PERFORMANCE AUDIT
OF

SEWAGE FUNDING NEEDS

May 2002

76-601-01L

EXECUTIVE DIGEST

SEWAGE FUNDING NEEDS

INTRODUCTION

This report, issued in May 2002, contains the results of our performance audit* of Sewage Funding Needs.

AUDIT PURPOSE

This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.

BACKGROUND

Michigan municipalities operate approximately 840 sanitary sewer collection systems* and 435 wastewater treatment plants* (WWTPs). The first sanitary sewer collection system was installed in 1836 and the first WWTP began operation in 1940. Many of the sanitary sewer collection systems and WWTPs in use were constructed during the 1960's, 1970's, or before and are nearing the end of their useful lives.

During the 1970's, large federal grants supported the construction of a very significant amount of sewer infrastructure. These federal grant programs have been phased out and were replaced in 1988 with a state revolving fund (SRF) program. Since the SRF program began in Michigan, requests for loans have exceeded the amount of funds available. The gap between funds

* *See glossary at end of report for definition.*

available and loan requests has widened significantly in recent years. Loan requests for 2001 totaled $436 million, with approximately $274 million being available for loans. The amount of federal funds contributed to SRF has diminished from a high of $92 million in 1993 to $57 million in 2001.

AUDIT OBJECTIVES AND CONCLUSIONS

Audit Objective: To determine how much annual funding, on the premise of a 20-year funding plan, will be needed for Michigan municipal sewage treatment systems to upgrade and expand to meet their residents' needs.

Conclusion: We estimate that the annual funding needed for 20 years ranges from $334 million to $530 million a year.

Audit Objective: To determine how much funding will be needed for Michigan municipalities whose residents currently rely on septic systems but are likely to need to convert to a municipal sewage treatment system.

Conclusion: Because the municipalities that we contacted did not have any firm plans to convert areas served by septic systems to a centralized sewage system, we did not project a cost for this type of conversion. The municipalities recognized that there might be a large number of areas with failing septic systems that would need to be converted. However, they currently do not know the extent of the problem.

AUDIT SCOPE AND METHODOLOGY

Our audit scope was to examine the Department of Environmental Quality's program and other records related to sewage needs and sewage discharges; sewer infrastructure needs studies that the Southeast Michigan Council of Governments and the Michigan Municipal League/Public Sector Consultants, Inc., compiled; and plans that selected municipalities had prepared regarding

future sewer infrastructure needs and estimated expenditures. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Our audit methodology included review of data that the Department of Environmental Quality maintains regarding SRF loan activity and sewage discharges; review of the sewer infrastructure needs studies that other groups have compiled; and discussions with local municipalities regarding their plans for sewer related repairs, refurbishing, and expansion.

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May 17, 2002

The Honorable Kenneth R. Sikkema
820 Farnum Building
Lansing, Michigan

Dear Senator Sikkema:

This is our report on the performance audit of Sewage Funding Needs.

This report contains our executive digest; description; audit objectives, scope, and methodology; comments; and a glossary of acronyms and terms.

Our comments are organized by audit objective.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Thomas H. McTavish, C.P.A.
Auditor General

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Description

Michigan municipalities operate approximately 840 sanitary sewer collection systems and 435 wastewater treatment plants (WWTPs). The first sanitary sewer collection system was installed in 1836 and the first WWTP began operation in 1940. Many of the sanitary sewer collection systems and WWTPs in use were constructed during the 1960's, 1970's, or before and are nearing the end of their useful lives.

During the 1970's, large federal grants supported the construction of a very significant amount of sewer infrastructure. These federal grant programs have been phased out and were replaced in 1988 with a state revolving fund (SRF) program. Since the SRF program began in Michigan, requests for loans have exceeded the amount of funds available. The gap between the funds available and loan requests has widened significantly in recent years. Loan requests for 2001 totaled $436 million, with approximately $274 million being available for loans. The amount of federal funds contributed to SRF has diminished from a high of $92 million in 1993 to $57 million in 2001.

