



Report to the Subcommittee on Interior,
Environment, and Related Agencies,
Committee on Appropriations, House of
Representatives

August 2015

STATE REVOLVING FUNDS

Improved Financial Indicators Could Strengthen EPA Oversight

Accessible Version

GAO Highlights

Highlights of [GAO-15-567](#), a report to the Subcommittee on Interior, Environment, and Related Agencies, Committee on Appropriations, House of Representatives

Why GAO Did This Study

EPA estimates that more than \$680 billion is needed to repair and replace water and wastewater infrastructure nationwide over the next 20 years. Under the Clean Water Act and Safe Drinking Water Act, the federal government contributes some funding to states through EPA's Clean Water and Drinking Water SRF programs. States use this funding to make low- or no-interest loans to communities to build water and wastewater infrastructure, in addition to other assistance. These loans are repaid with interest, and these funds are then used for future loans. EPA reviews and oversees state SRF programs.

GAO was asked to examine the sustainability of SRF funds. This report examines (1) factors that affect selected states' abilities to sustain their SRF funds, (2) selected states' actions to enhance their SRF funds and views about sustaining the funds, and (3) steps that EPA takes to review states' abilities to sustain their SRF funds as part of its oversight. GAO analyzed EPA and state financial data and interviewed EPA officials, nine experts, and officials in 21 states. Experts were selected from an EPA financial advisory board. States were selected for program size, region, and type of fund management.

What GAO Recommends

GAO recommends that EPA update its financial indicators guidance to include one or more financial measures and develop projections of states' SRF programs' future lending capacity. EPA agreed with the recommendations and said that it would form a state-EPA work group and take action on the indicators in fiscal year 2016.

View [GAO-15-567](#). For more information, contact J. Alfredo Gómez at (202) 512-3841 or gomezj@gao.gov.

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Improved Financial Indicators Could Strengthen EPA Oversight

What GAO Found

Multiple factors can limit states' abilities to sustain their Clean Water and Drinking Water state revolving funds (SRF), according to Environmental Protection Agency (EPA) officials, nine experts, and officials in the 21 states GAO reviewed. Under the Clean Water Act and the Safe Drinking Water Act, as amended, states are to create and maintain revolving funds to be eligible for federal grants. To sustain their SRF funds into the future, states earn revenues—such as from interest on invested funds—that enable them to continue to lend funds. Yet, factors can permanently remove money from the funds or diminish the states' abilities to earn funds. For example, states provide subsidies from SRF funds to communities and charge them below-market interest rates on loans, removing funds, and earning less revenue than would otherwise be available to make future loans.

Officials in most of the 21 states GAO reviewed said that they have taken actions to enhance the financial management of their SRF programs, but that they generally cannot sustain their SRF funds without continued federal grants or changes to their programs, such as decreasing SRF program assistance or increasing revenue. Selected states' actions were aimed at three general areas: (1) raising SRF revenue directly, such as by charging higher administrative fees to borrowers; (2) increasing loan volume, which increases loans but does not necessarily increase revenue; and (3) improving financial planning, which can increase the number of loans, interest earned, or both.

As part of EPA's oversight responsibilities, EPA regional offices annually review states' financial performance by collecting financial information and indicators, including some information related to states' abilities to sustain their SRF funds. Leading financial management practices include indicators to evaluate an entity's growth and sustainable lending capacity. EPA's financial indicators include sustainability indicators that show the growth of the SRF programs relative to federal and state investments, which are only part of total net assets. They do not reflect the states' abilities to sustain their SRF funds through growth of total net assets, consistent with leading financial management practices. EPA has identified financial measures, in its guidance for states, that show states' overall financial management of SRF funds and the growth of those funds. However, they are not part of EPA's financial indicators for regional offices to use when reviewing state SRF funds' financial performance. EPA officials said that having regions use such measures could be helpful, and that they developed a standard operating procedure in September 2014 that encourages regions to use different financial measures when reviewing state programs, but the agency has not yet updated its financial indicators guidance. Including one or more of the financial measures for identifying the growth of states' SRF programs in its financial indicators guidance for regional office reviews can help EPA better gauge the financial performance and growth of states' SRF funds. Further, state programs develop projections of their future lending capacity, but EPA does not use these projections as indicators. By using past performance to develop projections of SRF funds' future lending capacity, consistent with leading financial management practices, EPA can better assess state programs' sustainability. EPA officials said that future-looking indicators could be helpful for understanding the financial sustainability of SRF funds, and that they would consider incorporating such indicators.

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Abbreviations

EPA	Environmental Protection Agency
SRF	State Revolving Fund

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August 5, 2015

The Honorable Ken Calvert
Chairman
The Honorable Betty McCollum
Ranking Member
Subcommittee on Interior, Environment, and Related Agencies
Committee on Appropriations
House of Representatives

The Honorable Mike Simpson
House of Representatives

The nation's drinking water and wastewater infrastructure is old and deteriorating and will require hundreds of billions of dollars in investment to help provide safe drinking water and wastewater treatment to protect the quality of the nation's rivers, streams, lakes, and other water bodies. The Environmental Protection Agency (EPA) estimated that more than \$680 billion is needed to repair and replace drinking water and wastewater infrastructure nationwide over the next 20 years as pipelines, facilities, and other equipment continue to age and break.¹ The cost of repairing or replacing this infrastructure is often borne by drinking water and wastewater utility customers, but the federal government also provides some financial support to communities for their infrastructure projects. The largest sources of federal funding are EPA's Clean Water State Revolving Fund (SRF) program, created under the Water Quality

¹This figure is from EPA's water infrastructure needs assessments, which estimated that the funding needs for drinking water infrastructure needs totals \$384.2 billion (as of 2011) and for wastewater infrastructure needs total \$298 billion (as of 2008). The most recent drinking water infrastructure needs assessment is EPA, *Drinking Water Infrastructure Needs Survey and Assessment: Fifth Report to Congress*, EPA 816-R-13-006 (Washington, D.C.: April 2013) and the most recent wastewater infrastructure needs assessment is EPA, *Clean Watersheds Needs Survey 2008: Report to Congress*, EPA-832-R-10-002 (Washington, D.C.: May 2010). EPA conducts a separate survey and assessment for each type of infrastructure, drinking water and wastewater, on separate 4-year schedules. The costs shown reflect the 20 year projected drinking water and wastewater infrastructure costs starting with the year that each survey was conducted. Throughout this report, all dollar figures, such as these costs, are expressed in nominal dollars, unadjusted for inflation.

Act of 1987,² which provides funds to repair and replace wastewater infrastructure, and EPA's Drinking Water SRF program, created under the Safe Drinking Water Act Amendments of 1996, which provides funds to upgrade and replace drinking water infrastructure.³

Through the federal Clean Water and Drinking Water SRF programs, EPA provides annual grants to states to capitalize state-level SRF programs. States must match these EPA grants with a minimum of 20 percent of their own contributions. States use the SRF funds to, among other things, make loans to local communities⁴ and utilities for various drinking water and wastewater infrastructure projects.⁵ States may also use SRF funds in other ways, including to refinance or guarantee local debts, and as security for or revenue for repayment of state-issued bonds. EPA has provided about \$57 billion in federal appropriations to states, about \$39 billion for the Clean Water SRF since 1988, and about \$17 billion for the Drinking Water SRF since 1997.⁶ To receive grants under the acts, states are to establish state-level revolving funds into which federal and state funds, loan repayments, and interest payments are deposited to be made available for future loans. The acts require states to maintain these SRF funds in perpetuity—that is, they are to ensure that funds will always be available to pay for drinking water and wastewater projects and other authorized activities.⁷ As of June 2014,

²Pub. L. No. 100-4, § 212, 101 Stat. 7, 21-28 (codified as amended at 33 U.S.C. §§ 1381 – 1388) (2015). The Water Quality Act of 1987 amended the Clean Water Act.

³Pub. L. No. 104-182, § 130, 110 Stat. 1613, 1662 – 1672 (codified as amended at 42 U.S.C. § 300j-12) (2015).

⁴We use communities to refer collectively to both the communities financing wastewater and drinking water infrastructure construction and the utilities that serve them.

⁵In addition to infrastructure projects such as repairing and replacing sewage treatment plants and sewer pipelines, Clean Water SRF funds can be used to construct treatment works; to manage nonpoint source pollution (pollution from diffuse sources such as runoff from rain and snowmelt) and stormwater; provide estuary conservation and management; reduce water demand and energy consumption; provide certain watershed projects; enhance security; reuse or recycle wastewater, stormwater, or subsurface drainage water; and provide technical assistance. In addition to infrastructure projects such as upgrading and replacing drinking water filtration and treatment plants and water mains, Drinking Water SRF funds can also be used for source-water protection; technical and financial assistance for capacity development; and wellhead protection programs.

⁶Numbers may not add due to rounding; dollars are nominal and not adjusted for inflation.

⁷42 U.S.C. § 300j-12(c)(2015); 33 U.S.C. § 1382(b)(11)(2015).

states have used the \$57 billion in federal investment to provide about \$133 billion in loans and other support to communities to improve their drinking water and wastewater infrastructure.

At the same time, the acts and subsequent provisions in appropriations acts establish certain requirements for state Clean Water and Drinking Water SRF programs that may cause the programs to expend funds. States are to make loans at or below market interest rates and to provide additional subsidies for some projects. For example, recent appropriations acts have required Drinking Water SRF programs to provide some SRF funds as additional subsidies to communities. According to EPA, these funds have gone primarily to communities that cannot easily afford infrastructure improvements. These subsidies are provided in the form of negative-interest loans, or as loans with part or the entire amount of principal forgiven.

