

**2008 State Revolving Fund Workshop
Council of Infrastructure Financing Authorities**



October 20, 2008

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Panel Participants

 **Thomas Liu, Managing Director,
Bank of America Securities LLC**

- ◆ Manager, Water and Wastewater/SRF Finance
- ◆ Book-running senior manager on over \$9 billion SRF financings
- ◆ Senior manager on 18 SRF programs throughout the U.S.
- ◆ Structured start-up financings, senior/subordinate partial refundings, cross-collateralized financings, stand-alone safe drinking water financings and SRF restructurings

 **Jag Khuman, Director,
Maryland Water Quality Financing Administration**

- ◆ Responsible for the financial management of the Water Quality SRF, the Drinking Water SRF and other State water related infrastructure financing programs
- ◆ Specific responsibilities include the capital and operating budget, cash flow projections, investment of funds, financial/credit analysis, development of program policies, issuance of revenue bonds and the development of several grant, program and bond documents.
- ◆ Served the State of Maryland since 1989

 **Lori Beary, Community Development Manager
Iowa Finance Authority**

- ◆ Serves as primary administrator for the Clean Water and Drinking Water SRF Programs
- ◆ Responsible for the new Wastewater Treatment Financial Assistance Program created by the legislature in 2006
- ◆ Served for eight years managing the Authority's community development programs



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SRF Programs

When to Consider Bond Leveraging

- ◆ Loan demand for ready-to-proceed priority projects exceeds available SRF funding
- ◆ SRF loan interest rate of 50%+ of market/bond interest rate does not significantly decrease loan demand
- ◆ Competent financial and accounting staff exists or can be hired by the SRF program
- ◆ Most communities within the State have current water/sewer user rates generally below the affordability benchmarks (example annual water/sewer rate < 2% of median household income)



When to Consider Bond Leveraging

Key Financial Requirements

- ◆ No loss of Federal/State equity (CWSRF: No grants; DWSRF: Loan forgiveness OK)
- ◆ Funds Available in Perpetuity

Income Statement: Retained Earnings = Revenue – Expenses \geq Zero (but not necessarily every year)

Balance Sheet: Net Asset = Total Assets – Total Liabilities must be \geq federal funds + state match

◆ Example 1:

- Cash \$120 received from fed/state and loaned @ 0% interest, assume no investment earnings

At Year End

- Retained Earnings = Loan interest income \$0 – bond interest expense \$0 = \$0 (OK)
- Net Asset = Loans receivable \$120 – Liabilities \$0 = \$120 = federal funds + state match (OK)

- #### ◆ Example 2:
- Cash \$120 received from fed/state and loaned @ 2%; interest earned \$2.40 (retained earnings), assume no investment earnings

At Year End

- Retained Earnings = Loan interest income \$2.40 – bond interest expense \$0 = \$2.40
- Net Asset = Loans receivable \$120 + Cash \$2.40 – liabilities \$0 = \$122.40 > federal + state match (OK)

- #### ◆ Example 3:
- Cash \$120 received from fed/state; bonds issued \$50 (@5%) and all loaned @ 0% interest, assume no investment earnings

At Year End

- Retained Earnings = Loan interest income \$0 – bond interest expense \$2.25 = - \$2.25 (Not OK, but...)
- Net Asset = Loans receivable \$170 – bonds payable \$50 - interest payable \$2.25 = \$117.75 < federal/state match of \$120 (Not OK)



How to Leverage

Programmatic/Financing Issue Checklist

- ◆ Source of State Match
- ◆ Loan Repayment Obligation and Enforcement Mechanisms
- ◆ Legal Requirements – reserve fund requirements, debt service coverages, additional bonds test
- ◆ Number of Borrowers and Credit Composition
- ◆ Program Management
- ◆ Flow of Funds
- ◆ Amount and Timing of Federal Capitalization Grant Monies – amount needed for leveraging verses set asides, federal transfer provisions
- ◆ Cross-collateralization Provisions
- ◆ Loan Rate Policies
- ◆ Leveraging Capacity Analysis