Audit Objectives, Scope, and Methodology

Audit Objectives

Our performance audit of Sewage Funding Needs had the following objectives:

1. To determine how much annual funding, on the premise of a 20-year funding plan, will be needed for Michigan municipal sewage treatment systems to upgrade and expand to meet their residents' needs.

2. To determine how much funding will be needed for Michigan municipalities whose residents currently rely on septic systems but are likely to need to convert to a municipal sewage treatment system.

Audit Scope

Our audit scope was to examine the Department of Environmental Quality's program and other records related to sewage needs and sewage discharges; sewer infrastructure needs studies that the Southeast Michigan Council of Governments and the Michigan Municipal League/Public Sector Consultants, Inc., compiled; and plans that selected municipalities had prepared regarding future sewer infrastructure needs and estimated expenditures. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our audit fieldwork was conducted from March through July 2001. Our audit methodology included review of data that the Department of Environmental Quality maintains regarding state revolving fund (SRF) loan activity and sewage discharges; review of the sewer infrastructure needs studies that other groups have compiled; and discussions with local municipalities regarding their plans for sewer related repairs, refurbishing, and expansion.

COMMENTS

REHABILITATION AND UPGRADING OF SEWAGE TREATMENT SYSTEMS

COMMENT

Background: Prior to the 1950's, local governments and private entities were largely responsible for developing and financing wastewater infrastructure. In the 1950's, federal financial assistance for constructing municipal wastewater treatment systems began and steadily increased. In the late 1960's, State bond proceeds were used for grants for wastewater infrastructure and supplemental funding with ongoing federal assistance.

The Federal Water Pollution Control Act of 1972 (known as the Clean Water Act) authorized funding to local units of government, primarily for wastewater treatment plant (WWTP) construction under a program administered by the U.S. Environmental Protection Agency (EPA). The Construction Grants Program provided grants to assist local governments in constructing WWTPs. The federal grants constituted a large percentage of the funding for these projects. The federal share of project costs was originally 75%, with supplemental funding from State bond sources increasing grants to 90% for some projects, but it was reduced to 55% under amendments enacted in 1981.

In 1987, Congress began phasing out the Construction Grants Program and replaced it with a loan program. States now receive state revolving fund (SRF) capitalization* grants, which are matched at a rate of one state dollar for every five federal dollars, or 20%. The funds are then utilized by the states to provide loans to communities for the construction of eligible water pollution control projects on a priority basis. Repayments on the initial loans are loaned out again, thus establishing the "revolving" nature of the SRF program. The original intent was that communities would repay loans to the states, phasing out federal involvement, while the states built up a source of capital for future investments.

Michigan has received federal capitalization funds from the EPA since fiscal year 1988-89. Federal contributions have totaled approximately $805 million through fiscal

* *See glossary at end of report for definition.*

year 2000-01. As shown in the following table, approximately $1.5 billion in SRF loans have been made in Michigan since fiscal year 1988-89, consisting of the federal contributions, State match, and municipality payments on principal and interest:

Fiscal Year	SRF Loans (in millions)
1988-89	$ 1.8
1989-90	36.9
1990-91	110.2
1991-92	57.0
1992-93	120.7
1993-94	69.5
1994-95	70.0
1995-96	136.2
1996-97	104.2
1997-98	126.9
1998-99	241.0
1999-2000	194.6
2000-01	255.6
Total	$1,524.8

From fiscal year 1989-90 through 1991-92, Michigan operated the SRF program as a direct loan program. Municipalities would request reimbursement for project costs and SRF would draw directly upon federal and State funds, as they were needed.

Since fiscal year 1992-93, the State has used SRF capital to buy securities and has sold SRF revenue bonds for which those securities are pledged as collateral. Existing bond issuance agreements pledge that the State will maintain collateral of at least 50% of the amount of bonds outstanding. This provides the framework for Michigan to issue bonds and provide loans to municipalities of twice the amount of capital in SRF.

