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Industry Outlook

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STATE REVOLVING FUNDS OUTLOOK 2002

Executive Summary

- The credit quality of State Revolving Fund (SRF) revenue bonds remain strong, and continues to show positive trends.
- Moody's rates the SRFs of 23 states and the median rating is Aaa, up from Aa1 in 1999.
- The highest quality median rating reflects the upgrades of 12 programs since 1999 (see chart, p.3), and the assignment of four initial Aaa ratings in the last year to SRFs in California, Illinois, Iowa and Florida
- A chart of comparative data for all Moody's rated SRFs can be found at the back of this report.

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Program Upgrades Since 1999

Issuer	Rating Before Upgrade	New Rating	Rating Assignment Date
Arizona Wastewater Management Authority (Water Quality)	Aa2	Aaa	Nov-01
Kansas Development Finance Authority (Public Water Supply)	A2	Aa3	Apr-02
Massachusetts Water Pollution Abatement Trust			
MWRA	Aa1	Aaa	Jun-01
South Essex Sewerage District	Aa3	Aaa	Jun-01
Michigan Municipal Bond Authority State Revolving Fund (Master Trust)	Aa1	Aaa	Sep-00
Missouri State Environmental Improvement and Energy Resources Authority (Master Trust)	Aa1	Aaa	Mar-00
New York State Environmental Facilities Corporation -MFI			
NYCMWFA Second Resolution Bonds	Aa1	Aaa	Jun-01
North Dakota Municipal Bond Bank	Aa2	Aaa	Jul-01
Ohio Water Development Authority (WPCLF)	Aa3	Aaa	May-00
Rhode Island Clean Water Finance Agency	Aa1	Aaa	Nov-00
South Dakota Conservancy District	Aa3	Aa1	Aug-01
Texas Water Development Board (Senior Lien)	Aa1	Aaa	Aug-00

THE FOUR ELEMENTS THAT MAKE SRFS SUCH STRONG CREDITS

The assignment of Moody's highest ratings to SRF programs primarily reflects the substantial resources that result from the equity in the programs provided by the federal capitalization grants and the state match contributions. In addition to the typically substantial equity provided by these programs, Moody's considers several key factors in assigning its ratings: the credit quality of the loan portfolio, program management, and the degree of leveraging.

Substantial Equity

Federal capitalization grants and state match contributions result in the availability of substantial equity for SRF programs and their bondholders. Whether it be the reserve model, in which the SRF pledges to maintain reserves at a certain level relative to the outstanding principal of each borrower's loan, or the cash flow model, in which loan repayments are pledged to the bonds, over-collateralization generally results in significant risk mitigation for bondholders. For example, New York State's Environmental Facilities Corporation (EFC) maintains reserves at a minimum of one-third of principal outstanding, and often as high as 50%. The reserve fund earnings, which are also pledged to the bonds, are used to subsidize the interest rate on loans to the participants. In addition, as the principal of loans is paid down, the dedicated reserves are de-allocated and are available to cure any deficiencies throughout the program. New York's fund structure is typical of the reserve model.

Florida's SRF has implemented the cash flow model by pledging all of its loan repayments from \$442 million of loans funded with federal capitalization and state match funds, to the program's recently issued \$50 million in bonds. Additionally, those loans funded with bond proceeds will secure the bonds. This significant over-collateralization results in debt service coverage of over eight times and a default tolerance of almost 90%. While Moody's rating incorporates the expectation of reduced coverage through continued leveraging, the Florida program highlights the substantial equity that can be derived from the cash flow model.

State Revolving Funds Finance Environmental Improvement

State revolving funds were established under the 1987 amendments to the federal Clean Water Act, creating the legal framework for water pollution control in the United States. State revolving funds replaced the former construction grants program, a major source of direct federal funding for municipal wastewater system projects. New SRFs were established in the 1996 amendments to the Safe Drinking Water Act to fund drinking water related projects. Since inception, the Clean Water program has provided over \$30 billion in loans to 9,500 wastewater projects, while the Safe Drinking Water program has made \$3.2 billion in loans for 1,500.

Under the state revolving fund structure, the federal government provides annual capitalization grants to states, which in turn are required to provide an additional 20% in matching funds. These moneys are used to capitalize a fund used to make loans to local borrowers, who, in turn, repay the loans - allowing funds to revolve through the program - thus re-capitalizing the fund. Many states have leveraged their capitalization funds by issuing bonds that are in some way secured by the fund.

