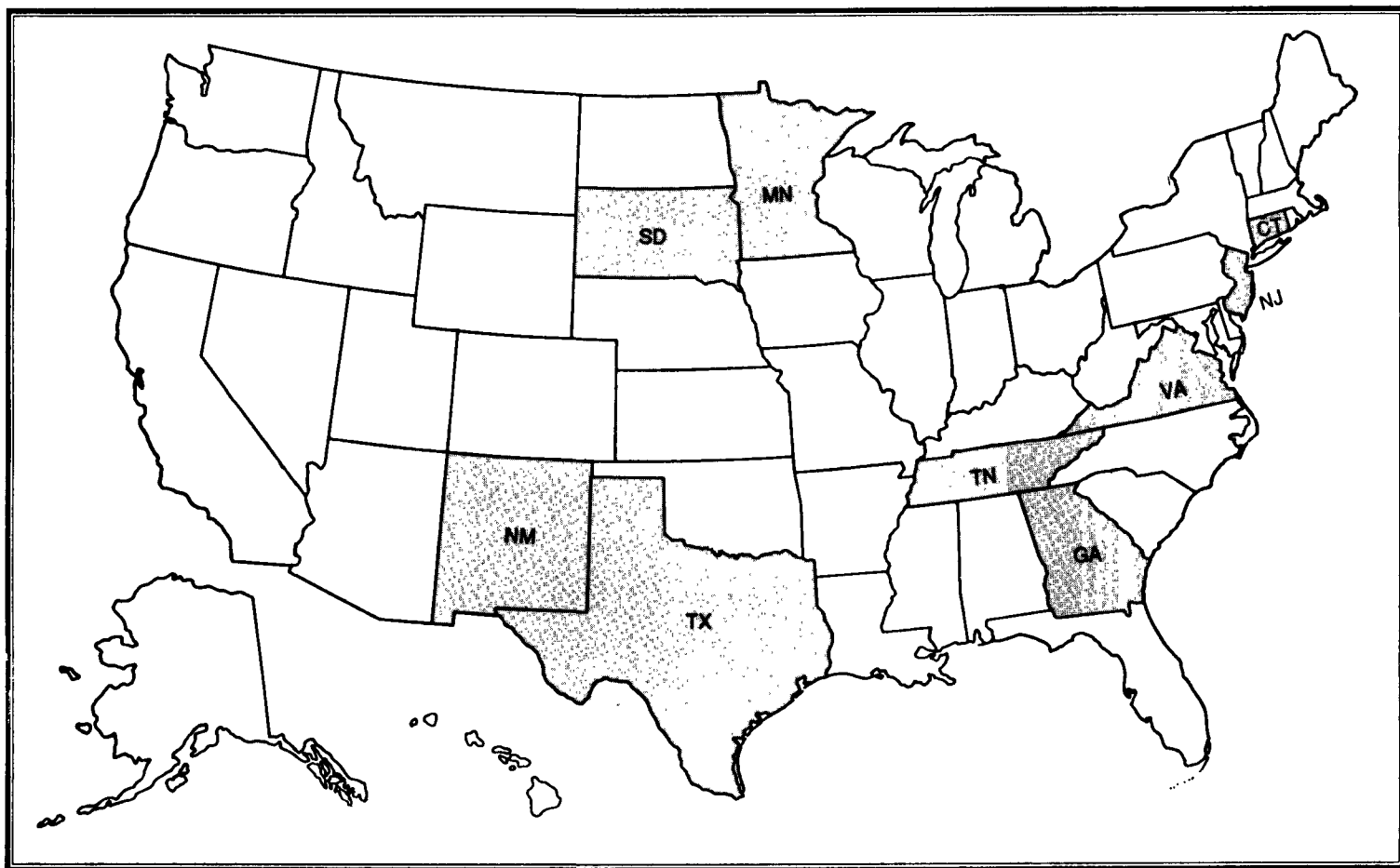




State Revolving Fund (SRF) Interim Report To Congress

Financial Status And Operations Of Water Pollution Control Revolving Funds





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

APR 16 1991

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THE ADMINISTRATOR

Honorable Dan Quayle
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

Enclosed is the Environmental Protection Agency's (EPA) "State Revolving Fund (SRF) Interim Report to Congress." This Report is required by Section 516(g) of the Clean Water Act (CWA). The Report was prepared in cooperation with the States and water pollution control planning and financing agencies.

This SRF Interim Report addresses the financial status and operations of water pollution control revolving funds established by the States under Title VI of the CWA, but focuses only on nine States with SRF programs. We are submitting an interim report because very few States had established their SRF programs in 1988 when work on this Report began and the experience of these States with program implementation was limited. We will submit a final report covering all SRF States later this spring.

The Report presents findings in the following areas: funding needs for the nine study States, the available sources of funding, the financing mechanisms used to meet their needs, how the States administer the SRF program, and the impacts of implementing the SRF program. The SRF program is a significant step in restoring responsibility for financing wastewater treatment from the Federal government to the States and municipalities.

I would be pleased to discuss further the results of this assessment at your convenience.

Sincerely yours,

A handwritten signature in black ink, reading "William K. Reilly", is written over a horizontal line.

William K. Reilly

Enclosure



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

APR 16 1991

THE ADMINISTRATOR

Honorable Thomas S. Foley
Speaker of the House
of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

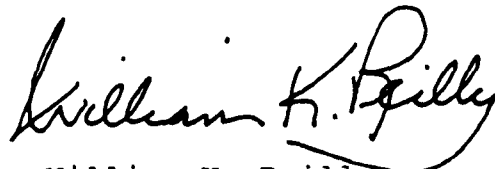
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Sincerely yours,


William K. Reilly

Enclosure

**STATE REVOLVING FUND (SRF)
INTERIM REPORT TO CONGRESS**

Financial Status and Operations of Water Pollution
Control Revolving Funds

April 1991

U.S. Environmental Protection Agency
Office of Municipal Pollution Control (WH-595)
Washington, DC 20460
Tel. (202) 382-7251

Prepared Under Contract Number 68-C8-0023

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SECTION ONE

EXECUTIVE SUMMARY

1.1 Background

This Report to Congress describes the financial status and operations of State Revolving Funds (SRFs) established pursuant to Title VI of the Clean Water Act (CWA) as amended by the Water Quality Act of 1987 (P.L. 100-4). As funding under the CWA Title II construction grants program is phased out, SRFs will become one of the principal funding sources for wastewater treatment facilities, collection systems, and other water quality projects in most States.

Because very few States had established their SRF programs in 1988 when work on this report began and the experience of these States with program implementation was limited, EPA is submitting an interim report at this time. This interim report addresses the informational requirements of Section 516(g) of the CWA. (Section 516(g) is summarized on page 2-1 of this report.) It provides a national-level overview of program implementation and detailed information for nine States. EPA will submit a final report covering all SRF States in 1991.

The nine States covered in detail in this report are Connecticut, Georgia, Minnesota, New Jersey, New Mexico, South Dakota, Tennessee, Texas, and Virginia. These States were selected to provide coverage of (1) several of the more established SRF programs, (2) a range of program operating styles (e.g., leveraged and nonleveraged programs), and (3) a mix of geographic locations and demographics. However, the SRF programs in these States should not be considered as representative of all State programs.

1.2 Status of SRF Program Implementation

As of June 30, 1990, forty-three States and Puerto Rico had established SRF programs and received capitalization grants from EPA. Eighteen of these States had received second grants, seven States had received third grants, and one State had received a fourth grant. The remaining States that plan to establish SRF programs were expected to receive their first capitalization grants by the end of fiscal year 1990.

1.3 Construction Needs of Wastewater Treatment Projects

Section 516(g)(A) requires EPA to identify facilities in "significant noncompliance" (SNC) with the Act and to develop estimates of the construction costs of bringing those facilities into compliance. The definition of SNC as used in EPA's enforcement program was expanded for the purposes of this report because it does not include all facilities with construction needed to attain compliance. If EPA or a delegated State enters into an agreement to resolve the basis of noncompliance, the facility is removed from the SNC list,

even though construction necessary to achieve physical compliance has not taken place. As a result, the universe of facilities needing construction to achieve physical compliance is larger than the SNC universe needing construction. This report deals with facilities which need construction in order to achieve or return to compliance (see Section 3.1). EPA identified 1,247 facilities in the nine study States which met the definition used in this report. The cost of construction necessary to bring these facilities back into compliance is estimated to be \$4.5 billion.

Because a high level of compliance has already been achieved, the above estimate of compliance-related construction needs represents a small percentage of the cost of constructing all facilities eligible for SRF funding. The estimate does not include wastewater treatment and collection costs for facilities currently in compliance, but which have major wastewater funding needs as documented in the 1988 Needs Survey¹. If all documented funding requirements in Categories I through V of the 1988 Needs Survey are included, a total of \$14.9 billion will be needed to construct SRF-eligible projects in the nine study States. Additionally, the SNC estimate does not include costs associated with new funding eligibilities, replacement needs, and new enforceable requirements of the 1987 CWA Amendments. These water quality activities, programs, and requirements, which include nonpoint source control, sludge disposal, estuary protection, and storm sewer projects, will add significantly to the potential demand for SRF funds. Documented estimates of the funding needs for these activities, however, are not available.

1.4 Total Funds Available in SRFs and Other Programs

Based on data provided by the nine study States, Federal and State funds totaling approximately \$6.4 billion will be available from 1988 to 1999 to meet SRF-eligible needs. This total includes Federal and State contributions to SRFs, EPA construction grants, other (non-EPA) Federal grant and loan programs, other State grant and loan programs, and repayments on SRF loans by local recipients. Local sources of funding, which were not included in the \$6.4 billion estimate, will provide additional capital for wastewater treatment and collection projects.

¹The Needs Survey is a biennial assessment of the cost of wastewater treatment and collection systems required to meet the goals of the Clean Water Act. The survey divides community wastewater treatment and collection needs into five categories.

- Category I = Secondary Treatment
- Category II = Advanced Treatment
- Category IIIA = Infiltration/Inflow Correction
- Category IIIB = Replacement/Rehabilitation of Sewers
- Category IVA = New Collector Sewers
- Category IVB = New Interceptor Sewers
- Category V = Combined Sewer Overflows (CSO)

The estimate of Federal and State funding assumes that construction grants and SRFs are funded at full, authorized amounts for FY 1990 through FY 1994. However, the appropriated amount for FY 1990 was approximately 80 percent of the authorized amount.²

Of the \$6.4 billion in Federal and State funding for SRF-eligible needs in the nine study States from 1988 to 1999, \$5.4 billion will be administered through State programs. Of this, \$4.1 billion will be available through the States' SRFs. Between 1989 and 1999, the amount of SRF funding available annually in the nine study States is projected by State officials to decrease by about 40 percent. At this time, State funding does not appear to be increasing sufficiently to offset the phase out of Federal SRF monies. Except for Connecticut, Minnesota, and New Jersey, the study States did not project further capitalization of their SRFs beyond 1994. However, historical experience indicates that local funding increases as federal funding decreases.

It should be noted that much of the data on available funding presented in this report is preliminary, particularly estimates of State funding for the latter half of the 1990s. The data included in this report reflect the best estimates of State officials based on their experience and professional judgment. However, many of these officials indicated that projections of future State funding are highly uncertain.

1.5 Comparison of Wastewater Treatment Needs to Funds Available

For the nine study States, funding from Federal and State sources from 1988 to 1999 is sufficient to cover all SNC needs in seven of the nine study States and nearly 90 percent of the needs in the remaining two States. However, the SNC-related needs only represent a "snapshot" as of June 30, 1990. While it is not possible to quantify future SNC-related needs, it is predictable that there will be additional significant violations through 1999 that will require construction to correct. The reasons for potential violations include population growth which will generate flows and/or pollutant loadings in excess of design capacity. During this period, some number of treatment plants will reach the end of their useful lives and face the need for major rehabilitation or replacement. Finally, additional regulations in the area of toxics control, stormwater management, and sludge disposal may result in significant new violations that might require construction to correct.

It was possible, however, to make some additional comparisons of funding availability and need using data contained in the 1988 Needs Survey. Federal and State funding covers an average of only 43 percent of the \$14.9 billion of Category I to V design year needs documented for the nine study States in the 1988 Needs Survey. The 57 percent gap between available Federal and State funds and Category I to V needs represents the amount that may need to be funded from local sources between 1988 and 1999 if all needs are to be met. Local sources provided approximately 40 percent of the financing for such projects in the mid 1980s.

²State funding projections for this report were received prior to final appropriation of FY 1990 Title VI funds, and therefore reflect full authorized funding amounts.

1.6 SRF Program Operations

All nine study State SRF programs offer loans at below-market interest rates. Loan repayments are used to fund additional loans (with the exception of repayments used to retire SRF program debt). The key structural and operating characteristics of the nine programs include:

- Method of Obtaining Matching Funds - Five States obtain matching funds through appropriations, two through State general obligation bond financing, one through an SRF program revenue bond, and one by pledging the loan repayments of an existing wastewater treatment loan program.
- Use of Leveraging - SRF programs in three of the study States (Minnesota, New Jersey, and Texas) borrow to provide additional lendable funds. The other six States plan to consider leveraging in the future.
- Types of Assistance - The study States plan to provide assistance primarily in the form of loans. States with leveraged programs will use some funds to secure bond issues. States plan to use only a very small portion of funds for refinancing.
- Interest Rates - All of the State programs offer loans at below-market interest rates (typically ranging from 2 to 5-1/2 percent). Three of the nine States vary interest rates based on a community's ability to pay.
- Type of Projects Funded - States plan to use virtually all funds for sewage treatment and collection system projects through 1990. After that year, several States plan to use a small percentage of funds for nonpoint source control programs.
- Measures to Assure Fund Viability - States uniformly view the soundness of their loan portfolios as the critical factor in assuring long-term viability of the SRFs. States carefully scrutinize applicants to evaluate their creditworthiness. Many States require that communities pledge user fees and full faith and credit as assurance for repayment. In the event of default, several States reported that they can intercept other State assistance to the recipient.

1.7 Administration of State SRF Programs

SRF program administration requires a mix of technical, financial, and general administrative personnel. In the nine study States, staff size varied from four to 70 people in FYs 1989-1990. Most of the study States anticipate significant staff expansion over the next several years as personnel shift from the construction grants to the SRF programs and the number of projects and the amount of money in the SRF programs increase.

The CWA restricts the cumulative total of SRF funds used for administrative expenses to four percent of the amount of capitalization grant awards. The adequacy of the four percent SRF administrative expense allowance varies significantly among the nine study States. Four of the States should not have difficulty covering their projected administrative expenses during the 1989 to 1994 time period. The remaining five States, however, report large shortfalls. In three of the States, the projected expenses are two to three times the four percent administrative allowance. After the allotment of the final Federal capitalization grants in 1994, States will have to rely primarily on alternative funding sources, such as appropriated funds, or unused allowances "banked" from previous years to cover their administrative expenses. Alternatively, they may charge closing or loan origination fees on the loans they make.

1.8 Impact of the SRF Program on User Fees

Because construction of facilities financed with SRF loans is not yet complete and actual data are not available, a financial model was used to assess the impact of SRF funding on user fees. The model simulates the user fee impact of SRF funding versus construction grants funding for a range of community sizes. In the analysis, user fees are assumed to cover all debt service and operation and maintenance costs for a new wastewater treatment facility (excluding land).

The analysis shows that SRF loans generally provide less of a subsidy to communities than construction grant funding. This occurs despite the expanded eligibility of project funding under the SRF program. If SRF loans are issued at four percent interest, the average rate charged for SRF loans in the nine study States, user fees are expected to be approximately 20 percent higher than projects constructed with construction grants assistance.

Since the level of subsidy is generally smaller under the SRF program than under the construction grants program, user fees will be higher at SRF financed facilities than at construction grants financed ones. However, SRF loans still provide a substantial subsidy. On average, user fees for treatment facilities constructed with a 4 percent SRF loan will be approximately 14 percent lower than facilities constructed with market rate financing.

1.9 Impact of the SRF Program on Treatment Plant Efficiency

There are no actual data available on SRF-financed treatment plant efficiency because very few SRF-financed plants have begun operating at this point in time. However, most State officials expect that SRF-financing will lead to lower-cost facilities because communities must finance the entire cost of the facility. Officials anticipate a reduction in the use of innovative and alternative technologies because, unlike the construction grants program, the SRF program offers no special incentives for such projects. The potential impact of a shift toward lower-cost, non-innovative facilities on treatment plant efficiency is unclear. However, State officials indicated that they expect no major changes in treatment plant efficiency.

Recently, EPA embarked on a cooperative effort in partnership with the States to promote State-based Municipal Water Pollution Prevention (MWPP) programs. These

programs are concerned with assessing the operations and physical capabilities of municipal wastewater treatment facilities on a regular basis to determine their capability to meet treatment requirements both currently and into the future. They are also concerned with getting municipalities to take corrective action before potential pollution problems occur. The MWPP program will help ensure that the quality of the infrastructure financed under Titles II and VI is maintained and continued.

1.10 Advantages of the SRF Program

The SRF program offers many financial and environmental advantages to Federal, State, and local governments. The revolving nature of the SRFs creates a perpetual source of low cost financing. The funds invested now for the capitalization of SRFs will work for many years to assist communities in meeting their needs, providing more money for more communities than would one-time loans or grants.

For the Federal government, the program furthers the long-standing national policy of assisting States and local governments in financing the construction of wastewater treatment facilities. SRFs also facilitate the goal of restoring the responsibility for funding these activities to the States and municipalities. In the process of resuming this responsibility, the States also have increased flexibility to design and operate their SRFs to address the water quality concerns most important to them and their communities.

For communities receiving SRF assistance, below market interest rates are the single most important advantage of the program. This reduced cost of capital enables some projects to be completed that otherwise would not be affordable and reduces the level of user fees required to repay project debt.

1.11 Issues Associated With SRF Implementation

State officials in the nine SRF programs identified a number of areas of concern that affect their ability to implement their programs. Many of these concerns arise from Federal and State statutes, regulations, and policies.

Of primary concern to most officials was Federal funding of the SRF program. The States believe that funding the program at less than the full authorized levels will reduce their ability to accomplish the goals of the CWA, including the 1987 Amendments. They also report that uncertainty in the level of funding due to the appropriations process makes planning difficult for them and their communities.

The study States report that the application of "cross-cutters" (i.e., Federal laws and authorities that exist independently of the SRF program, but apply to certain activities undertaken under the program) adds significantly to administrative and project costs. In addition, the States are having difficulty monitoring and assuring compliance with cross-cutters because at any time, Federal laws can be enacted that apply to the SRF program, and a permanent list of these authorities cannot be identified. States recommend that Congress

consider exempting the SRF program from all Federal cross-cutters. As an alternative, some State officials recommend that compliance with cross-cutters be based on the intent of law rather than specific requirements, and be determined by the Governor of each State.

The States believe that Federally mandated Title II requirements on the SRF program can also increase project costs. The most frequently mentioned requirement in this regard is the Davis-Bacon Act.

The letter of credit payment process was also cited as an impediment. Several States indicated that it prevents them from earning interest on Federal funds and also becomes cumbersome because States have to comply with their own overlapping fiscal and accounting procedures which can impede the quick transfer of funds. Thus, although the letter of credit itself as a method of payment is not causing delays beyond the maximum of 36 hours necessary to make the electronic transfer of funds, delays are occurring in some States due to State processing problems associated with the cash disbursements.

Several States reported that the statutory restriction on the use of SRF funds for administrative costs is an impediment to establishing effective SRFs. The CWA restricts the amount of money in an SRF that can be used for administrative expenses to four percent of all capitalization grant awards received by the fund. A number of States expect that the allowed amount will be inadequate to cover the full costs of administering their funds during the period of Federal capitalization.

Land eligibility was also cited as an impediment. The purchase of land for a wastewater treatment facility is not an eligible cost under the SRF program unless the land is integral to the treatment process or used for sludge disposal. This statutory restriction means communities must obtain separate financing for land.

The CWA also requires that recipients of SRF assistance provide a dedicated source of revenue to cover loan repayments. Because of this, many States reported that it may be difficult to fund nonpoint source and estuarine activities. However, SRF funding of nonpoint source and estuarine activities is just beginning; it is too early to determine whether this provision will serve to reduce the amount of SRF loans for these purposes.

Finally, three of the nine study States mentioned that they anticipate difficulty in providing SRF assistance to economically distressed communities because these communities may be unable to repay loans even at very low interest rates. Many of these communities were unable to accept a grant under the construction grants program because they could not finance the local share. Similarly, they will not be able to repay a loan under the SRF program even at low interest rates because the subsidy will be even less than it was under the construction grants program.

SECTION TWO

INTRODUCTION

2.1 Program Background

Title VI of the Clean Water Act (CWA), as amended by the Water Quality Act of 1987 (P.L. 100-4), authorizes the Administrator of the EPA to make capitalization grants to States for State Water Pollution Control Revolving Funds (SRFs). The SRF program is intended to support a long-standing national policy to provide financial assistance for the construction of publicly owned wastewater treatment works (POTWs). This new program, however, is fundamentally different from the Title II construction grants program that has provided financial assistance for many years and received its last appropriation in FY 1990.

