funding in order to identify the best funding solution for each project. As a result, a substantial number of the initial projects on the state's priority list were financed with other sources of funding. In the initial years of this state's program, as systems are preparing to proceed with DWSRF loans, projects identified through the DWSRF process are getting funded and important public health protection is taking place.

With respect to the set-asides, there have been three primary challenges impacting states in utilizing funds that have been reserved—staffing, contracting, and competing priorities. The August 2000 GAO report, *Drinking Water: Spending Constraints Could Affect States' Ability to Implement Increasing Program Requirements* (GAO/RCED-00-199) discussed how states have been impacted by low authorized state staffing and funding levels, hiring freezes, and inadequate salaries. Some states reserved funds and then found they could not hire the staff needed to implement activities. States that could not hire looked to contracting as a solution, but often found road blocks in the procurement process or ceilings on contract use of funds. Finally, in addition to new drinking water rules, the 1996 SDWA Amendments introduced several new programs and requirements in the areas of source water protection, capacity development, and operator certification. States have spent the last three years working to complete strategies and receive approval for programmatic changes. Now that states have approval for source water assessment plans, capacity development strategies, and operator certification programs, it is anticipated that expenditures of the set-asides will continue to increase.

### ▼ Challenges Related to Federal Requirements

Challenges that states face are not only the product of state issues or the character of the recipients of assistance in the program. Many of the challenges that have affected pace in the program are the product of federal requirements. There are a number of federal laws and regulations that apply to recipients and sub-recipients of federal assistance (i.e., cross-cutters). These include requirements relating to the conduct of environmental reviews, utilization of disadvantaged businesses, and historical preservation. There are also conflicting requirements that create obstacles to efficient coordination of funding among different federal agencies. For example, when pursuing coordinated funding opportunities, states have experienced frustration at differing federal agency requirements pertaining to the conduct of environmental reviews.

Because there are many conditions attached to the receipt of federal funds, states face challenges in working to help recipients of assistance understand all of the requirements to which they are subject, especially small and/or privately-owned systems which often do not have the option of using the municipal market or other affordable sources of financing. States have reported that the most challenging cross-cutters to implement have been the provisions governing the participation of disadvantaged business enterprises (minority and women), environmental reviews, and historic preservation.

### ▼ Issues Related to State Program Decisions

In the discussion on stewardship in Chapter 8, it was noted that, in implementing their programs, states must make decisions on how to direct funds and structure programs in a manner that addresses their highest priority needs and ensures longevity of the Fund. These goals can compete against one another, particularly in determining how much of the funding to direct to set-asides and how much assistance, and what type of assistance, to provide to disadvantaged communities. EPA, in guidance and regulations, has left the decision as to how states split their grants between funding set-asides to carry out priority drinking water program activities and capitalizing their Fund to support loans to water systems.

Usually, decisions on how to distribute funds between the Fund and the set-asides are made at the state drinking water program level based on a consideration of the immediate need for funding for projects that are ready to proceed in the coming year, the long-term goal for fund capitalization for the state, and the activities that need to be implemented through the set-asides. The amount of funds reserved from year to year will vary in accordance with the projected funding needs. Nationally, states have reserved approximately 16 percent of their grants for set-aside activities. On a state by state basis, the figure ranges from 6.7 to 31 percent. In some instances, states have reserved an excess of funds for the set-asides and found that they are not able to expeditiously expend them. EPA has encouraged several states to transfer excess funds to the Fund to provide infrastructure assistance. On the other hand, the 2000 GAO report referred to in the previous section discussed the concerns of several states with respect to the political difficulties in using funds for set-asides when the acknowledged infrastructure needs are so great. This tension is more acute in states where more than one agency is implementing the program. In these states, there are often conflicts between the drinking water program and the financial agency overseeing implementation of the Fund in determining how much of the funding goes to projects as opposed to set-asides. In some cases the pressure comes from higher levels of the state government. In at least one state, the state's budget agency dictates how much of the set-asides the state program can access. An additional factor that has impacted state use of set-asides is an inability to take funds for the state program management set-aside because a state cannot provide the additional matching funds required to access the set-aside.

In addition to tensions between the Fund and the set-asides, EPA has also observed tensions between the set-asides and other sources of state funding. In some cases, states have decreased the amount of funding they provide for their drinking water programs and replaced the funds with the set-aside funds. This causes concern for state drinking water administrators because they cannot be assured that the set-aside funds will be available in the long-term since they are tied to capitalization grants. Other states have been reluctant to take set-asides because they are afraid that their own state funding will be cut or that EPA will make a decision to decrease funding for the traditional PWSS grant program.