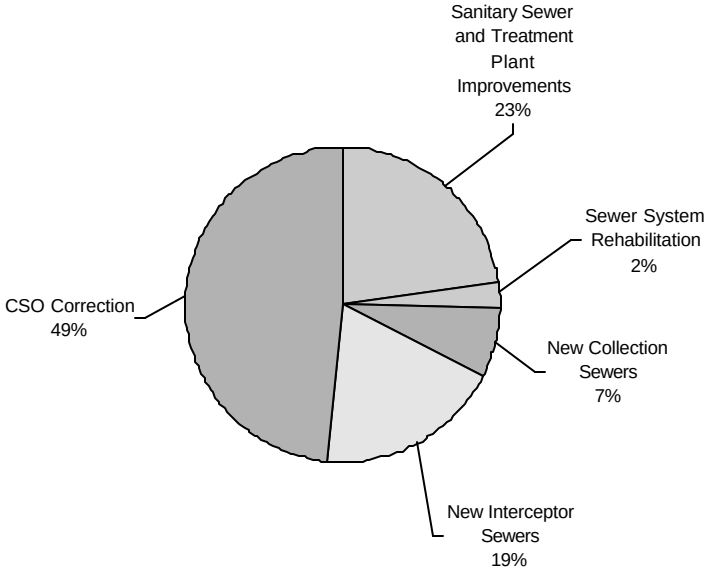
To date, Michigan's SRF has marketed nine bond issues. The most recent was in August 2001 for $222,800,000. Bond issuances are timed to cover loan disbursement needs for a period from 12 to 15 months. Issuance costs are paid out of bond proceeds and, thus, are not identified as direct administrative expenses in SRF.

SRF provides reduced interest loans for the construction of water pollution control projects. These may include WWTP upgrades or expansions, combined sewer overflow

(CSO) abatement, rehabilitation or rebuilding of sewers and WWTPs, new sewers, nonpoint source pollution management measures and other related wastewater treatment efforts. The State Clean Water Assistance Act, now codified in Part 53 of Act 451, P.A. 1994, requires SRF to offer assistance in priority order from the State's annual project priority list. Projects are ranked using a number of State-established criteria. Michigan places a high priority on resolving those situations in which enforceable schedules for corrective action have been agreed to. Having an enforceable schedule plays a crucial role in determining a project's scoring for the project priority list. Most of the projects that receive funding have an administrative order or a permit with an enforceable schedule or a schedule imposed by a court.

Over 200 municipalities have recently reported sanitary sewer overflows (SSOs) to the Department of Environmental Quality. These overflows occurred over the last six years. About 80 of these communities require implementation of SSO corrective programs.

The following chart displays the types of projects funded by SRF from fiscal year 1988-89 through fiscal year 1999-2000:



Audit Objective: To determine how much annual funding, on the premise of a 20-year funding plan, will be needed for Michigan municipal sewage treatment systems to upgrade and expand to meet their residents' needs.

Conclusion: We estimate that the annual funding needed for 20 years ranges from $334 million to $530 million a year, as illustrated in the following table (in millions):

Type of Project	Southeast Michigan		Remainder of State		Statewide Total	
	Low	High	Low	High	Low	High
Sewer system rehabilitation	$ 80	$ 148	$ 46	$ 67	$ 126	$ 215
WWTP rehabilitation and new capacity	28	45	53	53	81	98
CSO control	99	146	6	6	105	152
SSO remediation	14	58	7	7	21	65
Total	$ 222	$ 397	$ 112	$133	$ 334	$ 530

Changes in laws and regulations could have a dramatic impact on the costs estimated in this report.

Southeast Michigan

In April 2001, the Southeast Michigan Council of Governments (SEMCOG) published *Investing in Southeast Michigan's Quality of Life: Sewer Infrastructure Needs*. This study projected the sewer infrastructure needs from 2001 through 2030 for 7 southeast Michigan counties: Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. To help provide guidance and expertise in the project, SEMCOG formed a task force that included municipal public works officials and consulting engineers.