Unlike the construction grants program under which EPA provides grant assistance directly to municipalities for wastewater treatment projects, the SRF program is designed to give individual States the responsibility for developing and operating their own programs, including providing financial assistance for POTW construction and other eligible activities. Financial assistance provided by SRFs can include loans and various forms of credit enhancements, but not grants. A key element of SRFs is their "revolving" nature--most disbursements return to the program to provide assistance to additional recipients. SRF assistance can be used for a broader range of water quality management activities than construction grants assistance such as the implementation of nonpoint source management programs¹, and development and implementation of conservation and management plans under the National Estuary Program.

The SRF program is a significant step towards restoring responsibility for financing wastewater treatment facilities from the Federal government to the States and municipalities. The CWA allows flexibility in the program; each SRF is designed and operated to address the water quality needs in a particular State and its communities. EPA cooperates with, and provides technical assistance to States in establishing their programs.

2.2 Purpose of the Report to Congress

Section 516(g) of the CWA requires EPA to prepare a Report to Congress on the financial status and operations of the State SRFs. In accordance with Section 516(g), the report must provide:

- (A) an inventory of the facilities that are in significant noncompliance with the enforceable requirements of the CWA;

¹The 1987 CWA amendments also authorize grants for these programs under Section 201(g)(1)(B).

- (B) an estimate of the cost of construction necessary to bring such facilities into compliance with such requirements;
- (C) an assessment of the availability of sources of funds for financing such needed construction, including an estimate of the amount of funds available for providing assistance for such construction through September 30, 1999, from the water pollution control revolving funds established by the States under Title VI of the CWA;
- (D) an assessment of the operations, loan portfolio, and loan conditions of such revolving funds;
- (E) an assessment of the effect on user fees of the assistance provided by such revolving funds compared to the assistance provided with funds appropriated pursuant to Section 207 of the CWA; and
- (F) an assessment of the efficiency of the operation and maintenance of treatment works constructed with assistance provided by such revolving funds compared to the efficiency of the operation and maintenance of treatment works constructed with assistance provided under Section 201 of the CWA.

The report was to be prepared in cooperation with the States and water pollution control planning and financing agencies. EPA formed a workgroup of State and EPA Regional Staff directly involved in the SRF program to assist in the development of this report. The workgroup participated in the development of the approach and commented on draft questionnaires and a draft of the report. Workgroup participants are identified in Appendix A.

2.3 Status of Nationwide Implementation

To initiate an SRF program, States must apply for a capitalization grant from EPA. The capitalization grant is the Federal seed money that the State uses to establish its revolving loan fund. To qualify for the capitalization grant, the State must provide matching funds equal to at least 20 percent of the grant and conform to applicable Title II and Title VI program requirements.

As of June 1990, forty-three States and Puerto Rico had received at least one capitalization grant, eighteen States had received second grants, seven States had received third grants, and one State had received a fourth grant (Table 2-1). The remaining States that plan to implement SRF programs were expected to receive their first grants by the end of fiscal year 1990.

TABLE 2-1

States with Approved SRF Programs
in Order of First SRF Grant Award Date*

STATE	FIRST SRF GRANT AWARD DATE
Tennessee**	March 1988****
Texas**	March 1988****
Georgia	April 1988****
New Mexico	May 1988*****
Utah	June 1988****
Virginia	June 1988****
Connecticut	September 1988****
Louisiana	September 1988***
New Jersey	October 1988***
Nebraska	October 1988
South Carolina	November 1988****
Alaska	November 1988
Arkansas	December 1988***
South Dakota	March 1989***
Oklahoma	March 1989***
Kentucky	March 1989***
North Carolina	March 1989***
Minnesota	April 1989
Alabama	April 1989***
Florida	April 1989***
Kansas	April 1989***
Iowa	May 1989***
New Hampshire	May 1989***
Vermont	May 1989
Mississippi	June 1989***
Maine	June 1989***
Illinois	June 1989***
Missouri	June 1989***
Ohio	June 1989
California	June 1989***
Michigan	July 1989
Idaho	August 1989
Maryland	August 1989
Colorado	August 1989***
Wisconsin	September 1989
Pennsylvania	September 1989
Massachusetts	September 1989
Indiana	September 1989
Hawaii	September 1989
Nevada	September 1989
Puerto Rico	September 1989
Oregon	September 1989
Washington	September 1989
New York	March 1990

* Status as of June 30, 1990

** Received the first grants in the program

*** State has received two capitalization grants

**** State has received three capitalization grants

***** State has received four capitalization grants

2.4 Federal Funding

Federal funding for State SRFs includes both Title VI allotments and Title II transfers. The latter category consists of funds transferred at State discretion from the construction grants allotment to the SRF program. As of June 1990, Federal funding for the SRF programs totaled \$2.1 billion (see Table 2-2). All funds committed in FY 1988 were Title II funds transferred at State discretion to their SRF programs; Title VI funds were not authorized until FY 1989. Thus far, 38 percent of Federal contributions to SRF programs have come from Title II transfers and 62 percent from Title VI allotments. Many States chose to transfer the maximum allowable amount of their Title II funds to SRFs in FY 1989 and FY 1990.

2.5 Scope and Organization of this Report

Because fewer than twenty States had established their SRF programs in 1988 when work on this report began and the experience of these States with program implementation was limited, EPA is submitting an interim report at this time. This interim report addresses the informational requirements of Section 516(g) of the CWA. It provides a national-level overview of program implementation and detailed information for nine States. EPA will submit a final report covering all SRF States in 1991.

The nine States covered in detail in this report are Connecticut, Georgia, Minnesota, New Jersey, New Mexico, South Dakota, Tennessee, Texas, and Virginia. These States were selected to provide coverage of (1) several of the more established SRF programs; (2) a range of program operating styles (e.g., leveraged and nonleveraged programs); and (3) a mix of geographic locations and demographics. The SRF programs in these States are not necessarily representative of all State programs.

EPA sent a questionnaire to each of the study States and followed up with a site visit. The questionnaire solicited information on State program financial and operating characteristics, environmental goals, accomplishments, and problems. During the site visits, questionnaire responses were discussed and State officials were given the chance to provide additional observations. The information in this report is based on both the questionnaire responses and observations from the site visits.

This report is organized to respond to Section 516(g) of the CWA and to provide additional information that may be of use to Congress in evaluating the SRF program.

- Section Three estimates the cost of bringing facilities that are currently in significant noncompliance into compliance with the enforceable requirements of the CWA and discusses new enforceable requirements and new funding eligibilities of the CWA [responsive to Sections 516(g)(2)(a) and 516(g)(2)(b)].
- Section Four discusses the funds available to address these needs from State SRFs and other sources [responsive to Section 516(g)(2)(c)].

TABLE 2-2

Federal Funding of SRFs
(\$ Millions as of July 13, 1990)

STATE	TITLE II TRANSFERS (FY'88, '89, and '90)	TITLE VI 1989 ALLOTMENT*	TITLE VI 1990 ALLOTMENT*	TOTAL FEDERAL SRF GRANTS**
Alaska	4.4	5.6	0.0	10.0
Alabama	0.0	10.5	10.9	21.5
Arkansas	7.5	6.1	0.0	13.6
California	60.1	67.5	0.0	127.6
Colorado	3.4	7.5	7.8	18.7
Connecticut	49.7	11.6	12.0	73.2
Florida	54.8	31.8	32.9	119.6
Georgia	57.7	15.9	16.5	90.1
Hawaii	0.0	7.3	0.0	7.3
Idaho	0.0	4.6	0.0	4.6
Illinois	13.2	42.7	44.1	100.0
Indiana	0.0	22.7	0.0	22.7
Iowa	0.0	12.8	13.2	26.0
Kansas	0.0	8.5	8.8	17.3
Kentucky	21.2	12.0	0.0	33.2
Louisiana	12.0	10.4	0.0	22.4
Maine	0.1	7.3	7.5	14.9
Maryland	0.0	22.8	0.0	22.8
Massachusetts	29.4	32.0	0.0	61.4
Michigan	0.0	40.6	0.0	40.6
Minnesota	0.0	17.3	0.0	17.3
Missouri	0.0	26.1	27.0	53.2
Mississippi	13.8	8.5	8.8	31.0
North Carolina	21.1	17.0	17.6	55.7
Nebraska	0.0	4.8	0.0	4.8
Nevada	0.0	4.6	0.0	4.6
New Hampshire	0.3	9.4	9.7	19.5
New Jersey	96.9	38.5	0.0	135.5
New Mexico	12.0	4.6	4.8	21.4
New York	0.0	104.1	107.7	211.8
Ohio	0.0	53.1	0.0	53.1
Oklahoma	9.3	7.6	0.0	16.9
Oregon	3.4	10.7	0.0	14.0
Pennsylvania	0.0	37.4	0.0	37.4
Puerto Rico	0.0	12.3	0.0	12.3
South Carolina	21.7	9.7	10.0	41.3
South Dakota	0.0	4.6	4.7	9.3
Tennessee	26.3	13.7	0.0	40.0

TABLE 2-2 (Cont.)

Federal Funding of SRFs
(\$ Millions as of July 13, 1990)

STATE	TITLE II TRANSFERS (FY'88, '89, and '90)	TITLE VI 1989 ALLOTMENT*	TITLE VI 1990 ALLOTMENT*	TOTAL FEDERAL SRF GRANTS**
Texas	173.0	43.1	44.6	260.7
Utah	12.9	4.9	5.1	22.9
Virginia	75.7	19.3	20.0	114.9
Vermont	0.1	4.6	0.0	4.6
Washington	1.0	16.4	0.0	17.4
Wisconsin	0.0	25.5	0.0	25.5
TOTAL	781.0	877.9	413.8	2,072.7

* This figure generally represents the Title VI allotment minus 1% or \$100,000, whichever is greater. The 1% or \$100,000 is reserved under Section 604(b) of the CWA for planning under Sections 205(j) and 303(e).

** Totals vary due to rounding.

- Section Five compares available funds to the funding needs required for compliance with the CWA [also responsive to Section 516(g)(2)(c)].
- Sections Six and Seven describe the operation and administration of State SRFs [responsive to Section 516(g)(2)(d)].
- Section Eight provides an assessment of the impact of SRF funding on user fees in comparison to construction grants funding [responsive to Section 516(g)(2)(e)].
- Section Nine provides an assessment of the impact of SRF financing on the efficiency of POTW operation and maintenance [responsive to Section 516(g)(2)(f)].
- Section Ten describes the advantages of the SRF program to the Federal government, States, and communities.
- Section Eleven presents a discussion of the impediments States have encountered in implementing their SRFs.

SECTION THREE

CONSTRUCTION NEEDS OF STATES FOR COMPLIANCE WITH THE CLEAN WATER ACT

Section 516(g)(2)(a) and (b) of the Act required EPA to prepare an inventory of facilities currently in significant noncompliance with enforceable requirements of the Act and an estimate of the cost of construction necessary to bring such facilities into compliance. Section 3.1 provides the required inventory and cost estimates. Section 3.2 provides estimates of SRF-eligible construction needs for all facilities regardless of their compliance status.

3.1 Compliance Related Needs

Significant noncompliance (SNC) is a term used by EPA to identify facilities (generally with flows greater than 1 million gallons per day (mgd)) covered under the National Pollution Discharge Elimination System (NPDES) which are in serious and/or repeated violations of effluent limits, compliance schedule milestones, reporting requirements or other administrative or judicial requirements, and that require priority management attention. Some facilities in significant noncompliance may require construction or other corrective actions in order to come back into compliance. However, when a facility owner/operator enters into a compliance agreement with EPA and commits to resolve the basis of noncompliance, the facility is removed from the SNC list, even though construction necessary to achieve physical compliance has not taken place. Thus, the universe of facilities needing construction to achieve physical compliance is larger than the SNC universe needing construction. This report deals with facilities which need construction in order to achieve or return to compliance.

EPA does not routinely collect data specifically on the construction-related needs to bring SNC facilities back into compliance. As a result, EPA's estimate of "significant noncompliance," as used in this report, and associated construction needs is based on a compilation of data from several sources. First, EPA prepared a list of facilities in SNC with outstanding construction needs as reported in its Permit Compliance System (PCS) national database as of June 30, 1989. EPA then prepared a list of facilities in PCS with a "resolved pending" (RP) enforcement status as of June 30, 1989. This second list consists of facilities that had been classified as SNC but, for enforcement purposes, are no longer in SNC because they are on construction schedules. These RP facilities were included because they were not yet physically meeting their permitted effluent limits as of June 30, 1989.

To obtain estimates of the construction costs required to bring these facilities into compliance, EPA matched those lists of SNC and RP facilities with its 1988 Needs Survey. EPA sent the resulting lists of facilities and compliance cost estimates to the nine study States to review for completeness and accuracy. States were asked to check both the compliance status information and the construction needs required to correct significant violations as of June 30, 1989.

The SNC and RP lists do not include facilities with flows of less than 1 mgd unless there is a significant impact on water quality. Therefore, EPA has for the purposes of this report expanded its definition of significant noncompliance to include facilities with flows of less than 1 mgd with Category I and/or II wastewater treatment needs based on the 1988 Needs Survey. (See Section 1.3 for a definition of the Needs Survey categories.)

Table 3-1 shows the number of facilities in the nine study States that meet the SNC definition used in this report. The cost of construction needed to bring these facilities into compliance is estimated to be \$4.5 billion. For the remainder of this report, the construction needs for the three groups of facilities shown in Table 3-1 will be referred to as SNC needs.

While Table 3-1 provides an estimate of the cost of construction required to correct significant violations (as required under Section 516(g) of the Act), States strongly assert that a comparison of SNC-related needs with SRF funding availability is not a reasonable measure of the ability of SRF programs to meet current and future municipal sewage treatment construction needs.

The Agency developed the concept of "SNC" as a method for setting priorities for its enforcement effort. The reasons why certain types of violations are included in the definition are based on enforcement considerations rather than on construction needs. Thus, repeated failure to monitor or report effluent data is a significant violation but does not require construction to correct. Conversely, major and legitimate construction needs exist independently of significant violations. For example, Houston, Texas, is not considered to be in significant violation, although it has been fined by the State and is under administrative order to correct its stormwater overflow problems. Inclusion of Houston's construction needs would add about \$800 million to the estimate of Texas' SNC needs presented in Table 3-1. Further, the 1987 Amendments expanded eligibilities under the SRF program to include funding required for compliance with new enforceable requirements of the Act (e.g., storm sewers) and for the implementation of new programs (e.g., nonpoint source control programs). These potential demands on SRF funds are also not included in the SNC cost estimates in Table 3-1.

However, the SNC-related needs only represent a "snapshot" as of June 30, 1990. While it is not possible to quantify future SNC-related needs, it is predictable that there will be additional significant violations through 1999 that will require construction to correct. The reasons for potential violations include population growth which will generate flows and/or pollutant loadings in excess of design capacity. During this period, some number of treatment plants will reach the end of their useful lives and face the need for major rehabilitation or replacement. Finally, additional regulations in the area of toxics control, stormwater management, and sludge disposal may result in significant new violations that might require construction to satisfy.

In order to provide additional perspective on the adequacy of SRF program funds, the next section addresses SRF-eligible funding needs beyond those associated with the correction of significant violations.

TABLE 3-1

SNC Needs

State	SNC Facilities With Construction Needs		Resolved Pending Facilities With Construction Needs		Categories I and II Needs for Facilities with Flows Less Than 1 MGD*				Total SNC Needs	
	Number	Estimated Cost (\$ Thousands)	Number	Estimated Cost (\$ Thousands)	Number	Estimated Cost (\$ Thousands)	Number	Estimated Cost (\$ Thousands)	Number	Total Cost (\$ Thousands)
Connecticut	6	273,514	0	0	15	39,244	21	312,758		
Georgia	5	82,500	1	5,909	74	134,526	80	222,935		
Minnesota	0	0	0	0	161	203,597	161	203,597		
New Jersey	19	219,520	30	669,679	37	182,175	86	1,071,374		
New Mexico	0	0	3	13,940	9	8,289	12	22,229		
South Dakota	1	834	3	4,261	155	44,026	159	49,121		
Tennessee	14	169,477	13	243,394	114	142,587	141	555,458		
Texas	11	120,117	24	591,789	439	834,909	474	1,546,815		
Virginia	8	66,592	11	351,522	94	133,130	113	551,244		
TOTAL	64	932,554	85	1,880,494	1,098	1,722,483	1,247	4,535,531		

* These estimates include surface water discharging facilities only.

3.2 Additional SRF Eligibilities

As described above, many communities with major construction needs have not experienced compliance problems in the past and are, therefore, not included on EPA's S C or RP lists. The Needs Survey, required by Sections 205(a) and 516(b)(1) of the CWA, is a biennial assessment of the cost of constructing all publicly-owned wastewater treatment works necessary to meet the goals of the CWA regardless of compliance status. The 1988 Needs Survey showed a design year¹ need of \$83.5 billion to satisfy all currently documented needs² nationwide through the year 2008. Currently documented needs for the nine study States total \$14.9 billion for that time period (see Table 3-2). The 1987 Amendments to the CWA allow SRFs to fund certain activities not eligible under the construction grants program and not included in the \$83.5 billion/\$14.9 billion needs cited above. Additionally, EPA has or will soon promulgate rules related to new enforceable requirements as specified in the 1987 Amendments.

The major categories of new eligibilities are nonpoint source control and programs for the protection of ground-water, estuaries and wetlands. The primary programs with new enforceable requirements are those dealing with stormwater, toxics discharges, and sludge use and disposal. The costs of meeting the needs for these new eligibilities and enforceable

¹"Design year" needs reflect the total needs for documented facilities to satisfy the design year population. Year 2008 is used as the design year to better approximate a 20-year design life for facilities in the 1988 Needs Survey.

²To be incorporated into the Needs Survey, an estimate of construction needs must conform to a number of criteria, including:

- The projects included in the needs estimate must address a documented public health or water quality problem.
- The projects must be required to rectify a current problem (e.g., needs solely for future growth requirements cannot be included). However, if a project has a legitimate current need, the cost for meeting future growth needs is included in the survey.
- The needs must be project-specific (e.g., needs for a county-wide problem are not acceptable).

Wastewater treatment needs are reported in five categories in the 1988 Needs Survey.

Category I	-	Secondary Treatment
Category II	-	Advanced Treatment
Category IIIA	-	Infiltration/Inflow Correction
Category IIIB	-	Replacement/Rehabilitation of Sewers
Category IVA	-	New Collector Sewers
Category IVB	-	New Interceptor Sewers
Category V	-	Combined Sewer Overflows (CSO)

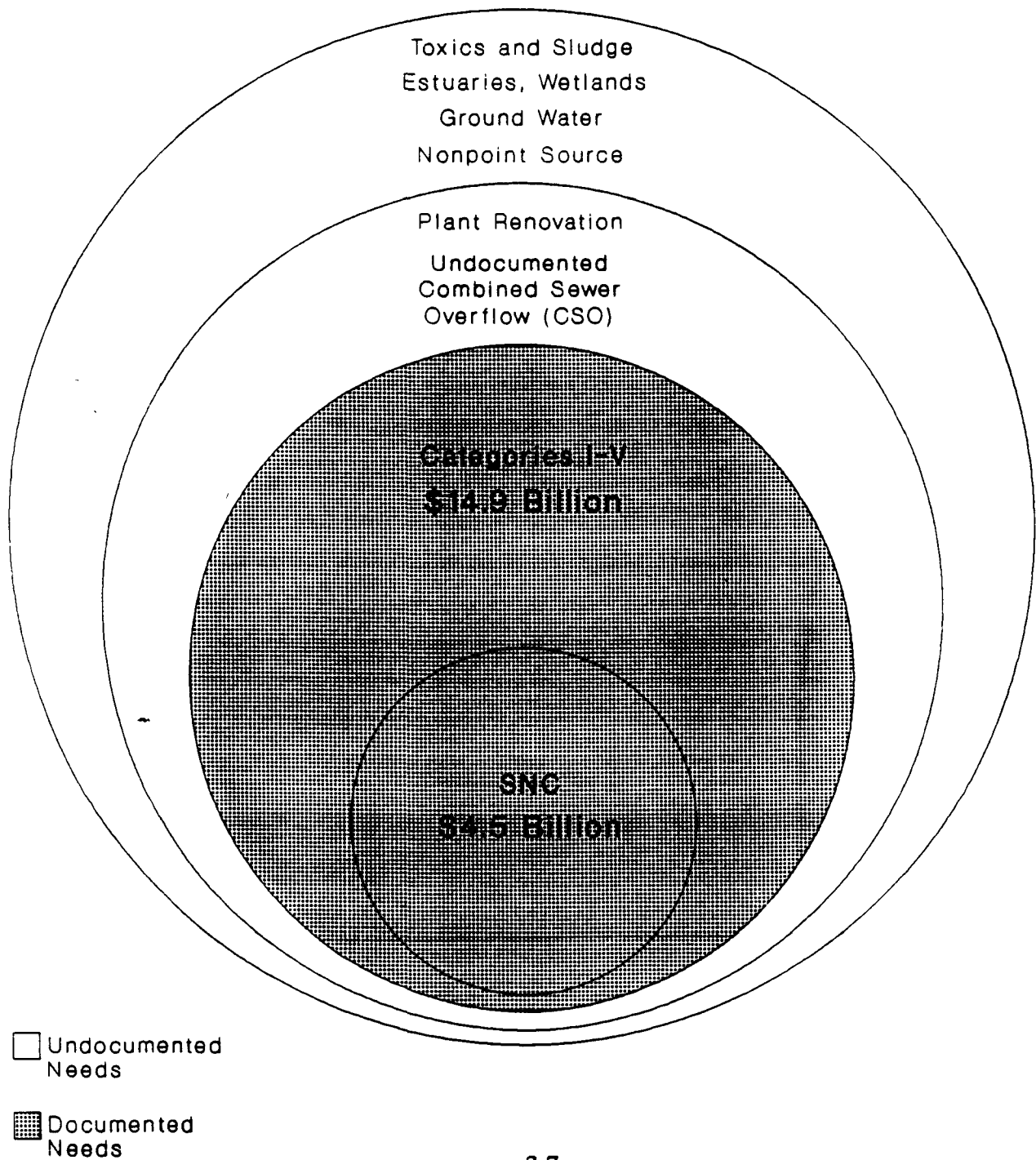
TABLE 3-2

Category I to V Wastewater Treatment and Conveyance
Needs for the Nine Study States

STATE	1988 Design Year Needs (\$ Millions, 1988)
Connecticut	1,392
Georgia	1,007
Minnesota	1,106
New Jersey	3,754
New Mexico	130
South Dakota	87
Tennessee	1,467
Texas	4,975
Virginia	957
TOTAL	14,875

requirements (which are discussed in more detail in Appendix B) as well as the costs for maintaining compliance at existing facilities are not included in the 1988 Needs Survey. These new eligibilities and other requirements, however, will add substantially to SRF-eligible needs. Figure 3-1 shows that the SNC needs, described in Section 3.1, are only a part of the SRF eligible financing requirements in the nine study States.