A hybrid model employs both cash flow and reserve model elements. The Illinois program (issued through the Illinois Development Finance Authority) is the most recent example, with the security pledge consisting of a reserve fund sized at 50% of principal and a number of outstanding loans, resulting in over 1.5x debt service coverage. The reserves and excess cash flow would allow 66% of the loans to default for the life of the bonds and debt service would still be paid. In addition, the pool is extremely diverse, with no borrower representing more than 5% of total pledged loan value; further, Moody's believes this significant over-collateralization enhances the average credit quality of the pledged pool.

Moody's notes that the success of the SRFs has led states to employ the revolving fund structure to address needs outside of the environmental sector. Over the last several years Moody's has rated a number of revolving fund financings that have addressed a wide variety of areas. Several examples are listed below

Issuer	Purpose	Rating
Delaware Regional Finance Authority	Local govts	Aa2
VA Resources Authority	Airports	Aa2
MO Environmental Imp. & Energy Res. Auth.	Energy efficiency	Aa2
Greater Arizona Development Authority	Infrastructure improvements	A1

Diversified Credit Risk

The SRF programs pool the loans of a number of participants of varied credit quality, and are often dominated by highly rated credits. This is the case with the Aaa-rated Minnesota Public Facilities Authority (PFA), which is dominated by the Metropolitan Council of the Twin Cities (Met Council) (making up 52% of the loan portfolio). Met Council's bonds are rated Aaa. Another example is the Aaa-rated Ohio Water Development Authority Water Pollution Control Loan Fund (WPCLF): its two largest issuers, representing a combined 36% of the pool, are rated Aa2, while another 10% of the pool is rated Aa3. Almost 73% of WPCLF's loans are to participants rated A3 or better. Diversified credit risk enables the SRFs to lower their borrowing costs through improved credit quality and economies of scale.

Degree of Leveraging

Moody's SRF credit ratings incorporate the degree to which each program leverages its equity. Moody's maintains no specific minimum level of reserves or debt service coverage, yet recognizes that equity levels and the credit risk of the portfolio are the key determinants of risk to SRF bondholders. As such, Moody's evaluates each SRF program on its own merits. In fact, program objectives, such as a targeted below market interest rate on loans to participants, often result in increased bondholder security. For example, Iowa's Aaa-rated SRF program does not specify a minimum reserve requirement for future, separately secured issues under its Master Trust. However, Moody's believes credit risk is mitigated by the expectation that the loan rate of 3% will require a sufficiently large reserve fund to generate the necessary investment earnings. In the case of cash flow programs that have the ability to de-pledge loans (OH and CA are two examples), which poses a risk to bondholders, Moody's ratings incorporate the likelihood that debt service coverage levels will remain well above the minimum allowed levels.

Program Oversight

Moody's views strong program oversight as fundamental to an SRF rating. In each case, Moody's considers the SRF program's history of loan underwriting and borrower surveillance. Moody's believes that established and on-going program management, which ultimately ensures that funds are on hand when needed to meet debt service obligations, is an important factor in maintaining the highest credit quality of all SRFs.

The following four credit summaries reflect recent, initial SRF ratings assigned by Moody's in the last year. All received Moody's Aaa ratings.

California's SRF: Strong Cash Flow, High Default Tolerance and Portfolio of Seasoned Borrowers

Earlier this month, Moody's assigned a Aaa rating to California's initial leveraging of its SRF program. The Aaa rating is based on very strong anticipated annual cashflow coverage of over 2x provided to the bonds by substantial loan repayments and the generally strong credit quality of the portfolio.

Repayments of 98 existing Clean Water loans made to the SRF's largest 50 borrowers (measured by loan amount outstanding) secure the bonds. These loans were funded from federal grants and state appropriations. The outstanding loan principal pledged to the \$300 million in bonds is substantial, totaling \$883 million, on loans made over the past 11 years. Bondholders will rely on the repayments of the 98 already disbursed loans, not the loans to be made with the bond proceeds, nor the bond proceeds themselves.

Cash flows are expected to provide over 2x annual debt service coverage for most of the 16-year life of the bonds. With this level of coverage, and support from the debt service reserve funded at one-half maximum annual debt service, 54% of loan repayments could be in default for the life of the bonds and all debt service obligations would be met. Moody's notes that the Board is allowed under the bond indenture to release pledged (de-pledge) loans down to the 1.15x minimum coverage of scheduled debt service or to substitute pledged loans. Moody's anticipates that the Board will continue to maintain coverage levels well in excess of the 1.15x level.