SEMCOG distributed a survey to a selected sample of representative southeast Michigan municipalities to obtain information about existing sanitary sewers, such as: (1) miles of pipe, (2) annual cost of operation and maintenance and repair, (3) identified projects and costs needed to maintain or upgrade existing systems, and (4) anticipated expansions to the existing system. Along with the survey, SEMCOG sent a sewer service map asking the municipality to update and indicate where sewer service had been added, was expected to be added, and was anticipated to be available between certain time periods.

In addition, SEMCOG conducted a mail survey of all WWTPs in southeast Michigan to obtain expenses anticipated through 2030 for the following categories: (1) operation and maintenance, (2) rehabilitation, and (3) new sewer construction.

Using the information gathered from both surveys and follow-up contacts, SEMCOG extrapolated the municipal data to prepare estimates at the county and regional levels. SEMCOG extrapolated the WWTP data from the largest facilities in the region, which account for approximately 80% of sewage treatment in southeast Michigan. Because extrapolation and growth projections were used, SEMCOG used a range of cost estimates for the cost categories of sewer infrastructure.

SEMCOG extrapolated data by first approximating the future sewer service area for municipalities that were not surveyed or did not provide a sewer service map. Using the adopted regional development forecast, SEMCOG attempted to identify municipalities that had experienced significant growth in the 1990's or were expected to experience significant growth and development by 2010 and/or 2030.

Next, SEMCOG estimated the total length of sewers by examining the relationship between miles of road and miles of sewers. After comparing the miles of sewer reported in the surveys to the data obtained for miles of road, SEMCOG determined that there was a relationship between them and used the road-to-sewer relationship along with returned sewer service maps to identify the length of sewers in the region.

Once the total length of sewers was calculated, a cost was obtained based on recent engineering studies, survey responses, housing stock, and other consulting organizations for the following categories of sewer infrastructure: (1) operation and maintenance, (2) rehabilitation, (3) CSO control, (4) SSO remediation, (5) new sewer construction, and (6) WWTPs.

Using the survey results and extrapolation methodology previously described, SEMCOG developed the following estimates for sewer infrastructure needs for southeast Michigan counties by range by the year 2030 (in millions):

Range	Operation and Maintenance	Rehabilitation	CSO Control	SSO Remediation	New Sewer Construction	WWTPs	Total
Low	$1,810	$2,414	$1,987	$ 280	$6,975	$1,012	$14,478
Mid	$4,524	$3,224	$2,427	$ 415	$8,503	$1,285	$20,378
High	$6,874	$4,437	$2,927	$1,166	$9,660	$1,577	$26,641

Based upon our analysis of the report and data obtained from the EPA, the Department of Environmental Quality, municipalities and other sources, we concluded that the estimates were well substantiated and represented the best available information.

For our projection of funding needs, we excluded the operation and maintenance and new sewer construction categories. The operation and maintenance costs are normal operating costs rather than infrastructure costs. The new sewer construction category includes costs that developers would normally pay to construct new sewer collector systems for subdivisions. These new sewer collector systems become the responsibility of the municipality to operate and eventually to replace or refurbish. Although we did not include these categories in our projections, they are very important factors in the overall cost of sewage treatment systems.

The SEMCOG projections included a low, mid, and high range based on different assumptions that are explained in its report. We divided the low and high SEMCOG 30-year projections by 30 to estimate the range of annual needs. These projections are in current dollars and include no allowance for inflation. Since SRF has made loan commitments for many of the CSO projects, the amounts expended on these types of projects will probably exceed our annual funding needs estimate during the first few years of the 20-year period and be less during the last few years.

Remainder of State

Public Sector Consultants, Inc. (PSC), along with Environmental Consulting and Technology, Inc., partnered with the Michigan Municipal League (MML) to publish *Managing the Cost of Clean Water: An Assessment of Michigan's Sewer Infrastructure Needs* in August 2000. The report assessed the financial obligations of local governments for sanitary sewer infrastructure repairs and improvements. It also examined (1) the resources available for capital expenditures and (2) the legal and policy issues that local governments must address to meet existing and new mandates related to water pollution.