How to Leverage

Leveraging Structure Alternatives

Cashflow Model

**Reserve Fund
Model**

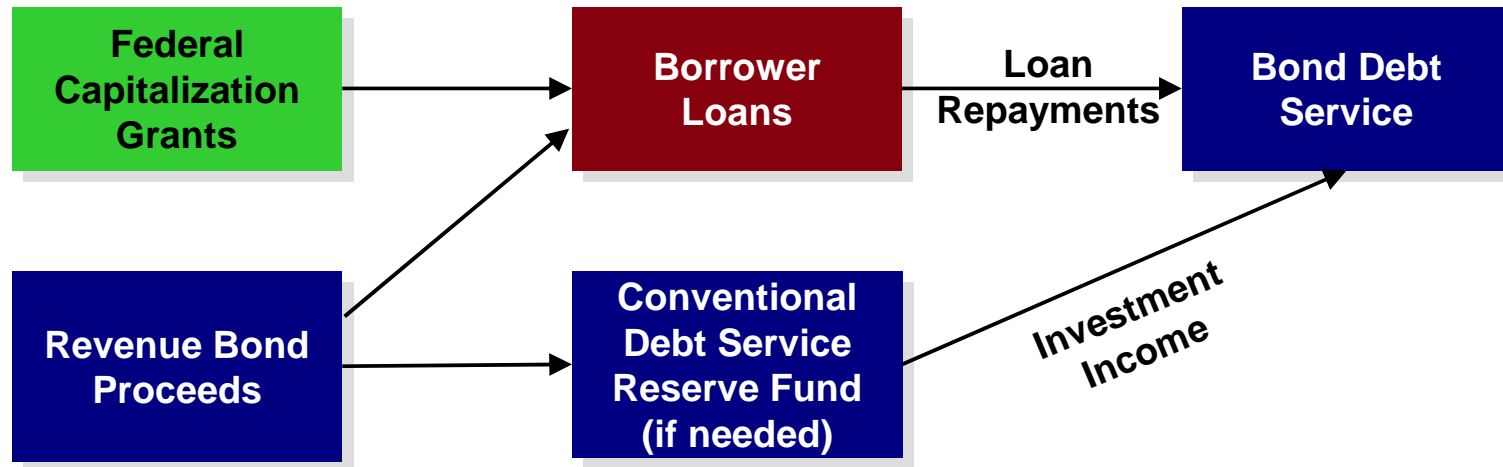
“Hybrid” Model

- ◆ There are generally three leveraging models used by SRF programs to finance borrower needs
 - Cashflow Model relies upon using loan repayments as the primary source of security for the underlying bonds
 - Reserve Model – relies upon an overfunded reserve and the bond-funded loan repayments as the primary source of security for the underlying bonds
 - Hybrid Model – relies upon the combination of loan repayments (from direct loans and bond-funded loans) as well as an overfunded reserve as the primary source of security for the refunding bonds



How to Leverage

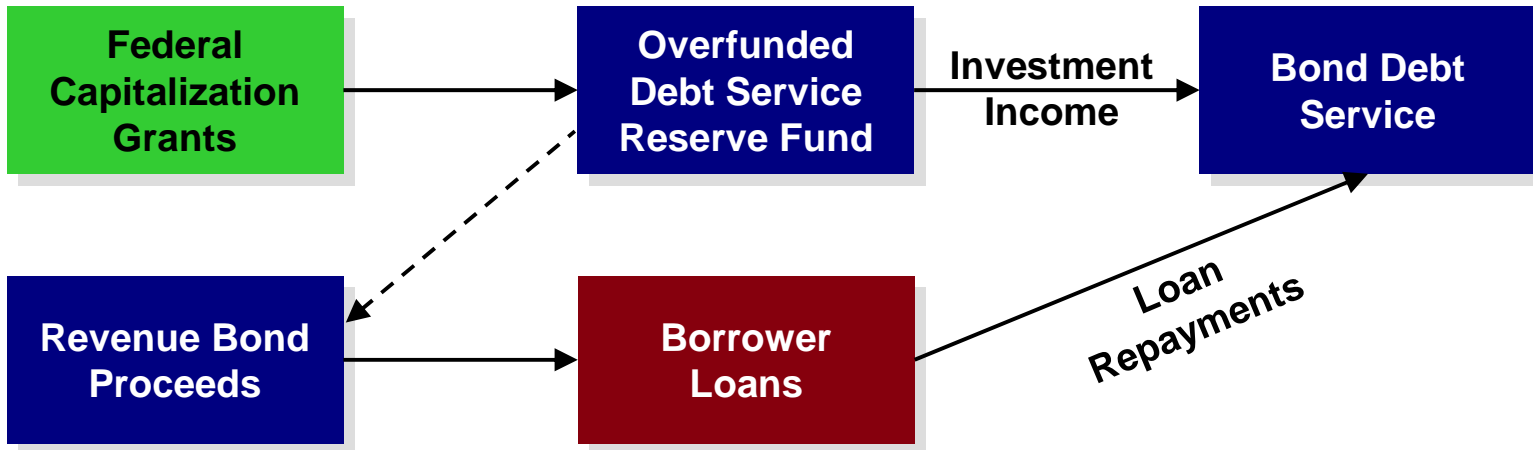
Cashflow Model



- ◆ The Cashflow Model leverages loan repayments funded from federal capitalization grants and bonding as the primary source of monies for borrower loans
 - First, the SRF makes direct loans with federal capitalization grants
 - Second, additional loans (i.e., leveraged loans) are funded from a revenue bond issuer; the revenue bond issue is secured from the loan repayments from both the direct loans as well as the leveraged loans. All or a portion of principal and interest repayments from the existing direct loans can be pledged to debt service of a bond issue
- ◆ Revenue available for debt service payment include:
 - Pledged borrower loan repayments from existing and new direct loans (which can result in excess coverage)
 - Interest income from a conventional debt service reserve fund, if necessary
- ◆ Loan subsidy made up by over-collateralization of loan repayments - loans rate(s) can be lower than bond rate or a blend of market rate loans and zero percent loans

How to Leverage

Reserve Fund Model



- ◆ The Reserve Fund Model leverages federal capitalization grants and uses bond proceeds as the primary source of monies for borrower loans
- ◆ Federal capitalization grants are deposited into an overfunded debt service reserve fund⁽¹⁾ to serve as
 - Security for the bonds (to cure defaults)
 - Source of interest subsidy for the borrowers
 - As principal on the SRF bonds is paid, reserves are released on a proportionate basis and available to cure any defaults
- ◆ Revenues available for debt service payment:
 - Borrower loan repayments
 - Interest income from overfunded reserve fund
 - Principal from the overfunded reserve fund (in the event of default)

(1) Beyond that which is usually required.