Moody's anticipates that the Board will maintain strong debt service coverage as it further leverages in order to meet program needs, with approximately another \$200 million of bonds expected in 2004. The Master Trust allows for additional bonds to be issued as cash flow bonds, like the current issue, or as reserve bonds.

Moody's also maintains ratings, or has evaluated the credit quality, of the entire portfolio. Over 38% of the pledged portfolio is to borrowers whose sewer revenue obligation bonds are rated A1 or A2 by Moody's; almost 3% represents loans to two borrowers with Baa1 sewer revenue ratings. Another 18% represents loans to borrowers whose general obligations range from A3 to Aaa, with the majority rated A1 or above. Moody's assessment of the remaining unrated 43% of the portfolio indicates investment grade credit characteristics, with the exception of one issuer representing less than 1% of the loan portfolio.

San Francisco Sewer is the largest pool participant, representing over 20% of pledged loans, and is rated A2 with a negative outlook. The negative outlook reflects the possibility that the system's credit quality may deteriorate, given the impact of voter-approved Proposition H, which was passed in 1997 and freezes sewer rates through 2006. San Francisco's GO bonds are rated Aa3. As with all of the pledged loans, San Francisco's amortization schedules are in place and the system has a history of full and timely repayment. Moody's believes that the strength of the program and the overall diversity of the pledged loan pool will tolerate possible credit deterioration of San Francisco's sewer system.

Moody's believes US EPA-approved improvements related to program management and accounting issues, particularly those focusing on the financial aspect of program administration, are important for a highly rated SRF program such as this one.

Illinois SRF: Significant Reserves and Strong Cash Flow

Illinois SRF's garnered a Moody's Aaa in May. The rating is based on strong anticipated overall debt service coverage of over 1.5 times (x) for most of the life of the bonds, the substantial reserve, and a very diversified portfolio of borrowers demonstrating average credit quality. The bonds are secured by the repayments on 109 outstanding and largely seasoned loans and earnings from and the corpus of the substantial reserve, which is sized at 50% of principal. Resources from both Clean Water and Drinking Water programs support each other, if needed, through cross-collateralization.

The bond indenture requires a reserve fund equal to 50% of the bond principal outstanding. The pledged earnings are used to subsidize the interest rate on the loans to participants. The loan rate is one-half the 20-year Tax-Exempt Bond General Obligation Bond Buyer Index, with a minimum rate of 2.5%

With the reserve and repayments from direct loans, the program could withstand 66% of its loans defaulting through the life of the bonds and still meet debt service. This substantial default tolerance factors significantly in the Aaa rating. While the Master Trust allows future bond issues to maintain a minimum reserve of 10% of principal and a 1.1x debt service coverage, Moody's believes that programmatic objectives

and conservative management will result in reserve and coverage levels well above these minimums.

Another key element of the rating is the very diverse portfolio, with the two largest participants each comprising only 5% of pledged loans. The 109 pledged loans are from existing, relatively seasoned borrowers in the SRF programs. Bondholders will rely on the repayments of the already disbursed loans, not the loans to be made with the bond proceeds, nor the bond proceeds themselves. Moody's notes the ability to release pledged (de-pledge) loans down to the 1.1x coverage level.

Moody's maintains ratings, or has evaluated the credit quality, of the entire portfolio. Over 40% of the pledged loans is to borrowers whose general obligation bonds are rated A3 or better by Moody's. Almost 20% is rated Aa3 or better, with 9% to Aaa rated borrowers. Moody's assessment of the remaining unrated 60% indicate the majority have water and sewer revenue systems with investment grade credit characteristics. Less than 10% of the loan portfolio was found to have below investment grade credit quality. This below investment grade group is highly diversified, spread across 33 borrowers with only one representing more than 1% of pledged loans.

Florida's SRF: Bonds Benefit from Pledge of Existing Loan Assets and Strong Portfolio Credit Quality

Moody's assigned a Aaa rating to Florida's inaugural SRF leveraging last June. The bonds are secured by repayment of loans funded from the bonds as well as a portfolio of existing loans funded from federal grants and state appropriations. Highest quality security is provided by the very strong debt service coverage that is expected to decline as additional debt is issued. The strong portfolio of borrowers is also a key element of the rating assignment, as well as the program's demonstrated history of loan performance.

