

# STATE REVOLVING FUND

---

**A Decade of Successful  
SRF Performance  
1987-1997**

---

**Council of Infrastructure Financing Authorities  
Environmental Financial Advisory Board**

*January, 1998*

This report on the progress of the State Revolving Loan Fund (SRF) program for Clean Water project financing was prepared by the **Council of Infrastructure Financing Authorities (CIFA)** in cooperation with U.S. EPA's **Environmental Financial Advisory Board (EFAB)**. The report profiles the development and performance of the SRF loan program over the past ten years, chronicling its success as an effective mechanism for bringing low-cost financing to meet community environmental infrastructure needs; a priority concern of both CIFA and EFAB.

**CIFA** is a national, nonprofit organization of state and local authorities involved in the provision of financing for public infrastructure development. Most **CIFA** members have the capacity to access the municipal debt market to finance infrastructure projects with the issuance of tax-exempt bonds, and most are involved in the management or administration of the SRF program in their state or participate as active borrowers. For this reason, the organization takes some satisfaction in providing this positive report on the progress of the SRF program in its first decade.

**EFAB** operates under the Federal Advisory Committee Act (FACA) to provide advice and analysis to EPA's Administrator on ways to meet the growing costs of environmental protection, as well as the means to increase investment in environmental infrastructure through the leveraging of public and private resources. The operation and expansion of the state revolving loan fund mechanism, especially its capacity to leverage through issuance of tax-exempt bonds, has been a focus of the Advisory Committee and a subject of several of its advisories to the EPA Administrator. **EFAB's** membership consists of prominent individuals from government and the private sector with experience and expertise in the area of public and private finance. A list of the membership can be found at the back of this document.

Information in this report is based on data collected and assembled by EPA from the 51 SRF programs and can be found in EPA's electronic data-base, Clean Water On Line. Analyses and graphic design were provided by Nathan Nikotan and Tara Powers.

**The Council of Infrastructure Financing Authorities**  
805 15th St., N.W., Suite 500  
Washington, DC 20005  
Tel: (202) 371-9694 • Fax: (202) 371-6601

# STATE REVOLVING FUND

## Its Performance, Its Success

### PUBLIC FINANCE SUCCESS STORY

State Revolving Loan Funds (SRFs) are a real success story, funding tens of billions of dollars of environmental infrastructure projects to clean and protect the nation's waters. Created by amendments to the Clean Water Act in 1987, the SRF was envisioned as a transitory financing mechanism to carry the funding of municipal water quality from a project grant financed program to a self-sufficient loan fund. The Federal government would provide states with matching grants to capitalize State Revolving Funds. The SRFs would loan funds to localities, mostly at below market rates, to build necessary wastewater treatment systems. The return flow of principal and interest payments from the loans would increase to the point when eventually a self-sufficient loan fund could be sustained.

Now, with ten years of experience with the **Clean Water SRF** program, it is gratifying to observe how well it has performed in meeting those expectations. Data collected by EPA from the 50 State SRFs and Puerto Rico tells the story. Collectively, these SRFs constitute a loan pool of over **\$24 billion**. As of the date of the survey (June 30, 1997), **82%** of available funds had been loaned. Nearly **5,700** separate project loans have been made. Federal "seed money" in the form of capital grants of **\$13.2 billion** to the SRFs has been nearly doubled by the 20% state matching requirement, the proceeds from leveraging the funds through bond issues, and the cumulative payment of principal and interest of over **\$4.2 billion** returning to the SRFs for debt retirement and re-lending.

### LEVERAGING THE DOLLARS

The most unique feature of the SRF is the capacity of the States to leverage their loan funds in the municipal bond market. More than one-half of the States now leverage their funds, which collectively accounts for **\$8.8 billion** or **36%** of the funds in the lending pool. In addition, another **\$2.9 billion**, now in debt reserves securing leveraged bond issues, will incrementally flow back into the loan funds as reserve requirements diminish with bond maturities.

Now with the ability to cross-collateralize loans in the Clean Water SRF with the new **Drinking Water SRF** as common security for a bond issue, several states are planning to issue bonds in 1998 to further **leverage** their funds and increase the lending pool.