In addition, a congressional committee considering the legislation that ultimately created the Clean Water SRF program envisioned a program that would be self-sustaining in the long term. Specifically, when the Clean Water SRF program was first considered in 1985, a committee conference report said the state SRF programs should become self-sustaining—that is, able to sustain their ability to loan funds in the future without federal funding at some point.⁸ Accordingly, the committee believed that federal appropriations for the program should only be authorized for a limited period. The enacted legislation authorized appropriations for 7 years, through 1994. However, Congress has continued to fund the state Clean Water SRF programs and subsequently created the Drinking Water SRF without indicating in the legislation or the legislative history that it was expected to become self-sustaining.

EPA provides guidance and oversight to help states manage their SRF programs. A key source of guidance, a 2001 EPA handbook entitled the *SRF Fund Management Handbook*, identifies actions that states can take in the form of best management practices and tools to manage their SRF

⁸S. Rep. No. 99-50, at 8-10 (1985), accompanying S. 1128, 99th Cong. (1985), which was pocket vetoed by the President in November 1986. In February 1987, Congress passed the virtually identical Water Quality Act of 1987. No additional reports accompanied the new bill.

programs.⁹ To oversee state programs, EPA collects financial indicator data annually, and EPA's 10 regional offices use financial information to conduct annual reviews of states' SRF programs. EPA's National Information Management System database contains financial data that the agency collects from state SRF programs, such as the amount of federal and state grant dollars received, the number and value of loans states make, and state SRF fund balances. EPA uses these data to calculate a set of financial indicators, including one called "sustainability," and directs regional offices to use these indicators in their annual reviews of state SRF programs.¹⁰ In addition, EPA has an Environmental Financial Advisory Board, a federal advisory committee, to study and report on various environmental financing issues. For example, this board identified actions in reports published in 2008, 2011, and 2014 to enhance states' abilities to sustain their SRF funds by: (1) issuing tax-exempt bonds, which involves selling bonds with the SRF funds as security (issuing leveraged bonds) and using the proceeds to provide additional loans,¹¹ (2) investing a portion of funds in high-yield vehicles,¹² and (3) facilitating states' use of loan guarantees.¹³

Over the last 5 years, federal grants to state SRF programs have averaged about \$2.6 billion annually—about \$1.6 billion for the Clean Water SRF program and about \$1 billion for the Drinking Water SRF program. Under constrained federal budgets, the amount of funding for each SRF has been debated over the last few years. At the same time, a new financing program for drinking water and wastewater infrastructure has been created. Specifically, Congress enacted the Water

⁹U.S. Environmental Protection Agency, *SRF Fund Management Handbook*, EPA 832-B-01-003 (Washington, D.C.: April 2001).

¹⁰According to EPA's 2001 *Handbook*, the sustainability of a fund relates to the sustainable lending capacity of the program; that is, the average dollar amount of funding that the program can provide each year.

¹¹Environmental Financial Advisory Board, *Relative Benefits of Direct and Leveraged Loans in State Revolving Loan Funds Programs* (Washington, D.C.: Aug. 28, 2008).

¹²Environmental Financial Advisory Board, *SRF Investment Function: Current Status and Prospects for Enhancing SRF Sustainability* (Washington, D.C.: January 2011).

¹³Environmental Financial Advisory Board, *Utilizing SRF Funding for Green Infrastructure Projects* (Washington, D.C.: Jan. 2, 2014). Loan guarantees are financial arrangements in which one party guarantees that it will repay any losses that may arise, enabling a borrower to access better loan terms than they would be able to obtain otherwise.

Infrastructure Finance and Innovation Act of 2014, which created a new program for funding infrastructure projects, including those of national or regional significance with a minimum anticipated cost of at least \$20 million.¹⁴ The President's 2016 budget request included funding for a new Water Finance Center to promote public-private investment in water infrastructure projects, along with other alternative financing approaches. In light of these developments, state officials and others have raised questions as to whether federal funding may decrease or end because of constrained federal budgets and the shifting of focus to new financing programs.

Given the large amounts of federal funds involved, constrained federal budgets, and potential competition for federal funding for SRFs, you asked us to examine the financial sustainability of Clean Water and Drinking Water SRF funds over the long term. This report examines (1) factors that can affect selected states' abilities to sustain their SRF funds; (2) selected states' actions to enhance SRF financial management and state officials' views about whether they can sustain their SRF funds; and (3) steps, if any, that EPA takes to review states' abilities to sustain their SRF funds as part of its oversight responsibilities.

To examine the factors that can affect states' abilities to sustain their SRF funds, we analyzed EPA documents; used EPA's financial model and financial data for 1988 to 2014 for the Clean Water SRF and 1997 to 2014 for the Drinking Water SRF to project the approximate effect of various factors on the long-term financial position of SRFs nationwide; and interviewed EPA officials, experts on water financing, and officials from 21 states.¹⁵ To determine whether EPA's financial model was reasonable and appropriate for this work, we assessed the model by discussing its calculations and data with EPA program staff and running various tests, such as comparing the model's results to the results of three states' projections. We found the model reasonable and appropriate for our purposes. We identified nine experts on water financing by identifying members of the Environmental Financial Advisory Board, who

¹⁴Pub. L. No. 113-121 §§ 5021-35, 128 Stat. 1193, 1332-1345 (codified at 33 U.S.C. §§ 3901-3912 (2015)).

¹⁵The 21 states we selected were Arkansas, California, Connecticut, Delaware, Iowa, Louisiana, Maine, Michigan, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Texas, Vermont, Washington, and Wisconsin.

are experts in water infrastructure finance, business, and government, and requesting them to name others who also have expertise in the area; from this list, we selected nine experts. To assess the reliability of EPA financial data, we corroborated these data with relevant sources and interviewed officials responsible for compiling the data. We determined that the data were sufficiently reliable for the purposes of this report. To select states for review, we identified states that had low and high SRF balances, had leveraged funds or not, and were located in different census regions.¹⁶ We selected 12 states that issued leveraged bonds and 9 that did not. Of these 21 states, experts identified 3 states as using innovative investing strategies, which is important for our purposes because investing is a principal way to sustain SRF funds. Because our sample is a nonprobability sample, information from the states and their SRF programs cannot be generalized to all states and their SRF programs but can be used for illustrative purposes. We visited 3 of the 21 states in our sample that reflected the range of attributes that we used to select states and were in proximity to our office; while there, we interviewed officials in charge of the states' SRF programs and visited infrastructure projects identified by the state officials.

To examine the actions that selected states have taken to enhance the financial management of their SRF funds and state officials' views about whether they can sustain the funds, we obtained and analyzed (1) Environmental Financial Advisory Board reports issued in 2008, 2011, and 2014; (2) EPA guidance and reports, including a July 2014 EPA Office of Inspector General's report;¹⁷ and (3) financial data from EPA for the 21 selected states' Clean Water SRF programs (1988 to 2014) and for their Drinking Water SRF programs (1997 to 2014). To assess the soundness of the Environmental Financial Advisory Board's and EPA's Inspector General's findings, we generally reviewed the methodologies of each report and determined that they were sufficiently sound for use in

¹⁶To characterize state officials' views throughout this report, we defined the modifiers: "nearly all" to represent officials from 19 to 21 states; "most" to represent officials from 12 to 18 states; "many" to represent officials from 8 to 11 states; "some" to represent officials from 4 to 7 states; and "a few" officials to represent officials from 2 to 3 states.

¹⁷U.S. Environmental Protection Agency, Office of Inspector General, *Unliquidated Obligations Resulted in Missed Opportunities to Improve Drinking Water Infrastructure*, 14-P-0318 (Washington, D.C.: July 16, 2014).

this report.¹⁸ We also interviewed officials in the selected states about actions they have taken and projections of their SRF funds into the future. We then used EPA's financial model to project the availability of SRF funds for all states combined under two scenarios, one with increased average interest rates and one without continued federal funding.

To examine any steps that EPA has taken to review states' SRF programs, and their ability to sustain their funds, we interviewed EPA program officials at the headquarters and regional levels, including officials from the 10 EPA regional offices that oversee the states in our sample. To understand leading practices for evaluating an entity's financial sustainability, such as an SRF, we reviewed leading financial management practices.¹⁹ Financial management practices commonly use a variety of indicators to describe the financial performance of an entity such as the SRF funds. We compared the financial measures used in leading financial management practices to EPA's financial indicators. We also analyzed EPA indicator data on state SRF programs and obtained and analyzed copies of regional reviews of state SRFs for fiscal year 2013, the most recent year for which such reviews were available. Appendix I contains a more detailed description of our objectives, scope, and methodology.

We conducted this performance audit from May 2014 to August 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The following sections provide information on (1) the overall purposes of the Clean Water Act and the Safe Drinking Water Act, including the federal and state SRF programs established under the acts that support clean water and drinking water infrastructure, and (2) SRF program

¹⁸For the EPA Inspector General's report, we also interviewed officials in EPA's Inspector General's office responsible for reviewing and reporting on EPA's oversight of the states' SRF programs.

¹⁹Lawrence Revsine, Daniel W. Collins, W. Bruce Johnson, *Financial Reporting and Analysis*, 2nd ed. (New Jersey: Prentice Hall, 2001).

management, including EPA's and states' roles and responsibilities in managing SRF program funds.