Figure 3-1
SRF-Eligible Projects of the Nine Study States
Documented and Undocumented



SECTION FOUR

AVAILABILITY OF SRF AND OTHER FUNDING FOR ELIGIBLE PROJECTS

Funding for wastewater treatment, collection, and conveyance projects comes from a mix of Federal, State, and local sources. During the mid-1980s, local sources contributed approximately 40 percent of the financing for wastewater treatment projects.¹ Prior to the 1987 CWA Amendments, the construction grants program provided the largest share of Federal funding for these projects. With the phaseout of the construction grants program, SRFs will shift the relative contribution for wastewater project funding away from Federal sources towards State and local sources. In addition to changing the funding source mix for wastewater projects, the SRF program expands the scope of wastewater and other water quality projects and activities eligible for CWA financial assistance (see Section 3.2).

4.1 Availability of Funding from All Sources

Wastewater treatment, collection, and conveyance projects can receive funding from the construction grants program, State SRF programs, other State programs, other (non-EPA) Federal sources, and local sources. Other Federal sources include the Farmers Home Administration, the Department of Housing and Urban Development, and the Economic Development Administration. Local sources could include municipal appropriations, user fees, impact fees, and debt financing.

Table 4-1 and Figure 4-1 show the total amount of funding for wastewater projects coming from Federal and State sources, including CWA Title II and VI, other Federal sources, and other State sources in the nine study States. SRF loan repayments, which come from local sources and represent a portion of the total local source funding contribution, are included in Table 4-1 under State funding. For the period 1988 to 1999, approximately \$6.4 billion (1988 dollars) in Federal and State funding is projected to be available for wastewater treatment and conveyance projects in the nine study States. For the study States in aggregate, CWA Title II and VI monies contribute approximately \$1.9 billion from 1988 to 1999. Other Federal sources play a small but consistent role, contributing an additional \$0.7 billion during that time period. State funding, which is projected to decline slightly from 1988 to 1995 and then slightly increase to 1999, contributes approximately \$3.8 billion from 1988 to 1999.

The funding provided by each source varies throughout the 1988 to 1999 time period. CWA Title II and VI funding for the nine study States declines from \$469 million in 1988 to \$95 million in 1994 (the last year of capitalization grants) to zero thereafter, based on the authorizations specified in the 1987 CWA Amendments. State funding declines from \$491 million in 1988 to \$366 million in 1994 because most States plan to reduce their matching fund contributions as Federal capitalization grant contributions decline. After 1995, funding from

¹U.S. EPA. Environmental Investments: The Cost of a Clean Environment. Office of Policy, Planning, and Evaluation. December 1990.

TABLE 4-1

Annual New Federal and State Funding for Wastewater Projects Aggregated for Nine Study States*
(\$ Millions)

FUNDING SOURCE:	Actual		Projected										Total	1988 Constant** Dollar Total
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		
CWA Title II and VI	469	324	347	376	286	189	95						2,085	1,890
Other Federal***	93	88	79	72	72	72	72	59	59	59	59	59	841	683
State****	491	440	456	401	386	371	366	336	338	356	369	381	4,692	3,781
TOTAL*****	1,053	852	881	849	744	632	532	395	396	415	428	440	7,618	6,354

* Table excludes funds not considered available for wastewater project funding, including debt service reserves and monies used to repay State bonds. CWA Title II and VI funding projected at authorized levels. New Jersey and Tennessee were unable to project Federal funding contributions for some "other Federal" programs. Several States expressed concern about projecting available funds ten years into the future, and stated that the figures provided are best estimates.

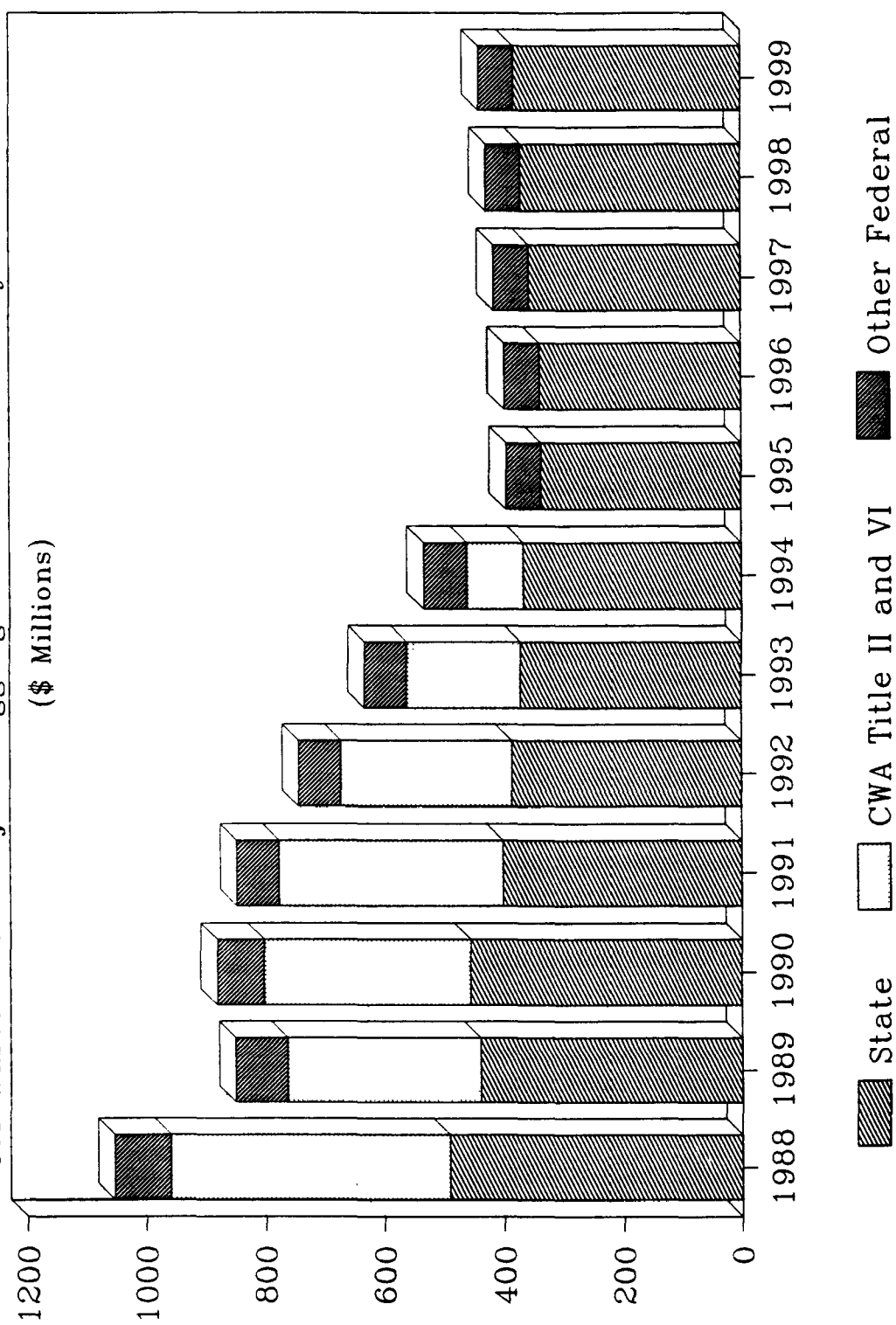
** Current year dollars for 1989 to 1999 discounted assuming 4.5% annual inflation, the average inflation rate for State and local government purchases from 1982 to 1988.

*** Includes Farmers Home Administration, Department of Housing and Urban Development, and Economic Development Administration.

**** SRF loan repayments, which come from local sources, are included under State funding.

***** Totals vary due to rounding.

Figure 4-1
Total Federal and State Funding Projected to be Available
for Wastewater Projects Aggregated for Nine Study States



State sources increases slightly as higher levels of loan repayments flow back into the SRFs and are available for relending.

Because three of the nine study States were unable to project local source funding other than that provided by SRF loan repayments, and because many of the study States that did project local funding indicated that their projections were highly uncertain, Table 4-1 does not include local funding projections. Section Five of this report provides estimates of the amount of local funding that may be needed to meet wastewater collection and conveyance needs in the nine study States. Funding for wastewater projects from all sources for each of the nine study States is presented in Appendix D.

4.2 Availability of SRF and Other State Program Funding

Much of the available funding detailed in Section 4.1 is administered through State programs including SRFs, non-SRF State loan programs, and State grants. Table 4-2 shows the amount of actual and projected funding available through SRF and other State programs aggregated for the nine study States from 1988 to 1999. Figure 4-2 presents a graphic illustration of these data. The States project that their programs will provide funding totalling \$5.4 billion (in 1988 dollars) from 1988 to 1999.

In most of the nine study States, the SRF programs have or will become the predominant source of State funding for wastewater projects. The States' SRFs are comprised of funds from Federal capitalization grants (including Title II transfers), State match and overmatch monies, SRF leveraging, loan repayments, and interest earnings. Federal capitalization grants contribute to SRF capitalization through 1994 and, at authorized levels, provide more than 36 percent of all SRF funds available for the period 1988 to 1999. State match and overmatch monies together contribute about 18 percent of SRF funds available for this time period. Leveraging and loan repayments each contribute about 23 percent. (The portion will be larger if more programs leverage their funds in the future; only three of the nine States currently leverage, but the other study States plan to consider leveraging.) Beginning in 1994 and continuing through 1999, loan repayments provide the largest annual source of available SRF funds. Overall, new contributions to SRFs and other State programs drop after 1994, the last year of Federal capitalization funding, and remain fairly constant thereafter.

Figure 4-3 shows the cumulative level of funding through SRFs in the nine study States from 1988 to 1999. Cumulative funds made available through SRFs total approximately \$5 billion in 1999.

While the cumulative amount of SRF funding made available continues to increase throughout the 1988 to 1999 time period, as shown in Table 4-2 and Figure 4-3, annual new capitalization investments in SRFs are projected to decrease about 40 percent between 1989 and 1999. Although SRF loan repayments will increase beyond 1995, this increase is not expected to be sufficient to offset the phase-out of Federal capitalization grants within the time frame of this analysis. Additional State capitalization and/or leveraging may be necessary if SRF funds are to continue to grow. Of the study States, Connecticut, Minnesota, and New Jersey projected future capitalization of the SRF beyond 1994.

TABLE 4-2

Estimated Annual Contributions to SRFs and Other State Programs*
Aggregated for Nine Study States
(\$ Millions)

FUNDING SOURCE:	Actual		Projected										1988 Constant**	
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total	Dollar Total
SRF Cap. Grant	302	277	332	420	319	211	106						1,968	1,758
State Match	55	49	59	77	58	34	17						350	313
Overmatch***	57	89	91	36	41	39	43	43	43	42	41	40	604	496
Leveraged Funds*****	67	116	142	153	132	109	89	68	72	75	76	76	1,175	955
Loan Repayments*****		1	10	31	55	85	113	137	156	171	182	193	1,133	799
SRF Sub-Total	481	533	635	717	605	478	367	248	270	288	299	309	5,229	4,321
SRF Debt Service Reserve	(14)	(24)	(31)	(54)	(40)	(27)	(13)	0	0	0	0	0	(203)	(178)
SRF Available	467	509	604	663	565	451	353	248	270	288	299	309	5,026	4,144
Cumulative SRF Available*****	467	975	1,579	2,243	2,807	3,259	3,612	3,860	4,131	4,418	4,717	5,026		
State Grant Programs	64	74	49	56	49	50	49	48	40	42	44	45	610	495
Other State Programs	263	117	113	58	58	58	59	40	27	27	27	27	875	771
TOTAL *****	793	700	766	778	672	560	460	336	338	356	369	381	6,510	5,410

* Table projects SRF capitalization grant funding at authorized levels, and excludes funds not considered available for wastewater project funding, such as monies used to repay State bonds. Since a portion of the study States' SRF State Match funds are not available for direct project assistance, the State Match figure appears lower here than the actual 20% of the capitalization grants. Several States expressed concern about projecting available funds ten years into the future, and stated that the figures provided are best estimates.

** Current year dollars for 1989 to 1999 discounted assuming 4.5% annual inflation, the average inflation for State and local government purchases from 1982 to 1988.

*** Of the nine study States, only Connecticut reportedly intends to provide its SRF with overmatch funding after 1994.

**** Amounts represent leveraged funding in only three of the nine study States.

***** SRF loan repayments are from local funds.

***** Totals vary due to rounding.

Figure 4-2
Estimated Annual Contributions to SRFs and Other State Programs
Aggregated for Nine Study States

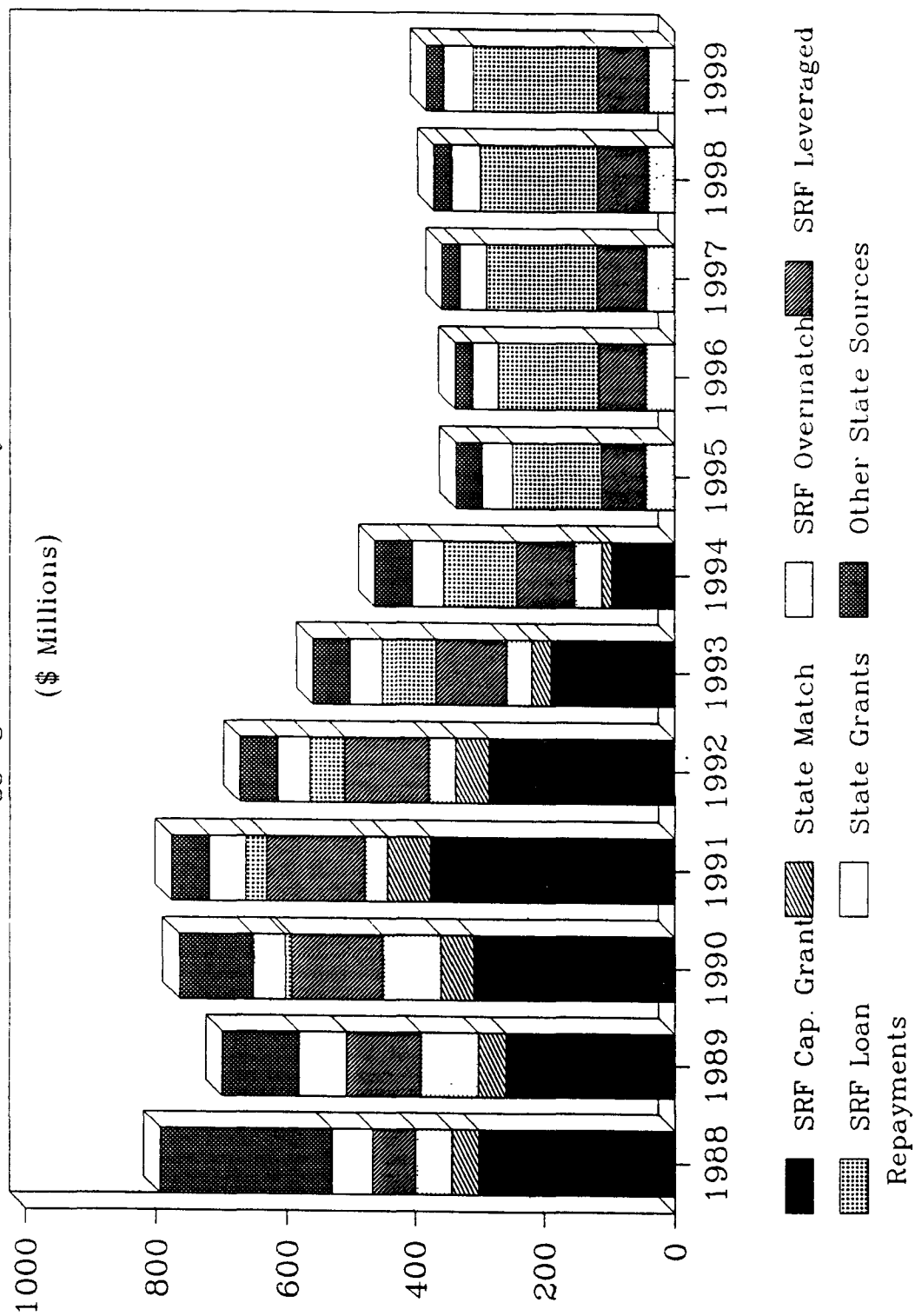
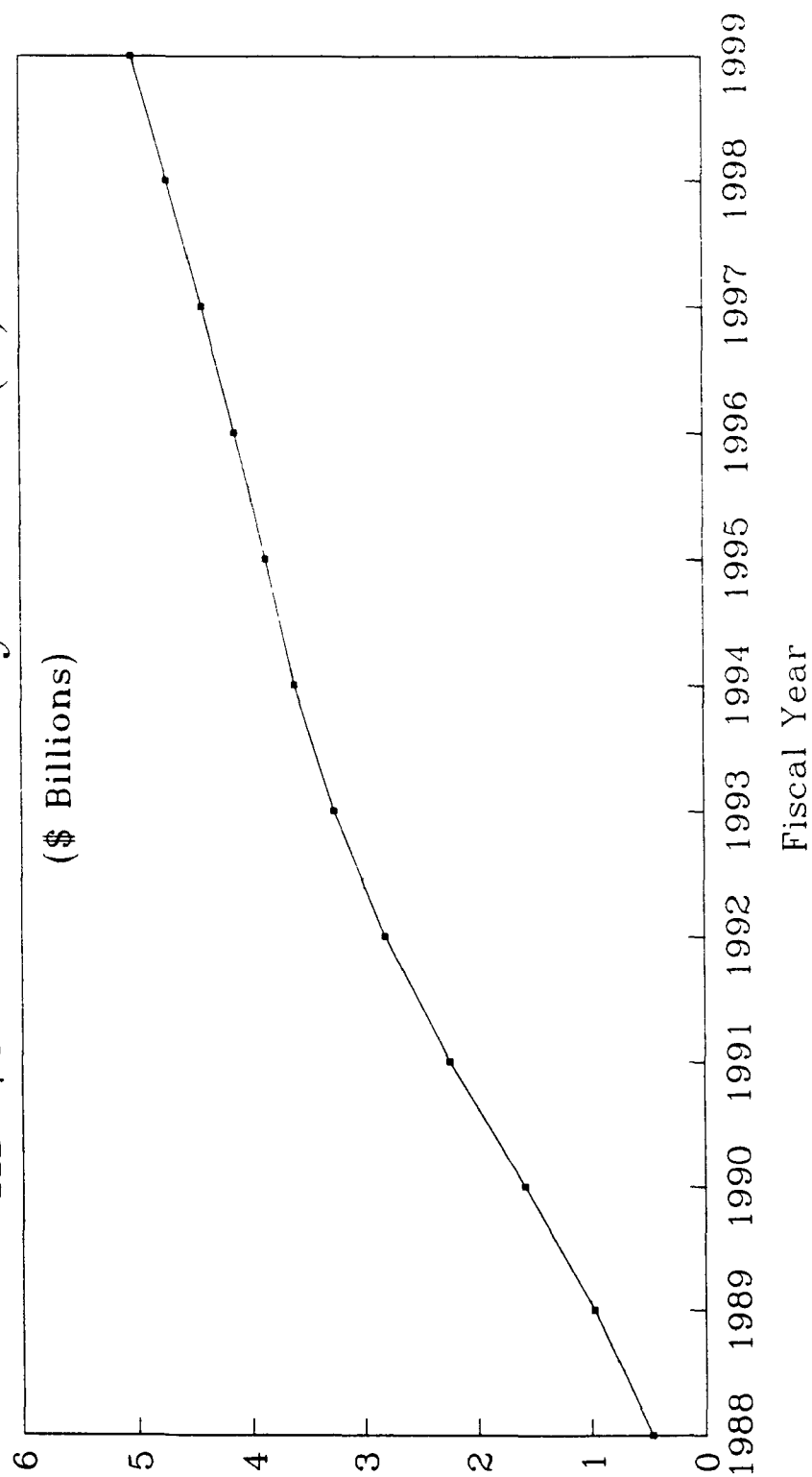


Figure 4-3
Estimated Cumulative SRF Funds Available
in the Nine Study States(a)



(a) Nominal dollars. 1988-1989 actual; 1990-1999 projected.