The program has \$599 million in loans made over the past 12 years, of which \$442 million are outstanding and whose repayment are pledged to the bonds. Cash flows provide over eight times coverage of debt service for the bonds. With this level of coverage, and support from the debt service reserve, nearly 90% of loan repayments could be in default and all debt service obligations would be met. Coverage is expected to be reduced as the SRF has authority to issue an additional \$175 million through 2003, which will reduce coverage to a still substantial 4.4x. While Moody's anticipates additional financings, inherent in the Aaa rating assignment is Moody's assumption that coverage could drop to 1.50x, and Aaa quality will be maintained. Under the indenture, coverage could drop to 1.15x, but such coverage levels would require issuance of significant debt that is not foreseen at this time.

The largest borrower is the City of Tampa (water/sewer revenue bonds rated Aa2), which represents about 18% of the loan repayments. Miami-Dade County (rated A1) represents 16% of the loan repayments. Two-thirds of the loan portfolio have obligations assessed to be A3 or better. The loans to be made with the bond proceeds, which are pledged to the bonds, indicate that at least 60% possess A3 or better credit characteristics. The program also has \$470 million active (not yet closed and amortizing) loans with similar credit characteristics. These loans are not yet pledged to the bonds, and are not factored in the eight times debt service coverage. Inherent in the Aaa rating is Moody's expectation that the credit quality of the loan portfolio will continue to have a preponderance of borrowers rated A3 or better.

Iowa's SRF: Substantial Reserves and Large Portfolio

Assigned in late 2001, Iowa's Aaa SRF rating reflects substantial reserve funds and the very large and diverse portfolio of borrowers that exhibit overall average credit quality.

The uses its federal capitalization grants to establish a very large reserve fund that will generate investment earnings sufficient to offer subsidized loans to participants at a 3% interest rate. The reserve for the 2001 series will be 50% of bond principal for Drinking Water loans and 30% for Clean Water loans. While the drinking water and clean water programs are separate, reserves not needed for one program are available to cure a default in the other. With the large reserves, 34% of the loans could default and all debt service obligations would be met. This default tolerance is a key element of the Aaa rating.

Each series of bonds will be separately secured, with a reserve sized as a proportion of the bond principal outstanding and sufficient to meet the subsidized loan interest rate. While there is no minimum reserve requirement, Moody's Aaa rating speaks to our expectation that the loan rate of 3% will require a sufficiently large reserve fund to generate the necessary investment earnings. In addition, each series of bonds is

linked through a Master Trust Indenture; as the reserve size is proportionately reduced with bond principal amortization, the freed up reserve is available to cure a default in any bond issued under the indenture.

The diversity of the program, with over 180 borrowers currently, and 40 more in process, reinforces the Aaa security of the bonds. As the program continues to lend, over 200 borrowers will each represent less than one percent of the loan portfolio. This diversity significantly reduces the risk that any one borrower default, or group of several borrowers, could jeopardize the financial integrity of the program and its ability to meet debt service obligations.

The largest borrower is Des Moines (revenue bonds rated A2), representing just over 8% of the loan portfolio. Sioux City (revenue bonds rated A1), is the next largest borrower, with about 5%. Overall, about 95% of the loan portfolio principal is rated A3 or better. Moody's assessment also indicates that the portfolio is largely investment grade. Most loans are secured by a pledge of revenues from the water and/or sewer system; some loans carry a general obligation pledge.