Clean Water and Drinking Water Infrastructure

The Clean Water Act and the Safe Drinking Water Act were enacted more than 40 years ago to improve the quality of the nation's waters and the safety of the nation's drinking water. The stated objective of the Clean Water Act, enacted in 1972,²⁰ is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. EPA carries out many programs that help implement the Clean Water Act, including the Clean Water SRF program and others that affect the provision of wastewater services across the country. Under the Safe Drinking Water Act, enacted in 1974,²¹ EPA sets enforceable standards for public drinking water systems that generally limit the levels of specific contaminants in drinking water that can adversely impact the public's health. EPA manages programs, including the Drinking Water SRF program, to further the health objectives of the Safe Drinking Water Act.

Across the country, as of 2011—the most recent year for which data were available—about 52,000 community water systems provided drinking water to communities, while more than 16,000 wastewater treatment plants treated sewage water and returned it to a nearby water body, as we reported in 2012.²² According to EPA documents, replacing and repairing drinking water and wastewater facilities and pipelines often involves large capital investments, which in turn require funding. To get such funding, generally, a community can get a loan from a bank, sell bonds in the municipal bond market, or get a loan or grant from state governments. In the bond market, communities borrow money by selling bonds that must be repaid with interest to the investors that purchase the bonds; revenue to repay the bonds comes from utility ratepayers or

²⁰The Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816, codified as amended at 33 U.S.C. §§ 1251-1387 (2015) (commonly referred to as the Clean Water Act). For consistency throughout this report, we refer to the statute and its amendments as the Clean Water Act.

²¹Pub. L. No. 93-523 (1974), codified as amended at 42 U.S.C. §§ 300f-300j-26 (2015).

²²GAO, *Rural Water Infrastructure: Additional Coordination Can Help Avoid Potentially Duplicative Application Requirements*, [GAO-13-111](#) (Washington D.C.: Oct. 16, 2012).

community taxes. Communities can also get funding from other federal programs.²³

Projects funded by the Clean Water SRF program include construction of sewer pipes, improvements to treatment facilities, or other upgrades. For example, figure 1 shows a wastewater treatment facility in New Jersey financed by SRF funds. The facility is adding a new pretreatment facility for grit removal that is to feed the clarifier tanks in the foreground. The tanks settle and skim the wastewater before additional treatment to remove pollutants more effectively.

²³For example, the U.S. Department of Agriculture provides, among other things, low-cost loans and grants for water utilities through its Rural Utilities Service Water and Waste Disposal Program, and the Department of Housing and Urban Development disburses grants to states and local governments through the Community Development Block Grant Program to fund, among other things, wastewater and drinking water projects.

Figure 1: Upgrades to a Wastewater Treatment Plant in New Jersey



Source: GAO. | GAO-15-567

Note: The plant is adding a new pretreatment facility for grit removal that is to feed the clarifier tanks in the foreground. The tanks settle and skim the wastewater before additional treatment to remove pollutants more effectively.

Projects funded by the Drinking Water SRF include improved water treatment systems, repair and replacement of distribution pipelines, or other projects. For example, figure 2 shows an intake pipe serving the town of New London, Connecticut, which received funds from the Drinking Water SRF program. When completed, the pipe is to take water

from the center of the lake and connect to the drinking water treatment plant, to provide improved access to the drinking water treatment plant, even during a drought.

Figure 2: Improvements to Access Pipe for a Drinking Water Treatment Plant Near New London, Connecticut



Source: GAO. | GAO-15-567

Note: When completed, the pipe is to take water from the center of the lake and connect to the drinking water treatment plant, to provide improved access to the drinking water treatment plant, even during a drought.

SRF Program Management

EPA and states have different roles and responsibilities in the management of the SRF programs. EPA administers funding, provides guidance and assistance to states, and oversees their efforts, including reviewing state program performance annually. States manage their SRF programs, work with communities, rank and select projects for funding, and manage the finances of their SRF programs.

Congress provides annual appropriations to EPA for the SRF programs, which EPA then allots and provides to states in the form of capitalization grants, that is, grants to capitalize the state SRF programs, according to different formulas.²⁴ The federal grants for Clean Water SRFs are allotted to each state using formulas established by law in 1987, which have not since changed to reflect the population and infrastructure needs.²⁵ For Drinking Water SRF programs, federal grants are allocated based on an EPA survey of community needs for drinking water infrastructure, which is conducted every 4 years. In addition, states are required to match the federal grants by providing an additional amount of funds equal to 20 percent of the federal grants. Since 1988, states have provided a total of about \$7 billion to the states' Clean Water SRF programs and, since 1997, have provided a total of about \$3 billion to the states' Drinking Water SRF programs.

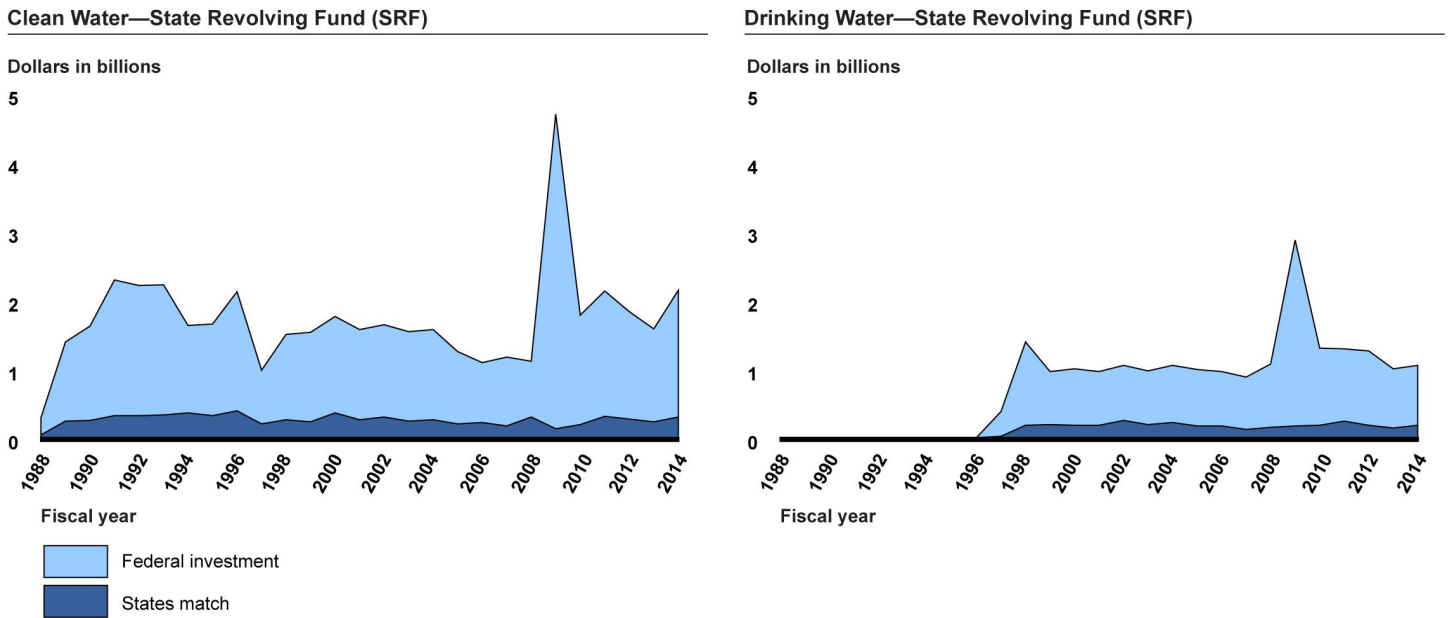
The history of federal investment in Clean Water and Drinking Water SRF programs has varied over time. EPA's Clean Water SRF program has received appropriations for a longer period of time, while the Drinking Water SRF program has received a more consistent, but lower level of appropriations. Both SRF programs were provided spikes of funding in 2009 because of increased funding from the American Recovery and Reinvestment Act of 2009,²⁶ as shown in figure 3 below.

²⁴Puerto Rico also has SRF programs; for the purposes of this report, when we refer to data encompassing the 50 states, data from Puerto Rico are also included.

²⁵The Water Resources Reform and Development Act of 2014 recently required EPA to conduct a review of the Clean Water SRF program allotment formula, to be made publicly available in December 2015.

²⁶Pub. L. No. 111-5, 123 Stat. 115.

Figure 3: Federal Grants and State Match Funding for Clean Water and Drinking Water State Revolving Fund (SRF) Programs, Fiscal Years 1987-2014



Source: GAO analysis of EPA data. | GAO-15-567

Note: The spikes in funding in 2009 are because of increases from American Recovery and Reinvestment Act of 2009 funding.

In addition to allocating funds, EPA provides guidance and assistance to the states and coordinates with them through a number of outreach efforts including direct communication with state SRF program managers and training sessions. EPA developed the 2001 SRF *Handbook* to assist states with financial management.²⁷ EPA also issued other guidance and tools for regional offices and states reviewing the program.

- In December 1989, EPA issued guidance to its regional offices on how to conduct annual reviews of states' SRF programs. The agency updated this guidance for Clean Water SRFs in November 2013.²⁸

²⁷U.S. Environmental Protection Agency, *SRF Fund Management Handbook*.

²⁸U.S. Environmental Protection Agency, *Annual Review Guidance for EPA Annual Review of Clean Water State Revolving Fund Programs* (Washington, D.C.: November 2013).