The assessment was primarily drawn from surveys that MML sent in October 1999 to its member cities and villages outside the 7-county (Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne) area of southeast Michigan. The survey requested information on the age and status of sanitary sewer infrastructure, maintenance costs, recent and projected expenditures to control CSOs, and the number of residences still served by on-site sanitary disposal systems.

The report estimated the cost to replace, rehabilitate, and upgrade sanitary sewers over the next 20 years at $150 million. That projection was based on mean annual SRF loans since 1989. The report stated: "Three major factors that will affect the demand for

SRF funds were not effectively documented by the surveys conducted as part of this study."

Using the data from the MML/PSC study as a base, we collected data from additional municipalities with sewer systems and from WWTPs in order to form a basis for making our projections. The combination of the MML/PSC survey data and the additional data that we compiled represented the infrastructure plans for 154 municipal sewer systems and 41 WWTPs. We calculated the average estimated cost per individual served for this group and projected it to the remainder of the population served by a sewer system. The result is our low estimate.

Most of the municipalities that we contacted had not developed long-range plans for their sewer needs and wastewater treatment needs. Since most municipalities plan for only the next 3 to 4 years, we concluded that this estimate was likely to be significantly less than the actual need over a 20-year period. Therefore, we developed an alternative estimate. We concluded that the per-person-served cost for the 7-county SEMCOG area would be similar for the rest of the State, with the expected greater cost of more miles of sewer per person in the outstate area more than offset by the expected greater cost of sewer work in the more heavily paved and otherwise urbanized SEMCOG area. Therefore, we adopted SEMCOG's low per-person-served cost as our high estimate for the remainder of the State.

We estimated an average annual cost of $6 million for outstate CSO control projects. All systems experiencing significant CSO problems are on SRF's project priority list. Our estimate is the total from that list, divided by 20 years. The actual annual costs may be higher than the average in the next few years because the CSO control capital expenditure will occur early in the 20-year time frame based on current enforceable schedules.

We estimated an annual cost of $7 million for SSO remediation projects. We based our estimate on discussions with the 45 outstate municipalities that had large or frequently occurring discharges. Twenty-six of these municipalities had plans for projects costing between $150,000 and $20 million. These projects totaled approximately $129 million. For the 19 municipalities we contacted that had not developed plans with cost estimates and the 150 municipalities we did not contact, we used an estimate of $30,000, for a total of approximately $5 million. The 150 municipalities we did not contact are not currently expected to have significant SSO remediation needs. The total of $134 million was divided by 20 years for the annual amount.

Future Funding

One technique for increasing the amount of funding available for loans would be to leverage at a higher leveraging ratio* than has historically been done with Michigan's SRF.

Michigan's SRF tendered direct loans from fiscal year 1988-89. It began using leveraging in fiscal year 1992-93. The leveraging ratio has generally increased since then. The cumulative leveraging ratio from fiscal years 1992-93 through 2000-01 was 1.99 and is estimated to increase to 2.07 at the conclusion of fiscal year 2001-02. The overall leveraging ratio since Michigan's SRF began in 1988 is 1.69. According to the EPA, nearly half of other states' SRF programs use leveraging to increase the amount of loan funding available. Leveraging ratios can be computed in a variety of ways. For this presentation, the cumulative dollar amount of loans granted is divided by the total dollar amount of federal grants and state matching funds. We identified the following 8 states that reported overall leveraging ratios of 2:1 or above:

State	Approximate Leveraging Ratio
Alabama	2:1
Colorado	2:1
Connecticut	2.5:1
Maryland	2:1
Missouri	2:1
New Jersey	2:1
New York	2:1
Texas	2.5:1

The most significant factors in determining the ratio that an SRF can be leveraged* are the interest rate paid on the bonds issued and the interest rate charged on the loans to the municipalities. The rate of return on investments of the SRF is also a factor. Also, some states use other means to subsidize the interest charged to municipalities. Depending on the method they use to subsidize interest, it may have an effect on possible leverage ratios.