How to Leverage

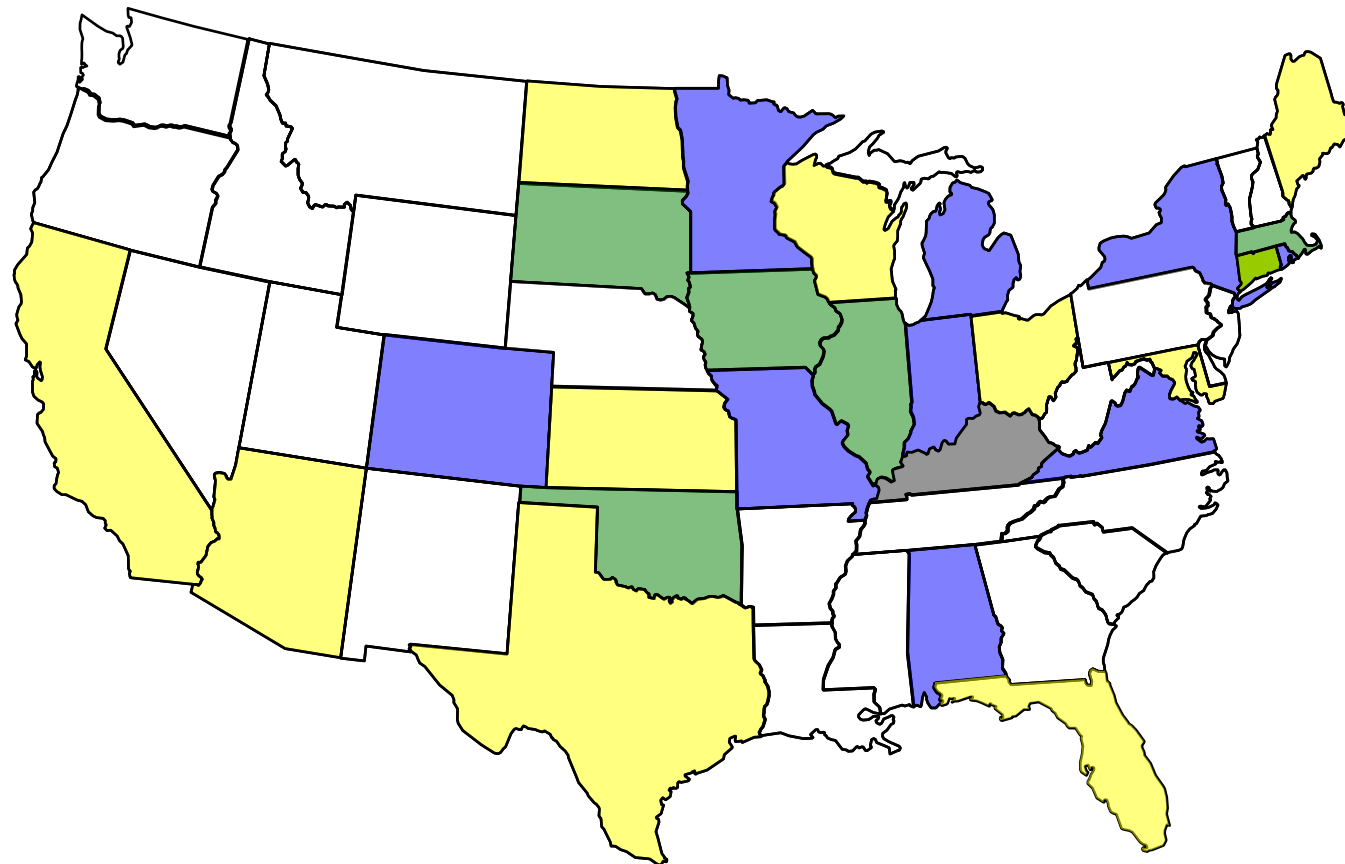
Leveraging Structure Comparison

	Advantages	Disadvantages
Cashflow Model	<ul style="list-style-type: none"> ◆ Decreases current bonding needs; federal capitalization monies currently disbursed as loans to borrowers ◆ Maximizes use of federal capitalization monies (if loan demand is large and/or predictable) ◆ Flow of funds can be relatively simpler 	<ul style="list-style-type: none"> ◆ Increases future bonding needs since loan repayments are the only source of future funding ◆ May require immediate disbursement of federal capitalization grants as loans to maintain coverage levels ◆ Requires additional non-bond equity (i.e. federal cap grants or state match appropriations) to create loan over collateralization to make up loan subsidy ◆ In default scenarios, can only access “excess coverage” from pledged monies over time
Reserve Fund Model	<ul style="list-style-type: none"> ◆ Decreases future bond needs (future funding achieved through reserve fund deallocations and loan repayments) ◆ In default scenarios, can access entire reserve balance immediately ◆ Achieves most liquid form of security (large reserves) with rating agencies and bondholders 	<ul style="list-style-type: none"> ◆ Requires monies (such as federal capitalization grants, etc.) to fund the debt service reserve fund ◆ Requires more bonding upfront since bond proceeds fund loans ◆ Requires more oversight of SRF investments which help make up the subsidy ◆ Flow of funds can be relatively more complex