## LOAN RECIPIENTS

Demographically, the loans are serving a broad spectrum of the population. Thus far, communities of over 100,000 have received **43%** of loan funds. Mid-sized communities in the 10,000 to 100,000 range account for **35%** of the loans, and **22%** of the loan dollars have gone to small communities of under 10,000 in population. Conversely, of the **5,680** loans made thus far, **58%** were made to communities under 10,000 in population.

## SUBSIDIZED BORROWING

Uniformly, these loans are providing below market rates for municipal borrowers. Loan rates range from zero interest to a few hundred basis points below market, but most SRF lending is at **2.5%** to **3.5%** below the average revenue bond index. For example, in 1996 the average revenue bond yield was 6.01%; the mean average SRF loan rate was 3%.

What does this loan rate subsidy mean in savings to the borrowers? Using the spread between the average revenue bond issue and the weighted average SRF lending rate for each year since 1989, and assuming that each loan is structured for 20 years, an estimated net savings to borrowers of **\$6.2 billion** (in current dollars) can be calculated.

## THE REVOLVING FEATURE

With many of the earlier loan funded projects completed and starting to bring in operating revenues, loan repayments together with interest are rapidly growing; increasing from a mere \$225 million in 1992 to nearly **\$1.2 billion** in 1997. Recently, EPA and the Clinton Administration made a commitment to continue providing federal capital grants to the Clean Water SRF to the point where the corpus will be large enough to sustain borrowing levels of **\$2 billion** a year from return of principal and interest back to the fund.

The success of the Clean Water SRF as an infrastructure funding mechanism has spawned replication. A new State Revolving Loan Fund was created in 1996 to assist communities in financing projects needed for compliance with the Safe Drinking Water Act. The State Infrastructure Banks for road and transportation system funding also give States the capacity to create revolving loan fund financing mechanisms. Adaptability of the revolving loan concept is also being considered for clean up and development of "Brownfield" sites, and to provide loan subsidies for financing physical improvements for public schools.



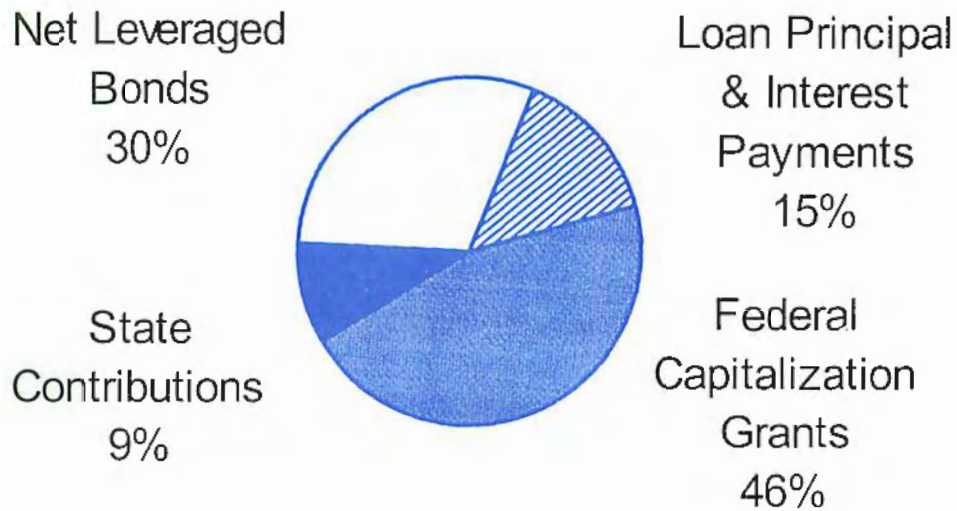
What follows are several charts and graphs visually displaying the successful performance of the Clean Water State Revolving Loan Fund. All SRF-related data comes from EPA's Survey of State SRFs for the year ending June 30, 1997, and is contained in the Agency's Clean Water On-line database.