A second programmatic issue that is restricted to management of the Fund is the subject of disadvantaged assistance. Although the DWSRF program offers significant savings through its low interest loans, there are systems that will still find it difficult to receive loans and keep rates affordable for their customers. Only 16 of the 29 states with disadvantaged assistance programs provided principal forgiveness. Most states that do not provide disadvantaged assistance in the form of principal forgiveness have indicated that their reluctance is due to the fact that the assistance will, by its nature, reduce the amount of funding available for assistance in the long-term as forgiven principal will not return to the revolving Fund. States have been more amenable to providing longer term loans of up to 30 years and interest rates that are greater than zero but less than the standard interest rate for non-disadvantaged loans. Many states believe that the low interest loans offered through the program are sufficient in addressing disadvantaged needs based on a financial assessment of the applicant. Some states are using other federal or state funding programs to provide grant assistance to systems that have an identified need, and in some cases, coordinate that funding with DWSRF funding.

EPA has not developed an estimate of the percentage of systems in the country that serve disadvantaged communities. In its January 2002 report, *Drinking Water: Key Aspects of EPA's Revolving Fund Program need to be Strengthened* (GAO-02-135), GAO surveyed states in an attempt to develop a national estimate of the number of disadvantaged communities using an individual state's definition of disadvantaged or a system's rates as a percent of its median household income. GAO estimated that about 28 percent of the 24,334 small systems reflected in the results of their survey qualified as disadvantaged. However, GAO did not have confidence in the precision of their estimate because some states lacked information to report and there were issues associated with the sampling strategy. In response to new regulations such as the revised arsenic standard, there has been a call for new grant programs targeted at small systems. States may need to reassess their use of the disadvantaged assistance provision to determine if they are missing systems that are not participating in the program due to lack of subsidy.

### ▼ National Program Issues

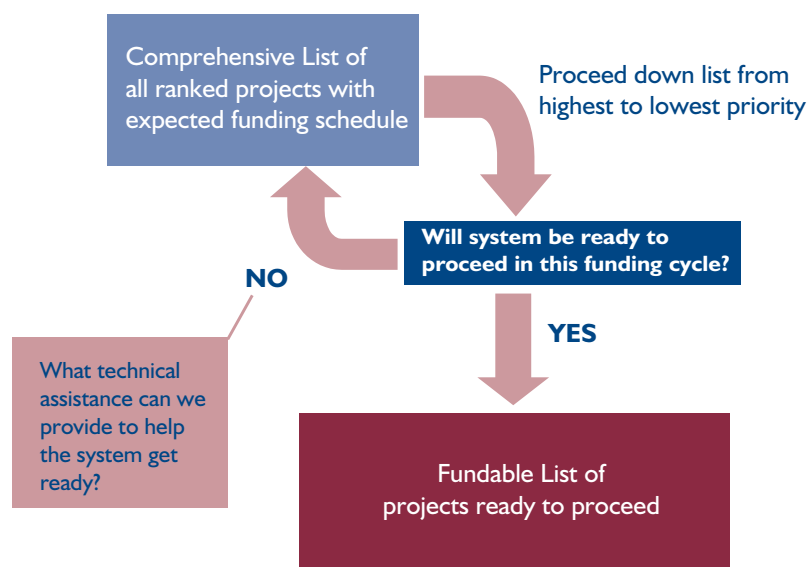
EPA established a partnership with the states to address the problems and issues associated with the new program and to identify acceptable solutions. One of the first major issues faced by the program was related to identifying the types of projects that would be eligible or ineligible for DWSRF assistance. The law indicated that projects of a "type or category which the Administrator has determined ... will facilitate compliance with the national primary drinking water regulations applicable to the system under section 1412 or otherwise significantly further the health protection objectives of the Act" would be eligible for assistance through the program. In developing the initial guidelines for the program, EPA also considered the required criteria of section 1452(b)(3)(A) of the SDWA to focus on projects needed to address the most serious risk to human health, to ensure that the nation's drinking water is safe through compliance with the national primary drinking water regulations, and to assist those systems with the greatest economic need. The Agency determined that the purposes of certain types of projects, including the construction and rehabilitation of dams and reservoirs and purchase of water rights, were focused less on water quality and more on satisfying demand for drinking water. The Agency believed that providing DWSRF program assistance for these types of projects would not further the objectives Congress set out in the SDWA to the same extent as the other projects identified as eligible. EPA maintained these restrictions in its final regulation for the program.

The second major issue facing the program was associated with identifying and prioritizing projects for funding. The law required that states give priority to projects that meet the criteria in section 1452(b)(3)(A) of the law (see above). EPA reviewed the priority systems for all 51 programs to ensure that they met the Congressional intent of the law. In some states, there were intense discussions relating to the types of factors and relative weights assigned to them within the systems. States were concerned that through the review process, EPA was attempting to force a cookie-cutter approach that would have all state priority systems looking the same. EPA provided a compendium of the state priority systems in a report released in February 1999, *Prioritizing Drinking Water Needs: A compilation of State priority systems for the Drinking Water State Revolving Fund Program* (EPA 816-R-99-001). A review of the priority systems demonstrates that, while all states had to address the three primary factors identified in the law, the structure of, and additional factors included within, the states' systems vary considerably.