How to Leverage

Leveraging Structures By State

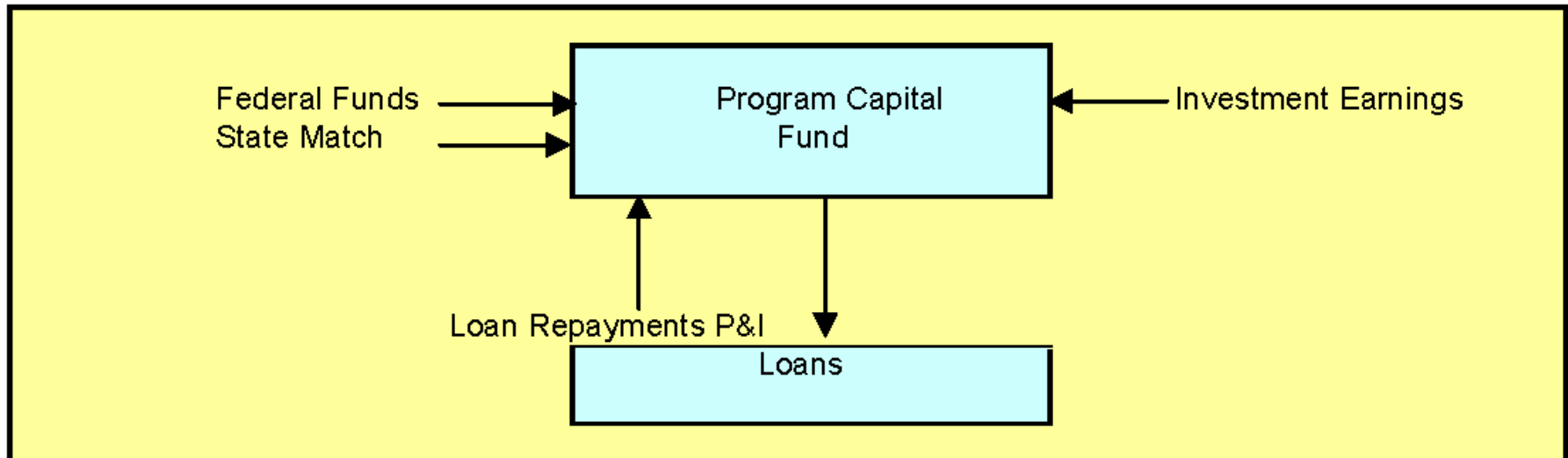


- Reserve Fund Model
- Cashflow Model
- Hybrid: Reserve Fund Model with Cashflow Model Structure
- G.O. Model
- State-Appropriation Backed

Direct Loan Program

No Bond Leveraging

Direct Loans - No Bond Leveraging





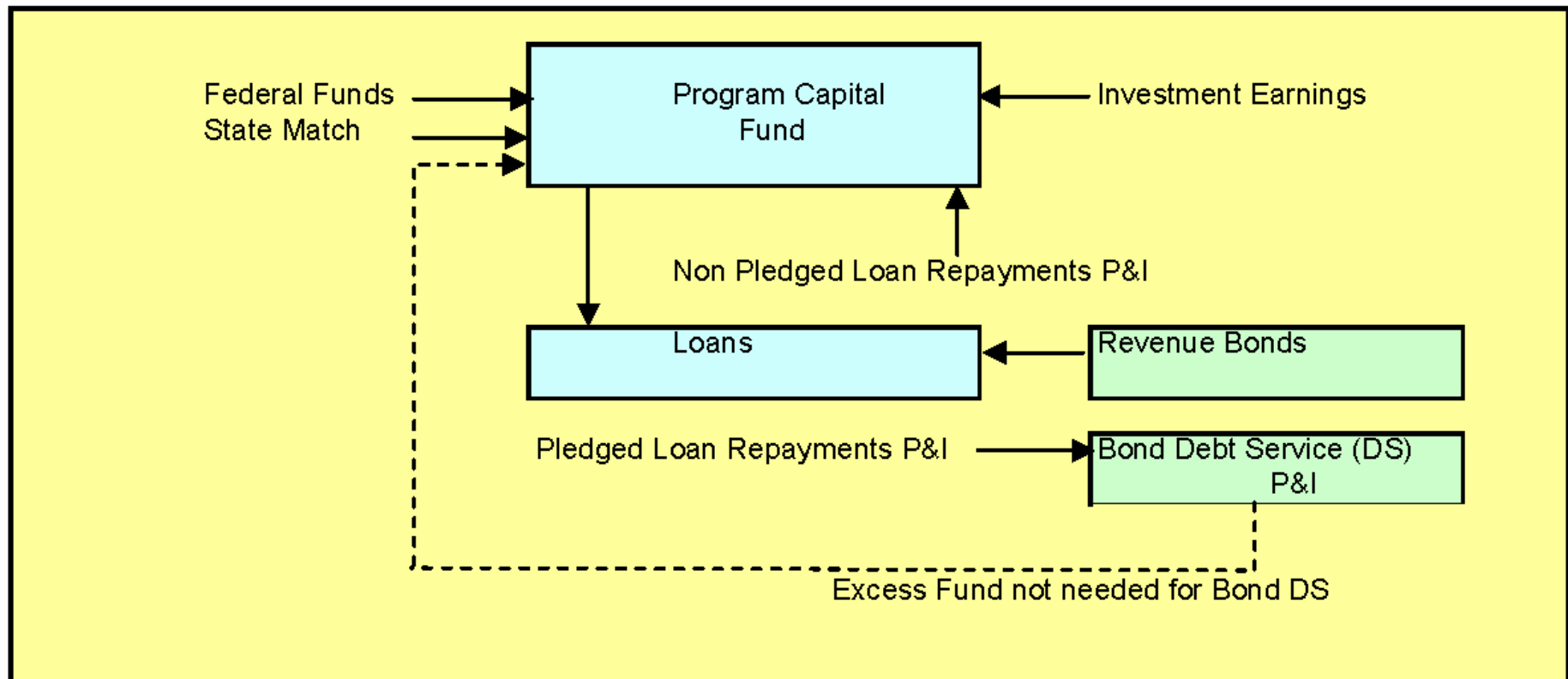
Direct Loan Program

No Bond Leveraging

Interest Rate (Wt. Avg)		2.50%										
Term (yrs)		20										
Year		1	2	3	4	5	6	7	8	9	10	Total
Fed. Capitalization Grant		100	100	100	100	100						500
State Match @20%		20	20	20	20	20						100
Total Equity		120	120	120	120	120						600
Loan Repayments		0	8	16	25	34	44	47	50	53	56	331
Total Avail for Loans/yr		120	128	136	145	154	44	47	50	53	56	931
Cumulative Loans		120	248	384	528	682	726	772	822	875	931	