Annual U. S. Clean Water SRF Funds (In Millions)				
Years	Federal Capitalization Grants	State Contributions	Net Leveraged Bonds <sup>1</sup>	Loan Principal & Interest Payments
1988	195.5	36.6	0.0	0.0
1989	846.1	196.7	107.0	2.0
1990	1,031.4	257.7	344.8	13.1
1991	1,587.2	400.7	999.9	98.7
1992	1,843.0	344.1	1,111.0	225.1
1993	1,510.9	322.0	946.9	419.8
1994	1,720.3	345.2	1,539.0	624.2
1995	2,321.4	363.5	1,137.7	774.1
1996	849.1	244.4	1,496.5	929.4
1997	1,292.0	194.6	1,097.0	1,179.8
<b>TOTAL</b>	<b>\$ 13,196.9</b>	<b>\$ 2,705.7</b>	<b>\$ 8,779.9</b>	<b>\$ 4,266.3</b>

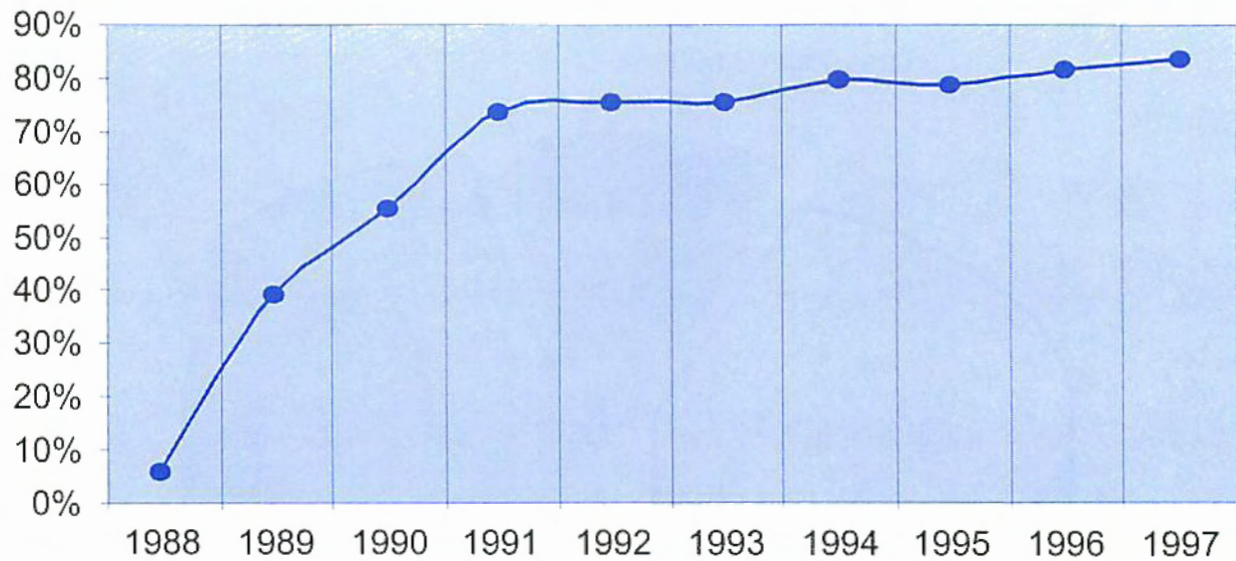
<sup>1</sup> Exclusive of debt service reserves.

## Cumulative SRF Funds by Category

(as a percentage of total SRF funds)