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- In October 2000 and February 2003, EPA issued memorandums identifying key financial indicators for regional offices to focus on during their annual reviews of states' Clean Water and Drinking Water SRF programs, respectively.
 - Periodically, EPA has issued State Activity Updates that describe state practices in managing their SRF funds. For example, in October 2000, EPA issued an update describing the practice of "accelerating" loan commitments; that is, making loan commitments on the basis of future cash flows, instead of limiting loan commitments to the amount of funds that are currently available.²⁹
 - In May 2013, EPA's Clean Water SRF program developed a draft report entitled *Clean Water SRF Financial Risks: Program Objectives, Risk Analysis, and Useful Tools*.³⁰ This draft report includes tools for regional and state managers to identify and manage financial risks to the state SRF programs, including staffing levels and capabilities, efficient use of funds, effective management of investments, and sound bond and debt management. As of April 2015, EPA has not finalized or issued this report or developed a similar report for the Drinking Water SRF program, according to EPA officials. Agency officials said they have not done so because of resource constraints, but they may incorporate the information it contains in future revisions of the 2001 *Handbook*.
 - In September 2014, EPA issued a standard operating procedure on "Compliance with Audit Requirements" to provide its regional offices with steps that they can take in reviewing states' SRF programs and funds. According to EPA officials, they have issued seven such procedures in the last 3 years in response to Office of the Inspector General audits of the SRF program.³¹

²⁹U.S. Environmental Protection Agency, *SRF Fund Management Handbook* and EPA Office of Water, *State Activity Update, Accelerated Loan Commitment in the SRF Program*, EPA 816-N-00-003E (Washington, D.C., October 2000).

³⁰U.S. Environmental Protection Agency, Draft Report, *CWSRF Financial Risks: Program Objectives, Risk Analysis and Useful Tools* (May 13, 2013, version).

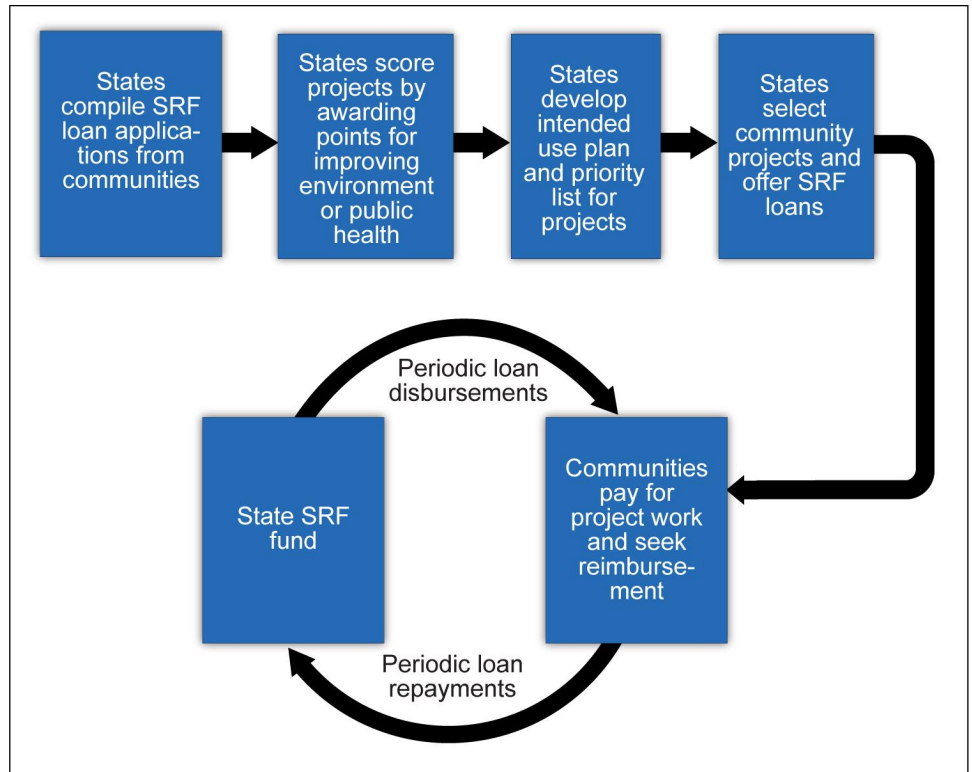
³¹U.S. Environmental Protection Agency, *1.3: Compliance with Audit Requirements: Standard Operating Procedures for State Revolving Fund Programs* (Washington, D.C.: Sept. 30, 2014).

EPA headquarters and regional offices oversee and review state programs and provide national-level information about the program to inform Congress, the public, and other stakeholders about the status of the SRF programs. To oversee the programs, EPA headquarters collects data annually from the states in its National Information Management System database on financial indicators for each state's programs. EPA publishes these data on its website and publishes annual financial reports for the Clean Water and Drinking Water SRF programs. In addition, EPA uses these data to populate its financial planning model, which is a computer model that projects future cash flows for the individual state SRF programs or all state programs combined. The model allows users to input various assumptions, such as interest rate charged, amounts loaned, inflation, and repayment rates to project the amount of funding available in the future. In addition, EPA's 10 regional offices conduct annual performance reviews of states' SRF programs and provide the results of these reviews in performance evaluation reports.

For their part, the states manage their SRF programs and funds, working with communities to develop their projects and loan applications, ranking and selecting projects for funding, managing the loan reimbursement process, and managing financial elements of the programs. Not all communities in need of water infrastructure improvements pursue financing through their states' SRF programs because they may not be able to afford a loan or may be pursuing other sources of financing. To assess the level of demand—that is, the degree to which communities are interested in obtaining SRF loans and other assistance—states compile SRF funding applications from communities at least annually. States may assess projects on the basis of water infrastructure improvement goals, project costs, and each community's financial capacity to repay a loan.

States use this information about communities' projects to develop an annual intended use plan that outlines how states' SRF funds are to be used in that year, and a priority list for projects. Once a state and community enter into an SRF loan agreement, the community pays for the project work and seeks reimbursement for its expenses. According to officials in states we reviewed, states and communities may sign a loan agreement prior to, or after, construction begins. As the project proceeds, states issue disbursements of SRF funds to communities to reimburse them for the funds expended on the project. Construction, payment, and reimbursement may take a few years depending on the size of a project, according to EPA. Figure 4 shows the application and payment process that is generally followed for SRF projects.

Figure 4: Project Application and Payment Process States Generally Follow in Managing Clean Water and Drinking Water State Revolving Funds (SRF)



Source: GAO analysis of State Revolving Funds (SRF) program documents. | GAO-15-567

Note: These steps are a general representation of the funding application and approval process. The exact order and timing of the steps may vary by state or program.

Each state manages the finances of its SRF programs, which involves assessing the revenue an SRF program collects, as well as its expected expenses. Each state also analyzes its loan capacity, that is, the number and value of loans it has the ability to provide for at least the next year. To determine loan capacity, states need to understand the demand for funds in their state, as well as their SRF programs' financial status. To do so, states often rely on "cash flow models" to analyze their cash flows, which states can use to, among other things, project future cash flows and loan capacity. Projecting cash flows involves systematically identifying and anticipating all cash flows into and out of an SRF program, including income from bond issuances, federal grants and state matching funds, and revenue from interest on loans or investments, as well as outflows through loan disbursements, bond repayments, or administrative costs.

Within the states, various agencies are responsible for managing their SRF funds. In some states, the state's environmental department manages all aspects of the SRF programs, including financial management while, in other states, the public health department is involved in managing the Drinking Water SRF. Many other states have a state financial authority that manages the financial aspects of the programs, while the environment department and/or health department manage the programmatic aspects of the SRF programs, such as the engineering and planning aspects.

Multiple Factors Can Affect Selected States' Abilities to Sustain Their SRF Funds

Multiple factors can limit states' abilities to sustain their SRF funds, according to EPA officials, experts, and officials in the states we selected for our review. To sustain their SRF funds into the future, with or without federal grants, states need to earn revenue, which they generally do by making loans and earning interest on the loans. Yet, multiple factors can permanently remove funds, either by expending funds from an SRF program or diminishing states' abilities to earn additional funds. As a result, the amount in a state's SRF program available to loan for future water infrastructure needs is reduced. Some of these factors result from the SRF programs' financial structure and directly reduce the amount of funds that revolve into and out of the SRF funds. Others are more general in nature and affect the ability for SRF programs to earn revenue. These factors affect states differently because states have different program structures.

States Earn Revenue through Interest on Loans, Which Depend on Demand from Communities

States largely earn revenue for SRF programs by loaning their funds and earning interest on those loans. As of June 2014, EPA data showed that states had \$61.9 billion in outstanding loans held by the Clean Water and Drinking Water SRF programs, \$47.6 billion for the Clean Water SRFs, and \$14.3 billion for the Drinking Water SRFs. According to EPA data, as of the same date, Clean Water SRFs have earned about \$16.4 billion in interest payments since the inception of the program in 1987, and Drinking Water SRFs have earned about \$2.9 billion in interest payments since their inception in 1997.³² States also have the option to grow their SRF funds by earning interest on invested funds or by charging fees to their borrowers for loan applications or other services. States may also leverage their SRF funds—meaning that states may be able to generate

³²These figures represent gross interest revenues and do not take into account debt payments made by SRF programs to repay interest on bonds.

additional money and increase lending by issuing bonds guaranteed by SRF funds. Liabilities associated with issuing leveraged bonds include expenses paid from the SRF program and debt incurred by the fund.