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Reserve Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Arizona Water Infrastructure Finance Authority Aaa Clean and Drinking Water, state and leveraged bonds	cash flow/\$233	GO, revenue, taxes, special assessments, Non-governmental entities; Revenues	state match: 4.7x coverage; leveraged: 1.6x coverage	Leveraged Bonds - maximum allowed under law	1.2x debt service coverage (applies separately to state match and leveraged bonds)	Cross collateralization provisions between clean water and safe drinking water programs. State match bonds have first lien on loan interest.	32 participants; 70% of loan participants rated A3 or above
California Infrastructure and Economic Development Bank Aaa Clean Water	cash flow or reserve/\$300	Revenue	2.3x projected coverage; 54% default tolerance	50% of MADS	Master Trust allows additional cash flow or reserve model bonds; cash flow would require a 1.15x debt service coverage minimum; reserve bonds require a 1x coverage minimum and a reserve no less than 33% of principal	SRF loans senior to, or parity with, other outstanding obligations of borrowers	50 participants; 94% of loan value rated A3 or above; San Francisco Sewer (A2; negative outlook) largest borrower, representing 20% of program
Colorado Water Resources and Power Development Authority Aaa Clean Water Revenue, Master Indenture	reserve/\$289.8	Revenue (1.1x rate covenant and add'l bonds test; 25% op. revs), GO	31% default tolerance through cross-investment provisions	Greater of 37% bond principal outstanding or MADS	Each series separately secured with master program indenture (surplus matching account trust agreement)	Surplus matching account allows de-allocated reserves to cure deficiencies in both Clean and Drinking water programs; through cross-investment	52 participants; 62% of loan principal rated A3 or better
Aaa Drinking Water Revenue Bonds, Master Indenture	reserve/\$112.8	GO, GOLT, revenue	31% default tolerance through cross-investment provisions	Greater of 37% outstanding principal or MADS.	Each series separately secured with master program indenture (surplus matching account trust agreement)	Surplus matching account allows de-allocated reserves to cure deficiencies in both Clean and Drinking water programs; through cross-investment	19 participants; 72% of the loan principal rated A3 or better
Aa1 Wastewater Revolving Fund Refunding Revenue Bonds	hybrid/\$79.3		None	Each series separately secured. Reserves established to provide required subsidy.	Approximately \$8 million annually in de-allocated reserves available to cure deficiency in current issue. Amount released is expected to be greater than annual debt service.	62 participants; 70% of loan principal rated A3 or better	
Connecticut (State of) Aaa Clean and Drinking Water	reserve/\$415	GO, double barrel, revenue	58% default tolerance	50% of outstanding principal	Debt service and interest subsidy fund funded at required levels	Cross collateralization of Clean and Drinking water programs; State intercept; subsidy fund secured by state GO bonds if reserve fund earnings insufficient	70 participants; 80% loan principal rated A3 or better; 50% rated Aa3 or better
Aa1 Subordinate Revenue Refunding Bonds	cash flow/\$138.8	GO, double barrel, revenue	Sum sufficient	None	Senior interest subsidy fund and subordinate interest subsidy fund funded at required levels	Lien on excess loan repayments. Debt service funded at beginning of FY with prior year's excess senior bond revenues.	80% loan principal rated A3 or higher

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Reserve Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Iowa Finance Authority Aaa Master Trust, Clean and Drinking Water	reserve/\$235	Revenue, GO	34% tolerance for life of bonds	50% Drinking Water, 30% Clean Water	Reserve sized to meet interest earnings requirement to achieve 3% loan rate	Cross collateralization provisions between clean water and safe drinking water programs	182 borrowers: 55% rated A3 or better; 98% evaluated to be investment grade
Illinois Development Finance Authority Aaa Master Trust, Clean and Drinking Water	hybrid/\$150	GO, revenue	coverage over 1.5x; 66% default tolerance	50% of principal outstanding for both Clean Water and Drinking Water programs	Minimum reserve of 10% of principal and a 1.1x debt service coverage	Cross collateralization between Clean and Drinking water programs	103 borrowers: 40 rated A3 or better, 91% of portfolio investment grade
Kansas Development Finance Authority Aa1 Clean Water (Water Pollution), Master Bond	cash flow/\$270	GO; other pledges permitted with insurance	1.7x, with minimum projected at 1.3x; 3.5x coverage on state match	Separate, state match and leveraged reserve accounts funded at lesser of 10% of proceeds, MADS or 125% of AADS	1.25x debt service coverage for both leverage and state-match bonds; no downgrades	State intercept, Suspense fund, Rate setting authority on delinquent loans	143 borrowers: over 50% loan principal rated Aa3 or better; 66% rated A3 or above
Aa3 Drinking Water (Public Water Supply)	reserve/\$186	GO; revenue from water districts	Sum Sufficient on leveraged; 3.5x on state match; 16% default tolerance	Greater of 25% of bond principal or MADS	Reserve funded at required levels; Sum sufficient revenues	State intercept, Rate setting authority on delinquent loans	85 borrowers: 50% loan principal rated investment grade
Maine Municipal Bond Bank Aaa Water and Sewer Revenue Bonds - State Revolving Fund Program	cash flow/\$82	GO; revenue	1.7x debt service coverage	MADS	sum sufficient	Bonds secured by separate drinking water and clean water program loans with cross-collateralization/Bonds carry Moral Obligation of state to replenish reserve fund/ Special Discretionary Resv. Fund available to all Bond Bank programs	Clean Water: 44 participants; 66% rated A or better. Drinking Water: 8 participants; 27% rated A1
Maryland Water Quality Financing Administration Revolving Loan Fund Aa2 Revenue Bonds	cash flow/\$166	double barrel, revenue	1.3x debt service coverage /Projected worst case 25%-30% default tolerance	MADS or 10% bond principal/Supplemental Reserve: 3 years AADS times percentage of total loan portfolio	Reserve fully funded, 1.2x projected annual debt service coverage test for each year after construction completion, (1X during construction)	State intercept, Noninvestment grade (NIG) have supplemental reserve account if NIG totals more than 5% of loan portfolio.	36 participants: 70% of loan principal rated Aa3 or better
Massachusetts Water Pollution Abatement Trust Water Pollution Abatement Revenue Bonds Aaa Pooled Loan Program (Master Indenture) Clean Water	reserve/\$1,200	Primarily a GOLT subject to Proposition 2 1/2; some districts and commissions make revenue pledges	59% default tolerance	40% of principal outstanding on extended term financings and drinking water financings - 50% on 20 year	Each series separately secured; Reserves funded at required levels, ranging from 33% to 50% in future	State-aid intercept, Cross-collateralization between programs, Commonwealth contract assistance subsidizes loan service, Deficiency fund and general reserve fund capture de-allocated reserves.	170 borrowers: 75% loan principal rated A3 or better; 92% rated investment grade
Aaa Mass. Water Resources Authority (MWRRA) Loan Program - senior lien	reserve/\$55	Interest earnings on reserve fund of \$149.3	1.2x debt service coverage (covenant)	State intercept, Commonwealth contract assistance subsidizes loan service, Deficiency fund and general reserve fund capture de-allocated reserves.		MWRRA rated Aa3	