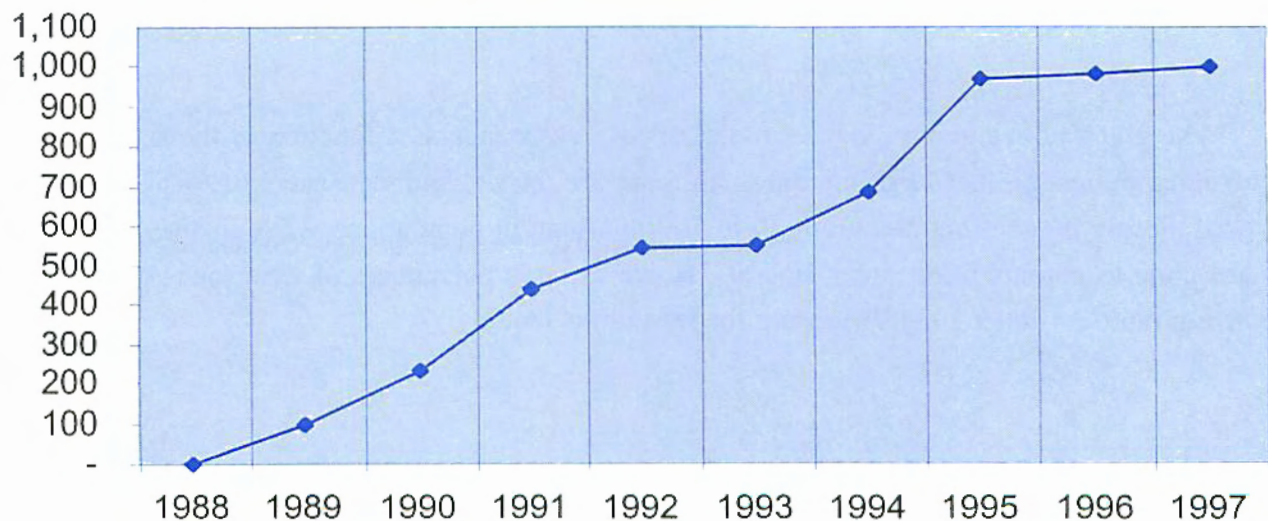


## SRF Assistance as a Percent of SRF Funds Available



As a percentage of funds available, only 5% of SRF capital was lent in 1988, the first full year of the program. By 1991 this percentage of lending climbed sharply to 72% and continued the upward trend, reaching 82% in 1997.