According to EPA's draft Clean Water report, the faster states revolve SRF funds, the more loans they are able to make, earning more revenue and supporting more environmental and public health benefits through infrastructure projects. The pace at which states are able to provide loans to communities depends on communities' demands for loans and abilities to take on loans, as well as the state's ability to make sound loans, according to EPA's 2001 *Handbook*.³³ EPA officials told us that the states have made more than 46,000 loans since the inception of the SRF programs. As of March 2015, no communities have defaulted on their loans entirely, and very few have made late repayments, according to EPA officials.³⁴

EPA's 2001 *Handbook* and EPA officials note that making loans depends on demand by communities for loans. Demand for loans can vary depending on a state's economic conditions, as well as the economic conditions in communities it serves. Officials from one state told us that the significant differences between states' geography and population, as well as economic and environmental factors, may result in different levels of demand for SRF loans. State officials said, further, that demand for SRF loans can be influenced by competition from other sources of funding, such as other federal loan programs and state programs. For example, many state officials told us that SRF programs compete with other federal funding programs such as the Department of Housing and Urban Development's Community Development Block Grants program or the Department of Agriculture's Rural Development Program. Some states such as New Mexico also have grants and loan programs other than the SRFs that have more favorable repayment conditions, such as lower interest rates, than the SRFs in those states, according to state officials. Communities may seek these grants and loans out before seeking loans from the SRF programs. In addition, officials from EPA and

³³U.S. Environmental Protection Agency, *SRF Fund Management Handbook*.

³⁴According to officials in one state we reviewed, they expect one community may default on a Clean Water SRF loan of about \$50 million that was originated in 2005. The state has made major changes to its credit policy as a result.

states we reviewed also told us SRF programs are in direct competition with the bond market, especially for communities with high credit ratings.

Further, according to EPA and state officials, demand for SRF loans can be affected by the administrative tasks associated with different federal requirements on the SRF programs, such as the Davis-Bacon Act and American Iron and Steel requirements.³⁵ Under the Davis-Bacon Act, all contractors and subcontractors performing construction, alteration and repair work under federal or District of Columbia contracts in excess of \$2,000 pay their laborers and mechanics not less than the prevailing wage and fringe benefits for the geographic location where the work is being performed. Under the American Iron and Steel requirements SRF funds cannot be used for an infrastructure project unless all of the iron and steel products used in the project are made in the United States. According to officials, these programs require periodic wage verification and proof of purchase documentation, which increases both communities' paperwork burdens and the costs of borrowing SRF funds. An official from one state told us that iron and steel products made in the United States may be less readily available, which may slow down projects and increase project costs. According to EPA and state officials, communities may seek funding from other sources if they perceive the additional work as too burdensome or time-consuming.

Factors That May Directly Reduce SRF Funds

According to EPA and state officials, the following factors may directly reduce SRF funds:

- *Subsidies to borrowers paid from SRF funds.* Federal law requires states to use some SRF funds to subsidize borrowing costs and authorizes them to use others. When given, such funds are expended and permanently removed from a state's SRF program. Subsidy authorities and requirements have varied over time and between the two SRF programs—currently states can provide subsidies of up to 30 percent under both programs, but the Drinking Water SRFs are

³⁵The Davis-Bacon Act applies permanently to the SRFs. Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, 125 Stat. 786, 1020. The American Iron and Steel requirement applies permanently to the Clean Water SRFs. 33 U.S.C. § 1388 (2015). The requirement has been applied through annual appropriations acts to DWSRF projects. See, e.g., Consolidated and Continuing Appropriations Act 2015, Pub. L. No. 113-235, div. F, tit. IV, § 424, 128 Stat. 2130, 2449.

required to provide subsidies of at least 20 percent.³⁶ In our discussions with officials from the states we reviewed, most officials noted that subsidies remove funds from the SRF programs that could otherwise revolve for future loans and earn future interest. However, officials from many of these states also noted that these subsidies help communities that cannot afford loans or loan repayments, and officials in a few of these states told us that subsidies help to increase demand for SRF funds by making them more affordable. For example, officials in one town told us they would not have been able to make needed improvements to their drinking water system without subsidies provided by the state SRF program. According to EPA data and analysis, about \$4 billion has been removed from states' Clean Water SRF funds to provide subsidies, and about \$2.4 billion has been removed from states' Drinking Water SRF funds to provide subsidies since inception, primarily to disadvantaged communities during that same period.

- *Other costs paid from SRF funds.* Both Clean and Drinking Water SRF programs are authorized or, in some cases, required to use SRF funds for various purposes that will not repay monies back into the funds. Specifically, Clean Water SRF programs may spend a portion of their funds for administrative costs in an amount not exceeding 4 percent of grants, \$400,000 per year, or 1/5 percent of the current valuation of the fund, whichever is greatest.³⁷ In addition, Clean Water SRF programs must spend either 1 percent of their grants or \$100,000, whichever is greater, for water quality management planning.³⁸ Drinking Water SRF programs may spend up to 31 percent of their annual federal grant dollars for several purposes. This 31 percent includes funds that can be used for the cost of administering the fund (up to 4 percent), providing technical

³⁶Specifically, state Drinking Water SRF programs have authority to provide subsidies equaling up to 30 percent of federal grants. The Clean Water Act was amended to include a similar provision for Clean Water SRF programs in late 2014; Clean Water SRF programs may provide subsidies equaling up to 30 percent of federal grants as long as federal grants to all states exceed \$1 billion. The American Recovery and Reinvestment Act of 2009 provided \$4 billion and \$2 billion in funding for the Clean Water and Drinking Water SRF programs, respectively. For this amount, Congress required states to provide 50 percent as subsidies to communities.

³⁷The programs are also authorized to spend any fees they collect.

³⁸These water quality management planning grants are not managed by states' SRF programs.

assistance to small communities of 10,000 or less people (up to 2 percent), state program management activities, including supervising public water systems (up to 10 percent),³⁹ and providing assistance in the development and implementation of local drinking water protection initiatives and other state programs (up to 15 percent).⁴⁰ For example, according to EPA officials and officials in many of the states we reviewed, the SRF funds set aside for public water supervision programs help pay for states to ensure drinking water systems meet safe drinking water standards. In addition, according to EPA documents, SRF funds may be used to provide technical assistance to small communities to help them apply for infrastructure financing because small systems may not otherwise be able or eligible to apply for loan assistance because of a lack of technical, financial, or managerial capacity. According to EPA data and analysis, about \$1.2 billion has been removed from Clean Water SRF funds for these purposes through 2014, and about \$2.5 billion has been removed from Drinking Water SRF funds for these purposes through 2014 and will not revolve to provide for future loans. Officials from some selected states also noted that they rely on these funds to cover administrative costs.

- *Payments on state match bonds.* Some state SRF programs borrow funds to provide their 20 percent match for federal grants, which can reduce the SRF funds that would otherwise be available for future loans. States issue bonds to provide their 20 percent match and deposit the proceeds in the SRFs. Some states repay these bonds from the states' own general funds, which enables the state to use the

³⁹EPA's Public Water System Supervision program provides grant funding to help eligible states, territories, and tribes develop and implement a Public Water System Supervision program adequate to enforce the requirements of the Safe Drinking Water Act and ensure that water systems comply with drinking water regulations. Other authorized state program management activities include administration or provision of technical assistance through certain source water protection programs; development and implementation of a capacity development strategy, and development and implementation of an operator certification program. States must match dollars spent on these activities.

⁴⁰Funds in this category may be used for expenditures to establish and implement wellhead protection programs and for assistance to public water systems as part of a capacity development strategy. They may also be used, however, for loans, including loans to certain water systems to acquire land or conservation easements or to assist in implementing certain voluntary, incentive-based source water protection measures. Both the Clean and Drinking Water programs are authorized or required to set aside funds to make loans for other specific purposes, such as loans to small water systems, but these do not reduce the states' abilities to sustain their funds provided they are paid back.

funds for future loans. Other states repay these bonds from the interest earned on SRF funds.⁴¹ If states take this approach, these funds are removed from the SRF program; if the funds had been retained, they could have accumulated and earned interest to be used for future loans. Ultimately, the approach reduces the SRF funds that would have been available for future loans if the state match were provided as cash appropriations, as it is in other states. Overall, of the 50 states with SRF programs, 24 have issued bonds to pay at least part of their match requirements for the Clean Water SRF programs, and 22 have issued bonds to pay at least part of their match requirements for the Drinking Water SRF programs. Officials from some of the states we reviewed told us that they used bonds to pay the state match when state legislatures did not provide the state match as cash appropriations. EPA officials told us that some states would be unable to apply for and receive federal SRF grants if they were unable to pay state match bonds back with SRF interest earnings. Nonetheless, because some states borrow to provide their state match, and repay this match from SRF interest revenue, the SRF funds are less than otherwise would have been available in these states by at least \$1.28 billion from the Clean Water SRF programs and at least \$460 million from Drinking Water SRF programs since inception, according to EPA data.⁴²

- *Debt payments for leveraged bonds.* States may issue leveraged bonds in order to increase the amount that they can lend;⁴³ to do so, states sell bonds that must be repaid with interest over a set period of time, such as 20 years, to investors that purchase these bonds in the bond market. However, this practice results in debt, owed by the state SRF programs to the purchasers of the bonds. According to EPA's 2013 draft Clean Water SRF report, if states pay more in interest for their debts than they earn in interest from loans to community

⁴¹This process is authorized under EPA regulations. 40 C.F.R. § 35.3135(b)(2) (2015); 40 C.F.R. § 35.3550(g)(3) (2015).

⁴²These values represent the amount of SRF funds that has been used to repay principal on match bonds. Interest payments are included in EPA's database along with other leveraged bonds.