The law requires that states provide assistance to those systems with the highest priority on a fundable list of projects. This was a departure from the CWSRF program, which allows states to fund any projects on the priority list regardless of order (although most states try to fund the highest priority projects). Early on there was some concern and misunderstanding about the consideration of a project's readiness to proceed with respect to offering assistance. For the first two years only, EPA allowed readiness to be considered as a factor in the priority system. After the initial two years, states could not include readiness as a priority ranking factor because it would provide a misleading portrait of the projects with the highest public health and compliance needs. Many states therefore thought that readiness to proceed could no longer be considered in funding decisions and that they would have to hold funding for a highly ranked project until it was ready for construction. However, EPA believes that states now understand that a project's readiness to proceed must be considered as the state develops its fundable list of projects from the comprehensive list of projects that have expressed interest in funding (Figure 11-1). A state would not want to place a project with a high public health need at the top of its list of projects that will receive funding in the next year if the project will not be ready to proceed for three years.

Two issues which states identified as concerns were discussed and resolved using the assistance of the State/EPA SRF work group. This work group consists of 18 representatives from state DWSRF, CWSRF, and finance agencies; and staff from EPA's headquarters and ten regional offices. The group was convened in February 1998 and has met ten times since then to

Figure 11-1 DWSRF Identification of Fundable Projects



discuss issues related to the two SRF programs. Early in the program, states received inquiries from homeowners served by private wells that had become contaminated about the possibility of their receiving assistance to remedy the problem. States had also heard from water utilities that were interested in consolidating into a regional water authority. In both scenarios, the applicants were seeking assistance to create a new public water system. Because the language in SDWA requires that assistance only be provided to a public water system, neither of these scenarios could be funded. EPA recognized that there could be important public health benefits and affordability issues that could be addressed through these types of projects and that allowing such projects would fall within the scope of the SDWA goals. The Agency worked with the work group to craft a policy that would allow these types of projects to be funded, but which would also include measures to ensure that the policy would not be abused. After seeking comment, a policy was approved through the *Federal Register* in 1998 (63 FR 59299) and was later incorporated into the final regulations for the program.

The second issue related to the timing of assistance for projects and whether such assistance would be considered refinancing. The law precludes states from refinancing projects for privately-owned systems. Some state programs were concerned that this restriction, read strictly, would preclude them from funding privately-owned systems under the state's funding schedule. For some states that issue bonds, all loans are closed at one or two times during the year. Because the state does not want to delay a project from proceeding prior to execution of the loan agreement, these states will typically allow the project to proceed and agree to reimburse the recipient for costs incurred between the time that the project was approved and the loan executed. Other states with short construction seasons, such as Alaska, also wanted the ability to reimburse a project for approved costs incurred prior to the execution of the loan. If a system, particularly a private system, was to fund any interim costs using debt, this meant that the state could not provide reimbursement of funds since it could be construed as refinancing. After soliciting public comment, EPA released a policy in 1999 (64 FR 1802), later incorporated into the regulations, stating that a project (for a privately-owned or publicly-owned system) that had been given approval, authorization to proceed, or any similar action by the state prior to initiation of construction would be eligible for reimbursement for construction costs incurred after such state action, provided that the project met all of the requirements of the DWSRF program and other criteria. Planning and design and associated pre-project costs were eligible for reimbursement regardless of when the costs were incurred.

A final, and on-going, controversy concerns state restrictions on funding privately-owned systems. The SDWA, unlike the CWA, explicitly allowed for the provision of assistance to privately-owned systems through the DWSRF program. This is particularly relevant since roughly one-half of the systems in the country are privately-owned and typically small. Several states have explicit restrictions against providing funding to privately-owned enterprises on a policy, statutory or regulatory basis. Presently, 12 states restrict the provision of DWSRF monies to privately-owned systems (Figure 7-4).

EPA had been asked by some stakeholders to consider changes to the allotment method to account for restrictions in the states that restrict privately-owned systems from receiving DWSRF assistance. Stakeholders expressed the opinion that the allocation for these states should only consider the total need associated with water systems that are eligible to receive DWSRF monies from the state (i.e., publicly-

owned systems). They proposed that capital needs associated with privately-owned water systems be deducted from these states' total need estimates, although, as required by the SDWA, each state (even those restricting privately-owned water systems from funding) would receive at least one percent of the funds available to states.

EPA reviewed the statutory language and determined that allotments should be based on the needs reported in the most recent needs survey which must assess "capital improvement needs of all eligible public water systems." The total state need collected through the survey represents the needs associated with systems eligible for assistance under the law (i.e., publicly- and privately-owned community water systems and non-profit noncommunity water systems). Therefore, these needs must be included in determining the allotment of funds.