Bond Leveraging - Cash Flow Model

Bond Leveraging - Cash Flow Model





Bond Leveraging

Cash Flow Model

Interest Rate (Wt. Avg)	2.50%
Term (yrs)	20

Leveraging: Total
 \$/(Fed & State \$) 2.00

Year		1	2	3	4	5	6	7	8	9	10	Total
Fed. Capitalization Grant		100	100	100	100	100						500
State Match @20%		20	20	20	20	20						100
Bond Interest Rate	5.00%	120	120	120	120	120						600
Total Equity		240	240	240	240	240						1,200
Loan Repayments (Net of bond DS)		0	6	12	18	25	33	35	37	39	42	248
Total Avail for Loans/yr		240	246	252	258	265	33	35	37	39	42	1,448
Cumulative Loans		240	486	738	996	1,261	1,294	1,329	1,366	1,406	1,448	



Bond Leveraging

Cash Flow Model

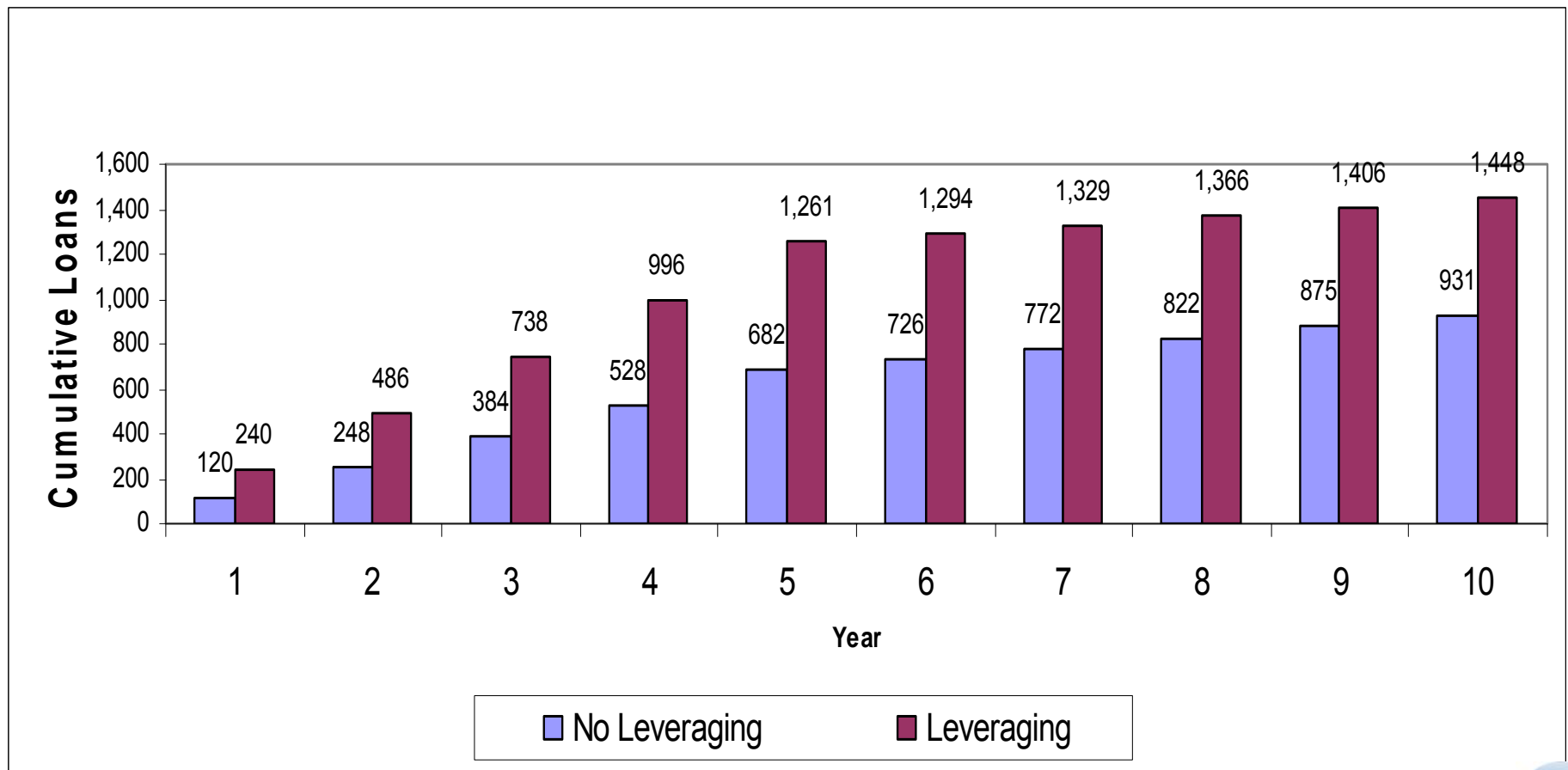
Year		1	2	3	4	5	6	7	8	9	10	Total
Loan Repayment (Principal)			9	19	30	40	52	54	57	60	63	385
Loan Repayment (Interest)			6	12	18	23	29	29	28	28	27	200
Loan Repayment (P&I)			15	31	47	64	81	83	85	88	90	585
Bond Debt Service (Principal)			4	7	11	16	20	21	22	23	24	149
Bond Debt Service (Interest)			6	12	17	23	28	27	26	25	24	188
Bond Debt Service (P&I)			10	19	29	39	48	48	48	48	48	337
Net Loan P&I Repayments			6	12	18	25	33	35	37	39	42	248
No Net loss of Equity Test	Must be Positive		0.00	0.09	0.28	0.57	0.98	1.50	2.07	2.67	3.32	11.48
Debt Service Coverage Test	> 1.10 to 1.20		1.60	1.62	1.64	1.66	1.68	1.72	1.77	1.82	1.87	