One of the major impacts of leveraging is that, as the leveraging ratio increases, the rate of interest that would have to be charged on the loans to municipalities increases

** See glossary at end of report for definition.*

and/or the amount of SRF capital available to support future loans decreases. This results because the interest rate charged on loans to municipalities is less than the rate being paid on the bonds that are issued for SRF. For bonds issued up to the amount of collateralized securities, interest earnings on the collateralized securities held essentially offset interest costs of the bonds. Interest from loans to municipalities, net of administrative costs, increases SRF retained earnings. As more bonds are issued, the amount of interest on those bonds exceeds the amount of interest paid by the borrowing municipalities, resulting in reduced SRF retained earnings. The more loans that are made and the greater the difference between the interest rate that SRF pays on leverage bonds and the interest rate it charges municipalities, the higher the cost of this subsidy to SRF. Currently, the loan interest rate that municipalities pay is 2.5%. It was originally 2.0% when the SRF program began in 1988. It was increased to 2.25% in 1995 and raised to 2.5% in 1999. Outstanding bonds have rates of 4.3% to 7.0%. Within those interest rate parameters, we estimate that the maximum leveraging that could be done while preserving SRF capital is approximately 2.5:1.

Given Michigan's current condition of built-up need, substantial leveraging over the next several years to provide maximum loans to municipalities appears to be a reasonable strategy.

Using the SRF Financial Planning Model that the EPA has developed, we compiled the following table to illustrate the effect that different leveraging ratios and different bond interest rates have on the amount of funds available to loan to municipalities. The average interest rate on the last bond issue, in 2001, was approximately 4.7%. The current rate for AAA municipal bonds ranges from 4.08% for bonds outstanding 7 years to 5.27% for bonds outstanding 20 years. Bond issues for Michigan's SRF are typically serial bonds with maturity dates ranging from 3 to 22 years. We included a column to illustrate the effect that an additional federal grant of $100 million for the next five years would have on amounts available. Leveraging ratios of 1.69:1 (the current rate) and

2.5:1 are presented for illustrative purposes. All amounts in the following table are in 2001 dollars based on an estimated inflation rate of 2.5% and a 3.0% loan interest rate:

	Projected Amounts Available for Disbursement						Projected Needs	
	Assuming Continuing Federal Grant Amount and State Match at Fiscal Year 2000-01 Level				Assuming Additional $100 Million Federal Grant for Five Years			
	4% Bonds		5% Bonds		4% Bonds	5% Bonds		
Fiscal Year	Leveraging Ratio 1.69:1 (a)	Leveraging Ratio 2.5:1 (a)	Leveraging Ratio 1.69:1 (a)	Leveraging Ratio 2.5:1 (a)	Leveraging Ratio 2.5:1 (a)	Leveraging Ratio 2.5:1 (a)	High	Low
2000-01	$ 275.0	$ 322.0	$ 271.0	$ 318.0	$ 405.0	$ 402.0	$ 530.0	$ 334.0
2001-02	281.0	362.0	271.0	351.0	513.0	501.0	530.0	334.0
2002-03	291.0	399.0	276.0	378.0	607.0	583.0	530.0	334.0
2003-04	306.0	436.0	283.0	401.0	695.0	654.0	530.0	334.0
2004-05	269.0	361.0	241.0	316.0	624.0 (b)	566.0 (b)	530.0	334.0
2005-06	250.0	322.0	217.0	266.0	488.0	413.0	530.0	334.0
2006-07	242.0	302.0	204.0	238.0	416.0	328.0	530.0	334.0
2007-08	239.0	292.0	197.0	222.0	380.0	281.0	530.0	334.0
2008-09	239.0	289.0	193.0	213.0	362.0	255.0	530.0	334.0
2009-10	240.0	288.0	191.0	207.0	353.0	239.0	530.0	334.0
2010-11	242.0	288.0	189.0	203.0	350.0	229.0	530.0	334.0
2011-12	244.0	290.0	188.0	199.0	350.0	223.0	530.0	334.0
2012-13	247.0	291.0	187.0	197.0	351.0	218.0	530.0	334.0
2013-14	250.0	293.0	186.0	194.0	352.0	213.0	530.0	334.0
2014-15	252.0	295.0	186.0	192.0	354.0	210.0	530.0	334.0
2015-16	255.0	297.0	185.0	189.0	355.0	206.0	530.0	334.0
2016-17	258.0	298.0	184.0	187.0	356.0	203.0	530.0	334.0
2017-18	261.0	300.0	183.0	184.0	357.0	200.0	530.0	334.0
2018-19	263.0	301.0	182.0	182.0	358.0	196.0	530.0	334.0
2019-20	265.0	302.0	181.0	179.0	359.0	193.0	530.0	334.0
Total	$ 5,169.0	$ 6,328.0	$ 4,195.0	$ 4,816.0	$ 8,385.0	$ 6,313.0	$ 10,600.0	$ 6,680.0