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Aaa Mass. Water Resources Authority (MWRA) Loan Program - subordinate lien	reserve/\$415	Revenue	1.1x - 1.3x debt service coverage; 1.1x covenant on combined Sr. and Sub.; 37.3% default tolerance	Initial \$39 million reserve increases to \$70 million as reserves for Senior lien de-allocate	Bonds restructured to amortize over 30 years. State intercept. Commonwealth contract assistance subsidizes loan and general reserve fund capture deallocated reserves.	MWRA rated Aa3	
Aaa South Essex Sewerage District (SES) Loan Program	reserve/\$89	Revenue	39% default tolerance	50% of principal outstanding	Sum sufficient debt service coverage/Reserves funded at required levels to maintain ratings	State intercept. Commonwealth contract assistance subsidizes loan and general reserve fund capture deallocated reserves.	SESD rated Aa3
Aa3 New Bedford Loan Program (Subordinate Revenue Refunding)	hybrid/\$151	Revenue	2x coverage/53% default tolerance	50% of principal outstanding/subordinated bond reserve from deallocated reserve of senior bonds equal to 40% of bond principal outstanding upon maturity of senior	None	State intercept. Commonwealth contract assistance subsidizes loan and general reserve fund capture deallocated reserves.	New Bedford GO rated Baa2
Michigan Municipal Bond Authority State Revolving Fund Aaa Clean Water Revolving Fund Revenue Bonds, Master Indenture	reserve/\$1,300 (both Clean & Drinking Water)	Mostly GOLT	43% default tolerance	Minimum 50% of bond principal outstanding; Higher as required for loan subsidy.	Debt service reserve funded at required levels. No downgrades.	State intercept. Deficiency fund. Refunding bonds secured separately from pooled project bonds. Cross-collateralization between Clean Water & Drinking water programs	83 participants 75% of loan principal rated A3 or better.
Aaa Drinking Water Revolving Fund Revenue Bonds, Master Indenture	reserve	Mostly GOLT	41% default tolerance	Minimum 50% of bond principal outstanding; Higher as required for loan subsidy	Debt service reserve funded at required levels. No downgrades.	State intercept. Deficiency fund. Refunding bonds secured separately from pooled project bonds. Cross-collateralization between Clean Water & Drinking Water Funds	51 participants; 33% of loan principal rated A3 or better
Aaa Refunding Revenue Bonds	cash flow/\$87	GOLT, Revenue	1.4x debt service coverage	None or up to 5% of outstanding principal	Debt service reserve fully funded. Sufficiency calculation	54% of loan principal rated A3 or better	
Minnesota Public Facilities Authority Aaa Water Pollution Control Revenue Bonds	cash flow/\$844	All GO now; revenue permitted	Low of 1.16x coverage; 71% default tolerance; if Aaa-rated Met Council is excluded	AADS on outstanding bonds or MADS if MADS is 1.1x AADS.	Projected revenues have sum sufficient coverage from loan repayments and investment earnings; reserves fully funded.	Three years' debt service currently in reserve funds. Cross-collateralization between drinking water and water pollution control programs	157 program participants; Met Council rated Aaa at least 47% of pool; over 50% of pool rated investment grade
Aaa Drinking Water Revenue Bonds, Series 1999B	cash flow	All GO now; revenue permitted	3.5x coverage (2.5x projected) / 73% default tolerance (100% with cross-collateralization)	Cross collateralization between drinking water and water pollution control programs	53 program participants		