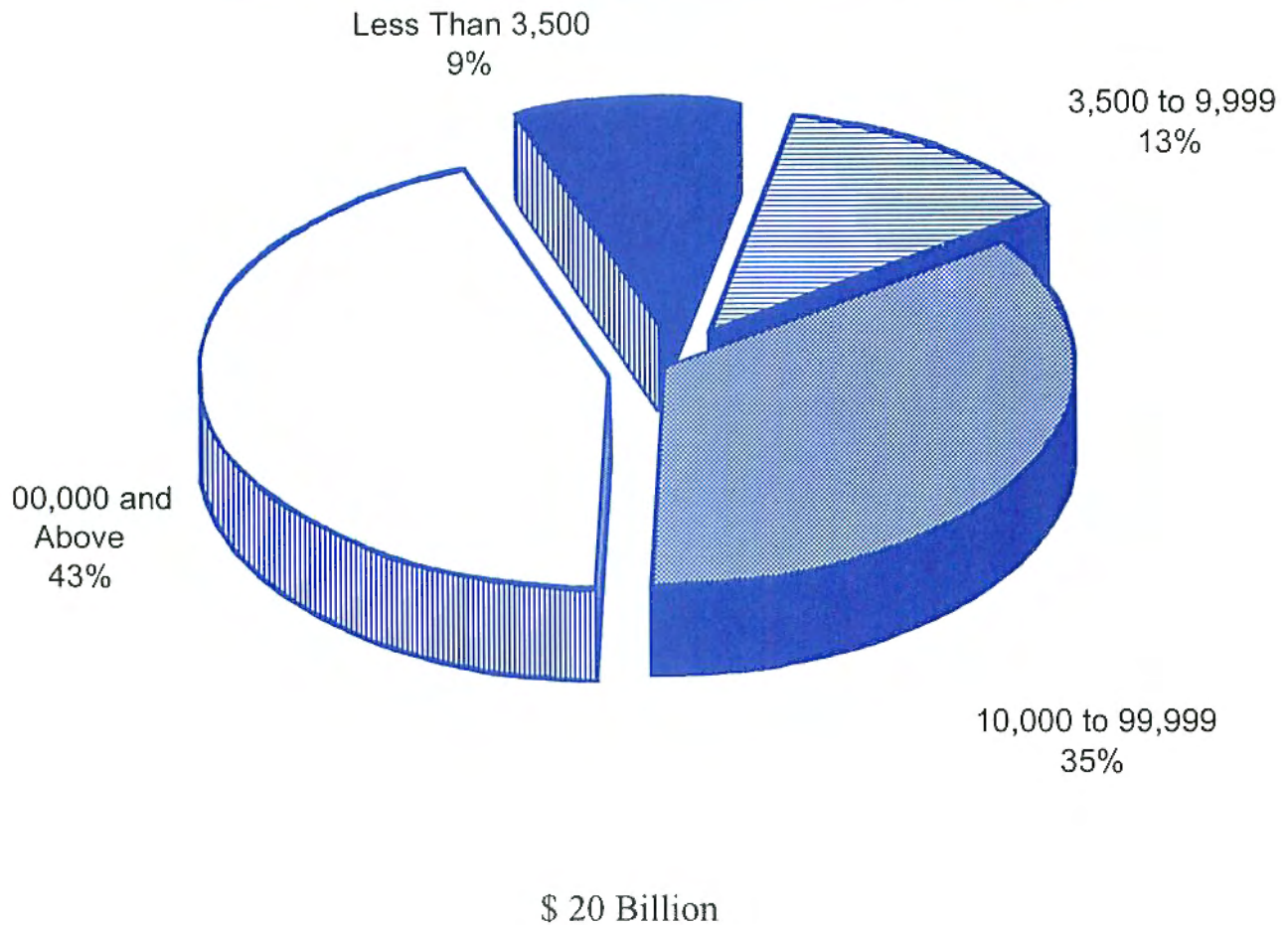
## Annual Growth in Lending



Growth in lending has also been steadily rising, climbing from 101 loans in 1989 to nearly 1,000 in both 1996 and 1997.



## SRF Assistance by Community Size



The graph above identifies the amount of SRF assistance as a function of the size of targeted populations, indicating that large metropolitan areas are the predominant users of SRF loan funding, followed closely by communities from 10 to 100 thousand in population. 22% of SRF funding, thus far, has gone to communities under 10,000. However, as a percentage of total loans made, smaller sized communities (under 10,000) account for 58% of the lending.



## What the Loans Finance

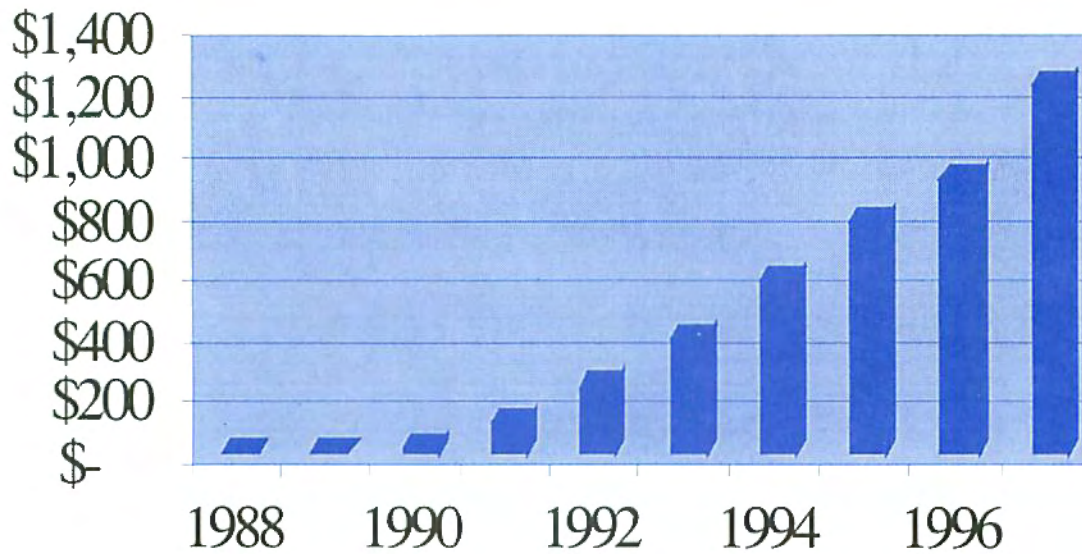
Of total wastewater treatment SRF financing, \$9.4 billion, or almost 50%, has been for secondary treatment, and \$3.0 billion (16%) went to advanced treatment. Other areas of wastewater project financing are new interceptor and collection sewers, \$3.86 billion; combined sewer overflow, \$1.24 billion; rehabilitation of sewer systems, \$1.14 billion; correction of infiltration/inflow, \$524 million; and storm sewer overflow correction, \$11.9 million.