In addition to SRF assistance, many of the nine study States will continue to provide financial assistance using State grants and/or other non-SRF programs, although these programs will provide less assistance as SRFs become more established. Appendix C shows the estimated amount of SRF and other State program funding to be provided from 1988 to 1999 for each of the nine study States.

4.3 Current and Anticipated Uses of SRF Assistance

State SRF programs may provide assistance for wastewater treatment projects, wastewater collection and conveyance projects (including CSO and storm water projects), implementation of approved NPS and ground water control activities, and planning and implementation of approved estuary protection activities. States must, however, use SRF funds "in the fund as a result of capitalization grants" (the capitalization grant, repayments of the first round of loans awarded from the grant, and the State match) for wastewater treatment projects on the National Municipal Policy (NMP) list, or otherwise satisfy the "First Use" requirements, before these funds can be used to provide assistance for any other projects or activities. First use requirements are satisfied by a State when all NMP facilities are in compliance, are on an enforceable schedule, have an enforcement action filed, or have a funding commitment during or prior to the first year covered in a State's most recent SRF Intended Use Plan.

Some of the study States are meeting First Use requirements by having some of their NMP facilities on an enforceable schedule and having the remainder in compliance. New Mexico reports that all of its NMP facilities are in compliance. South Dakota anticipates that all of its NMP projects will be completed by FY 1991. Minnesota reports that it may have difficulty completing some needed NMP projects in small communities (of less than 1,500) that cannot afford facility construction under current programs.

The nine study States are using most of their SRF assistance for wastewater treatment projects. Table 4-3 shows the actual and projected SRF funding used for the different types of eligible projects and activities. In 1988, nearly 86 percent of SRF assistance went to treatment projects. After 1995 the study States estimate that treatment projects will account for 72 percent of SRF assistance. Most of the remaining funds will be used for wastewater collection and conveyance projects, including CSO and storm water projects. Wastewater collection and conveyance projects account for just over 18 percent of projected SRF assistance for 1991 to 1994 and just over 26 percent for 1995 to 1999. Beginning in 1990, the study States project that a very small percentage of SRF assistance will be used for NPS activities. While three of the study States have estuaries in the National Estuary Program, none of them projected using SRF assistance for estuarine protection activities.

TABLE 4-3

**Planned Uses of SRF Assistance Aggregated for Nine Study States
(\$Millions)**

	Funds Committed				
	Federal Fiscal Year(s)				
TYPE OF PROJECT/ACTIVITY	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Wastewater Treatment Projects (Section 212) (% of Total)	376.2 (85.8 %)	420.6 (83.1 %)	503.3 (84.7 %)	1,443.5 (81.1 %)	996.6 (72.0 %)
Wastewater Collection & Conveyance (Section 212) (% of Total)	62.1 (14.2 %)	85.7 (16.9 %)	90.0 (15.1 %)	328.9 (18.5 %)	366.7 (26.5 %)
Nonpoint Source & Ground Water (Section 319) (% of Total)	0	0	1.0 (0.2 %)	8.0 (0.4 %)	21.0 (1.5 %)
Estuarine Activities (Section 320) (% of Total)	0	0	0	0	0
TOTAL	438.3 (100 %)	506.3 (100 %)	594.3 (100 %)	1,780.4 (100 %)	1,384.3 (100 %)

Note: Funds used for administrative expenses and debt service reserves are not included in this table. The amount of money used for funding projects in individual years may differ from SRF funding available in those years because project funding schedules are not necessarily tied to available funds year-by-year.

SECTION FIVE

COMPARISON OF WASTEWATER TREATMENT NEEDS TO AVAILABLE FUNDS

This section compares the wastewater treatment and conveyance needs of the nine study States to the total projected funding available from Federal and State sources. The section also estimates the amount of local funding that may be needed, in addition to Federal and State funding, to meet documented needs in the study States.

Table 5-1 compares the needs of SNC facilities in the nine study States to funding available during 1988-99. The SNC needs data are derived from Table 3-1 as explained in Section 3.1. Table 5-1 shows that SRF funds are adequate to cover SNC needs in seven of the States and nearly 90 percent of the needs in the remaining two States (Tennessee and Texas). The need for SRF funding, however, extends far beyond the requirements of SNC facilities (see Section Three).

Table 5-2 compares the design year Category I through V wastewater treatment needs in the nine study States to funding available during 1988-1999. The design year needs data are derived from the 1988 Needs Survey. The table shows the proportion of Category I to V design year needs covered by Federal and State funds. The gap between Federal and State funding and wastewater treatment needs, which represents the amount that may need to be funded by local sources, is shown in the right hand column of Table 5-2.

For the nine study States in aggregate, total Federal and State funding of \$6.4 billion is sufficient to cover 43 percent of all Category I to V design year needs, which total nearly \$14.9 billion. Local funding, therefore, may need to provide \$8.5 billion or 57 percent of all Category I to V needs. The proportion of design year needs covered by Federal and State sources varies from 27 percent in Texas to 98 percent in South Dakota. Conversely, local funding may need to provide from 2 percent to 73 percent of Category I to V wastewater treatment and conveyance financing for the nine study States.

In the mid-1980s, localities typically provided approximately 40 percent of such funds.¹ The approximate 57 percent local funding share for the nine State aggregate therefore represents an increase in the level of local funding for wastewater treatment and conveyance. Further, localities will be responsible for repaying SRF loans. Based on the final composition of grant and loan funding, localities will ultimately be responsible for paying well over 57 percent of the cost of wastewater treatment and conveyance.

¹U.S. EPA. Environmental Investments: The Cost of a Clean Environment. Office of Policy, Planning, and Evaluation. December 1990.

TABLE 5-1

Comparison of SNC Needs to Federal and State Funds Available*
(\$Millions, 1988)

STATE	Total SNC Needs	Actual and Projected Funds 1988 to 1999			Total Federal and State Funds Available 1988 to 1999
		SRF**	Other State	Other Federal	
Connecticut	313	706	177	0	883
Georgia	223	248	248	248	744
Minnesota	204	433	225	137	795
New Jersey	1,071	1,101	118	34	1,253
New Mexico	22	81	14	15	110
South Dakota	49	60	1	25	85
Tennessee	555	216	180	94	490
Texas	1,547	949	119	293	1,361
Virginia	551	351	184	98	633
TOTAL***	4,536	4,144	1,266	944	6,354

* Funds available data are from Table E-1. All funds have been discounted to 1988 Dollars. Funds not considered available for wastewater project funding, including debt service reserves and monies used to repay State bonds are excluded. Some of Virginia's non-SRF funds included in their total funds figure have been targeted for wastewater conveyance projects, and thus may not be available to fund treatment needs. New Jersey and Tennessee were unable to provide Federal funding estimates for some non-EPA Federal programs.

** SRF monies include loan repayments from local sources. Loan repayments account for 23% of SRF funds from 1988 to 1999.

*** Totals may vary due to rounding.

TABLE 5-2

Comparison of Design Year Category I to V Wastewater Treatment and
Conveyance Needs, Federal and State Funds Available, * and Funds Needed
(\$Millions, 1988)

STATE	Design Year Needs (Cat. I-V)**	Actual and Projected Funds 1988 to 1999			Total Federal and State Funds Available 1988 to 1999		Funding**** Gap
		SRF***	Other State	Other Federal			
Connecticut (% of Cat. I-V Need)	1,392	706 (51%)	177 (13%)	0 (0%)	883 (63%)	509 (37%)	
Georgia (% of Cat. I-V Need)	1,007	248 (25%)	248 (25%)	248 (25%)	744 (74%)	263 (26%)	
Minnesota (% of Cat. I-V Need)	1,106	433 (39%)	225 (20%)	137 (12%)	795 (72%)	311 (28%)	
New Jersey (% of Cat. I-V Need)	3,754	1,101 (29%)	118 (3%)	34 (1%)	1,253 (33%)	2,501 (67%)	
New Mexico (% of Cat. I-V Need)	130	81 (62%)	14 (11%)	15 (12%)	110 (85%)	20 (15%)	
South Dakota (% of Cat. I-V Need)	87	60 (69%)	1 (1%)	25 (28%)	85 (98%)	2 (2%)	
Tennessee (% of Cat. I-V Need)	1,467	216 (15%)	180 (12%)	94 (6%)	490 (33%)	977 (67%)	
Texas (% of Cat. I-V Need)	4,975	949 (19%)	119 (2%)	293 (6%)	1,361 (27%)	3,614 (73%)	
Virginia (% of Cat. I-V Need)	957	351 (37%)	184 (19%)	98 (10%)	633 (66%)	324 (34%)	
TOTAL (% of Cat. I-V Need)	14,875	4,144 (28%)	1,266 (9%)	944 (6%)	6,354 (43%)	8,521 (57%)	

Footnotes for Table 5-2

- * Funds available data are from Table E-1. All funds have been discounted to 1988 Dollars. Funds not considered available for wastewater project funding, including debt service reserves and monies used to repay State bonds, are excluded. Some of Virginia's non-SRF funds included in their total funds figure have been targeted for wastewater conveyance projects, and thus may not be available to fund treatment needs. New Jersey and Tennessee were unable to provide Federal funding estimates for some non-EPA Federal programs.
- ** For a discussion of design year needs, see Footnotes #1 and #2, Section 3.2.
- *** SRF monies include loan repayments from local sources. Loan repayments account for 23 % of SRF funds from 1988 to 1999.
- **** Derived by subtracting actual and projected 1988 to 1999 SRF, other State, and other Federal funding from design year needs.

SRF-eligible needs in the nine study States will greatly exceed the design year needs presented in Table 5-2. New needs are expected to arise between 1988 and 1999 due to economic growth and wastewater treatment plant renovation and expansion. The latter needs are likely to be significant because many treatment plants built in the 1970s will be reaching their design capacity during the 1990s. In addition, funding needs arising from the new funding eligibilities and new enforceable requirements will add substantially to the documented needs.

SECTION SIX

SRF PROGRAM OPERATIONS

This section discusses how the study States operate their SRF programs. Program structure is described in Section 6.1. Section 6.2 discusses special programs for small and economically distressed communities, and Section 6.3 describes the mechanisms used to ensure the viability of the States' SRFs.

6.1 Structure of the Nine Study State SRF Programs

All of the nine State SRF programs offer loans at below-market interest rates. Loan repayments, except for those required to retire program debt, are used to fund additional loans. While the nine SRFs have some basic similarities, the programs differ in several ways, including their manner of obtaining matching funds, their use of leveraging, and their method of determining interest rates.

Method of Obtaining Matching Funds

The States have adopted several different approaches toward generating matching funds. Minnesota, New Jersey, New Mexico, Tennessee, and Virginia have provided matching funds through an appropriation. Connecticut issued a General Obligation (G.O.) bond to provide its SRF matching funds. Texas also provides its SRF match with State G.O. bonds, and uses interest from SRF loan repayments to repay the bond issue. South Dakota's SRF is issuing its own revenue bonds, repaid by interest earned by the SRF, to provide the State match. Georgia has utilized an existing loan program to provide its matching funds. Prior to the implementation of the State's SRF program, Georgia had been issuing wastewater treatment loans through the Georgia Environmental Facilities Authority (GEFA). To provide the SRF match, certain loans in the GEFA portfolio have been designated for repayment into the SRF. The principal amount of these loans is counted toward the State match. Georgia plans to obtain all of its SRF matching funds through this mechanism.

The method a State uses to supply the match affects the amount of lendable funds in the SRF in the long term. Funds provided by a State G.O. bond or appropriation generally do not need to be paid back by the SRF. Therefore, when these funds are loaned by the SRF, the repayments are available to fund additional loans. In cases where loans are made with matching funds provided by SRF revenue bonds or similar debt instruments, less money will be available to fund additional loans if interest on the loan repayments is used to repay the SRF debt.

Leveraging

For most of the nine States, the SRF capitalization grant and the State match constitute all available capitalization for program assistance. SRF programs in three of the nine study States (Minnesota, New Jersey, and Texas) borrow to provide additional lendable funds. All of the States that are not currently leveraging indicated that they intend to consider this option in the future.

The States that are currently leveraging use different approaches. Minnesota uses its capitalization grant as debt service reserve to secure larger amounts of revenue bond financing and to provide interest subsidies; Minnesota uses the repayments on loans as debt service reserve. Using this approach, the State secured \$48 million in revenue bonds in 1989, and plans to secure this or greater amounts annually through 1999. Proceeds from the loan repayments go toward retiring the bond issue. (The financial practices of Minnesota's SRF under its first capitalization grant constituted "aggressive leveraging" as defined by EPA, so the SRF drew cash from its capitalization grant letter of credit on a more accelerated schedule than EPA's rules would otherwise allow.)

In New Jersey, the State program consists of the New Jersey Wastewater Treatment Fund (the "Fund") and the New Jersey Wastewater Treatment Trust (the "Trust"). The Fund derives its revenues principally from the Federal capitalization grant. The Trust uses some of the State matching funds to secure revenue bond issues. For example, in 1989 the State used \$6.5 million of its \$13.0 million in matching funds to secure \$69.8 million in revenue bond financing. Each revenue bond issue provides funds for specific projects, and revenues (loan repayments) from those projects go toward bond repayment.

In Texas, a portion of the State's Water Development Bonds are transferred from the State Treasury to the SRF. The Water Development Bonds are State G.O. bonds; their proceeds are placed in the SRF, which, in turn, provides funds for their repayment.

Types of Assistance

Table-6-1 presents the estimated distribution of available funds among the various types of SRF assistance. The data are aggregated for the nine study States. (Appendix E provides these data for each of the nine study States.) The nine States intend to provide most of their financial assistance through loans. Four of the States indicated that loans would be the only form of financial assistance provided. Five of the States plan to use a small amount of program funds for refinancing. States that leverage through revenue bonds (Minnesota and New Jersey) will use some funding to secure program indebtedness.

Interest Rates

All States offer loans substantially below market rates. The vast majority of SRF loans in the nine States are issued at interest rates of from 2 to 5-1/2 percent. The range of interest rates and methods of determining interest rates are presented in Table 6-2. Three of the States adjust their interest rates based on the economic condition of the community (see discussion in Section 6.2).

TABLE 6-1

Uses of SRF Funds
Aggregated for Nine Study States
(\$Millions)

	Funds Committed					
	Federal Fiscal Year(s)					
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated	Total
Loans (i.e., new loans) (% of Total)	399.7 (87%)	501.0 (95%)	585.6 (94%)	1,751.4 (93%)	1,374.3 (96%)	4,611.9 (94%)
Purchase or Refinance Existing Debt Obligation (% of Total)	37.9 (8%)	3.3 (1%)	7.0 (1%)	42.0 (2%)	10.0 (1%)	100.2 (2%)
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	14.1 (3%)	13.4 (2%)	16.9 (3%)	56.3 (3%)	40.0 (3%)	140.7 (3%)
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0	0
Administrative Expenses (max. 4% of cap grant)* (% of Total)**	9.9 (2%)	10.3 (2%)	13.0 (2%)	40.8 (2%)	1.2 (0.1%***	75.3 (1%)
TOTAL	461.6 (100%)	528.0 (100%)	622.5 (100%)	1,890.5 (100%)	1,425.5 (100%)	4,928.1 (100%)

* The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this figure is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

***One State anticipates banking a portion of its 4% of capitalization grant administrative allowance for use after 1994.

TABLE 6-2

SRF Loan Structures for Nine Study States

STATE	INTEREST RATE	DISCUSSION
Connecticut	2%	Funds all projects with 20 to 50% grants* and 2% interest loans for the balance.
Georgia	2%	Uses a uniform rate of 2% on all loans.
Minnesota	1% - 4.5% Below Market	Varies rate based on considerations such as community size, income, and ratio of user fees to total income.
New Jersey	0% and Market Rate	Finances projects equally from two separate accounts. One account extends zero interest loans; the other uses the market rate. The result is a blended rate currently at 4.2%.
New Mexico	5%	Uses a uniform rate of 5% on all loans.
South Dakota	3%	Uses a uniform rate of 3% on all loans.
Tennessee	0% to Market Rate	Varies loan interest rates based on communities' ability to pay. Most communities qualify for rates between 40% to 60% of the market rate.
Texas	4% - 5.5%	Varies rate from 4% to 5.5%.
Virginia	0% - 7%	Varies rate based primarily on communities' ability to pay. Tries to maintain a portfolio average interest rate of 4%.

*Grants are funded by other, non-SRF State programs.

In setting interest rates for SRF loan recipients, States must set rates low enough to make the program attractive to communities, but high enough to ensure the long term viability of the fund. The differing approaches used by the States reflect their perception of this trade-off. Some States reported that the high cost of program requirements (described in detail in Section Eleven) had to be offset by very low interest rates to make the SRF program attractive in their State. Various analyses have estimated that an interest rate subsidy of 2-3% to loan recipients (compared to the rate they can obtain in the market) is necessary to offset these costs. All of the study States have developed SRFs that appear to offer adequate subsidies. In fact, the interest rate structure of many of the programs provides an additional subsidy beyond that necessary to offset project cost increases for SRF loans.

These low, subsidized interest rates, however, reduce the level of funding available in the SRF in future years. After initial capitalization, SRFs will rely to a large extent on loan repayments to provide capital from which to make additional loans. While the initial SRF capitalization funds will be maintained by the principal portion of the repayments, the growth or decline of the fund depends directly on the rate of interest charged to recipients. In general, to maintain a level amount of actual project purchasing power, an SRF would have to charge an average interest rate equal to the inflation rate (which since 1982 has averaged 4.5 percent per year for State and local government purchases¹). There would be some fluctuation in the amount available for loans each year, based on the repayment schedules, but an SRF charging interest at the inflation rate would, over time, provide a steady source of loan assistance.

An SRF with a loan portfolio that has an average interest rate below the inflation rate will lose purchasing power without additional State capitalization. A State that makes a policy decision to provide loans below the inflation rate will need to make the financial commitment to provide further capitalization if it desires to maintain the fund in real terms. Of course, further capitalization would enable the SRF to grow, as would charging interest rates averaging more than the inflation rate.

States that issue bonds to leverage their SRFs would have another concern in protecting the long term viability of their funds. If loans are made at a rate less than that at which the bonds are issued, loan repayments will not be adequate to provide debt service on the bonds. Additional funds will have to be provided to make up the difference. The approach used by Minnesota is to use investment earnings from the debt service reserve fund for this purpose. While leveraging an SRF provides a significantly greater amount of loan assistance in the early years of the program than does an unleveraged fund, the use of loan repayments to retire leverage bond debt will limit the capital growth of the fund, as well as the long-term balance of lendable funds. Additional State capitalization in future years will be necessary if the State wants to expand its leveraged amount.

6.2 Special Programs for Small and/or Economically Distressed Communities

State officials reported that many economically distressed communities throughout the nine States cannot afford SRF loans even at very low interest rates. These communities include

¹U.S. Department of Commerce News. U.S. Bureau of Economic Analyses.

the colonias² in Texas, Indian lands in South Dakota, and some very small communities in Minnesota. Many States take the needs of these communities into account in developing and operating the SRF and related programs. Three States consider the economic condition of the community in setting interest rates for SRF loans. These States indicated that they may offer zero interest SRF loans to economically distressed communities. In addition, several states operate other loan or grant programs that provide additional subsidies to economically distressed communities. The most substantial grant subsidies are provided by Connecticut and Minnesota.

- Connecticut provides grants of 20 percent for all non-CSO projects and 50 percent for CSOs. While not a subsidy for economically distressed communities per se, the CSO grants tend to aid the older, economically distressed urban centers where the combined sewer problems are located. In addition, Connecticut funds one small community project per year. Small community projects also receive loan and grant support for lateral sewers to help offset the high per dwelling unit costs.
- Minnesota operates its own grants program, which provided \$23 million in funding for 1989. The State provides 65 percent grants to communities with populations of 25,000 or less. (Communities with populations greater than 25,000 are eligible to receive grants of 35 percent.) The State's unified application process channels applicants to the most appropriate loan and/or grant program for their project.

Several of the other States, including New Mexico, South Dakota, Tennessee, and Virginia, offer some grant funding to small and/or economically distressed communities, but their programs provide less of a subsidy than those in Connecticut and Minnesota. South Dakota reported that its grant and SRF loan programs are designed entirely for small, low-income communities. In general, the principal form of subsidy for wastewater treatment in most States for small and/or economically distressed communities is the low rate of interest offered under the SRF program.

6.3 Ensuring the Viability of the SRF Programs

All of the nine States plan to operate their SRF programs through 1999 and beyond. The States intend to ensure the long-term viability of their programs through sound management of their loan portfolios. The CWA requires that all SRF loan recipients specify a

²In the area immediately adjacent to the international boundary with Mexico, there are over 200,000 people living in small communities known as "colonias". These communities are economically distressed and either have inadequate water and sewage service or lack these services altogether. In the Agency's appropriation for fiscal year 1990, Congress authorized the State of Texas to establish a special revolving fund to serve residents of these communities. The special revolving fund has been capitalized from the construction grant allotment for Texas.

dedicated source of revenue to repay the loan. Several other common themes are apparent among the States.