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Missouri State Environmental Improvement and Energy Resources Authority Aaa Water Pollution Control & Drinking Water Revenue (State Revolving Fund Program - Master Trust)	reserve/\$680	GO, revenue, sales tax	over 50% for Clean Water Program; 21% for Drinking Water	Minimum reserve of 50% for Clean Water loans, 33.3% for Drinking Water loans. Reserves currently 70% and 50%, respectively.	Each series separately secured. Master program indenture.	Deficiency Fund from de-allocated reserves. Cross-collateralization via loan from de-allocated reserves. All loans voter authorized.	140 participants; 80% of principal investment grade
New Jersey Environmental Infrastructure Trust (formerly Wastewater Treatment Trust) Aaa Master Trust Program Revenue Bonds (post-1994)	cash flow/\$637	GO, revenue	1.6x	Lesser of MADS, 1.25x AADS or 10% bond proceeds.	Each series separately secured.	Master program trust funds. State aid intercept subordinate to holders of qualified local bonds. Suspend fund. Loan repayments on state loans.	192 participants; 68% of principal rated A3 or better
New York State Environmental Facilities Corporation-MFI Aaa/Clean Water and Drinking Water (Master Indenture and Master Trust)	reserve/\$1,830	GO/Revenue for Authorities	35% (excluding Aaa-rated Westchester Co)	Currently available: 43% required minimum: 33.3%	Each issue separately secured. Master indenture for program.	State intercept and general reserve account for Master Finance Indenture borrowers; Cross-collateralization between Clean and Drinking water programs	286 participants; 80% of loan portfolio rated A3 or better
Aaa State Clean Water and Drinking Water Revolving Funds Revenue Bonds, Series 2002C (Pooled Financing Program - Subordinated MFI Refunding Bonds)	reserve/\$42	GO	Subordinated lien on MFI loan repayments and reserves	None, but de-allocated MFI reserves are used on a subordinated basis to cure deficiencies and build reserves	Each issue separately secured	State intercept and general reserve account for master finance indenture participants; Cross-collateralization between Clean and Drinking water programs	14 participants; four largest borrowers rated Aa3 or better
Aaa NYCMWFA General Resolution, 1991A and 1991E	reserve	Revenue	48.3% default tolerance	50% of loan principal		Bonds have reserve equal to nearly 100% of bond principal and first lien on loan repayments	NYCMWFA General Resolution rated Aa2.
Aaa NYCMWFA Second Resolution Bonds	reserve/\$2,266	Revenue	48.3% default tolerance	Currently available: 39.4% of loan principal; Required minimum: 33.3%		NYCMWFA General Resolution rated Aa2; Second resolution not rated.	
Aaa NYCMWFA Subordinated Refunding Revenue Bonds, series 1997E (rating reflects bond insurance)	reserve	Revenue	48.3% default tolerance	None, but de-allocated MFI reserves are used on a subordinated basis to replenish deficiencies and build reserves	NYCMWFA General Resolution rated Aa2; Second resolution, not rated.		