### Annual U.S. Clean Water SRF Assistance for Wastewater Treatment Projects by Category (In Millions)

Year	Total Wastewater Treatment	Secondary Treatment	Advanced Treatment	Other
1988	10.50	0.80	0.00	9.70
1989	505.70	240.90	171.80	93.00
1990	1,071.40	635.80	215.70	220.10
1991	2,488.20	1,562.80	341.70	583.70
1992	2,332.50	1,190.20	327.40	814.90
1993	1,918.60	859.60	344.70	714.30
1994	2,971.10	1,529.30	399.10	1042.90
1995	2,812.40	1,272.80	378.30	1161.30
1996	2,472.90	1,008.70	472.30	991.80
1997	2,677.90	1,120.10	417.10	1140.70
<b>TOTAL</b>	<b>19,261.30</b>	<b>9,421.00</b>	<b>3,068.10</b>	<b>6772.20</b>

The above figures do not include non-point source project funding, which has totaled \$655 million. The trend toward non-point source funding accelerated in 1995, and continues to climb in the past two years with a total of 899 loans for non-point source projects over the 10 years of the program. Even so, 33 states reported no non-point source project funding, with most lending concentrated in a few states; namely Delaware, Minnesota, Massachusetts, Ohio, New York, Wyoming, Washington, New Hampshire, California and North Dakota.

## Loan Principal & Interest Payments (In Millions)



In 1997, loan repayments of principal and interest approached **\$1.2 billion**. In 1998, with many loan-financed projects completed and beginning to generate revenues, return payments to the state funds can be expected to accelerate. Cumulatively, since the beginning of the program, **\$4.2 billion** in principal and interest has returned to the funds for debt retirement and re-lending.



## SRF Interest Rate Subsidies

Weighted Average Interest Rate for Clean Water SRF Assistance (In Percentages)										
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
National Average	2.00	3.70	4.20	3.70	3.90	3.20	2.80	3.10	3.00	2.90
Revenue Bond Average*	8.03	7.51	7.53	7.11	6.59	5.82	6.45	6.20	6.01	5.78
Highest	2.00	5.10	5.50	5.90	5.40	5.00	5.20	5.10	5.00	4.60
Lowest	--	1.80	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00

\* Bond Buyer Yearbook

## State Revolving Funds Historical Subsidies Values

<u>Year</u>	<u>Loan Amounts</u>	<u>Average Subsidized Loan Rate</u>	<u>Present Value Subsidy</u> <sup>1</sup>
1989	\$ 513,193,108	3.81%	\$ 213,052,156
1990	\$ 1,113,335,898	3.33%	\$ 493,838,526
1991	\$ 2,643,719,902	3.41%	\$ 1,008,703,201
1992	\$ 2,390,260,766	2.69%	\$ 927,956,687
1993	\$ 1,876,548,157	2.62%	\$ 594,220,267
1994	\$ 3,147,174,714	3.55%	\$ 845,754,050
1995	\$ 2,884,934,495	3.10%	\$ 792,576,997
1996	\$ 2,829,173,800	3.01%	\$ 722,551,590
1997	\$ 2,803,300,000	2.89%	\$ 663,673,138
<b>Total</b>	<b>\$ 20,201,640,840</b>		<b>\$ 6,262,326,612</b>

Calculations prepared by Bear, Stearns & Co., Inc.

<sup>1</sup> Assumes all loans are made on January 1 and are structured to produce level debt service over 20 years. Future valued from loan year to 1/1/98 at 5.0%.

The above chart illustrates the cumulative amount of loan subsidy provided to SRF borrowers over the life of the program. Comparing average annual loan rates to the average annual revenue bond index, a total savings to the SRF borrowers of over **\$6.2 billion** in current dollars can be estimated.