Since the program began, several states with such funding restrictions have made changes to legislation to allow funding to privately-owned systems. Others have worked to identify alternative methods of providing assistance, have used set-aside funds to provide technical assistance, or are helping privately-owned systems obtain assistance from other state or federal sources. However, EPA has also found that some states with the authority to provide assistance to privately-owned systems have not done so. The Agency has been concerned that an attempt to remedy inequities through the allotment method might itself lead to inequities by penalizing states which have specific restrictions and not penalizing states that have no restrictions but do not fund private systems. EPA will continue to monitor states with respect to their decisions to fund privately-owned systems to ensure that the program maximizes benefits to public health. EPA will also continue to work to assist states in working with privately-owned systems by providing financial management training on the mechanics of applicant credit evaluation and facilitating the dissemination of information between states.

There have been additional issues that have been raised throughout implementation of the program, and issues will continue to be raised as the program moves into the future. EPA's goal is to work with the states to identify mutually agreeable solutions to issues that may arise.

### Public Outreach and the DWSRF program

One of the primary goals of the 1996 SDWA Amendments was to provide better information to the public on the quality of their drinking water. The law emphasized public participation and consumer right-to-know to ensure that states' choices concerning drinking water program implementation are responsive to public needs. Several provisions in the law specified that the public be given the opportunity to review and comment on program implementation in an effort to increase public awareness. For the DWSRF program, the law requires that a state release its Intended Use Plan, which provides information on how the state will use its program to fund infrastructure projects and other programs for the protection of drinking water and public health, to the public for review.

States have used a variety of methods to reach the public—including traditional mailing, the media, and the Internet. Effective public outreach not only serves to increase public awareness - an effective campaign that reaches all interested parties, including public health and environmental groups, will also market the program to potential customers for the program. In April 2000, EPA released a report, *Case Studies in DWSRF Implementation – Public Participation* (EPA 816-R-00-001), which reported on how several states were reaching out to include the public in developing their DWSRF programs and marketing the program to potential borrowers.

The success of states in reaching the public has been mixed. Some states have been able to successfully bring the public into the process while others have been disappointed that their efforts have not yielded greater interest on the part of the public. An example of a successful effort to market and promote the program comes from the State of Arizona. To highlight the importance of the DWSRF in protecting the citizens of the state, the state Water Infrastructure Finance Authority annually identifies a project of the year. A past winner was the Far West Water & Sewer, Inc., a private utility that serves a population of 20,000 in an area 10 miles east of the City of Yuma. The \$6 million project, funded at a 6% interest rate, solved a significant water quality problem by constructing a pumping plant and pipeline to transport water from the Yuma-Mesa Canal to a new “package” surface water treatment plant. The project acquired, pumped, treated, and distributed Colorado River water flowing in the Canal to supplement and blend with poor quality water from existing sources of ground water wells. The project enabled the owners to transfer their water source from a poor quality ground water source to treatment of a better quality surface water source.

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# 12

## Future of the DWSRF

Entering its sixth year of implementation, the DWSRF program is viewed as a success by both states and EPA, although all acknowledge that the program continues to be a work in progress. EPA and states have heard criticisms that the program has not moved as quickly towards full implementation as its sister CWSRF program had. While the DWSRF program has been fortunate to build on the experiences of the successful CWSRF program, it has suffered misconceptions due to comparison with a more mature program. In fact, a review of the data for both programs shows that the DWSRF program is actually well in line with progress shown by the CWSRF program at the same time in its development. Should appropriations continue beyond the 2003 authorization, EPA and states expect similar success for the DWSRF over the long-term.

Some of the greatest assets of the program are the elements that differ from those of the CWSRF program. Congress structured the DWSRF program to touch on all aspects of drinking water protection - not just infrastructure (Figure 12-1). While the flexibility to use funds for other purposes can present challenges for states in decision-making, EPA believes that states have found the flexibility of the set-asides and disadvantaged assistance to be of great utility in ensuring that their citizens have safe and affordable drinking water. States are using the DWSRF to fund their highest priority infrastructure projects and the program is successfully integrating with other objectives of the 1996 SDWA Amendments. States are using funds to implement new

Figure 12-1 DWSRF Support of the Mission to Ensure Safe Drinking Water



programs related to source water protection and operator certification. The program is focusing on assisting small systems through both the Fund and the set-asides. Perhaps the most effective cross-fertilization has occurred in the area of capacity development. Several states are integrating their DWSRF and capacity development programs to ensure better sustainability of system operations in the long-term.

There are still a few states that are facing challenges in implementing their programs. While EPA is committed to working with these states to help them overcome obstacles, the Agency will also monitor states for compliance to determine if it would be appropriate to withhold funding for redistribution to states with efficient programs.

This final chapter addresses programmatic challenges that are faced by systems and local, state, and federal governments and how they can be addressed through the DWSRF program as it is currently structured. The chapter also discusses other challenges that may require Congressional consideration to identify solutions. Finally, several principles are identified that should guide the efforts of federal, state, and local governments as they work to ensure protection of public health and drinking water.