⁴³In contrast to the bonds states issue to pay their required match, these bonds can be retired out of SRF principal and interest rather than just out of interest. See 40 C.F.R. § 35.3525(e) (2015); 40 C.F.R. § 35.3120(d) (2015).

borrowers, they will lose the difference.⁴⁴ The EPA 2001 *Handbook* states if two SRF programs are the same except that one issues leveraged bonds, and the other does not, then the program that issues leveraged bonds is able to provide more loans sooner than the other program. EPA tracks the amount of additional loans that are made because of leveraged bonds. States' Clean Water SRF programs have issued approximately \$31.8 billion in loans with leveraged bonds, and states' Drinking Water SRF programs have made approximately \$5.3 billion in additional loans with leveraged bonds, which have enabled the state SRF programs to earn interest on those loans. According to EPA documents, nonleveraged programs build program equity sooner than leveraged programs because nonleveraged programs earn interest and do not have to apply it to debt repayments. Since their inception, states' Clean Water SRF programs have paid approximately \$16.5 billion in interest on bonds, and states' Drinking Water SRF programs have paid approximately \$2.2 billion in interest on bonds, according to EPA data.⁴⁵ These funds are permanently removed from the SRF programs and, therefore, reduce the amount of funds to be loaned again in the future.

Factors That Affect the Ability of SRF Funds to Earn Revenue

The following factors are more general in nature and affect SRF funds' ability to earn revenue, according to EPA and state officials.

Requirements to Charge Below-Market Interest Rates

Because states are required to make SRF loans to communities at, or below, market interest rates, SRF programs earn less interest than they would if they were able to make the same loans at higher rates.⁴⁶ For example, if a community borrowed \$10 million in SRF funds for a project at the average Drinking Water SRF loan rate (about 1.9 percent from 2009 to 2014), it would pay about \$2.6 million less in interest over 20

⁴⁴In addition, investments are limited by arbitrage restrictions, which are discussed in more detail later.

⁴⁵These values represent the amount of SRF funds that have been used to repay interest, not principal, on leveraged bonds and bonds issued for state match funds. EPA officials told us that they could not estimate how much of this \$2.2 billion was payments on leveraged bonds or payments on bonds issued to pay for state match.

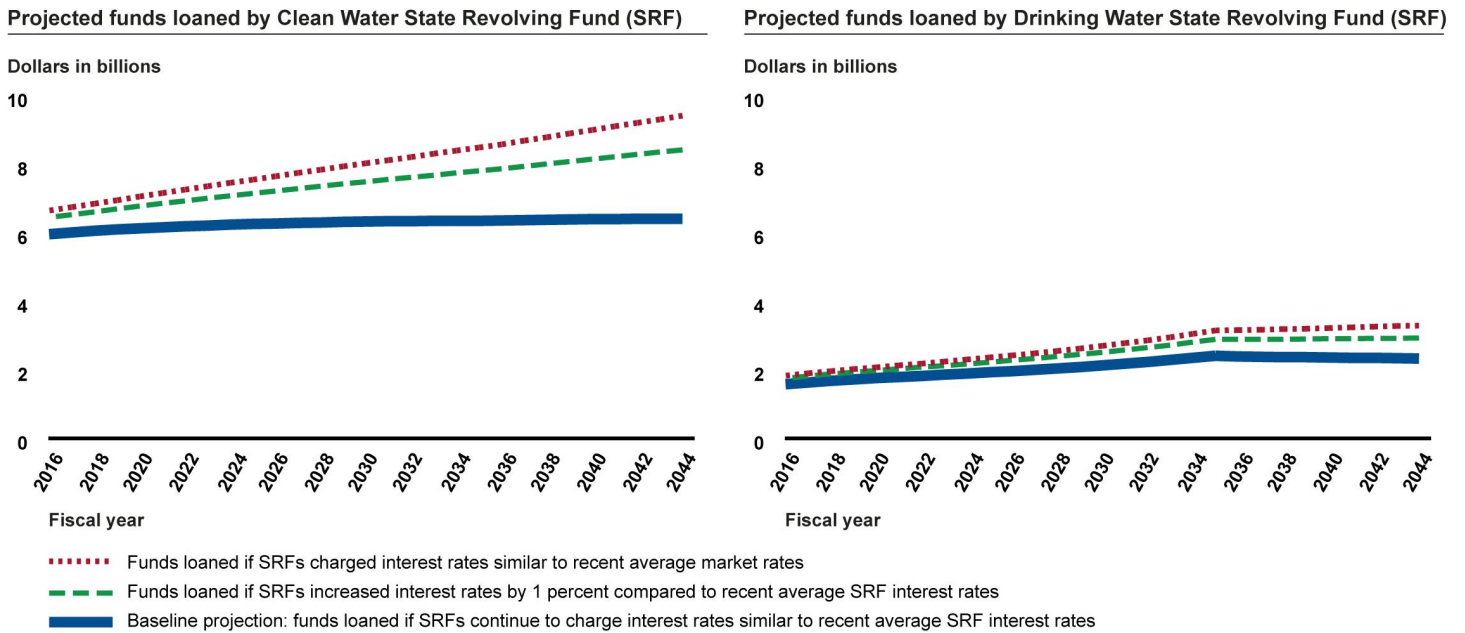
⁴⁶33 U.S.C. § 1383(d)(1)(A) (2015); 42 U.S.C. § 300j-12(f)(1)(A) (2015).

years than at the market rate, which was about 4.0 percent during the same time period. However, according to EPA's 2001 *Handbook*, states have two objectives in managing their SRF programs—(1) ensuring that financial assistance is provided to produce environmental and public health benefits and (2) sustaining SRF funds to provide financial assistance in the future—and states must balance these objectives when setting interest rates on SRF loans.

The 21 states we reviewed varied in their approaches to setting interest rates, with all of these states charging below-market interest rates, but with some of them charging higher interest rates than others. In setting interest rates, officials in many of the states we reviewed told us that they linked their interest rates to market rates by charging a certain percentage below the market rate, and officials in other states told us they kept their interest rates flexible and changed them according to specific programmatic and other circumstances. Officials in a few of the states we reviewed told us they charged a flat interest rate, while officials in a few other states told us their states had rates set according to the income level of their borrowers. EPA officials noted that higher interest rates may reduce communities' demand for SRF loans.

We used EPA's model to project the effect of charging higher interest rates—but still below-market rates—on SRF interest revenue in the future and found that charging higher interest rates generally increased states' loan capacity into the future. Figure 5 shows a general estimate of future loan capacity if state SRF programs charged higher interest rates than the baseline, in which interest rates and all other program factors, such as loan amounts and repayments, are held at the same levels over the most recent 3 years. The results show that an increase in interest rates leads to an increase in loan capacity in the future; however, the projections do not account for the effect of a potential reduction in demand for loans as a response to higher interest rates.

Figure 5: Projection of Clean Water and Drinking Water State Revolving Funds' (SRF) Loan Capacity with Higher Interest Rates



Sources: GAO analysis of projection using EPA financial planning model with GAO assumptions data. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

Limits on Interest Revenue from Investments

SRFs may earn revenue from investments other than loans to communities, such as government issued savings bonds or Treasury bills, but several factors may limit the amount of interest they may earn on these investments. Such factors include the following:

- *Investments are limited by state law.* Many of the states we reviewed are limited by state law to only certain types of investments, which affects the amount of interest states can earn on investments. Specifically, EPA's Environmental Financial Advisory Board, in its 2011 study, identified specific limitations that states face in making

investments,⁴⁷ such as the fact that SRF program investments are frequently controlled by state investment policies and handled by state treasurers' offices. Officials in many selected states confirmed that they have little flexibility in the types of investments they may pursue.

- *Investments are limited by low-interest rate environments.* SRF programs can make investments other than loans to communities. They are less able to earn interest on their SRF loans and other investments when interest rates are low, as they have been in the years following the 2008 economic crisis, according to officials in one state. A low-interest rate environment decreases the ability of SRFs to earn interest for providing assistance in the future, according to experts we interviewed. Officials in some of the states we reviewed mentioned that their opportunities to earn favorable returns on investments are limited by the current interest rate environment. For example, officials in one state reported that they used to invest in guaranteed investments with highly rated financial institutions, but these are no longer available and the long-term interest rates on investment vehicles that are available are not beneficial.
- *Investments are limited by arbitrage restrictions.* For the 28 states that issue leveraged bonds—that is, borrow funds by selling bonds on the market—federal tax law limits the amount of interest that can be retained by states on investments made with tax-exempt bond funds. Specifically, the Internal Revenue Code requires that any difference between the interest rates at which bond proceeds can be borrowed and the interest rates at which they are invested—must be paid to the U.S. Treasury.⁴⁸ If the excess proceeds are not paid to the U.S. Treasury, they are termed “arbitrage bonds,” and the interest on those bonds can no longer be deducted from the gross income of the bond holders. Officials from 11 of the 12 states we reviewed that issued leveraged bonds told us that these restrictions prevent them from earning interest with their SRF funds that exceed the cost of debt payments for leveraged bonds. As a result, SRF programs that

⁴⁷Environmental Financial Advisory Board, *SRF Investment Function: Current Status and Prospects for Enhancing SRF Sustainability* (Washington, D.C.: January 2011).