All of the States give careful consideration to affordability before issuing a loan under the SRF program. All nine study States either review credit information or undertake their own financial review of applicants before issuing loans. States uniformly view the soundness of their loan portfolio as the most important factor in the long-term viability of their programs.

In addition to financial review, States use some combination of community pledges and/or assurances to secure loans. All States require communities to pledge user fees, the full faith and credit of the community, or both, before issuing a loan. Some States (including Minnesota, New Jersey, and Tennessee) require communities to pledge both user fees and full faith and credit (the "double barrel" pledge) for every loan.

South Dakota and New Jersey purchase insurance to help protect the long term viability of their programs. In South Dakota, the revenue bond used to provide the State match is insured by a third party. In New Jersey, some of the revenue bonds used to acquire lendable funds are insured. While these insurance policies add to program costs, they also lower the interest rates paid on the bonds by providing an additional level of protection to the fund and the bondholders.

There are several common elements in State plans for anticipating and reacting to problems with loans:

- States typically plan to review annual audited statements and/or community user fees to ensure that communities are operating in a fiscally sound manner and are charging sufficient fees to cover their indebtedness.
- When potential problems are spotted, States will work with the community to rectify the problem and prevent a default. The State may encourage an increase in user fees. Many States indicated that they would consider restructuring or refinancing in the event of serious problems.
- ~ States will, in general, use all recourse allowed under State law in the event of a default. This recourse typically includes suing the community, seeking a court order to require the community to raise user fees, and withholding state-shared tax revenues or other State funding to the community.

In summary, the nine States have taken a very active approach to ensuring the financial health of their loan portfolios and are permitted under State law to implement strong measures of recourse in the event of problems. Because the program is so new, it is not possible to provide any statistics concerning the frequency of late payments, default, or other loan problems. None of the States report any problems, as yet, with their current loans.

SECTION SEVEN

ADMINISTRATION OF SRF PROGRAMS

At the time of this study, the nine study States were making the transition from the construction grants program to the SRF program. Many construction grants personnel were taking on the duties associated with the SRF program and some individuals split their time between the two programs. As a result, cost accounting for time spent on the construction grant versus SRF program was difficult for these States. In some cases, much of the evaluation of plans for projects receiving SRF assistance had been completed earlier as part of construction grants program activities. Therefore, administrative costs for the SRF program in FY 1988 and 1989 are not fully indicative of the costs States will experience once their SRF programs are more established. As the construction grants program is phased out and the SRF program is fully established, most of the nine study States project increasing SRF staff size and escalating administrative costs. This section summarizes the nine study States' estimates of the number and type of personnel and the associated cost of administering the SRF program over the next several years.

7.1 Agencies and Personnel Involved With SRF Program Administration

Administering the SRF program requires a mix of administrative, technical, accounting, and financial personnel. Table 7-1 shows the number and type of staff working in SRF programs in the nine study States in FYs 1989 and 1990. For the nine States, 46 percent of SRF personnel worked in technical support, 21 percent in financial management, 28 percent in general administration, and the remainder in other capacities. States' technical and financial experts often work in separate agencies. Six of the nine study States have two or three different agencies involved in running their SRF programs. Only three of the study States, New Mexico, Texas, and South Dakota, handle all aspects of their SRF program through a single agency.

The total number of personnel involved in SRF programs during FYs 1989 and 1990 varies considerably among the nine study States, ranging from 4 to 70 (see Table 7-1). To a large extent, the number of SRF program personnel employed by each State depends on SRF program variables such as the amount of SRF funding and the complexity of the program's financial activities (e.g., whether leveraging is used). For example, in FY 1989 New Mexico and South Dakota received the two smallest capitalization grant awards and did not leverage. During that same year, these States' SRF programs employed the two smallest staffs. Minnesota received the sixth largest capitalization grant of the nine study States in FY 1989. Minnesota leveraged its fund, however, and actually had the fourth largest fund in dollar terms of the study States that year. The State had a relatively large staff that year, employing 23.5 people. New Jersey, which received the second largest capitalization grant award of the study States in FY 1989 and leveraged its fund, employed the largest staff.

TABLE 7-1

Employment in Administration and Operation of SRFs
FY 1989-1990

State: Agency:	Annual Full Time Employee Equivalents					
	Staff Function					
	General Admin.	Technical Support	Financial Management		Other	State Total
Accounting			Finance			
Connecticut Treasurer Attorney General Water Compliance	4	12	5	1	1	23
Georgia Georgia EPA, Env. Protection Division Georgia Environmental Facilities Authority	3	6	1	0.25		10.25
Minnesota Public Facilities Authority Pollution Control Agency State Board of Investment	2 3	1 10	1 0.5	5 1		23.5
New Jersey Dept. of Environmental Protection Wastewater Treatment Trust	19 4.5	33	6.5 1.5	4.5 1.5		70.5
New Mexico Health and Environment	2	1	1.25			4.25
South Dakota Dept. of Water and Natural Resources	1	2.5	1	1	5.5	11
Tennessee Dept. of Health & Environment Treasury Comptroller Local Development Authority	5.5 0.5 0.1	6	1.5	0.25	0.5 0.25	14.6
Texas Water Development Board	6.5	10.8	2	1.2		20.5
Virginia State Water Control Board Virginia Resources Authority	2.8 4	10.5	1.5	3	1.5	23.3
TOTAL (% of Total)	57.9 (29%)	92.8 (46%)	22.75 (12%)	18.7 (9%)	8.75 (4%)	200.9 (100%)

Eight of the nine study States anticipate modest to substantial increases in both technical and financial personnel in the near future as staff from the construction grants program shift to the SRF program, and as the number of SRF projects and the amount of money in the SRFs increase. The ninth State, Connecticut, expects staffing needs to remain relatively constant. After the equivalency requirements¹ of the last capitalization grant are met, States may change the nature and number of SRF program staff if the workload decreases. Furthermore, the non-leveraged States may leverage their SRFs in the future, necessitating additional financial expertise.

7.2 Costs Associated With SRF Program Administration

Annual administrative expenses for 1989 to 1995 for the nine study States are presented in Table 7-2. Included in each State's estimates are all direct and indirect costs associated with SRF program administration. Also shown are each State's SRF administrative expense allowances. The allowance for 1989 is an amount equal to four percent of the actual capitalization grants awarded. The allowances for 1990 to 1994 are estimated based on the authorized capitalization grant. Program requirements limit the amount of SRF funds spent on administrative expenses in a given year to four percent of the cumulative capitalization grant amount, less previous expenditures of SRF funds on administration. States can accumulate or "bank" any unused portion of their expense allowance for use in future years.

The table shows that the cumulative SRF administrative expense allowance will be adequate in some States and not in others. Based on State estimated administrative expenses and SRF capitalization grant awards at authorized amounts, four States -- Georgia, New Mexico, Texas and Virginia -- are not projected to experience any shortfall in their coverage of administrative expenses for the 1989 to 1994 time period. South Dakota is projected to experience a small difference between its administrative expenses and the four percent capitalization grant allowance, while Tennessee is projected to experience a large differential of 30 percent. Minnesota, New Jersey, and Connecticut are projected to experience significant shortfalls. Their total administrative expenses for the time period shown will be more than double the four percent of their cumulative capitalization grant allowances. These latter shortfalls are due to the complexity and size of their programs, and, in Minnesota and New Jersey, their anticipated staffing increases. Connecticut has not projected any staffing increases.

It is important to note that no funds from capitalization grants are shown for 1995 or subsequent years. After the final Federal grant allotment, States will have to rely on alternative funding sources, such as appropriated funds, or banked allowances to cover their administrative expenses. Projected administrative expenses for 1995 are shown in Table 7-2.

¹The equivalency requirements are 16 statutory CWA Title II requirements included in Section 602(b)(6) that cover wastewater treatment projects constructed in whole or in part with funds "directly made available by" Federal SRF capitalization grant awards. These incorporate requirements on the type of technologies, analyses, and issues which must be taken into account by such projects. After States have committed funds equal to the total amount of capitalization grant awards, additional SRF-funded wastewater treatment projects are not subject to these requirements.

TABLE 7-2

Comparison of
Estimated SRF Administrative Costs And
Administrative Expense Allowances For Nine Study States
(\$ Thousands)

STATE	Actual	Projected					1989 to 1994 TOTAL	Projected 1995
	1989	1990	1991	1992	1993	1994		
Connecticut								
Estimated Admin. Costs	1,664	1,789	1,923	2,067	2,222	2,389	12,054	2,568
Administrative Allowance	892	932	1,196	892	596	296	4,804 *	-
Georgia								
Estimated Admin. Costs	606	954	1,240	1,210	990	1,030	6,030	990
Administrative Allowance	1,224	1,560	1,624	1,228	812	404	6,852 *	-
Minnesota**								
Estimated Admin. Costs	1,531	1,726	2,253	2,751	3,094	3,686	15,041	3,937
Administrative Allowance	693	880	1,760	1,320	880	440	5,973 *	-
New Jersey								
Estimated Admin. Costs***	3,650	4,370	4,570	5,370	5,670	6,070	29,700	6,070
Administrative Allowance	2,603	3,392	3,724	2,840	1,844	920	15,323 *	-
New Mexico								
Estimated Admin. Costs	50	202	242	280	320	360	1,454	400
Administrative Allowance	344	344	344	344	240	120	1,736 *	-
South Dakota								
Estimated Admin. Costs	200	200	400	400	400	400	2,000	400
Administrative Allowance	187	236	472	360	236	120	1,611 *	-
Tennessee								
Estimated Admin. Costs	147	338	863	1,393	1,753	1,982	6,476	2,171
Administrative Allowance	608	626	1,378	1,034	689	344	4,679 *	-
Texas								
Estimated Admin. Costs	1,000	1,305	2,104	2,587	2,871	3,251	13,118	3,532
Administrative Allowance	3,308	4,240	4,392	3,296	2,196	1,096	18,528 *	-
Virginia								
Estimated Admin. Costs	560	600	600	800	800	800	4,160	800
Administrative Allowance	1,228	1,080	1,924	1,444	960	480	7,116 *	-

Note: The administrative allowance is based on actual capitalization grants awarded for FY 1989, and on 4 percent of the authorized capitalization grant funding for 1990 to 1994.

* Represents the total Federal source of funds available for administering SRFs.

** Excludes bond issuance costs paid from bond proceeds.

*** New Jersey's administrative costs are estimated based on 1988 cost and staffing data, and staff increase projections, supplied by New Jersey DEP. New Jersey's 1988 costs cover most, but not all, SRF employees. Actual costs may be higher than those estimated here.

SRF program representatives made recommendations regarding the short-term (up to FY 1995) and long-term (after FY 1995) funding of administrative costs. For the short term, most States recommended increasing the four-percent ceiling or allowing four percent of the authorized, rather than the appropriated, amount. Two States recommended a separate Federal grant for administrative costs, and another suggested using investment earnings from the State funds in the SRF.

For the long term, States suggested a variety of funding methods. Five of the nine recommended instituting a closing or other type of fee to cover administrative costs. Georgia has already implemented a loan closing fee. It should be noted that any such fees collected should be kept out of the SRF itself so that they will not be counted towards or limited by the four-percent ceiling. Georgia's loan closing fees are thus placed in a non-SRF account. Several study States recommended the following administrative cost funding mechanisms, some of which are not currently allowed or viable in the SRF program:

- using fund reserves;
- using State appropriations;
- transferring unused 205(g) funds (Federal grant funds for States to implement certain Title II program management activities);
- using a portion of the debt service payments; and
- having the Federal government provide funds matching State appropriations for administrative costs on a dollar for dollar basis (up to 10 percent of the actual loans made).

SECTION EIGHT

POTENTIAL IMPACT OF THE SRF PROGRAM ON COMMUNITY USER FEES

As explained in Section Six, SRF programs offer loans at below-market rates for eligible projects. By contrast, the construction grants program generally provided a 55 percent grant for the eligible cost of projects¹ coupled in many cases with a State grant. This section examines the impact on user fees of a shift from construction grants funding to SRF funding for a typical facility. Because the SRF programs have been operating only a short time and data are not yet available on SRF-financed facilities, an analytical modeling approach is used to assess the impact of the SRF program on user fees. The sections that follow describe the scope and methodology of the analysis and present the analytical results.

8.1 Scope of the Analysis

This analysis assesses the incremental financial burden placed on households resulting from SRF loan financing of wastewater treatment facilities compared to construction grant funding. It is based on theoretical typical facilities and compares user fees for identical facilities built with SRF assistance versus construction grant funding. Although some changes in design may occur as the source of funding assistance changes from construction grants to SRF loans, interviews with State officials suggest these changes will be minor. One possible change is more construction of reserve capacity.² Reserve capacity was not eligible under the construction grants program after 1984 except in certain grandfathered, phased, or segmented projects. Reserve capacity is eligible for funding with SRF monies. As a result of the differing eligibilities of reserve capacity, the analysis assumes that a slightly higher percentage of costs are eligible under SRF financing in comparison to construction grants financing.

Land costs, except for those to acquire land that is an integral part of the treatment process or used for sludge disposal, are ineligible under both the SRF and construction grants programs. Since there will be no change in a community's ability to finance land costs with the switch to SRF funding, this item is not included in the analysis. The costs assessed here are limited, therefore, to construction and operation and maintenance (O&M) of the wastewater treatment facilities.

In conjunction with the construction grants program, States have typically provided a 10 to 15 percent State grant to municipalities. Under the SRF, States must provide a 20 percent match to receive a capitalization grant from EPA. It is not anticipated that many States will provide grants to municipalities as a general rule in conjunction with an SRF loan. However, some States anticipate the continuation of separate grant programs for special circumstances,

¹Innovative or alternative projects could receive a 75 percent grant.

²Extra treatment capacity built into treatment plants and interceptor sewers to accommodate flow increases due to future population growth.

such as communities which are economically distressed. As a result, the user fee impact analysis presented here assumes no State grants under the SRF program.

There is no provision in the analysis for existing debt, which can vary significantly from one community to the next. The incremental cost calculated here for the new facility could represent all of the financial burden for wastewater treatment in a community, or only a fraction of that burden.

8.2 Methodology

To assess the impact of user fees under the SRF program, a model which simulates user fees was developed. The model is structured to simulate user fees under the construction grants program and under the SRF program. The variables which the model uses to derive the user fees are identified in Table 8-1. The first column in Table 8-1 lists each of the different variables. The second column presents the value for each variable most commonly found under both the construction grants and SRF programs. The values in the second column were used to calculate the user fees presented in this chapter. The third column presents the range of values for the variables depending on particular conditions in a State.

Based on the input variables in Table 8-1 the model calculates other values used in the analysis. These calculated values include facility capital cost, daily flow rate, and the number of hook-ups. Output from the model includes the annual cost of capital financing (assuming level debt service), the annual O&M cost, and the total annual user fees per household under the construction grants and SRF programs. The user fee calculated by the model represents the annual incremental costs of construction and O&M for a new facility; it does not include land costs or costs of existing debt service.

Appendix F contains a sample input-output page from the model, the formulas used in the model and a description of the standard variable values and their sources, including a detailed description of the capital and O&M cost curves and their derivations. The model presented in Appendix F is designed so the user can input any of the variables presented in Table 8-1 and calculate the impact on user fees. The capital cost curve is an inflated version of EPA's Construction Costs for Municipal Wastewater Treatment Plants: 1973-1978, developed to describe construction grants-funded projects.³ The O&M cost curve is derived from a user fee survey of 161 construction grants-funded projects in EPA Region III. EPA is currently undertaking a comprehensive national survey of user fees and O&M costs.

³Cost curves reflect the capital cost of the components of a secondary treatment facility for all community size categories.

TABLE 8-1

User Charge Variables, Standard Values, and Range

VARIABLE	STANDARD VALUE	ESTIMATED RANGE
SRF interest rate:	4%	0-9%
Market interest:	8%*	7-11%
Persons/household:	Fixed at 2.64	-
Gallons/person/day:	90-110 depending on community size	90-110 depending on community size
Loan period:	20 yrs	5-20 yrs
Percent total costs eligible under a 55% construction grant:	90%	75-100%
Percent total costs** funded by State grant under construction grants program:	15%	0-25%
Percent total costs eligible under SRF:	100%	-
Percent total costs funded by State grant in con- junction with SRF loans:	0%	0-50%
Population served by facility:	Fixed at one of the following: 1,000; 2,500; 10,000; 100,000	-

*Recent cost of borrowing funds in the municipal bond market.

**Applies to all eligible costs.

8.3 Comparison of User Fees Under the SRF and Construction Grants Programs

The results of a comparison of user fees under SRF and construction grants financing for facilities serving five community population sizes are presented in Table 8-2. The results reflect the standard values displayed above in Table 8-1.

In Table 8-2, user fees are calculated as the household's proportional share of two cost components: the annualized cost of the capital expenditure and the annual operation and maintenance cost. The SRF and construction grants programs subsidize only the capital expenditure portion. But as Table 8-2 illustrates, it is the second cost, O&M, that often drives the user fees. The O&M costs account for approximately 60 percent of user fees under the SRF program and about 73 percent of user fees under the construction grants program.

Table 8-2 also shows that the size of the community served by a facility has a substantial impact on user fees under both the SRF program and the construction grants program. User fees for facilities serving communities with a population of 1,000 are over 3 times greater than user fees for facilities serving communities of 100,000. This disparity in user fees across community sizes is not altered significantly under the SRF loan program, due in part to the predominance of O&M costs in the overall user fee.

Table 8-2 indicates that user fees are higher under the SRF program than under the construction grants program. The difference in user fees under a 4 percent loan compared to a 55 percent construction grant ranges from \$72 annually for facilities serving communities of 1,000 to \$22 annually for facilities serving communities of 100,000. This represents a 21 percent increase for a community of 1,000 and a 19 percent increase for a community of 100,000.

8.4 Impact of SRF Loan Interest Rate on Level of Subsidy

The interest rate charged on SRF loans has a significant impact on user fees. One way of quantifying the value of the SRF loan subsidy is by expressing the loan interest rate in terms of a "grant equivalent." For example, a 4 percent SRF loan, the average rate charged for SRF loans by the nine study States, is equivalent to a grant subsidy of 16 percent under the construction grant program (assuming a 15 percent State grant is provided along with the construction grant). A zero interest SRF loan is equivalent to a 42 percent construction grant, while a 6 percent interest SRF loan is equivalent to a 1 percent construction grant. Table 8-3 shows various SRF loan interest rates and their construction grant equivalents.

Another way to quantify the value of the SRF loan subsidy is to compare projected user fees for facilities constructed with SRF loans to facilities constructed with market rate financing. A facility designed to serve a community of 1,000 constructed with an SRF loan using a 4 percent interest rate would have an annual user fee of \$351, whereas the same facility financed with a market rate loan charging 8 percent interest would have an annual user fee of \$407. Thus, the SRF reduces annual user fees by 14 percent. For a facility designed to serve a community of 100,000, annual user fees would be \$116 with a 4 percent SRF loan compared with \$134 for a market rate loan, a savings of 13 percent.

TABLE 8-2

**Annual Household Wastewater Treatment Costs: Comparison of State Revolving Fund
and Construction Grants Financing**

(\$ Per Household Per Year)

POPULATION SERVED BY FACILITY	CAPITAL FINANCING COST (SRF)	CAPITAL FINANCING COST (CG)	O&M COST	HOUSE- HOLD USER* FEE (SRF)	HOUSE- HOLD USER* FEE (CG)	DIFFERENCE IN USER FEE (SRF VS. CG)	PERCENT DIFFERENCE IN USER FEES (SRF VS. CG)
1,000	146	75	204	351	279	72	21%
2,500	122	62	184	306	247	59	19%
10,000	89	45	122	211	167	44	21%
100,000	47	24	70	116	94	22	19%

*Represents the user fee for a new wastewater treatment facility minus land costs.

Standard variable values:

SRF Interest Rate: 4%
 Market Interest Rate: 8%
 Gallons/Person/Day: 90-110 (depending on community size)
 Loan Period: 20 years
 Eligible Cost SRF: 100%
 Eligible Cost CG: 90%
 State Grant In Conjunction with SRF Loan: 0%
 State Grant Under CG Program: 15%

TABLE 8-3**SRF Interest Rate and Construction Grant Equivalent¹**

SRF Interest Rate	Construction ² Grant Equivalent
0%	42%
1%	36%
2%	29%
3%	23%
4%	16%
5%	9%
6%	1%

¹Ineligible costs financed at an 8% market rate.

²This number represents the construction grant equivalent (assuming construction grants are coupled with a 15% State grant) necessary to achieve the same subsidy as an SRF loan at the interest rate shown in the same row.

8.5 Summary of Key Findings

Key findings of this theoretical analysis include:

- For facilities serving the community sizes examined in this analysis, the household user fee under a 4 percent SRF loan is approximately 20 percent greater than the user fee under a 55 percent construction grant.*
- The absolute dollar difference in user fees under a 4 percent SRF loan compared to a 55 percent construction grant* ranges from about \$22 annually for a community of 100,000 to about \$72 for a community of 1,000.

*Assuming a 15 percent State grant is provided along with the construction grant.