## ENVIRONMENTAL FINANCIAL ADVISORY BOARD MEMBERSHIP

### Chair

**Robert O. Lenna**  
Executive Director  
Maine Municipal Bond Bank

### Designated Federal Official

**John C. Wise**  
Deputy Regional Administrator  
U. S. EPA

### Board Members

**Honorable Pete V. Domenici**  
U. S. Senate

**Langdon Marsh**  
Director  
Oregon Department of Environmental Quality

**Arthur W. Ray**  
Deputy Secretary  
Maryland Dept. of the Environment

**Mary Ellen Whitworth**  
Executive Director  
Bayou Preservation Association

**Michael Deane**  
Vice President  
Air & Water Technologies Corp.

**George A. Raftelis**  
Raftelis Environmental Consultant Group, Inc.

**George H. Butcher**  
Vice President  
Goldman, Sachs & Co.

**Michael Curley**  
Chairman  
General Trade Assistance Corp.

**Linda Descano**  
Vice President  
Salomon Smith Barney

**Sonia M. Toledo**  
Lehman Brothers

**Heather Ruth**  
President  
The Bond Market Association

**John P. McCarthy**  
Program Director  
Northeastern Rural Community Assistance  
Program

**Pete Butkus**  
Director, Community Investment  
State of Washington

**Shockley "Hap" Gardner**  
Executive Director  
Virginia Resources Authority

**Stephen Mahfood**  
Director  
Missouri Environmental Improvement and  
Energy Resources Authority

**Joseph L. Young**  
Forest County Potawatomi Tribal Attorney

**Jim J. Tozzi**  
Multinational Business Services, Inc.

**Elizabeth Ytell**  
Elizabeth Ytell Associates

**Michael C. Finnegan**  
Managing Director  
J.P. Morgan Securities

**Evan Henry**  
Senior Vice President  
Bank of America

**Anne Pendergrass-Hill, Esq.**

**Robin L. Wiessmann**  
Principal  
Artemis Capital Group, Inc.

**Peter M. Emerson**  
Senior Economist  
Environmental Defense Fund

**Deeohn Ferris**  
Global Environmental Resources, Inc.

## **CIFA OFFICERS AND BOARD MEMBERS 1998**

### **OFFICERS**

#### **President**

**Shockley D. Gardner, Jr.**  
VA Resources Authority  
909 East Main St., #700  
P.O. Box 1300  
Richmond, VA 23218

#### **Vice President**

**Robert O. Lenna**  
ME Municipal Bond Bank  
45 University Dr, PO Box 2268  
Augusta, ME 04338

#### **Treasurer**

**Michael D. Wolff**  
WI Capital Fin. Dept.  
101 E. Wilson 10 Flr. Box 7864  
Madison, WI 53707-7864

#### **Secretary**

**Daniel L. Law**  
CO Water Resources & Power  
Development Authority  
1580 Logan Street, Suite 620  
Denver, CO 80203

### **BOARD MEMBERS**

**Yvonne Addington**  
OR Economic Development Dept.  
775 Summer St., N.E.  
Salem, OR 97310

**Terry Kuhlman**  
MN Public Facilities Authority  
500 Metro Sq., 121 7th Pl. East  
St. Paul, MN 55101-2146

**Joe Freeman**  
OK Water Resources Board  
3800 N. Classen Blvd.  
Oklahoma City, OK 73118

**Paul Marchetti**  
PENNVEST  
22 S. 3rd St., Keystone Bldg., 4 Flr.  
Harrisburg, PA 17101

**Barbara Gottschalk**  
MA Water Resources Authority  
100 First Ave., Treasury Dept.  
Charlestown Navy Yard  
Boston, MA 02129

**Anthony Simeone**  
RI Clean Water Finance Agency  
235 Promenade St., #119  
Providence, RI 02908-5767

**Timothy Grogg**  
GA Environ. Facilities Authority  
100 Peachtree St., N.W., #2090  
Atlanta, GA 30303-1911

**Greg Swartz**  
AZ Water Infrastructure Finance Authority  
3033 North Central Ave.  
Phoenix, AZ 85012

**Dirk Hofman**  
NJ Wastewater Treatment Trust  
3131 Princeton Pike, Bldg.#6, Ste. 201 PO  
440  
Trenton, NJ 08625

**Sonia Toledo**  
Lehman Brothers  
Public Finance Department  
3 World Financial Center, 20th Flr.  
New York, NY 10285

**Janet Hunter Moore**  
MI Municipal Bond Authority  
DOT Treasury Bldg., 3rd Flr.  
Lansing, MI 48922

**Tom Tudor**  
ND Municipal Bond Bank  
418 E. Broadway, #246  
Bismarck, ND 58501

**Stephen Kraus**  
MD Dept. of Environment  
2500 Broening Highway  
Baltimore, MD 21224

**Executive Director**  
**James N. Smith**  
CIFA  
805 15th St., N.W., Suite 500  
Washington, DC 20005