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Reserve Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Aa1 NYCMWF Second Resolution Series 2002E (Subordinate Bonds)	reserve/\$95	Revenue	48.3% default tolerance	None, but de-allocated MFI reserves are used on a subordinated basis to replenish deficiencies and build reserves	NYCMWFA General Resolution rated Aa2: Second resolution, subordinated, not rated.		
North Dakota Municipal BondBank Aaa Clean and Drinking Water	cash flow/\$122	GO, Revenue, or Special Assessment	1.8x coverage/default tolerance so could withstand several years of default on all loans	MADS on all outstanding bonds. Other reserves at least equal to state-match reserve requirements.	Projected revenues sufficient to make all state-match and leverage payments and for 1.2x ADS.	Suspense Fund: Legislature can be petitioned to cure reserve fund deficiencies. Cross-collateralization between Clean and Drinking water	65 participants: 75% of loan principal of A3 credit quality or better; Grand Forks 40% of portfolio (GO rated Aa3)
Ohio Water Development/Authority Aaa Clean Water	cash flow/\$780	revenue	state match: 1.6x; leverage: 1.8x default tolerance: 51%	Lesser of 50% MADS or 10% principal amount of water quality bonds outstanding.	Minimum 1.05x debt service	Suspense fund. Moral obligation pledge on state match bonds.	75% of loan principal rated A3 or better
Ohio Water Development/Authority Aaa Drinking Water	cash flow/\$90	revenue	state match: 1.6x; leverage: 1.8x default tolerance: 51%	Lesser of 50% MADS or 10% principal amount of water quality bonds outstanding.	Minimum 1.05x debt service	Suspense fund. Moral obligation pledge on state match bonds.	54 participants: 55% of loan principal rated A3 or better
Aa3 Fresh Water	cash flow/\$225	revenue	1.5 x -1.8x debt service coverage; 57.7% default tolerance	50% MADS; two year "hold" on excess revenues	Minimum 1.05x debt service	Surplus fund retains excess revenues for two years. Cross-collateralization fund from funds released from surplus of other programs, maintained at 50% MADS	141 participants: 40% of loan principal rated investment grade; majority of participant pool exhibits below average credit quality
Pennsylvania Infrastructure Authority Aaa Clean and Drinking Water (Pennvest Loan Pool Program)	cash flow/\$263	primarily revenue	2.4x debt service coverage	MADS	1.54x debt service coverage; no downgrade	Legal structure minimizes additional leveraging	374 participants: 95% comprising less than 1% each of program; nine largest borrowers IG
Rhode Island Clean Water Finance Agency Aaa Clean Water	reserve/\$178	GO; revenue	44.8% default tolerance	49% of bond principal (minimum requirement typically 40% depending on interest rates)	Corpus of the reserve itself also available, and deallocated reserves become available as loans are repaid, which can be used in case of default	19 borrowers: 66% rated A3 or better; 99% IG; Largest borrowers: Narragansett Bay Commission (NR) and Warwick (A1), each at 30% of program	
South Dakota Conservancy/District Aa1 Clean Water (Leveraged and State Match) (Master Trust)	cash flow/\$32 (both Clean and Drinking Water)	Revenue, double barrel, Sales tax, or GO. (1.1x rate covenant)	2.5x	MADS	1.25x projected revenue coverage/fully-funded debt reserve; no future debt expected to be issued	State match secured by interest payments	53 borrowers: 66% of loan principal investment grade; Rapid City is 20% of program (Sales tax: A2; Water Revenue: A3)
Aa1 Drinking Water (State Match)	cash flow	Revenue, double barrel, Sales tax, or GO. (1.1x rate covenant)	2x		1.25x projected revenue coverage; no future debt expected to be issued	State match secured by interest payments	24 borrowers: 75% of loan principal investment grade; Sioux Falls is 30% of program (Sales tax: A1; GO LT: Aa2)

Moody's Rated SRF Programs - Comparative Data

Issuer/Rating/System	Program Structure/ Rated Debt (\$million)	Loan Pledge	Debt Service Coverage/ Default Tolerance	Debt Service Reserve Requirements	Additional Bonds Test	Other Security	Portfolio Credit Quality
Texas Water Development Board Aaa State Revolving Fund Senior Lien Revenue Bonds	cash flow/\$1,500	GO, revenue, or double barrel	1.7x on senior lien, expected to average 1.4x with further leveraging	AADS to be funded with bond proceeds	No downgrades. Pledged revenue for prior 12 months must be greater than or equal to AADS on bonds outstanding and proposed bonds.	Authority to raise rates on delinquent loans.	58% Aaa -insured commitments; 134 borrowers; 75% of loan portfolio rated A3 or better; City of Houston's insured obligations - 30%
Virginia Resources Authority -Aaa Clean Water (Master Indenture)	reserve/\$215	GO, revenue or double barrel	1.15x local coverage/ 25.2% default tolerance	Currently: 46% of bond principal; Minimum: 25%	Coverage of debt service by net revenues at least 1.0x	State aid intercept for loans secured by GO pledge. Each issue separately secured. Master Indenture Program.	31 participants; 85% of loan principal of A3 credit quality or better; Alexandria Sanitation Authority (A2) comprises 42% of portfolio
State of Wisconsin Clean Water Fund Program Aa2 Clean Water Revenue Bonds	hybrid/\$688	GO, revenue, or special assessment (rate covenant 1.1 x)	Sum Sufficient excluding reserves	1.20x AADS or such amount that will not adversely affect rating. Funded from bond proceeds.	State must certify balance in loan credit reserve fund and subsidy fund will meet indenture requirements.	State intercept. Subsidy fund backed by Aa3-rated state GO bonds. Can substitute loans.	187 participants; 44% of loans rated Aa3 or better; 90% of loans investment grade

IG- Investment Grade
NR- No Rating

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