## ▼ Challenges on the Horizon

### ► Meeting drinking water infrastructure needs

Over the past two years, there has been much discussion of the great needs facing the drinking water industry over the next several decades. Other reports have been released that promote drinking water needs in excess of EPA's 20 year estimate of \$151 billion. EPA has developed a report on the potential gap that exists between what systems currently spend and will need to spend in the future to meet those needs. The predicted gap varies considerably depending on the combination of assumptions used in the analysis. The analysis found that a significant funding gap could develop if the nation's clean water and drinking water systems maintain current spending and operations practices. However, this funding gap is not inevitable. For example, the gap largely disappears if municipalities increase clean water and drinking water revenue and associated spending at a real rate of 3 percent per year (above the rate of inflation) – a growth rate that is consistent with the long-term growth estimates of the economy. Over the next few years, EPA will be working with its stakeholder partners in all levels of government and

## Rhode Island

### Addressing Aging Systems in Rhode Island

The Providence water treatment plant supplies 60 percent of Rhode Island residents—over 600,000 people—with safe and reliable drinking water. In November 1999, an inspection of their 90-inch concrete aqueduct revealed severe corrosion and deterioration. The aqueduct, built in the 1920's, was the main water conduit from the water treatment plant to the distribution system. Though an alternate line was built in the 1960's, it did not provide true redundancy because there was no shut-off mechanism to prevent water from passing through the 90-inch aqueduct. If there was a failure in the line, there would be no way to isolate the 90-inch aqueduct, resulting in a complete loss of service to the entire water system.

Providence secured a \$5 million DWSRF loan to install a temporary 90-inch plug to take the aqueduct offline and make the necessary improvements. With the temporary plug in place, repairs to the aging concrete were completed, the entire 4.5 miles of pipeline was inspected, and a new butterfly valve and valve structure were installed. The new valve gives the system the capability to isolate the aqueduct in the future. This first phase was completed in May 2001, and repairs to the remaining miles of pipe were scheduled for the following winter.



utilities to address the challenges presented by the gap and to identify the appropriate share and type of local, state, and federal and private funding sources needed to meet future infrastructure needs.

In working through these issues, one of the primary considerations will be how to address issues of affordability associated with those segments of the population with low incomes. Although the federal government cannot be responsible for meeting the entire cost of providing safe water, it can share in meeting the burden where new drinking water standards disproportionately impact small communities. In the past two years, several Congressional bills were introduced that would develop new grant programs to address small and disadvantaged systems. While the intent behind the bills - to target funding to the neediest systems - may be appropriate, creating new grant programs may not be the best way to address the problem. The DWSRF program provides an existing administrative infrastructure for financing drinking water system improvements, operated by states, who best know and understand the systems that require assistance. State DWSRF programs already have the ability to provide subsidies (i.e., principal forgiveness) to recipients and would likely increase use of the provision if additional funds were made available through the program. Additionally, many state DWSRF programs have expressed concerns that new grant programs would negatively impact the ability of state DWSRF programs to make loans because systems will wait for grants rather than apply for loans, even if loans are an affordable option.

#### ► Ensuring sustainability

One of the most significant objectives of EPA's drinking water program is to see that all drinking water systems are sustainable. As discussed earlier in the report, the diversity of water systems is considerable, and many systems do not have the customer base or rate structure to be sustainable. The water industry as a whole should work towards sustainability using several different tools including rate structuring, more affordable technology, restructuring, privatization, and managerial or physical consolidation of systems.

One practice that has taken hold within the utility sector is asset management. By developing a comprehensive strategic plan and ensuring that sufficient funds are allocated over the life of an asset, a water system can potentially improve the process for building, maintaining, and renewing infrastructure. Over the next several years, new standards developed by the Governmental Accounting Standards Board will require that local governments revise their financial statement presentation in order to meet generally accepted accounting principles for governmental financial statements. Modifications include showing the depreciation of capital assets or a modified approach that would include an accounting of the value and condition of infrastructure assets. This requirement should continue to move publicly-owned water systems forward in managing their assets in a comprehensive and business-like fashion.

The DWSRF program can support many of the tools that can be used to enhance sustainability. An assistance recipient must undergo an assessment of their technical, financial, and managerial capacity before they can receive assistance. Most states will look at the rate structures of the system with an eye towards ensuring that the loan will be able to be repaid. Other states take a closer look at the rates and encourage systems to make changes that will ensure that they have adequate revenue in the future to maintain their infrastructure and make other needed improvements. For some private systems subject to Public Service Commission rate review, the DWSRF program has proven to be the avenue by which they

have justified rate increases to sustainable levels. States can take a closer look at the rate structures of the systems to which they provide assistance to ensure that rates are adequate and affordable to those with the greatest needs. The capacity review that states do on recipients also can touch on aspects related to asset management. A state could require that a system develop or update a plan outlining how it intends to manage its assets in order to show that it has adequate managerial capacity. States could also provide incentives to systems for enacting and maintaining asset management practices by providing them bonus priority points or additional subsidies if a system maintains proper asset management practices over the term of the loan (e.g., reduce the interest rate by a set number of basis points at years 5, 10, and 15 as a reward).