- A 4 percent SRF loan, the average rate charged for SRF loans by the nine study States, provides the same financial subsidy as a construction grant* that funds 16 percent of eligible cost.
- Even at zero percent interest, SRF loans cannot provide the same financial subsidy as a 55 percent construction grant.* Therefore, user fees will generally be higher under the SRF program than the construction grants program.
- Community size has a substantial impact on user fees under both the SRF program and the construction grants program. Because of economies of scale, total user fees to cover operation and maintenance in addition to capital costs are estimated to be about three times as great for a community of 1,000 compared to a community of 100,000.
- While SRF loans provide less of a subsidy than construction grants, SRF loans still provide a substantial subsidy. User fees for facilities constructed with SRF loans charging 4 percent interest will be approximately 14 percent lower on average than facilities constructed with market rate financing.

*Assuming a 15 percent State grant is provided along with the construction grant.

SECTION NINE

POTENTIAL IMPACT OF THE SRF PROGRAM ON FACILITY OPERATIONS

This section summarizes the opinions of officials in the nine study States on whether the SRF program will lead to changes in the operation of wastewater treatment facilities. Because the SRF is a new program, program officials had minimal information about the impact of SRF funding on facility operation. Anticipated changes in facility sizing, design, and operating efficiency are discussed below.

9.1 Anticipated Changes in Sizing, Design, and Operation and Maintenance Costs of New Facilities

Because communities have to pay for a larger portion of project capital costs under the SRF program than under the construction grants program, they are likely to construct lower cost facilities to minimize the impact on user fees. Three of the nine study States -- New Mexico, South Dakota and Virginia -- specifically mentioned that they anticipate reductions in project costs as a result of the shift to SRF financing. A fourth State, Tennessee, said that loan applicants will try to keep their costs down, though cost reductions may not be realized right away.

SRF officials in the study States expressed divergent views on the effect of SRF on facility sizing. SRF officials in New Mexico and South Dakota expect that facilities will be smaller because communities must repay the loans and will, therefore, tend to keep the size of projects to a minimum. New Jersey and Texas expect no change in facility sizing. Georgia anticipates that facilities will actually be larger because, unlike the construction grants program, the SRF can be used to fund reserve capacity projects. Minnesota anticipates that new construction will become less common, with municipalities favoring phased improvements instead.

The SRF program provides less incentive for the use of innovative and alternative technologies than the construction grants program. While three of the nine study States require innovative and alternative technology projects be considered during the planning phase of project development, none of the study States offer any direct incentive for innovative or alternative technology projects.¹ As Georgia and New Jersey pointed out, this is a change from the construction grants program which provided direct incentives for innovative and alternative technology projects (e.g., 75 percent grants rather than 55 percent).

¹Consideration of innovative and alternative treatment technologies is one of the CWA Title II equivalency requirements (described in Footnote 3, Section 7.1). Therefore, in all States, projects subject to equivalency requirements must evaluate innovative and alternative technologies.

Four of the nine States felt that the number of innovative and alternative projects undertaken would decrease. Because the SRF is a loan program, States assume a greater financial risk. The added risk and uncertainty associated with innovative projects may discourage their use. Proven alternative technologies will still be chosen, however, and might be preferred if they have lower overall costs.

The SRF program administrators view the O&M requirements under the construction grants program as constructive and integral to the successful operation of facilities. In the interviews, they indicated that they did not intend to change their O&M requirements. In their questionnaires, eight of the nine study States said they did not expect O&M requirements to change significantly under the SRF program. The ninth State did not respond.

Most of the study State program officials anticipate little or no change in the O&M costs of facilities built with SRF funds. While the increased debt service costs under the SRF program are expected to increase pressure to keep O&M expenditures down, municipalities may also wish to spend more on O&M to prolong plant life. Seven States reported that they expect O&M costs to remain about the same under the SRF program as they were under the construction grants program.

SECTION TEN

ADVANTAGES OF THE SRF PROGRAM

The SRF program offers benefits to all levels of government concerned about water quality. These benefits are both financial and environmental, helping responsible agencies and officials to use their limited resources to achieve the goal of clean water.

10.1 Federal Government

The SRF program provides a mechanism for the Federal government to further the long-standing national policy of assisting States and local governments in financing wastewater treatment and other water quality management activities. At the same time, the program facilitates the goal of transferring the responsibility for financing water quality construction and management from the Federal government to State and local governments.

The "revolving" nature of the SRFs developed under this program allows a limited amount of Federal funds to satisfy many more water quality needs than would happen with direct grants or one-time loans.

10.2 The States

The primary benefit of the SRF program to the States is that it allows flexibility in providing financial assistance. Each State designs its SRF to address the particular water quality concerns of that State and its communities. States can structure their SRF to meet a broad range of needs or to focus on a limited number of needs of major concern. By varying the types and terms of SRF assistance, States can reach "target" types of communities or projects. Also, States can integrate or coordinate the SRF with other State programs to develop a comprehensive system for financing water quality management, tailoring the level of subsidy to the varying needs of their communities. The SRF loan repayment stream provides a continuing source of funding which is not subject to annual appropriations and therefore allows for more certain projections of the availability of funds for assistance.

Expanded eligibilities under the SRF program further increase its flexibility. In addition to the new types of activities and facilities that can be funded, SRFs, in comparison to construction grants, can fund a larger portion of the costs of traditional types of treatment works. Fewer Federal requirements apply to SRF assistance than to construction grants, and certain of the SRF funds carry none of the requirements of Title II. This reduction in requirements can reduce the cost of facilities.

10.3 Communities

Low interest rates are the single most important benefit to communities mentioned by the study States. Due to the Federal grant and State match (and in some cases leveraged funds) that capitalize SRFs and because of the funds' fiscal strength, loan recipients can obtain interest rates lower than they could get on their own. This reduced cost of capital enables some projects to be completed that otherwise would not be affordable and reduces the level of user fees required to repay project debt.

An example is provided by using the model presented in Section Eight of this report to calculate the debt service costs for a community with a population of 10,000 people, building a wastewater treatment plant with a capital cost of \$4.56 million and borrowing the entire amount. With a 20-year, four percent SRF loan the annual capital cost per household would be \$89. If the community borrowed the funds at a market interest rate of eight percent, the annual capital cost per household would be \$123, or 38 percent higher than capital cost per household with an SRF loan.

Some States, such as Minnesota and Virginia, charge no interest on SRF loans during the construction period, providing even more savings in the cost of capital. Most SRFs do not charge closing costs, providing an additional savings over market financing for loan recipients.

Even in States that charge closing costs or administrative fees, communities experience savings because the administrative burden of capital financing is centralized at the State level, realizing economies of scale. State governments are more likely than municipalities to have the management and financial institutions and expertise necessary to access the public finance market at the most advantageous time and at lower cost. These reductions in financing costs can result in significant overall savings to a community and the beneficiaries of its water quality projects and activities.

Other benefits to communities mentioned by the study States include starting construction more quickly than under the construction grants program (with resultant savings in capital cost inflation), fewer eligibility constraints, no maximum or minimum assistance amount (unless imposed by the State), and efficient disbursements for incurred costs.

Communities also benefit from many features of the SRF program discussed above as benefits to the States. State-specific SRF program design and expanded eligibilities allow more communities to meet their particular needs. The variety of assistance types (i.e., credit enhancements) broadens the scope of the program to include communities that do not require direct grant or loan assistance. Also, fewer Federal requirements and restrictions on the assistance provided can reduce administrative complexities, costs, and time delays.

Finally, the SRF provides a long-term funding program to meet the water quality management needs of many communities. The revolving nature of the fund creates a perpetual source of affordable financing. The funds invested now for the capitalization of SRFs will work for many years to assist communities in meeting their needs, providing more money for more communities.

SECTION ELEVEN

ISSUES ASSOCIATED WITH SRF IMPLEMENTATION

Officials of the nine SRF programs identified a number of areas of concern that affect their ability to effectively implement their programs. Some of these impediments arise from Federal and State statutes, regulations, and policies while others are inherent in a new financial assistance program such as the SRF. This section presents the major concerns expressed by the States and discusses the realized or potential impact of each on the program.

Federal Funding

Officials of all nine study States expressed serious concern regarding the Federal funding of the SRF program. The FY 1989 and 1990 appropriations for Clean Water Act Title II (funds of which can be transferred to the SRF program) and Title VI were less than the authorized amounts as were FY 1991 Title VI amounts. State officials believe that future appropriations will also fall short of the authorized levels.

State officials also expressed concern about uncertainty as to what the Federal funding level will be from year to year. Because the States must provide matching funds based on the capitalization grant amount, such uncertainty makes planning difficult for both the States and communities. In many States the budget process is often not coordinated with that of the Federal budget, and if an SRF fails to obtain an appropriation or bond authorization for its match because the State legislature goes out of session before the necessary amount can be determined, significant delays in program implementation can occur.

Cross-Cutting Federal Laws and Authorities

The States report that the application of other (non-CWA) Federal laws and authorities to the SRF program leads to a number of difficulties. These "cross-cutters" apply to projects funded in whole or in part by "funds directly made available" by the Federal capitalization grant. The States are unsure of their responsibilities for monitoring and assuring compliance with the cross-cutters and it is therefore difficult to build the appropriate procedures into their SRFs. This concern arises because at any time, Federal laws can be enacted that apply to the SRF program, and a permanent list of these authorities cannot be identified. (The Agency is now examining twenty-four cross-cutting Federal authorities and will soon distribute a handbook describing their application in the SRF program.) In addition, once the State responsibilities and procedures are developed, the administrative costs of the program will increase as State officials ensure compliance. While several States indicated that cross-cutting authorities that apply to assistance recipients will increase project costs and delay project completion, EPA was unable to obtain descriptions of how cross-cutters affected specific projects. State officials are also concerned about EPA's role in reviewing State project-specific compliance actions.

In order to facilitate compliance with other Federal laws and authorities, EPA is working with the appropriate Federal agencies to develop programmatic agreements for major cross-cutters that outline the roles and responsibilities of the various government entities involved. The States and their representatives have recommended another approach to managing compliance with cross-cutters. They urge that compliance be "as determined by the Governor" of each State and that the focus should be on certifying compliance with the intent of law rather than adherence to project-specific requirements. States would prefer, however, that the SRF program be exempted entirely from cross-cutters by Congress.

Effect of Program Requirements on Project Costs

Several States expressed the view that the Title VI Federal requirements associated with the SRF program add substantially to project costs, as well as administrative costs. In particular, the Title II "equivalency requirements" for treatment works, which apply only to "funds directly made available" by Federal capitalization grants, are said to reduce the program's attractiveness to communities. Texas and New Jersey officials estimate cost increases of up to 20 percent in some communities due to Federal requirements.

Tennessee SRF officials assert that prevailing wage rates mandated under the Davis-Bacon Act (one of the equivalency requirements) alone could increase project costs by as much as 30 percent. Studies reviewed by EPA show a wide variety of project cost increases due to Davis-Bacon. A 1983 study by the Federal Highway Administration estimates an impact of two to four percent, while a 1982 study by Oregon State University estimates cost increases of 26 to 38 percent in rural areas of the country. For water and sewerage systems in Utah, a 1986 study by the State of Utah reports construction bids averaging 17.5 percent higher for projects subject to the Davis-Bacon Act compared to those not subject to Federal wage rates.

In addition to impacts on individual projects, the above cost increases affect the SRF itself. As Tennessee officials point out, lower interest rates must be offered in order to counter the costs associated with program requirements and attract potential recipients. Lower interest rates result in lower repayments to the SRF which in turn can affect the fiscal health and perpetuity of the fund.

Some study States have chosen to apply the Federal requirements discussed above to all projects funded by their SRFs, not only to those projects funded by an amount equal to the "funds directly made available" by their capitalization grants ("equivalency projects"). Although not a Clean Water Act or EPA requirement, States are using this practice to facilitate the handling of projects and to provide for equal treatment to all assistance recipients.

Letter of Credit Process

Payment of capitalization grants to an SRF occurs through a Federal letter of credit (LOC). No cash is transferred to the fund until the SRF requests a cash draw, up to the amount available in the LOC, generally as a result of incurred costs. Many States indicated

that this process is an impediment to the implementation of the SRF program for a number of reasons.

Tennessee and New Mexico point out, for instance, that lack of cash payments to the SRF prevents the State from earning interest on the Federal funds. Those interest earnings would help the fund grow and increase the amount available for assistance. But in an effort to ease the pressure of program outlays on the Federal budget deficit, the LOC payment process was instituted to coordinate outlays with the actual expenditure of Federal funds. This process complies with provisions of the Intergovernmental Cooperation Act (31 USC 6501; Pub. L. 97-258) which require Federal agencies to "schedule the transfer of grant money to minimize the time elapsing between transfer of the money from the Treasury and the disbursement by a State."

The LOC payment schedule for refinancing was cited as unduly cumbersome with regard to refinancing by two of the States. One State recommended dropping the 8 equal quarter payment requirement for refinancing.

Another concern of some of the States is that the LOC adds one more level of complexity to their programs. Under a cash payment system, cash would be available for disbursement as costs are incurred. With the LOC payment system, however, a request for a cash draw from the LOC must be made before that cash is available for disbursement. The cash draw may take up to 36 hours, usually considerably less, as the funds are transferred to the SRF. The Federal LOC system is well established, and efficient procedures are in place for the electronic transfer of funds to State accounts.

There have been reports that the "LOC process" can take several weeks. States must comply with their own overlapping fiscal and accounting procedures which can impede the quick transfer of funds. Thus, although the letter of credit itself as a method of payment is not causing delays beyond the maximum of 36 hours necessary to make the electronic transfer of funds, delays are occurring in some States due to State processing problems associated with the cash disbursements.

Administrative Expenses

The CWA restricts the amount of money in an SRF that may be used for administrative expenses to four percent of all capitalization grant awards received by the fund. The amount available each year to cover administrative costs is four percent of all awards received up to and including that year minus the amount of administrative expenses paid by the fund in previous years.

A number of study States expressed concern that the allowed amount would be inadequate to pay the full costs of administering their fund. This may be especially true of leveraged funds. The States expressed particular concern about the administration of the fund after FY 1994, when capitalization grants are scheduled to end. To address this concern, States have suggested that the four percent restriction be modified or eliminated. Because Section

603(d)(7) of the Act clearly mandates this restriction, any such change would require legislative action.

SRF program representatives made recommendations regarding the short-term (up to FY 1995) and long-term (after FY 1995) funding of administrative costs. For the short term, most States recommended increasing the four-percent ceiling or allowing four percent of the authorized, rather than the appropriated, amount. Two States recommended a separate Federal grant for administrative costs, and another suggested using investment earnings from the State funds in the SRF.

For the long term, States suggested a variety of funding methods. Five of the nine recommended instituting a closing or other type of fee to cover administrative costs. Georgia has already implemented a loan closing fee. It should be noted that any such fees collected should be kept out of the SRF itself so that they will not be counted towards or limited by the four-percent ceiling. Georgia's loan closing fees are thus placed in a non-SRF account. Several study States recommended the following administrative cost funding mechanisms, some of which are not currently allowed or viable in the SRF program:

- using fund reserves;
- using State appropriations;
- transferring unused 205(g) funds (Federal grant funds for States to implement certain Title II program management activities);
- using a portion of the debt service payments; and
- having the Federal government provide funds matching State appropriations for administrative costs on a dollar for dollar basis (up to 10 percent of the actual loans made).

Eligibility of Land

The purchase of land for a wastewater treatment facility is not an eligible cost under the SRF program unless the land is integral to the treatment process or used for sludge disposal. Several States recommended that this restriction be lifted because it makes the SRF less attractive as a source of financing. Since land upon which to build a facility must often be purchased, a community seeking assistance from an SRF may have to finance land acquisition through another source. This increases total financing costs for the project, especially since the land financing is unlikely to be at a subsidized interest rate. Minnesota mentioned that this restriction is especially problematic for small communities.

The restriction on the use of SRF funds for the purchase of land is statutorily imposed by the CWA. Therefore, legislative action would be necessary to expand the eligibility of land under the SRF program.

Identification of Repayment Revenue Source

The CWA requires that recipients of SRF assistance provide a dedicated source of revenue to cover repayments. While nonpoint source, ground water, and estuarine programs are a high water quality priority in many States and are eligible for assistance under the SRF program (see Section 3 and Appendix B), the activities associated with such "expanded uses" do not typically provide a source of revenue to repay loans. Because of this, many States reported that it may be difficult to provide SRF assistance for nonpoint source and estuarine activities.

It is possible, however, to provide for repayment. Although the revenue may not be derived directly from the funded activity itself, repayment sources are available. An assistance recipient can dedicate the proceeds of fees (e.g., permit fees, inspection fees, impact fees), taxes (e.g., property taxes, sales taxes, pollution taxes), or fines and penalties to the repayment of an SRF loan. EPA is preparing a case study guidebook to present examples of how expanded use activities may be funded under the SRF program.

Ability to Reach Communities With Assistance

A few States mentioned that they anticipate difficulty in providing SRF assistance to particular communities. Some economically distressed communities cannot afford to pay back a loan even at a 0 percent interest rate. An associated problem in Minnesota is that many such communities are on the NMP list, making it difficult to meet SRF first use requirements.¹ States will have to work closely with communities that have financial capability problems to structure an assistance package that provides adequate, affordable funding to meet water quality objectives and regulations.

Financial and Legal Aspects of the Program

A number of States commented that SRFs involve more financial and legal complexity than construction grants and many other funding programs. States and communities have an increasing need for expertise in public finance and bond and tax law to effectively utilize SRFs. While these added complexities can increase costs, they also are the elements of the program that increase the available forms of assistance (i.e., credit enhancements) and the amount of funds available (i.e., leveraging). Each State should determine whether or not its water quality needs are such that its SRF should incorporate various financial complexities.

EPA is aware of the potential delays and problems that financial and legal complexities may present to the program. In an effort to assist States to develop and implement effective SRFs, the Agency has put in place a mission support contract for use by EPA Headquarters, Regional Offices, and States. The contract team can provide the advice and support of

¹See Section 4.3 for a discussion of "first use."

financial managers, investment bankers, and bond attorneys during the establishment of most SRFs.

Federal Tax Laws and Regulations

Many SRFs issue bonds to raise State match, overmatch, or leverage funds. Some programs purchase, refinance, or provide security for local bonds issued for wastewater treatment projects. In order to minimize the cost of capital, States and municipalities may use tax-exempt financing in these situations. By doing so, however, SRFs become subject to the many provisions of Federal tax laws and regulations that affect tax-exempt bonds. The statutory and regulatory framework surrounding tax-exempt financing is very complex and cannot be covered in this report. The intent of this section is to identify the principal provisions that affect SRFs.

Most of the statutory provisions that affect the program are contained in the Tax Reform Act of 1986 and the Technical Corrections and Miscellaneous Revenue Act of 1988. They pertain to the following five areas.

- Arbitrage (including yield restriction and arbitrage rebate)

Generally, arbitrage profit is the difference in the interest rate paid on tax-exempt bonds and the rate of interest earned on investments made with proceeds of those bonds. Yield restriction is the general prohibition on earning such profits. Arbitrage rebate is the required payment to the U.S. Treasury of such profits in the few cases where they are permitted.

- Advance funding restrictions.

A refunding bond issue is an issue in which the proceeds are used to service or retire the debt on previously issued bonds. The refunding issue would generally have a lower interest rate than the issue to be refunded, thereby providing the issuer with lower borrowing costs. An advance refunding transaction is the issuance of the new bonds more than 90 days in advance of the retirement of the existing bonds. The Tax Reform Act of 1986 limits the ability of issuers to advance refund bonds.

- Debt service reserve funds.

Many bond issues are sold with the condition that a portion of the proceeds be used as a debt service reserve fund to assure bond purchasers that payment will be made on the bonds for a certain period of time. Federal tax laws limit the amount of bond proceeds that can be used for this purpose, generally require rebate of related arbitrage profits, and, in some cases, restrict the yield of these funds.

- Governmental use bonds/private activity bonds.

Bonds are categorized based on the purposes for which the proceeds are used and the nature of the source of repayment or security for the bonds.

Government use bonds are generally granted tax-exempt status while interest on private activity bonds is generally taxable but can be tax-exempt under certain specific exceptions. Private activity bonds lose their tax-exempt status when the proceeds are used to fund a project which violates certain private activity restrictions.

- Pooled bond restrictions.

A pooled bond issue is one in which the proceeds are distributed to multiple entities. Pooled bonds are sometimes "blind" and the ultimate borrowers of the proceeds are not identified when the bonds are issued. The tax code places restrictions on the issuance of pooled bonds and the subsequent use of the proceeds.

Although none of the tax laws or regulations prevent a State from developing an SRF and making use of the financial mechanisms allowed under the CWA, they do restrict the flexibility of the States in structuring their SRFs. These provisions can increase the costs of providing assistance and administering the program. Arbitrage tracking, for example, can be an intricate and costly process. Delays can occur during program development and implementation as State officials and bond counsel ensure that the program follows the applicable laws and regulations. This diligence is necessary to safeguard the tax-exempt status of SRF-related bonds.

APPENDIX A

SRF REPORT TO CONGRESS WORKGROUP MEMBERS

APPENDIX A

SRF REPORT TO CONGRESS WORKGROUP MEMBERS

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APPENDIX B

NEEDS ASSOCIATED WITH NEW SRF PROGRAM FUNDING ELIGIBILITIES AND NEW ENFORCEABLE REQUIREMENTS

APPENDIX B

NEEDS ASSOCIATED WITH NEW SRF PROGRAM FUNDING ELIGIBILITIES AND NEW ENFORCEABLE REQUIREMENTS

This Appendix describes the potential impact of new funding eligibilities and new requirements under the CWA on the need for SRF financing. The discussion considers these issues primarily from a qualitative, national perspective rather than a quantitative, State-specific one. This approach is necessary because the cost implications of many of the new requirements are either not available or, when available, are very preliminary.