(a) Funding ratio phased in over four fiscal years. Additional new funds were available in the first four fiscal years to phase in the capitalized ratio to this level.

(b) Last of five fiscal years of additional federal grant; current grant amount projected until fiscal year 2019-20.

As indicated in the table, even the highest practical level of leveraging SRF will not meet expected needs over the next 20 years unless substantial additional funding is received.

Department of Environmental Quality Comments

In consultation with the Michigan Municipal Bond Authority and its bond counsel and underwriters, Michigan's SRF has been leveraged to the maximum extent possible since 1993, given the level of State match, the loan rates that have been assessed, and the market conditions that have existed.

The performance audit selected, for comparison purposes, certain states that had the highest leveraging ratios. To leverage at these levels, these states had to charge higher interest on the SRF loans, provide state funding over and above the required

state match, or both. A more complete comparison analysis would show that Michigan's leveraging ratio is comparable with most states. Comparing Michigan to only a select list of states with high ratios is incomplete.

While higher leveraging is possible by raising the interest rate charged for loans, it may not be in the best interest for the program or the municipalities it serves. Michigan carefully selects the interest rate to be charged on loans taking into consideration the balance between maximizing the value of the loan to the municipality and maximizing the State's ability to leverage the fund. Michigan administers its SRF consistent with the principals of consistency, strength of the fund, and value to the communities served.

CONVERSION OF SEPTIC SYSTEMS

COMMENT

Background: Approximately 1.2 million households in Michigan have on-site septic systems. A significant number of these systems may be leaking inadequately treated waste into surface streams and groundwater.

Audit Objective: To determine how much funding will be needed for Michigan municipalities whose residents currently rely on septic systems but are likely to need to convert to a municipal sewage treatment system.

Conclusion: Because the municipalities that we contacted did not have any firm plans to convert areas served by septic systems to a centralized sewage system, we did not project a cost for this type of conversion. The municipalities recognized that there might be a large number of areas with failing septic systems that would need to be converted. However, they currently do not know the extent of the problem. Wayne County has required inspections of septic systems prior to sale since February 2000. A significant percentage of these systems have failed their inspections. The rate of these failures appears to be an indication that septic system failures could become a very costly Statewide problem.

Glossary of Acronyms and Terms

capitalization	The total of current federal contributions, State match, and loan repayments.
CSO	combined sewer overflow.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical for the amount of resources applied or minimizing the amount of resources required to attain a certain level of outputs or outcomes.
EPA	U.S. Environmental Protection Agency.
leveraged	The EPA considers an SRF to be leveraged if it uses bond proceeds to make loan disbursements.
leveraging ratio	The ratio of funds available to make loans compared to the SRF capitalization.
MML	Michigan Municipal League.
performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
PSC	Public Sector Consultants, Inc.
sanitary sewer collection system	A system used to collect and transport wastewater to a wastewater treatment plant.

SEMCOG	Southeast Michigan Council of Governments.
SRF	state revolving fund.
SSO	sanitary sewer overflow.
wastewater treatment plant (WWTP)	A facility that treats wastewater that has been collected in a sewer.