### ► Ensuring security of systems

The terrorist attacks of September 11, 2001 focused public attention on security issues related to public infrastructure. While water systems have always had to monitor their facilities to ensure that they are safe from vandalism, most have not conducted detailed assessments of their vulnerability to terrorist attack. State DWSRF programs can be used as a vehicle to ensure that systems have done sufficient security planning. For example, in order to demonstrate technical capacity, states could require that a system have a vulnerability assessment or current emergency operation plan in place as condition of assistance. States can look to the DWSRF to provide assistance for conducting vulnerability assessments and implementing infrastructure-related security measures. The DWSRF program can fund vulnerability assessments through the Fund or set-asides related to capacity development and technical assistance. Set-asides can also be used to help systems update emergency response plans. Remedial actions identified through assessments are also largely eligible for assistance where the action is a project that would otherwise be eligible under the Fund. For example, a system might identify that it needs to change its treatment process to ensure enhanced protection or it might determine that it needs to enclose its wellhead within a building to increase security.

### ► Addressing water quantity

Water supply is a critical consideration for any local government leader since diminished supply will directly impact the economic health of the community. Many areas in the nation are experiencing pressures arising from population growth and persistent drought conditions. Because the DWSRF program was developed to address public health and compliance with the SDWA, water quantity is not a priority for the program and many water quantity projects are not eligible for funding. Ensuring adequate quantity is a state and local, not a federal, responsibility. Congress explicitly disallowed DWSRF funding to be used for projects where the need was primarily



#### Improving System Capacity in New Jersey

The City of Cape May is a summer resort area located on the southern tip of New Jersey. The aquifer that supplied the city with drinking water was experiencing salt water intrusion and had insufficient long-term capacity. The aquifer was used by more communities than it could support, especially in the summer time. Cape May wanted to drill deeper to ensure adequate supply for its 12,880 residents. They installed an 840 foot deep well with a pump rate of 1,000 gallons per minute. Due to the high salinity of the water, the construction of a 1 million gallon per day reverse osmosis desalination water treatment plant was also required. The total project cost was \$1.6 million, of which \$1.35 million was funded with a DWSRF loan. The city also received funds from the U.S. Department of Agriculture. Since operation of the new plant began in October 1998, Cape May has had an adequate source of safe drinking water and should well into the future.

due to growth. While EPA cannot fund water quantity projects, it can address water quantity through water conservation. Many states are exercising the provision in section 1455 of the SDWA that allows states to require recipients of assistance to develop a water conservation plan as a condition of assistance. All states should look towards incorporating such plans into their program requirements. The DWSRF program can also fund many types of projects that would promote water conservation or reuse. Such projects could include (but are not limited to) installation of water meters, development of water conservation plans (through the set-asides), and installation of dual pipe distribution systems (potable and non-potable) as a means to lower the cost of treating water to potable standards. However, because the law specifically restricted use of funds to address growth as a primary purpose of a project, the intent of the program does not include increasing water quantity for household use or any other purpose.

The CWSRF program can also be used to fund many other types of water reuse and conservation projects that address the ability of wastewater treatment plants to properly meet the environmental goals of a community efficiently and at a minimum cost. The types of projects that can be funded include plumbing fixture retrofits and replacements (located in public buildings), use of efficient landscape irrigation equipment, recycling gray water in public buildings, and reusing wastewater.

#### ► Coordinating the CWSRF and DWSRF

In implementing the Clean Water and Safe Drinking Water Acts, federal, state and local governments often encounter barriers and disconnects that can hinder effective management of water programs. While EPA continues to work to identify and promote connections between the two Acts, the SRF programs provide an example of how programs authorized under one Act can help support the goals of the other Act. In EPA, the DWSRF and CWSRF programs work closely together. In many states, the two programs are implemented out of the same agency. However, in other states, where the drinking water program resides in a health-related department rather than an environment department which typically oversees water quality, state agencies are challenged to work together.

EPA has promoted use of the CWSRF program as a tool to address many types of problems that can negatively impact drinking water quality, such as methyl-t-butyl ether (MTBE) contamination, poorly managed septic systems, and ground water contamination by shallow underground wells used for the injection of waste. EPA has also promoted use of the CWSRF for the purchase of land and conservation easements to help protect sources of drinking water. Several states, including New York and New Jersey, have provided significant amounts of loan assistance that



#### Combined Drinking Water and Wastewater Project in Minnesota

The cities of New London and Spicer, as well as the Green Lake recreational area, are located in Kandiyoh County in central Minnesota. In the late 1990's, the area experienced several related drinking water and wastewater problems. Many households on Green Lake were served by private wells that were susceptible to contamination from failing sewage systems. The drinking water storage available in the two cities could not keep pace with the growing need, and New London had Coliform contamination. To solve these varied problems, a proposal was developed to combine systems into the Green Lake Sanitary Sewer and Water District. This combined wastewater and drinking water project relied on a \$6.5 million DWSRF loan in addition to funding from other sources (such as the CWSRF, the wastewater infrastructure fund, and County State Aid Highways bonds) to finance the \$23 million project. The drinking water project, begun in 1999 and completed in mid-November 2001, consisted of constructing a new treatment plant, drilling four new wells, installing three new water towers, and putting in miles of water mains to serve 1,529 households.

have helped to protect source water. Loans made from under the nonpoint source authority of the CWSRF program can have a dual benefit. If a farmer takes out a loan to implement best management practices that will reduce fertilization in order to reduce pollutant loadings to local water bodies, a secondary benefit may be that ground water used as a source of drinking water will experience decreases in nitrate, which can pose a serious risk to children. Both the water quality and drinking water programs benefit from such cooperation.