B.1 New Funding Eligibilities

Nonpoint Source Pollution Control

Congress specified in the 1987 Amendments to the CWA that States prepare Assessment Reports to identify the significant impact that nonpoint source (NPS) pollution can have on water bodies. These reports should identify waters unlikely to achieve water quality standards without NPS controls as well as the sources causing the water quality impairment. In addition, Section 319 of the CWA requires States to develop Management Programs to address these impairments.

Almost all States have submitted their Assessment Reports and Management Programs. EPA has approved or partially approved management programs for all but two jurisdictions. EPA and State agencies will identify funds available to carry out the activities necessary for meeting water quality standards. Funding is authorized in the CWA to implement these NPS control activities, and includes grants under Section 319 and Section 201(g)(1)(B) and assistance from the SRF program.

To be eligible for SRF financing, NPS activity must meet three threshold requirements: the State must have SRF-authorizing legislation which makes Section 319 activities eligible for SRF assistance, the activity must be included in the State's approved NPS Management Program, and the activity must be on the State's SRF Intended Use Plan (IUP). Four of the nine study States have indicated they plan to fund NPS activities through the SRF program in the future.

Estuarine Protection

Section 320 of the CWA established the National Estuary Program to ensure protection of estuarine areas "threatened by pollution, development, or overuse." The program calls for the development and implementation of Comprehensive Conservation and Management Plans (CCMPs) to achieve this protection.

As of July 1990, 17 estuaries had been accepted for participation in the National Estuary Program:

- Buzzards Bay, Massachusetts
- Narragansett Bay, Rhode Island
- Long Island Sound, Connecticut and New York
- Puget Sound, Washington
- San Francisco Bay, California
- Santa Monica Bay, California
- Albemarle/Pamlico Sounds, North Carolina
- New York/New Jersey Harbor, New York and New Jersey
- Delaware Estuary, Delaware and New Jersey
- Delaware Inland Bays, Delaware
- Sarasota Bay, Florida
- Galveston Bay, Texas
- Casco Bay, Maine
- Massachusetts Bays, Massachusetts
- Indian River Lagoon, Florida
- Tampa Bay, Florida
- Barataria-Terrebonne, Louisiana

In coordination with the States, EPA convenes management conferences to develop CCMPs for estuaries included in the National Estuary Program. Conference planning activities and actions needed to implement the CCMPs are eligible for funding under the SRF program. Since most of the management conferences are still assessing the status of their estuaries, final CCMPs have yet to be developed. Consequently, comprehensive cost estimates for CCMP implementation activities are not available at this time.

Of the nine study States, only three (Connecticut, New Jersey, and Texas) have approved estuaries under the National Estuary Program. While none of the States have indicated they intend to fund CCMP activities with SRF funds, Connecticut reported that it intends to make loans for wastewater treatment and CSO projects that are closely tied to the nutrient reduction strategy being developed for the Long Island Sound CCMP.

Ground-Water Protection

Section 319 of the CWA emphasizes ground-water protection by encouraging States to assess the impact of NPS problems on ground-water quality and by authorizing grants for ground-water protection activities related to nonpoint source problems. As an ongoing effort under Section 106 of the CWA, EPA provides grant money to States to support the development of State Ground-Water Protection Strategies. Most States have submitted Ground-Water Protection Strategies to EPA. The Agency encourages States to keep the Strategies current.

The CWA provides a mechanism for using SRF monies for ground-water protection under the NPS program. For ground-water protection activities to be eligible, they must be

identified in the State's EPA-approved NPS Management Program through direct identification or incorporation by reference to the State's Ground-Water Protection Strategy. State Ground-Water Protection Strategies do not generally include cost estimates. Therefore, it is not possible at this time to determine the extent to which ground-water protection activities will add to the total cost of SRF-eligible water pollution control activities.

Wetlands Protection

EPA encourages states to coordinate planning and implementation of programs for nonpoint source pollution control, ground-water protection and estuarine protection. Although no new program efforts were established for wetlands protection in the 1987 Amendments, wetlands protection is also a priority concern. Implementation of wetlands protection activities is SRF-eligible to the extent that the activities are included as part of approved State Nonpoint Source Management Programs or estuary CCMPs.

Maintaining Permit Compliance

Traditional Needs Surveys have not captured the needs associated with wastewater treatment facilities which are compliant at the time of the survey, but in need of near term improvements, because they are at a design capacity, near retirement, or in an area where stream standards will be upgraded. This is particularly critical in areas which are experiencing population growth. These needs are eligible for funding from SRFs and will add substantially to States' total needs for wastewater funding.

B.2 New Enforceable Requirements

Separate Storm Sewers

The 1987 Clean Water Act Amendments expand the permitting program for discharges from municipal separate storm sewers to include comprehensive storm water quality management programs to reduce the discharge of pollutants. Section 402(p) of the CWA provides deadlines for EPA to establish permit application requirements for discharges from large municipal separate storm sewer systems (systems serving a population of 250,000 or more) and discharges from medium municipal separate storm sewer systems (systems serving a population between 100,000 and 250,000). EPA is to study discharges from other municipal separate storm sewers and issue regulations based on the results of these studies.

On November 16, 1990, EPA published a final rule on permit application requirements in the Federal Register. The rule covers permit application requirements for discharges from large and medium municipal separate storm sewers. The requirements are sufficiently flexible to allow the development of site-specific permit conditions. Under the requirements, municipal applicants will be required to submit proposed storm water management programs as part of their permit application.

The proposed management programs will address a wide range of structural and nonstructural controls. Structural controls include the removal of illicit connections, regional storm water management basins, retention and infiltration basins, and other retrofit projects. Nonstructural controls include developing and implementing an ordinance to control construction site runoff, street sweeping, operation and maintenance improvements, public education programs, and waste collection programs to discourage illegal dumping.

Structural improvements to municipal separate storm sewer systems qualify for assistance from Federal funds authorized after FY 1990 for the SRF program. Activities for storm water pollution control are also eligible for SRF assistance if they are part of approved Section 319 State Nonpoint Source Management Programs or Section 320 estuary Comprehensive Conservation and Management Plans. Structural improvements and control activities for storm sewers that are part of these programs will, therefore, increase SRF-eligible needs. Estimates of the dollar amount of the increase are not yet available. Initial cost estimates should be available after municipal applicants submit cost analyses of implementing municipal storm water management programs. These cost analyses are required as part of the permit application for large and medium-sized municipal systems.

Discharge of Toxic Pollutants

Section 304(l) of the CWA requires EPA and the States to address the reduction of toxics from point source discharges. EPA promulgated requirements to implement Section 304(l) in June 1989. Section 304(l) required States to prepare lists of water bodies not meeting water quality standards because of point source discharges of one or more of the 126 priority toxic pollutants. Section 304(l) also required States to prepare lists of point sources discharging these pollutants and to develop control strategies to reduce these discharges.

As of July 1990, the States and EPA had identified 193 municipal facilities and 53 CSOs or storm water drains that are discharging toxic pollutants into impaired waters. To comply with new, more stringent limits on toxic pollutants, the treatment facilities will have to choose between either enforcing more stringent pretreatment requirements or installing more advanced technology within the facility. Communities with CSO and storm sewer problems will have a choice of adopting either nonstructural (e.g., street cleaning) or structural (e.g., separation of sanitary and storm sewers) controls. With certain restrictions, these options are eligible for assistance from SRFs.

EPA and the States have completed identifying impaired waters and point sources of toxic discharges and are now completing control strategies. After public comment, additional water bodies and facilities have been added to States' lists, while others have been deleted. After the control strategies become incorporated into final permits, facilities will have three years to comply with their new effluent limits. Because most facilities have yet to determine necessary treatment modifications, it is not possible to assess the cost of these new controls at this time.

Sludge Use and Disposal Regulations

Sludge is a byproduct of the wastewater treatment process. Treatment facilities bear the responsibility for disposing of sludge, which can contain toxic components. The 1987 CWA Amendments require EPA to identify toxic pollutants of concern in sludge, establish numerical limits for each pollutant, and determine appropriate use and disposal practices to protect human health and the environment.

EPA proposed regulations in February 1989 that address five sludge use and disposal practices: incineration, land application, monofill (sludge-only), distribution and marketing, and surface impoundments. These new requirements may generate additional costs for treatment facilities. SRF programs can provide financial assistance for the capital costs of POTW investments. Eligible capital costs might include upgrades for an existing treatment process, hardware purchases for sludge disposal (e.g., a truck to transport the material to a landfill), or engineering costs associated with a capital investment project.

As part of its regulatory development process, EPA prepared a regulatory impact analysis estimating the costs to treatment works of complying with the proposed regulations. Data in the record provide a basis for estimating capital costs. The total capital costs (including engineering costs) associated with POTW compliance with the proposed sludge regulations are estimated to be \$408.3 million (1988 dollars). This cost estimate is for the proposed regulation; the cost associated with the final regulation may differ substantially.

Ocean Dumping Ban Act

The Ocean Dumping Ban Act of 1988 affects the State Revolving Fund program in New York and New Jersey. The Act requires these states to commit ten percent of their capitalization grants awarded for fiscal years 1990 and 1991, and ten percent of their State match associated with those grants, to provide assistance authorized under Title VI for identifying, developing, and implementing alternatives to ocean dumping of sewage sludge.

Summary

Sludge use and disposal, new toxics requirements, separate storm water sewers, NPS pollution control, and ground-water, estuary, and wetlands protection activities all could add substantially to SRF-eligible activities. With the exception of the estimated \$408 million for compliance with proposed sludge use and disposal regulations, comprehensive estimates of the financing needs for these new eligibilities and requirements are not available. It is anticipated that costs associated with new funding eligibilities and new requirements will substantially exceed the Category I through V needs estimated in the 1988 Needs Survey.

APPENDIX C

ESTIMATED ANNUAL FUNDING FOR SRFS AND OTHER STATE PROGRAMS BY STATE

TABLE C-1
Estimated Annual Funding for SRFs and Other State Programs by State
(\$ Millions)

Funding Source	Actual		Projected									
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Connecticut												
SRF Cap Grant	28.1	22.3	23.3	29.9	22.3	14.9	7.4					
State Match	5.6	4.4	4.6	6.0	4.4	3.0	1.5					
Overmatch	52.8	23.2	70.8	35.2	37.6	38.0	41.3	43.4	42.6	41.9	41.0	40.4
Leveraged Funds												
Loan Repayments	0	0	0	5.2	8.2	14.2	18.7	23.0	27.4	30.9	34.9	38.5
SRF Sub-total	86.5	49.9	98.7	76.3	72.5	70.1	68.9	66.4	70.0	72.8	75.9	78.9
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
SRF Available	86.5	49.9	98.7	76.3	72.5	70.1	68.9	66.4	70.0	72.8	75.9	78.9
State Grant Program(s)	21.6	12.4	24.6	18.8	18.0	19.0	17.2	16.6	17.4	18.1	19.0	19.6
Other State Sources												
TOTAL	108.1	62.3	123.3	95.1	90.5	89.1	86.1	83.0	87.4	90.9	94.9	98.5
Georgia												
SRF Cap Grant	28.0	30.6	39.0	40.6	30.7	20.3	10.1					
a State Match	(5.6)	(6.1)	(7.8)	(8.1)	(6.1)	(4.1)	(2.0)					
Overmatch												
Leveraged Funds												
Loan Repayments	0	0.2	2.0	3.9	5.2	7.9	10.1	11.8	12.9	13.6	14.3	14.9
SRF Sub-total:	28.0	30.8	41.0	44.5	35.9	28.2	20.2	11.8	12.9	13.6	14.3	14.9
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
SRF Available	28.0	30.8	41.0	44.5	35.9	28.2	20.2	11.8	12.9	13.6	14.3	14.9
State Grant Program(s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Other State Sources	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
TOTAL	54.0	56.8	67.0	70.5	61.9	54.2	46.2	37.8	38.9	39.6	40.3	40.9
Minnesota												
SRF Cap Grant	0	17.3	22.0	44.0	33.0	22.0	11.0					
State Match	0	3.4	4.4	8.8	6.6	4.4	2.2					
Overmatch												
Leveraged Funds		46.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
b Loan Repayments												
SRF Sub-total	0	66.7	74.4	100.8	87.6	74.4	61.2	48.0	48.0	48.0	48.0	48.0
SRF Debt Service Reserve	0	-17.3	-22	-44	-33	-22	-11	0	0	0	0	0
SRF Available	0	49.4	52.4	56.8	54.6	52.4	50.2	48	48	48	48	48
State Grant Program(s)	23.0	24.0	9.0	21.7	20.2	18.6	17.0	15.5	16.3	17.1	18.0	18.9
Other State Sources	6.8	9.8	6.8	6.8	6.8	6.8	6.8	6.8				
TOTAL	29.8	83.2	68.2	85.3	81.6	77.8	74.0	70.3	64.3	65.1	66.0	66.9

Note: Numbers in parentheses indicate monies not considered available for wastewater project funding and are not included in the State totals. The table projects SRF capitalization grant funding at authorized levels.

- a Georgia's State match comes from non-SRF State loans that are designated for repayment into the SRF. The repayments on Georgia's State match loans are included with the State's SRF loan repayments.
- b Minnesota's loan repayments are used to repay State bond issues.

TABLE C-1 continued
Estimated Annual Funding for SRFs and Other State Programs by State
(\$ Millions)

Funding Source	Actual		Projected									
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
New Jersey												
SRF Cap Grant	70.3	65.1	84.8	93.1	71.0	46.1	23.0					
State Match	14.1	13.0	17.7	19.4	14.8	9.6	4.8					
Overmatch												
Leveraged Funds	67.0	69.8	94.3	104.9	84.0	61.0	40.6	20.2	24.2	26.7	27.9	28.1
Loan Repayments	0	0.2	0.7	2.1	5.6	10.1	15.2	20.2	24.2	26.7	27.9	28.1
SRF Sub-total	151.4	148.1	197.5	219.5	175.4	126.8	83.6	40.4	48.4	53.4	55.8	56.2
SRF Debt Service Reserve	-14.1	-6.5	-8.9	-9.7	-7.4	-4.8	-2.4	0	0	0	0	0
SRF Available	137.3	141.6	188.6	209.8	168.0	122.0	81.2	40.4	48.4	53.4	55.8	56.2
State Grant Program(s)	0	19.6										
Other State Sources	56.6	44.4										
TOTAL	193.9	205.6	188.6	209.8	168.0	122.0	81.2	40.4	48.4	53.4	55.8	56.2
New Mexico												
SRF Cap Grant	5.8	8.6	8.6	8.6	8.6	6.0	3.0					
State Match	1.1	1.8	1.1	1.7	1.7	1.7	0.6					
Overmatch	1.7	0	0	0.9	0.3	0.8	1.4					
Leveraged Funds												
Loan Repayments	0	0	0.1	0.6	1.0	2.3	3.1	3.9	4.5	5.0	6.0	8.0
SRF Sub-total	8.6	10.4	9.8	11.8	11.6	10.8	8.1	3.9	4.5	5.0	6.0	8.0
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
SRF Available	8.6	10.4	9.8	11.8	11.6	10.8	8.1	3.9	4.5	5.0	6.0	8.0
State Grant Program(s)	4.2	3.5	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Other State Sources	0.2	0	0	0	0	0	0.3	0.5	0.5	0.5	0.5	0.5
TOTAL	13.0	13.9	10.8	12.8	12.1	11.3	8.9	4.9	5.5	6.0	7.0	9.0
South Dakota												
SRF Cap Grant	0	4.7	5.9	11.8	9.0	5.9	3.0					
State Match	0	0.9	1.2	2.4	1.8	1.2	0.6					
Overmatch												
Leveraged Funds												
c Loan Repayments	0	0	0	0.4	0.8	1.6	2.2	2.6	3.7	5.0	5.0	5.1
SRF Sub-total	0	5.6	7.1	14.6	11.6	8.7	5.8	2.6	3.7	5.0	5.0	5.1
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
SRF Available	0	5.6	7.1	14.6	11.6	8.7	5.8	2.6	3.7	5.0	5.0	5.1
d State Grant Program(s)	0.4	0.6										
e Other State Sources	0	(1.2)										
TOTAL	0.4	6.2	7.1	14.6	11.6	8.7	5.8	2.6	3.7	5.0	5.0	5.1

Note: Numbers in parentheses indicate monies not considered available for wastewater project funding and are not included in the State totals. The table projects SRF capitalization grant funding at authorized levels.

- c The interest portion of South Dakota's loan repayments goes to pay off State Match bonds and is therefore not included here as it is not available to the SRF.
- d The amount of State grant funds available in South Dakota for 1990 to 1999 is unknown.
- e The \$ 1.2 million included under 1989 "Other State Sources" represents a State appropriation used to guarantee State match bonds - when no longer necessary this will be deposited into South Dakota's SRF.

TABLE C-1 continued
Estimated Annual Funding for SRFs and Other State Programs by State
(\$ Millions)

Funding Source	Actual		Projected									
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Tennessee												
SRF Cap Grant	24.8	15.2	15.6	34.5	25.8	17.2	8.6					
State Match	5.0	2.7	3.1	6.9	5.2	3.5	1.7					
Overmatch	0.3											
Leveraged Funds												
Loan Repayments	-	-	0.7	2.0	3.2	5.8	8.8	11.3	13.3	14.9	15.8	16.9
SRF Sub-total	30.1	17.9	19.4	43.3	34.2	26.4	19.1	11.3	13.3	14.9	15.8	16.9
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
 SRF Available	 30.1	 17.9	 19.4	 43.3	 34.2	 26.4	 19.1	 11.3	 13.3	 14.9	 15.8	 16.9
State Grant Program(s)	8.1	7.9	8.6	8.2	4.5	6.2	7.9	9.6				
Other State Sources	69.3	9.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
 TOTAL	 107.5	 35.4	 34.5	 58.0	 45.1	 39.1	 33.5	 27.4	 19.8	 21.4	 22.3	 23.4
Texas												
SRF Cap Grant	105.2	82.7	106.0	109.8	82.4	54.9	27.4					
State Match	21.0	16.6	21.2	22.0	16.5	11.0	5.5					
Overmatch	0	66.1										
Leveraged Funds												
f Loan Repayments	0	0.8	4.7	11.5	24.8	34.1	41.6	47.0	50.2	52.5	54.9	57.4
SRF Sub-total	126.2	166.2	131.9	143.3	123.7	100.0	74.5	47.0	50.2	52.5	54.9	57.4
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
 SRF Available	 126.2	 166.2	 131.9	 143.3	 123.7	 100.0	 74.5	 47.0	 50.2	 52.5	 54.9	 57.4
State Grant Program(s)												
Other State Sources	32.7	0	0	25.0	25.0	25.0	25.0	6.0				
 TOTAL	 158.9	 166.2	 131.9	 168.3	 148.7	 125.0	 99.5	 53.0	 50.2	 52.5	 54.9	 57.4
Virginia												
SRF Cap Grant	39.9	30.7	27.0	48.1	36.1	24.0	12.0					
State Match	8.0	6.1	6.0	10.0	7.2							
Overmatch	1.9	-	20.0	-	2.8							
Leveraged Funds												
Loan Repayments	0	0.2	1.8	5.0	6.6	8.8	13.3	16.8	19.4	22.5	23.0	23.7
SRF Sub-total	49.8	37.0	54.8	63.1	52.7	32.8	25.3	16.8	19.4	22.5	23.0	23.7
SRF Debt Service Reserve	0	0	0	0	0	0	0	0	0	0	0	0
 SRF Available	 49.8	 37.0	 54.8	 63.1	 52.7	 32.8	 25.3	 16.8	 19.4	 22.5	 23.0	 23.7
State Grant Program(s)	0.4	0.2	0.2	0.2	0.2							
Other State Sources	77.6	33.2	80.0									
 TOTAL	 127.8	 70.4	 135.0	 63.3	 52.9	 32.8	 25.3	 16.8	 19.4	 22.5	 23.0	 23.7

Note: The table projects SRF capitalization grant funding at authorized levels.

f Only the portion of Texas' loan repayments which are available to the SRF are shown here. The interest portion of Texas' loan repayments go to pay off State Match bonds and some repayment funds are used to pay off overmatch or leveraged bonds; these portions are not included here as they are not available to the SRF.