⁴⁸See 26 U.S.C. § 148 (2015). This rule applies to governmental bonds, which are generally issued for traditional public purposes, and account for the majority of tax-exempt bonds issued each year. See GAO, *Tax Policy: Tax-Exempt Status of Certain Bonds Merits Reconsideration, and Apparent Noncompliance with Issuance Cost Limitations Should Be Addressed*, [GAO-08-634](#) (Washington, D.C.: Feb. 15, 2008).

leverage by selling tax-exempt bonds to borrow funds may invest those funds, but any revenue from these investments that exceeds the costs associated with the bond issuance must be paid to the U.S. Treasury to prevent investors from losing the tax benefits of investing in the bonds. EPA's Environmental Financial Advisory Board has nonetheless recognized that this provision prevented greater growth of SRF funds and recommended in two reports that EPA support congressional action to exclude SRF programs from the arbitrage restrictions.⁴⁹ EPA officials said that they have not done so because congressional action is unlikely and, further, the agency does not provide investment advice to states. There have been congressional attempts to amend the arbitrage rules as they relate to SRFs, but the rules have not been changed.⁵⁰ In November of 2012, we generally concluded that such tax exclusions can result in a loss of revenue to the U.S. Treasury.⁵¹

Unliquidated Obligations

EPA uses the term “unliquidated obligations” to refer to federal funds that are obligated by EPA to states for infrastructure projects but remain unexpended; therefore, they are not being expended to achieve water infrastructure goals and are not available to lend to other projects. In a 2014 report, EPA's Inspector General found that, as of September 2013, \$231 million of Drinking Water SRF funds remained unexpended in the five states they reviewed, and that nationally, about \$2.2 billion—or 13 percent—of obligated funds had not been liquidated.⁵² As of July 2015, this amount has been reduced to \$1.1 billion, according to EPA officials. The Inspector General called these unexpended funds “idle funds” that

⁴⁹Environmental Financial Advisory Board, *Relative Benefits of Direct and Leveraged Loans in State Revolving Loan Funds (SRF) Programs* (Washington, D.C.: Aug. 28, 2008); *Arbitrage Relief Would Increase Funds Available to Meet Critical Water and Sewer Funding Needs* (Washington, D.C.: Sept. 28, 2001).

⁵⁰There have been at least two attempts to amend the arbitrage rules as they relate to SRF programs, one in 2002 and another in 2007. H.R. 3930, 107th Cong., § 302 (2002); S. 1910, 110th Cong., (2007). Additionally, Congress considered an amendment to H.R. 3058, 109th Cong., (2005) requiring the Secretary of the Treasury to submit a report to the appropriations committees explaining the legal basis for the application of arbitrage restrictions to the SRF programs.

⁵¹GAO, *Tax Expenditures: Background and Evaluation Criteria and Questions*, [GAO-13-167SP](#) (Washington, D.C.: Nov. 29, 2012).

⁵²U.S. Environmental Protection Agency, Office of Inspector General, *Unliquidated Obligations Resulted in Missed Opportunities to Improve Drinking Water Infrastructure*, 14-P-0318 (Washington, D.C.: July 16, 2014).

could otherwise be employed in achieving water goals because states were not adequately projecting the Drinking Water SRF resources that would be available in the future. Since 2013, EPA has taken actions to help states reduce unliquidated obligations. For example, in April 2014, EPA issued a memorandum outlining a policy for reducing unliquidated obligations in the Drinking Water SRF program. Under this policy, states are to ensure the full use of funds from fiscal year 2013 and prior by the end of September 2016; states are also to provide monthly reports including data showing progress toward the September 2016 goal and ensure the full use of funds for future years' federal grants within 2 years from the date of the grant award.⁵³

Inflation

SRF programs' purchasing power is eroded by inflation, and if SRF programs do not earn enough to offset inflation, the states will either need to make fewer or smaller loans, according to EPA documents and an expert we interviewed. All else being equal, inflation decreases the amount of goods or services that the programs' funds can purchase. EPA has noted in its 2001 *Handbook* that it is important for states to understand the effect of inflation and consider it in their financial management and planning for SRF funds.⁵⁴ For example, states could incorporate inflation into their cash flow models and adjust loan capacity or interest rates accordingly. Officials from a few states we reviewed told us they formally estimate inflation as a factor in their models. Officials we interviewed from some other states said that, although they do not formally include inflation in their cash flow models, they account for inflation in other ways. For example, they may lend at interest rates that anticipate future inflation or make very conservative estimates in their financial planning such as underestimating their actual lending capacity. In addition, officials from one state told us that the inflation index for structural steel, concrete, and labor has generally grown much faster than inflation for the overall economy. EPA officials told us that some states also anticipate future inflation by setting interest rates to a certain percentage of the prevailing market interest rates.

⁵³U.S. Environmental Protection Agency, *Drinking Water State Revolving Fund (DWSRF) Unliquidated Obligations (ULO) Reduction Strategy* (Washington, D.C.: Apr. 14, 2014).

⁵⁴U.S. Environmental Protection Agency, *SRF Fund Management Handbook*.

States We Reviewed Took Multiple Actions to Enhance SRF Funds, but Officials Stated They Cannot Sustain Their Funds without Continued Federal Grants or Program Changes

Officials in most of the 21 states we reviewed told us that they have taken actions to enhance the financial management of their SRF programs, including actions recommended by EPA and its Environmental Financial Advisory Board to increase revenue. However, officials in these states also told us that they generally cannot sustain their SRF funds without continued federal grants or changes to their programs, such as reducing levels of assistance or increasing revenue.

States We Reviewed Have Taken a Variety of Actions to Enhance the Financial Management of Their SRF Programs

Many of the states we reviewed have taken a variety of actions to enhance SRF financial management, including actions recommended by EPA and the Environmental Financial Advisory Board. These actions were aimed at three general areas: (1) raising SRF revenue directly; (2) increasing loan volume, which increases the number of loans but does not necessarily increase revenue; and (3) improving financial planning, which can lead to increases in the number of loans or interest earned, or both. State officials also emphasized the fact that earning funds was not the primary purpose of the SRF programs, and that the main goal of the program is to provide low-interest loans to communities to achieve environmental and health benefits.

Raising Revenue Directly

States have taken the following actions to raise SRF revenue directly:

Investing in Long-term Investments with Higher Yields

A few states we reviewed have made long-term investments, such as certificates of deposit, which typically have higher yields than short-term investments, to raise SRF revenue. Federal law authorizes states to invest SRF funds, such as cash and cash equivalents that are not yet needed for loans, allowing the SRF funds to earn interest. In its 2011 report, however, the Environmental Financial Advisory Board concluded

that, while states vary in their use of investments, this investment authority is widely underused and often limited to short-term investments.⁵⁵ The board recommended in its 2011 report that EPA encourage states to integrate investment strategies into their SRF programs to maximize funding capacity, particularly in states with significant unmet demand. In response to the recommendation, EPA officials reported that it is ultimately up to the states to make decisions about what investments to make. EPA has also noted in its draft report on the Clean Water SRF program that when states earn revenue from low-interest investments, such as those earned on short-term investments, they are missing the opportunity to make higher-interest investments and earnings to grow their SRF funds.⁵⁶ EPA guidance maintains that states need to monitor the risk profile of their investments and avoid poor returns.

In its 2011 report, the board identified two states, New York and Connecticut, which were undertaking long-term investment strategies to increase revenue.⁵⁷ Officials in three of the states we reviewed, including New York, told us that their SRF programs are currently making long-term investments, when possible.⁵⁸ For example, one state invests in municipal bonds that mimic the timing terms of the loans the SRF issues to communities. As a result, the state's SRF funds can earn about 20 times more interest from these municipal bonds than would be possible with the state's short-term investment fund, which generally invests in short-term U.S. Treasuries, government-backed securities, or other conservative investments. Officials from this same state noted that one downside in this investment approach is a loss of liquidity, or ready access to funds, but they compensate for lack of liquidity by issuing leveraged bonds. Additionally, officials in most of the states we reviewed emphasized the need to maintain a high degree of liquidity when investing, and officials

⁵⁵Environmental Financial Advisory Board, *SRF Investment Function: Current Status and Prospects for Enhancing SRF Sustainability* (Washington, D.C.: January 2011).

⁵⁶U.S. Environmental Protection Agency, Draft Report, *CWSRF Financial Risks: Program Objectives, Risk Analysis and Useful Tools* (May 13, 2013 version).

⁵⁷Environmental Financial Advisory Board, *SRF Investment Function: Current Status and Prospects for Enhancing SRF Sustainability* (Washington, D.C.: January 2011).

⁵⁸After we provided this report to states for their comment, officials from a fourth state in our review told us they had invested SRF funds in a long-term investment fund managed by their state Treasurer.

from many of the states we reviewed noted that their highest priority is to preserve the capital received from the federal government.

Charging Administrative Fees

Most states across the country have charged administrative fees to raise SRF revenue in order to cover costs, according to EPA officials and data. States are authorized to charge fees to borrowers, and these fees can supplement the administrative funds that states can take from their SRF federal grants.⁵⁹ For example, SRF programs may raise revenue by charging closing fees as a percentage of the loan amount, or charging loan servicing fees as a percentage of the outstanding balance on a loan. Of the 50 states that have SRF programs, 43 have charged fees for various services they provide, according to EPA officials. EPA data, as of 2014, show that Drinking Water SRF programs have collected \$464.4 million in fees since inception. EPA does not collect fee data for Clean Water SRF programs. According to EPA regional officials, there may be barriers to increasing fees in some states, such as state policies limiting such fees.