Example Loan Capacity

Leveraging vs. Direct Loans

Example 1: Interest Rate 50% of Market (Market = 5.00%)

Leveraging Ratio: Total $\$/$ (Federal & State $\$$) = ~2.00



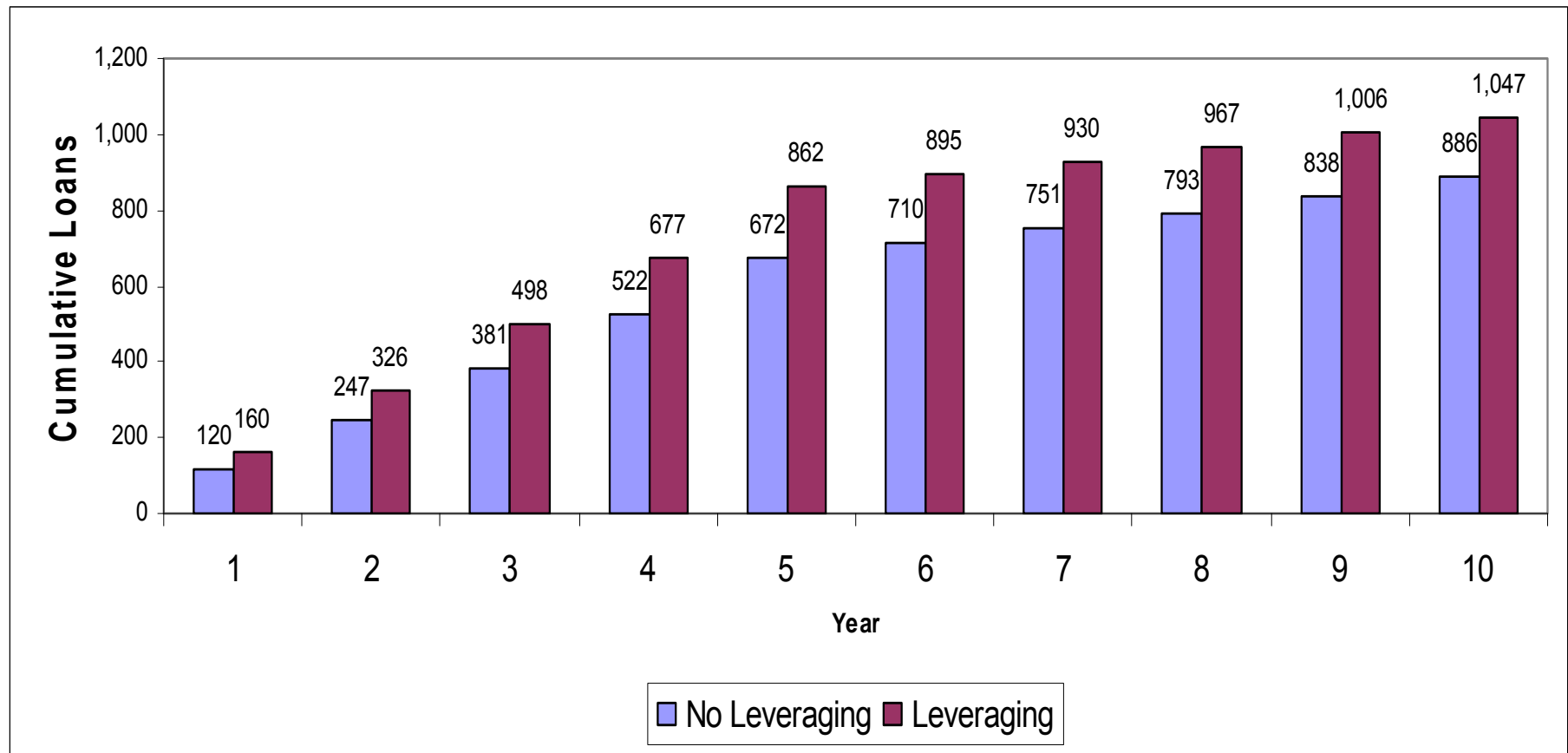


Example Loan Capacity

Leveraging vs. Direct Loans

Example 2: Interest Rate 25% of Market (Market = 5.00%)

Leveraging Ratio: Total $\$/$ (Federal & State $\$$) = ~1.33





Maryland WQSRF Program

History

- 1990 – 1994:** 7 series of new bond issuance (~\$165 million)
- 1995 – 2007:** Direct (non-leveraged) loan program
2 series bond refunding (~\$105 million)
- 2008 :** Bond issuance restarted (New Indenture)

Balance Sheet as of June 30, 2008 (\$ Million)

Assets:	\$970		
Liabilities:	<u>\$111</u>		
Net Assets:	\$859	→	
		Federal Grants:	\$580
		State Match:	\$116
		Retained Earnings:	\$163