### ▼ **Challenges for Congressional Consideration**

While many of the issues above could potentially involve Congressional actions, there are several identifiable issues that have been raised by states that Congress could look to address in the short-term. Some of these issues are related to DWSRF program implementation, some are tangential to the DWSRF but important nonetheless for drinking water financing.

#### ► **Extending the authority to transfer between the SRFs**

In the 1996 SDWA Amendments, Congress authorized states to transfer up to 33 percent of their DWSRF grant to the CWSRF program, or an equivalent amount from the CWSRF to the DWSRF program. The Act included a sunset provision on September 30, 2001. Congress extended the provision for one year through EPA's FFY 2002 appropriation, and an extension through FFY 2003 is proposed in the President's Budget. States have indicated that they would like to see the provision extended permanently. Several states have used the provision to their advantage to address high priority public health needs. Others who would be interested in pursuing transfers have been reluctant due to the presence of a sunset date. A lending SRF wants to be assured that it will be able to recapture the funds in the future should circumstances require it.

#### ► **Increasing funds for administration of the DWSRF program**

Many states have expressed that an amount equal to four percent of the allotment is insufficient for administering the program. This is especially the case where multiple agencies implement the program and must share the funds, and, more importantly, in those states that issue bonds to increase the number of projects they can fund. In some cases, the proceeds from bonds can create a four-fold increase in available funds and the four percent can prove to be insufficient to meet the costs to oversee so many projects. In the CWSRF program, states are confronted with a minimal amount of funds with which to administer an ever-growing portfolio of loans as repayments begin to stream into the program. Many states have elected to impose fees on borrowers, which has the effect of increasing costs for the borrower or diminishing returns to the Funds. Because this is not a preferable solution, states should pursue an appropriate solution that will provide them with sufficient funding to administer the program now and into the future when capitalization ends.

#### ► **Providing relief from federal requirements**

States have indicated that compliance with federal cross-cutters has hampered their ability to provide assistance to small systems. Many small systems do not have the expertise to understand these complicated requirements and other systems have determined that the costs of compliance exceed the value of subsidies offered through the program. EPA will continue to work with other federal agencies and internally to identify workable solutions in achieving compliance with these cross-cutting federal requirements. However, flexibility to provide relief to some classes of borrowers (e.g., small and/or disadvantaged applicants) could be useful.

**► Modifications to tax law**

States have raised two issues related to tax law that they indicate negatively impact state DWSRF programs that issue bonds. These issues also impact the CWSRF program and could also be an issue for other environmental assistance programs. They relate to provisions of the Internal Revenue Code rather than the SDWA. The first issue concerns arbitrage. Some states that have issued tax-exempt bonds in connection with DWSRF and CWSRF programs use amounts as reserve accounts to secure repayment of the bonds. If proceeds of tax-exempt bonds issued by state and local governments are invested in securities that pay a higher yield than the yield on the bonds, the profit made on the invested bond proceeds generally must be rebated to the U.S. Treasury. Without this rule, state and local governments could issue tax-exempt bonds solely for the purpose of gaining arbitrage profits at the expense of greater revenue losses to the federal government and ultimately higher interest rates on bonds whose proceeds actually are used for the acquisition or construction of public property. States have urged that amounts used as reserves to secure bonds for DWSRF and CWSRF projects be exempted from the arbitrage rebate rules so that any interest earnings could be used for additional investment in water and wastewater infrastructure projects. The Council of Infrastructure Financing Authorities, which represents many state SRF financing agencies, has estimated that, if arbitrage restrictions were lifted, SRFs could earn an additional \$100 to \$200 million annually on their funds. If these earnings were used as reserves to secure additional bonds they would provide an additional \$200 to \$400 million annual investment in water and wastewater infrastructure projects. Treasury officials suggest that greater programmatic benefits would be achieved if instead states used a small portion of those bond proceeds for other forms of credit enhancement, such as bond insurance, and used the bulk of the proceeds for additional loans to finance needed infrastructure.

A second issue raised by state programs concerns private-activity bonds. Unlike the wastewater treatment universe, the drinking water system universe includes a significant number of privately-owned systems. Any tax-exempt bonds issued by a state DWSRF program under arrangements whereby the proceeds are used by privately-owned systems generally must receive an allocation of issuance authority under a state's private activity bond volume cap. States allocate their volume caps based on the priority they attach to competing allowable uses of private activity bonds, all of which should serve some public purpose. States and other stakeholders have suggested tax law modifications that would allow bonds for water infrastructure projects funded through SRF programs to be issued without regard to the cap because the activities serve a public benefit. However, if use of tax-exempt bond proceeds by private companies can make critical progress toward DWSRF program goals, proponents of the financing should be able to make persuasive claims on a state volume cap.