APPENDIX D

**TOTAL ANNUAL CONTRIBUTIONS OF FEDERAL AND STATE FUNDS
AVAILABLE BY STATE**

TABLE D-1
Total Annual Contributions of Federal and State Funds For Wastewater Projects
for Nine Study States
(\$ Millions)

Funding Source	Actual		Projected									
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Connecticut												
CWA Title II and VI	28.1	22.3	23.3	29.9	22.3	14.9	7.4					
Other Federal	0	0	0	0	0	0	0	0	0	0	0	0
State	80.0	40.0	100.0	65.2	68.2	74.2	78.7	83.0	87.4	90.9	94.9	98.5
Total	108.1	62.3	123.3	95.1	90.5	89.1	86.1	83	87.4	90.9	94.9	98.5
Georgia												
CWA Title II and VI	36.5	30.6	39.0	40.6	30.7	20.3	10.1					
Other Federal	26.9	24.8	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
State	26.0	26.2	28.0	29.9	31.2	33.9	36.1	37.8	38.9	39.6	40.3	40.9
Total	89.4	81.6	92.0	95.5	86.9	79.2	71.2	62.8	63.9	64.6	65.3	65.9
Minnesota												
CWA Title II and VI	42.2	17.2	22.3	**	**	**	**					
Other Federal	8.6	9.1	10.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
State**	29.8	83.2	68.2	85.3	81.6	77.8	74.0	70.3	64.3	65.1	66.0	66.9
Total	80.6	109.4	101.4	89.9	86.2	82.4	78.6	74.9	68.9	69.7	70.6	71.5
New Jersey												
CWA Title II and VI	87.9	74.0	93.4	93.1	71.0	46.1	23.0					
Other Federal	NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
State**	123.6	140.5	103.9	116.7	97.0	75.9	58.2	40.4	48.4	53.4	55.8	56.2
Total	211.5	214.5	197.3	209.8	168.0	122.0	81.2	40.4	48.4	53.4	55.8	56.2
New Mexico												
CWA Title II and VI	10.8	8.6	8.6	8.6	8.6	6.0	3.0					
Other Federal	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
State	7.2	5.3	2.2	4.2	3.5	5.3	5.9	4.9	5.5	6.0	7.0	9.0
Total	19.0	14.9	12.3	13.8	13.1	12.3	9.9	5.9	6.5	7.0	8.0	10.0
South Dakota												
CWA Title II and VI	11.3	9.3	7.9	11.8	9.0	5.9	3.0					
Other Federal	0.8	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
State**	0.4	1.5	1.2	2.8	2.6	2.8	2.8	2.6	3.7	5.0	5.0	5.1
Total	12.5	11.3	10.0	15.5	12.5	9.6	6.7	3.1	4.2	5.5	5.5	5.6
Tennessee												
CWA Title II and VI	38.4	23.5	19.0	34.5	25.8	17.2	8.6					
Other Federal	17.6	17.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
State	82.7	20.2	18.9	23.6	19.3	21.9	24.9	27.4	19.8	21.4	22.3	23.4
Total	138.7	61.3	42.5	62.6	49.7	43.7	38.1	32.0	24.4	26.0	26.9	28.0
Texas												
CWA Title II and VI	165.3	96.0	106.0	109.8	82.4	54.9	27.4					
Other Federal	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
State	53.7	83.5	25.9	58.5	66.3	70.1	72.1	53.0	50.2	52.5	54.9	57.4
Total	242.1	202.6	155.0	191.4	171.8	148.1	122.6	76.1	73.3	75.6	78.0	80.5
Virginia												
CWA Title II and VI	48.3	42.4	27.0	48.1	36.1	24.0	12.0					
Other Federal	14.7	12.0	12.5	12.5	12.5	12.5	12.5	NA	NA	NA	NA	NA
State	87.9	39.7	108.0	15.2	16.8	8.8	13.3	16.8	19.4	22.5	23.0	23.7
Total	150.9	94.1	147.5	75.8	65.4	45.3	37.8	16.8	19.4	22.5	23.0	23.7

Note: Table projects Federal Title II and VI funding at authorized levels.

* NA = Not Available

**Excludes funds considered not available for wastewater project funding, including debt service reserves and monies used to repay State bonds.

APPENDIX E

**DISTRIBUTION OF AVAILABLE FUNDS BY
TYPES OF ASSISTANCE BY STATE**

TABLE E-1
Types of SRF Assistance in Connecticut
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	86.5 (99.1%)	50.9 (98.3%)	98.7 (98.9%)	281.8 (99.7%)	364.0 (100%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	0	0	0	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	0.8 (0.9%)	0.9 (1.7%)	1.1 (1.1%)	0.8 (0.3%)	0
TOTAL	87.3 (100%)	51.8 (100%)	99.8 (100%)	282.6 (100%)	364.0 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-2
Types of SRF Assistance in Georgia
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	26.0 (95.9%)	29.0 (96.0%)	32.8 (83.5%)	68.7 (65.0%)	67.5 (100%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	0	5.0 (12.7%)	33.0 (31.2%)	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	1.1 (4.1%)	1.2 (4.0%)	1.5 (3.8%)	4.0 (3.8%)	0
TOTAL	27.1 (100%)	30.2 (100%)	39.3 (100%)	105.7 (100%)	67.5 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-3
Types of SRF Assistance in Minnesota
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	0	47.0 (83.4%)	48.0 (81.8%)	192.0 (81.6%)	240.0 (82.8%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	1.8 (3.1%)	2.0 (3.4%)	8.0 (3.4%)	10.0 (3.4%)
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt* (% of Total)	0	6.9 (12.2%)	8.0 (13.6%)	32.0 (13.6%)	40.0 (13.8%)
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)** (% of Total)***	0	0.7 (1.2%)	0.7 (1.2%)	3.3 (1.4%)	0
TOTAL	0	56.4 (100%)	58.7 (100%)	235.3 (100%)	290.0 (100%)

*In addition to the Debt Service Reserve Fund, loan repayments are also pledged to bond holders as a moral obligation of the State.

**The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

***Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-4
Types of SRF Assistance in New Jersey
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	134.0 (88.9%)	139.6 (93.9%)	188.6 (93.8%)	581.0 (94.1%)	254.2 (100%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	0	0	0	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	14.1 (9.4%)	6.5 (4.4%)	8.9 (4.4%)	24.3 (3.9%)	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	2.7 (1.8%)	2.6 (1.7%)	3.5 (1.7%)	12.1 (2.0%)	0
TOTAL	150.8 (100%)	148.7 (100%)	201.0 (100%)	617.4 (100%)	254.2 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-5
Types of SRF Assistance in New Mexico
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	2.8 (100%)	16.0 (100%)	9.3 (95.9%)	33.8 (97.1%)	27.4 (95.8%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	0	0	0	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)***	0	0	0.4 (4.1%)	1.0 (2.9%)	1.2** (4.2%)
TOTAL	2.8 (100%)	16.0 (100%)	9.7 (100%)	34.8 (100%)	28.6 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

**New Mexico anticipates that it may bank a portion of its 4% of cap. grant administrative allowance for use after 1995.

***Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-6
Types of SRF Assistance in South Dakota
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	0	5.7 (96.9%)	7.1 (97.5%)	39.6 (94.8%)	22.7 (100%)
Purchase or Refinance Existing Debt Obligation (% of Total)	0	0	0	1.0 (2.4%)	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	0	0.2 (3.1%)	0.2 (2.5%)	1.2 (2.8%)	0
TOTAL	0	5.9 (100%)	7.3 (100%)	41.8 (100%)	22.7 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-7
Types of SRF Assistance in Tennessee
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	19.1 (96.7%)	15.9 (96.7%)	18.1 (96.7%)	99.9 (96.7%)	95.0* (100%)
Purchase or Refinance** Existing Debt Obligation (% of Total)	NA	NA	NA	NA	NA
Guarantee or Purchase Insurance for Local Debt (% of Total)	NA	NA	NA	NA	NA
Revenue or Security for SRF Debt (% of Total)	NA	NA	NA	NA	NA
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	NA	NA	NA	NA	NA
Administrative Expenses (max. 4% of cap. grant)*** (% of Total)****	0.7 (3.3%)	0.5 (3.3%)	0.6 (3.3%)	3.4 (3.3%)	0
TOTAL	19.8 (100%)	16.4 (100%)	18.7 (100%)	103.3 (100%)	95.0** (100%)

*Does not include loans from non-SRF State loan program.

** Refinancing may be done under Tennessee's SRF law.

***The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

****Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-8
Types of SRF Assistance in Texas
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	96.3 (76.3%)	162.0 (97.9%)	123.0 (96.7%)	318.5 (96.7%)	303.5 (100%)
Purchase or Refinance Existing Debt Obligation (% of Total)	25.7 (20.4%)	0	0	0	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	4.2 (3.3%)	3.4 (2.1%)	4.2 (3.3%)	11.0 (3.3%)	0
TOTAL	126.2 (100%)	165.4 (100%)	127.2 (100%)	329.5 (100%)	303.5 (100%)

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

TABLE E-9
Types of SRF Assistance in Virginia
(\$Millions)

	Funds Committed (millions of \$)				
	Federal Fiscal Year(s)				
TYPE OF ASSISTANCE	1988	1989	1990	1991-1994 Aggregated	1995-1999 Aggregated
Loans (i.e., new loans) (% of Total)	34.9 (73.4%)	34.9 (93.7%)	60.0 (98.7%)	136.0 (97.1%)	0
Purchase or Refinance Existing Debt Obligation (% of Total)	12.2 (25.6%)	1.5 (4.0%)	0	0	0
Guarantee or Purchase Insurance for Local Debt (% of Total)	0	0	0	0	0
Revenue or Security for SRF Debt (% of Total)	0	0	0	0	0
Loan Guarantees for "Sub-State Revolving Funds" (% of Total)	0	0	0	0	0
Administrative Expenses (max. 4% of cap. grant)* (% of Total)**	0.5 (1.0%)	0.8 (2.2%)	0.8 (1.3%)	4.0 (2.9%)	0
TOTAL	47.6 (100%)	37.2 (100%)	60.8 (100%)	140.0 (100%)	0

*The CWA restricts the amount of SRF money that may be used for administrative expenses to 4% of all capitalization grant awards received by the fund. The amount of SRF money available each year for administrative expenses is limited to 4% of all grant awards minus the amount of administrative expenses paid by the SRF in previous years.

** Note that this number is a percentage of total SRF funds available, not a percentage of capitalization grant awards.

APPENDIX F
USER FEE CALCULATION MODEL

APPENDIX F

USER FEE CALCULATION MODEL

Variable List and Description

Community size: This is a basic input whose value for each model run is set at either 1,000, 2,500, 10,000 or 100,000 by the user.

SRF interest rate: Another critical input that the user adjusts for each model run. The value can vary between zero and the market rate. The base value is four percent, a "typical" value for existing SRF programs.

Market interest rate: This variable changes with time and financial market conditions. Also, different States define market rate differently in their Capitalization Grant Applications. The base value used in the analysis, eight percent, is the value that best reflects recent costs of borrowing capital in the municipal bond market.

Persons/Household: This is an integral part of the analysis since we are attempting to assess impacts on households in a community, not on individuals. The number included here, 2.64, is the national average value released by the Bureau of the Census in the Spring of 1989. It is the best information available.

Gallons/Person*Day: Analyses of this type usually assume a value of about 100. The value varies somewhat depending on geographical location (rural versus urban), age and condition of the system (which affects losses because of leaks), and, most importantly, community population. This analysis assumes a value 90 for communities sizes 0-1,000; 100 for 1,000-5,000; and 110 for 5,001+.

Loan period: This is the maximum loan period allowed under SRF regulations. Most States have indicated they intend to make 20-year loans, so this analysis assumes a base loan duration of 20 years.

Cost eligible SRF(%): This is the percentage of total capital costs eligible for loans under the SRF program. Since this analysis ignores land costs, typically the largest ineligible cost, and since the flexibility of the SRF program allows expanded eligibility, the analysis assumes all costs (100 percent) are SRF-eligible.

Cost eligible CG (%): This is the percentage of total capital costs eligible for grants under the Construction Grant program. EPA staff familiar with the Construction Grants program recommended a base value of 90 percent.

State grant (%): The State grant is the percentage of total capital costs funded through a State construction grant program. It is independent of any Federal financial assistance. The base value is zero for the SRF program and 15 percent for the Construction Grants program.

Flow rate (mgd): In millions of gallons per day, it equals the number of persons in the community multiplied by the daily water usage per person.

Capital cost: Derived according to updated EPA construction cost curves. The original cost curve comes from EPA's Construction Costs for Municipal Wastewater Treatment Plants: 1973-78. The curve in this document was updated according to EPA's inflation index for construction of wastewater treatment plants. The costs in EPA's report were January, 1979 dollars. These were assumed to be the same as March, 1979 dollars (the EPA inflation index is keyed to March each year). A factor of 1.602 was used to bring March, 1979 dollars up to March, 1989 dollars.

Eligible: The total capital cost multiplied by the percent eligible under SRF.

Ineligible: The total capital cost less the eligible costs. This is the amount of funds the community must raise from the State or from other sources outside the SRF.

O&M cost: Derived from composite data provided by EPA Region III staff who had done a rate study of 161 wastewater treatment plants built under the Construction Grants program. The curve was assumed to flatten out at either end, beyond the range of the composite data. The cost curve derived from the data was inflated using the GNP deflator from the Economic Report of the President. The shape of the curve was compared with that of an O&M cost curve developed by EPA in 1981 to confirm that the economies of scale implied by the model's O&M cost curve are reasonable. Also to ensure reasonableness, the values derived from the model's cost curve were compared with unit, average values calculated in studies undertaken by California and Pennsylvania. A comprehensive national study of user charges and O&M costs is now underway at EPA; the results of this study will provide an updated source for O&M costs.

Number of hookups: The number of households served by the wastewater treatment plant. It is equal to the community population divided by the number of persons per household.

**MODEL OUTPUT ILLUSTRATING THE EFFECTS OF
CERTAIN VARIABLES ON USER FEES**

*****USER CHARGE CALCULATION MODEL*****

*****INPUT SECTION*****

I. USER SUPPLIED INPUTS

Community Size:	1,000	Loan Period:	20
SRF Interest Rate:	4.0	Cost Eligible SRF(%):	100
Market Intrst Rate:	8.0	Cost Eligible CG(%):	90
Persons/Household:	2.64	State Grant/SRF (%):	0
Gallons/Person*Day:	90	State Grant/CG (%):	15

II. MODEL CALCULATED INPUTS

Flow Rate (mgd):	0.090
Number of Hookups:	379
Capital Cost:	\$752,427
Eligible:	\$752,427
Ineligible:	\$0
Annual O & M Cost:	\$77,427

*****OUTPUT SECTION*****

I. CAPITAL COST FINANCING

	Cost of financing capital portion per household	Savings realized using program option
No grant or loan:	\$202	N/A
With SRF Loan:	\$146	28%
With 55% CG:	\$102	50%
With SRF Loan and State Grant:	\$146	28%
With 55% CG and State Grant:	\$75	63%

II. O & M COST FINANCING

Cost of financing O & M portion per household:	\$204
--	-------

III. TOTAL ANNUAL COST FINANCING

	Total annual cost of financing per household	Savings realized using program option
No grant or loan:	\$407	N/A
With SRF Loan:	\$351	14%
With 55% CG:	\$307	25%
With SRF Loan and State Grant:	\$351	14%
With 55% CG and State Grant:	\$279	31%

A Construction Grant that equaled 31% of eligible costs would provide savings equivalent to those provided by the SRF loan (this does not include the effects of any state grant)

A Construction Grant that equaled 31% of eligible costs would provide savings equivalent to those provided by the SRF loan (this does include the effects of any state grant)

A Construction Grant, after including the effects of a Construction Grant State Grant, that equaled 16% of eligible costs would provide savings equivalent to those provided by the SRF loan (this does not include the effects of any SRF state grant)

A Construction Grant, after including the effects of a Construction Grant State Grant, that equaled 16% of eligible costs would provide savings equivalent to those provided by the SRF loan (this does include the effects of any SRF state grant)

CONTENTS OF USER CHARGE MODEL CELL BY CELL

The user charge model runs on Lotus 123 software

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A1: [W19] '
A2: [W19] '*****USER CHARGE CALCULATION MODEL*****
A5: [W19] '*****INPUT SECTION*****
A7: [W19] 'I. USER SUPPLIED INPUTS
A9: [W19] 'Community Size:
B9: (,0) [W15] 1000
D9: [W21] 'Loan Period:
E9: 20
A10: [W19] 'SRF Interest Rate:
B10: (F1) [W15] 4
D10: [W21] 'Cost Eligible SRF(%):
E10: (F0) 100
A11: [W19] 'Market Intrst Rate:
B11: (F1) [W15] 9
D11: [W21] 'Cost Eligible CG(%):
E11: 90
A12: [W19] 'Persons/Household:
B12: [W15] 2.64
D12: [W21] 'State Grant/SRF (%):
E12: 10
A13: [W19] 'Gallons/Person*Day:
B13: [W15] @IF(B9<1001,90,@IF(B9<5001,100,110))
D13: [W21] 'State Grant/CG (%):
E13: 15
E14: (H) +E11/100
E15: (H) ((100-E11)+(0.45*E11))/100
A16: [W19] 'II. MODEL CALCULATED INPUTS
E16: (H) ((100-E11)+(0.45*E11)-(E13*(E11/100)))/100
A18: [W19] 'Flow Rate (mgd):
B18: (F3) [W15] +B13*B9/10^6
C18: (H) +B18
E18: (P0) '
A19: [W19] 'Number of Hookups:
B19: (F0) [W15] +B9/B12
A20: [W19] 'Capital Cost:
B20: (C0) [W15] (4.26*10^6)*C18^0.72
A21: [W19] ' Eligible:
B21: (C0) [W15] (E10/100)*B20
D21: (H) [W21] @IF(E12<=(100-E10),B21,(100-E12)/100*B20)
A22: [W19] ' Ineligible:
B22: (C0) [W15] +B20-B21
D22: (H) [W21] +B22-(E12*B20/100)
A23: [W19] 'Annual O & M Cost:
B23: (C0) [W15] @IF(C18<0.2,2.6-(2.7*C18),@IF(C18>5,0.68-(0.0018*C18),1.189*C18^-0.342))*365000*B18
D23: (H) [W21] @IF(D22>0,D22,0)
B25: (C0) [W15] '
A26: [W19] '*****OUTPUT SECTION*****
A28: [W19] 'I. CAPITAL COST FINANCING
B30: [W15] 'Cost of financing
D30: [W21] ' Savings realized
B31: [W15] 'capital portion
D31: [W21] ' using program
B32: [W15] 'per household
D32: [W21] ' option
A34: [W19] ' No grant or loan:
B34: (C0) [W15] (@PMT(B20,B11/100,E9)/B9)*B12
D34: [W21] "N/A
A36: [W19] ' With SRF Loan:
B36: (C0) [W15] ((@PMT(B22,B11/100,E9)+@PMT(B21,B10/100,E9))/B9)*B12
D36: (P0) [W21] (B34-B36)/B34
A38: [W19] ' With 55% CG:
B38: (C0) [W15] (@PMT(B20*E15,B11/100,E9)/B9)*B12
D38: (P0) [W21] (B34-B38)/B34
A40: [W19] ' With SRF Loan
A41: [W19] ' and State Grant:
B41: (C0) [W15] ((@PMT(D23,B11/100,E9)+@PMT(D21,B10/100,E9))/B9)*B12
D41: (P0) [W21] (+B34-B41)/B34
A43: [W19] ' With 55% CG
A44: [W19] ' and State Grant:
B44: (C0) [W15] (@PMT(B20*E16,B11/100,E9)/B9)*B12
D44: (P0) [W21] (+B34-B44)/B34
A46: [W19] 'II. O & M COST FINANCING
B48: [W15] 'Cost of financing
B49: [W15] 'O & M portion
B50: [W15] 'per household:
C50: (C0) (B23/B9)*B12
A53: [W19] 'III. TOTAL ANNUAL COST FINANCING
B55: [W15] 'Total annual cost
D55: [W21] ' Savings realized
B56: [W15] 'of financing

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B57: [W15] 'per household
 D57: [W21] ' option
 A59: [W19] ' No grant or loan:
 B59: (C0) [W15] +B34+C50
 D59: [W21] "N/A
 A61: [W19] ' With SRF Loan:
 B61: (C0) [W15] +C50+B36
 D61: (P0) [W21] (B59-B61)/B59
 A63: [W19] ' With 55% CG:
 B63: (C0) [W15] +B38+C50
 D63: (P0) [W21] (B59-B63)/B59
 A65: [W19] ' With SRF Loan
 A66: [W19] ' and State Grant:
 B66: (C0) [W15] +B41+C50
 D66: (P0) [W21] (B59-B66)/B59
 A68: [W19] ' With 55% CG
 A69: [W19] ' and State Grant:
 B69: (C0) [W15] +B44+C50
 D69: (P0) [W21] (B59-B69)/B59
 A71: [W19] 'A Construction Grant that equaled
 C71: (P0) +D36/(E11/100)
 D71: [W21] ' of eligible costs would
 A72: [W19] 'provide savings equivalent to those provided by the SRF loan (this
 A73: [W19] 'does not include the effects of any state grant)
 A75: [W19] 'A Construction Grant that equaled
 C75: (P0) +D41/(E11/100)
 D75: [W21] ' of eligible costs would
 A76: [W19] 'provide savings equivalent to those provided by the SRF loan (this
 A77: [W19] 'does include the effects of any state grant)
 A79: [W19] 'A Construction Grant, after including the effects of a Construction
 A80: [W19] 'Grant State Grant, that equaled
 C80: (P0) (D36-(E13*E14)/100)/(E11/100)
 D80: [W21] ' of eligible costs would
 A81: [W19] 'provide savings equivalent to those provided by the SRF loan (this
 A82: [W19] 'does not include the effects of any SRF state grant)
 A84: [W19] 'A Construction Grant, after including the effects of a Construction
 A85: [W19] 'Grant State Grant, that equaled
 C85: (P0) (D41-(E13*E14)/100)/(E11/100)
 D85: [W21] ' of eligible costs would
 A86: [W19] 'provide savings equivalent to those provided by the SRF loan (this
 A87: [W19] 'does include the effects of any SRF state grant)