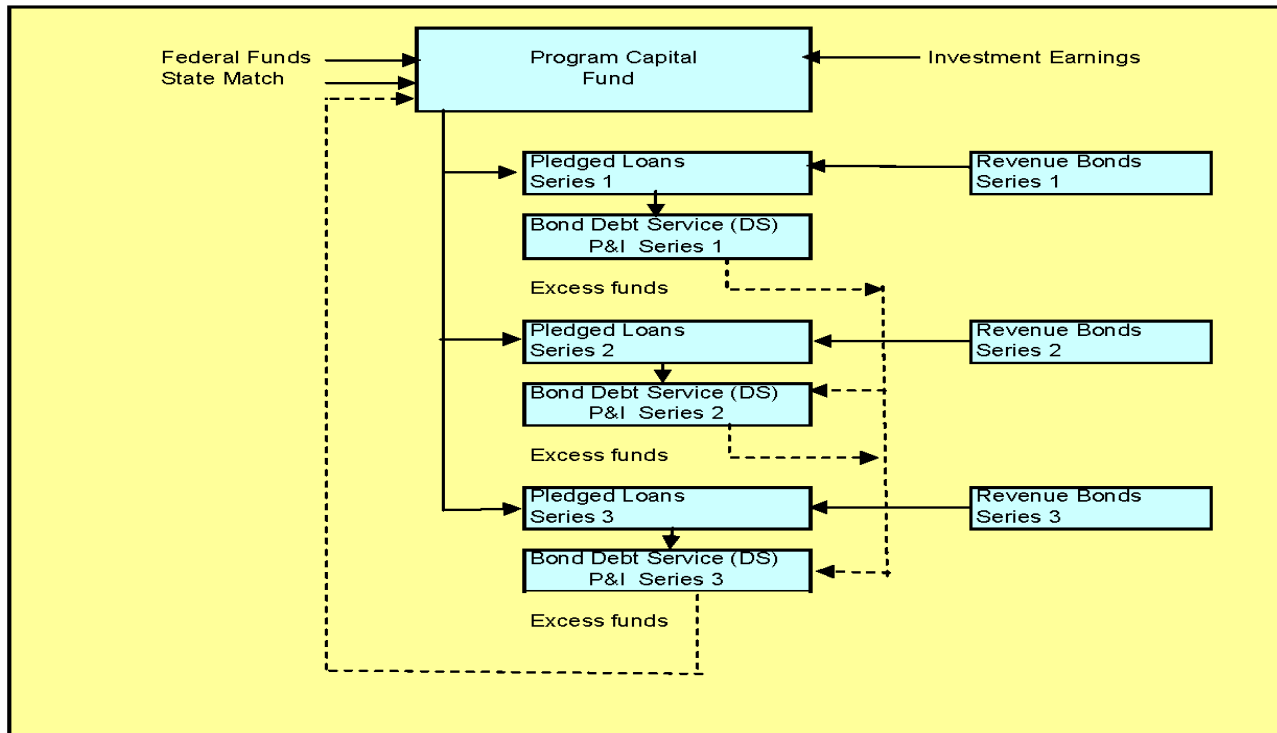
Maryland SRF Indentures – Old & New

Key Provisions

	<u>Old Indenture (1990)</u>	<u>New Indenture (2008)</u>
Debt Service Reserve	Required (1-yr DS)	None
Additional Bonds Test	DS Coverage > 1.20	> 1.10
Cross-Collateralization	None	Yes. Cross-investment & transfers between WQ/DW
SRF Accounting	Complex	Simplified