**► State set-asides**

The flexibility afforded to states to use a portion of their grants to support other drinking water programs has proven to be an effective tool in drinking water protection. However, slight modifications to the set-asides could help them to be even more effective. First, many states have not been able to use the state program management set-aside because they cannot provide the dollar for dollar match required by the law, which is above and beyond the 20 percent matching requirement on the entire grant. This set-aside category includes important state activities that support drinking water rule implementation, source water protection, and capacity development. The match was added to discourage states from backsliding. However, requiring the match has not stopped states from cutting their programs in light of

budget constraints. Secondly, now that states are fully implementing source water protections programs, it may be appropriate to reevaluate the set-aside activities that address source water protection programs addressed under section 1453 of the Act.

### ▼ Principles for Future Actions

As we move into the future to address the challenges that have been identified in this chapter, there are certain principles that should be followed to ensure that any actions taken have the greatest benefit. The core objective of any actions taken should be to promote sustainable systems which will be better able to protect public health. By ensuring the technical, financial, and managerial capacity of water systems; encouraging service providers to adopt holistic strategies to manage water on a sustainable basis; creating incentives for service providers to adopt best management practices (e.g., consolidation, privatization, restructuring, improved rate structures, source water protection); and promoting innovative management techniques (e.g., asset management, environmental management systems) to improve efficiency, utilities can reduce the cost of service, avoid future funding gaps, and help protect public health.

The principles which should be kept in mind as solutions are pursued include:

- Providing Assistance through Enhanced SRFs. For the present, the SRFs should be considered as the centerpiece of any new funding that may be provided; program modifications should be made where needed to increase flexible financial mechanisms.
- Leveraging Existing Programs and the Private Sector. The integrated use of all state and federal sources for infrastructure financing and fostering public-private partnerships and greater participation of private capital should be encouraged.
- Promoting Innovations and Efficiencies. There are significant opportunities for developing affordable and innovative technologies to help reduce the costs of treatment for new and existing rules and extend the life of infrastructure. By creating incentives to



### Responding to Customer Needs in Florida

The central part of Florida's Jefferson County is a rural, economically depressed area with a median household income of \$21,782 and widespread ground water problems. Most residents have private wells which lack the depth and casing to prevent contamination from nearby septic tanks. There is also concern about surface runoff contamination, leaking underground gasoline tanks, and a leak at an area chemical plant that has contaminated one community's aquifer. Over 400 samples of private wells in the area have tested positive for Coliform bacteria. In 1997, the only drinking water system in the area was the Lloyd Water Works Authority (LWWA). In order to complete a necessary expansion, LWWA asked the Department of Environmental Protection for financial assistance. During the early planning stages of the expansion, the system conducted public meetings and discovered that people on the whole were unhappy with the quality of their water. Community-sponsored efforts spread through Central Jefferson County and led to the organization and chartering of the Jefferson Communities Water System (JEFKOM), a non-profit cooperative. In August 1998, JEFKOM received a \$158,000 DWSRF preconstruction grant to plan and design the new, multi-community system that will consolidate over 30 small, unreliable systems. Once the planning and design was completed, JEFKOM received an annual \$750,000 DWSRF loan for 3 years (\$2.25 million in total). In addition, JEFKOM received a grant/loan combination from the U.S. Department of Agriculture for \$2.75 million. With this assistance, the water bill for the average customer will be kept in the affordable range between \$20 and \$25 per month. Even before construction, the new system had 909 of the 1,000 potential connections signed up for service. JEFKOM will consist of three wells, two storage tanks, and over 80 miles of distribution lines.

support research, development, and use of innovative technologies, systems can move towards improved services at lower life-cycle costs.

- **Encouraging Cost-Based Rates.** Appropriate rate structures that are sufficient to cover costs should be encouraged, while taking care to ensure that water services are affordable for low-income families.
- **Encouraging Comprehensive Strategic Planning.** Effective planning at all levels should be promoted, including effective regional planning to maximize use of existing infrastructure to address growing and shifting populations, and utility planning to address current and future regulatory requirements, infrastructure needs, security needs, and source water protection.
- **Building State Capacity.** States must have adequate resources to manage public health and water quality programs, assist communities, and fully utilize flexibility available under existing grants and regulations.

The flexibility provided for in the DWSRF program makes it a useful tool in addressing the challenges ahead. Each of the principles discussed above are currently addressed through the DWSRF program or could be in the future. In considering the question of whether Congress should continue to authorize the DWSRF, the answer would appear to be in the affirmative. The program has proven to be a success in helping states implement their drinking water programs and has provided assistance to public water systems within the states for infrastructure improvements needed to protect public health.

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