Maryland SRF Indenture - Old

Bond Leveraging - Cash Flow Model



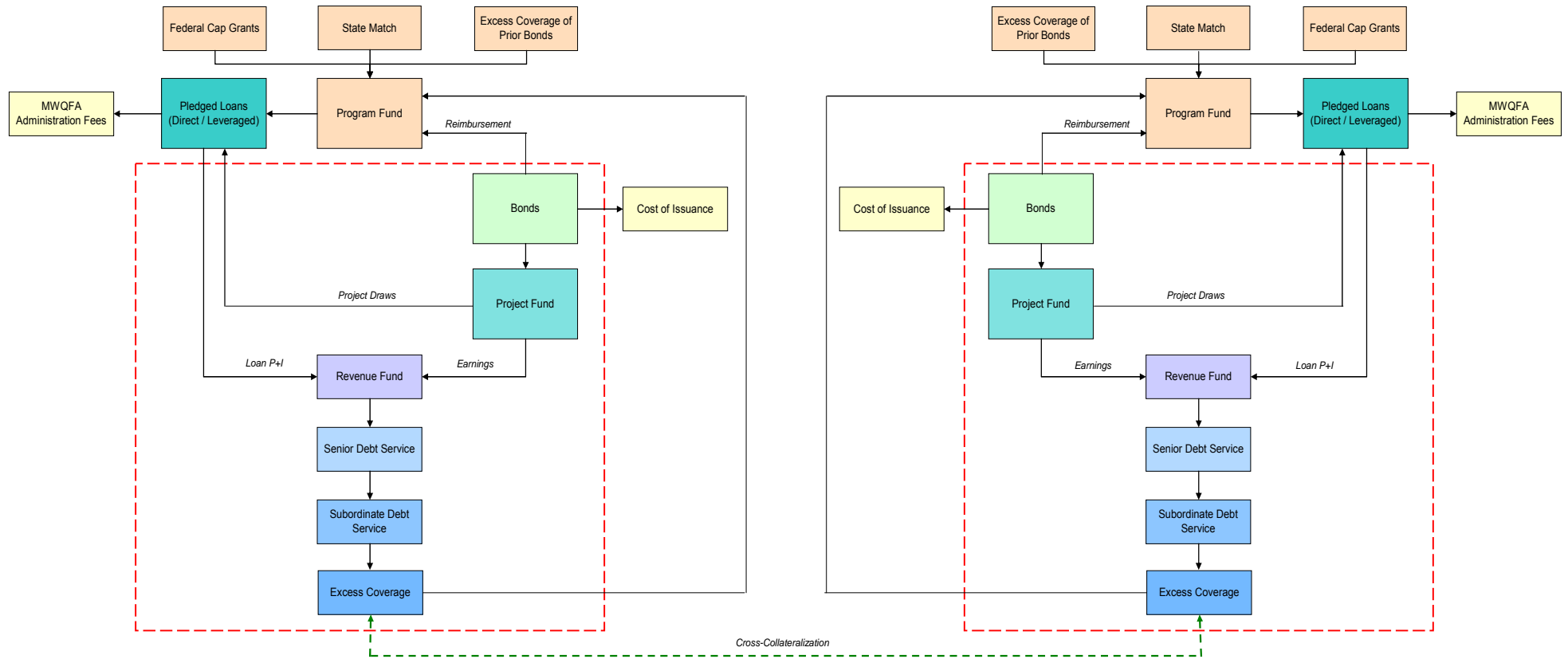


Maryland WQSRF Program

Cash Flow Model w/ Cross-Collateralization

Clean Water SRF Program

Drinking Water SRF Program



--- Master Trust Indenture
- - - Cross-Collateralization



Maryland QSRF Program

As of June 30, 2008

<u>Sources</u>	<u>\$ Million</u>
Federal Grant Awards	619
State Match Appropriation	124
Revenue Bonds	213
Investment Earnings	125
Loan Principal Repayments	377
Loan Interest Repayments	<u>169</u>
	1,627
<u>Uses</u>	<u>\$ Million</u>
Loans (Tax-exempt/taxable)	1,232
Loans (Linked Deposit via banks)	20
Loans Pending on IUP	80
Bond DS/Expenses/Reserve	238
Transfer to DWSRF	11
Operating Expenses (4% a/c)	<u>12</u>
	1,593
Loan Capacity w/o Leveraging	34



Iowa State Revolving Fund

Background

- ◆ When Iowa SRF was created by legislature:
 - Iowa Department of Natural Resources (DNR) and Iowa Finance Authority (IFA) given joint authority to administer program

- ◆ In reality
 - DNR administered entire program
 - IFA just issued bonds
 - One of first states to leverage
 - First state to issue state match bonds





Iowa State Revolving Fund

Disconnect Between Financing and Program Administration

- ◆ DNR received & reviewed all applications
- ◆ IUP listed basically all applications
- ◆ IFA issued bonds based on IUP
- ◆ **Resulting in over issuance of debt**
 - IFA issued bonds based on the IUP because we weren't involved in the program and didn't understand the process
 - DNR didn't understand the financial impacts of issuing bonds that weren't going to be loaned out soon
- ◆ **Iowa leveraged early -- but not always wisely**





Iowa State Revolving Fund

Other Issues

- ◆ SRF interest rates varied depending on which bond financed the loan
- ◆ DNR approval process was very long
- ◆ Because of time lag between when bonds were issued and when loans were made – interest on loans didn't reflect current market rates
- ◆ **Both program and financial issues resulted in lower demand with oversupply of funds**





Iowa State Revolving Fund

2001 – Financial Restructure

- ◆ Creation of Master Trust Indenture
- ◆ Consolidation of reserve funds
- ◆ Cross collateralization of Clean Water and Drinking Water bonds
- ◆ Creation of Equity Fund
 - Release of excess reserves
 - Not tied to any bonds
- ◆ 3% interest rate for all loans





Iowa State Revolving Fund

Creation of an Equity Fund has allowed us to....

- ◆ Fund non-point source loans (\$40 million so far)
- ◆ Develop Planning & Design Loans
 - 0% interest for up to 3 years
 - Allows communities to get projects started
- ◆ Use the equity account as an internal line of credit
 - Used to originate loans and make disbursements that are then taken out with bond issues
 - Bond proceeds are used to repay equity account
 - No TIPRA problem





Iowa State Revolving Fund

Iowa has a hybrid leveraging model

- ◆ 2001 bonds were reserve model
- ◆ More recent issues are cash flow model
- ◆ **After the financial restructure, we needed to make programmatic changes**





Iowa State Revolving Fund

Programmatic Changes

- ◆ Separated environmental aspects of program from financial aspects
- ◆ DNR
 - reviews technical aspects of projects
 - Issues permits
 - Hired environmental services coordinator to do the environmental review
 - Hired SRF coordinator to coordinate IUP, non-point source projects, develop manuals, etc.
- ◆ IFA
 - Receives and reviews loan applications
 - Makes disbursements
 - Sends out invoices and collects loan payments
 - Program accounting
 - Financial management
- ◆ Allows each agency to do what it does best
 - Lets engineers be engineers
 - Lets finance people manage financial issues
- ◆ **Allows various aspects of the program to happen simultaneously**





Iowa State Revolving Fund

So – how does our program work?

- ◆ IFA Board adopts reimbursement resolution
- ◆ So bond proceeds can be used to reimburse Equity Fund
- ◆ Loans are originated and disbursements are made from the Equity Account
- ◆ To determine when we issue bonds, we monitor:
 - Disbursements paid to borrowers
 - Equity Fund balance
 - Principal and interest repayments
 - Releases from reserve funds after debt service
 - Cap grant payments
- ◆ Amount of bond issue is determined by:
 - Reimbursement resolution amount
 - Amount disbursed from Equity Fund to existing SRF loans
 - Amount of SRF loan repayments needed to make debt service payments
 - Those loans are then pledged to the bond issue
- ◆ Bond proceeds are then deposited in the Equity Fund and used for new loans