Increasing Loan Volume

In addition to raising revenue directly, states have taken actions to increase loan volume in a number of ways, including by advancing the pace at which loans are provided to communities. According to EPA's draft Clean Water report, the pace at which state SRF funds revolve or are loaned to communities, repaid to the SRF, and then loaned again to support additional water infrastructure projects, is important to the efficient financial management of an SRF program. Lending pace is also related to how quickly water infrastructure projects are completed or construction pace. If a project takes several years to begin construction, a community will be delayed in requesting disbursement of its loan funds, and the community's subsequent repayments to the SRF program will also be delayed.

Aligning Incoming Cash Flows with Funds Committed to Loans

Some states have also aligned the funds they have committed to loans, or loan commitments, with the funds they expect to be available over a period of time, according to EPA documents and state officials in these

⁵⁹40 C.F.R. § 35.3530(b) (2015); 33 U.S.C. § 1383(d)(7) (2015).

states. EPA's 2001 *Handbook*, as well as an EPA *State Activity Update* from 2000, identified reducing cash balances—those funds that a state SRF does not currently have committed to loans or other requirements such as reserves for leveraged bonds—as a way to ensure SRF program resources are used efficiently. A state can use a portion of its cash balance—including funds committed to loans—to make more loans by closely matching the funds flowing out of its program for loans with the repayments flowing into its SRF program. To do so, a state commits to loans on the basis of expected repayments of funds, which EPA refers to as “accelerating lending.” In 2014, EPA data showed that state SRF programs held about \$16.9 billion in cash and cash equivalents, some of which was committed to loans, and some of which was not.⁶⁰ According to EPA's 2000 *State Activity Update*, accelerating lending requires that a state analyze and understand the expected availability of repayments for existing loans, as well as the anticipated disbursements that its SRF program needs to make to communities who have borrowed funds.⁶¹ For example, if a state commits \$1 million for a project that is going to require \$200,000 per year for 5 years, rather than waiting until it has \$1 million on hand in its SRF program to initiate the commitment, the state could commit to the loan when it knows it has incoming unobligated funds of at least \$200,000 every year.

At the same time, according to EPA's 2000 *State Activity Update*, states also need to ensure that sufficient SRF funds are available to address unforeseen changes in anticipated repayments or disbursements. Using the same \$1 million loan example, a state would need to ensure that it had funds available to pay for more than the anticipated \$200,000 per year if a project were completed more quickly or if another project needed

⁶⁰For context, these \$16.9 billion in cash and cash equivalents held by SRF programs can be compared with the \$61.9 billion in outstanding loans held by the Clean and Drinking Water SRFs (\$47.6 billion for Clean Water SRFs and \$14.3 billion for Drinking Water SRFs). When compared with this total loan amount, cash and cash equivalents equal about 21 percent of the total. These cash and cash equivalent balances, as well as demands on these funds, fluctuate as cash flows out of and into the SRF funds. Annually, an average of \$10 billion flows out of SRF programs for disbursements to borrowers (about \$6.9 billion), and to pay back bondholders (about \$3.1 billion). Also, an average of \$9.5 billion flows into SRF programs annually from repayments from borrowers (about \$6.3 billion), and from new federal grants and state matching funds (about \$3.2 billion). These figures represent the average for these amounts over the last 3 years available (2012 through 2014).

⁶¹U.S. Environmental Protection Agency, *State Activity Update, Accelerated Loan Commitment in the SRF Program*.

funds earlier than expected. According to EPA officials, some states are more cautious, and their SRF programs do not accelerate lending, instead keeping funds equal to the full amount of all of SRF loan commitments in the SRF until the borrower asks for disbursement. Further, EPA officials also told us that some states may not have sufficient demand or the financial expertise required to accelerate the use of their SRF funds, and some states may have legal requirements that prevent acceleration. Specifically, EPA officials told us that there are at least 26 states with cash requirements, and that at least 10 states have policies that require their SRF programs to fully encumber funds once a loan has been made to guarantee that cash is available to provide timely disbursements to borrowers. While this approach ensures the state SRF program does not make loan commitments beyond what it has funds to pay for, given that construction can take several years, it may also result in large cash balances of funds that are not used for additional loans or earning interest.

Ensuring Project Readiness

Many states we reviewed have taken steps to ensure that water infrastructure projects are ready to draw SRF funds before they approve loans for these projects. EPA's 2001 *Handbook* encourages states to increase lending pace by requiring or incentivizing projects to be ready to start construction when a loan is issued. EPA's draft report on the Clean Water SRF program highlights a number of tools states can use to do this, such as minimizing application requirements for repeat borrowers.⁶² According to EPA's draft report, if a state makes a loan agreement before a project is ready to proceed, delays can reduce the pace with which new loans may be issued, resulting in a reduced amount of support provided to communities over time. In addition, EPA included project readiness in its strategy to reduce unliquidated obligations for Drinking Water SRF programs.

Officials in many selected states we reviewed said that they have taken specific steps to ensure that the projects they approve for loans are ready to begin construction and draw SRF funds in a timely manner. For example, officials from one state told us the state began charging interest on all SRF funds committed to loans immediately upon issuing the loan

⁶²U.S. Environmental Protection Agency, *SRF Fund Management Handbook*.

rather than when the funds were disbursed, which incentivizes communities to use the funds quickly. Officials in another state told us their SRF programs require borrowers to prepare environmental reviews and bond resolutions before applying for SRF funding, and another will not accept an application until a borrower has obtained a bid for the construction of the project. States have also funded the planning, acquisition, and design phases of infrastructure projects separately from the construction phase, which means that construction is ready to start when a second loan is made, or considered offering preplanning loans for small communities that have difficulty accomplishing the financial and technical work required to plan a water infrastructure project.

Issuing Leveraged Bonds

Most states we reviewed have also increased the number of loans they make in the near-term by issuing leveraged bonds, according to EPA data, although as previously mentioned, they incur debt to do so. In 2008, the Environmental Financial Advisory Board found that state SRF programs that issued leveraged bonds provided greater assistance to communities as a percentage of their federal grants than those that did not issue such bonds. The board recommended that EPA encourage states with significant unmet demand to carefully evaluate the benefits of issuing leveraged bonds.⁶³ According to EPA data, 28 of the 50 states that have SRF programs have issued leveraged bonds. Officials in many states we reviewed noted that leveraging can be a useful technique to increase capacity and lending when there is sufficient demand to support it.

Officials in most states we reviewed noted that a weakness of issuing leveraged bonds is that it has associated costs and creates debt. Officials in some states we reviewed that do not currently issue such bonds told us that they do not need to do so to meet community demand for loans in their states. For example, officials from one state noted that the state has issued leveraged bonds in the past and will do so again in the future if it becomes necessary to meet demand, but it does not do so at present. EPA regional officials we interviewed told us that it is possible to overleverage—a state that leverages without sufficient demand could

⁶³Environmental Financial Advisory Board, *Relative Benefits of Direct and Leveraged Loans in State Revolving Loan Funds (SRF) Programs* (Washington, D.C.: Aug. 28, 2008).

incur long-term debt without achieving the benefits of increasing loan volume, with a negative effect on SRF funds. EPA's draft Clean Water report noted two states that overleveraged and stopped; in one case, the state began leveraging again when demand was sufficient to support it. Most of the state officials we interviewed emphasized that demand for SRF funds affects state decisions regarding leveraging.

Issuing Loan Guarantees

Of the states we reviewed, one has issued a loan guarantee, and another is in the process of establishing loan guarantees, according to EPA officials.⁶⁴ Loan guarantees can allow SRF programs to increase the amount of support they provide to communities, which can help borrowers obtain access to credit with more favorable terms than they may otherwise obtain in private lending markets.⁶⁵ In a 2014 report, the Environmental Financial Advisory Board recommended that EPA take an active leadership role in facilitating states' use of the loan guarantees, particularly in funding environmentally innovative infrastructure projects.⁶⁶ EPA regional officials we spoke with reported that, although state SRF programs have the authority to issue loan guarantees, the programs have not traditionally done so, and demand for loan guarantees does not yet exist. Officials in one state we reviewed told us they were in the process of establishing a loan guarantee program so that it can provide loan guarantees for projects in the future.

Improving Financial Planning

Selected states have also taken the following actions to improve the ability of state SRF officials to make sound financial decisions and increase the number of loans, revenue, or both:

⁶⁴According to EPA, 1 of 50 states has issued a loan guarantee to support a community that is issuing \$23 million in bonds for a clean water project.

⁶⁵The Clean Water Act and the Safe Drinking Water Act provide states with the authority to issue loan guarantees. 33 U.S.C. § 1383(d)(3) (2015); 42 U.S.C. § 300j-12(f)(3) (2015). The SRF programs guarantee to pay lenders if the borrowers default, which makes extending credit more attractive to lenders. However, loan guarantees can also expose the states to substantial financial risks. SRF programs can use the same authority to purchase insurance as an additional credit enhancement

⁶⁶Environmental Financial Advisory Board, *Utilizing SRF Funding for Green Infrastructure Projects* (Washington, D.C.: Jan. 2, 2014).

Projecting Cash Flows

Most states we reviewed have used cash flow models to analyze the financial status of their SRF programs and project their future lending capacity. States may use cash flow models to evaluate the effect of any number of decisions on their SRF funds, such as the effect of changing interest rates, extending loan terms, and issuing leveraged bonds. According to EPA's 2001 *Handbook*, projecting cash flows is the principal technique for analyzing the financial effect of program decisions over time.⁶⁷ According to EPA officials, almost all states' Clean Water SRF programs are using cash flow models, and more than 30 Drinking Water SRF programs use them. For example, according to officials in an EPA regional office, one state worked with its EPA regional office to develop a cash flow model to better understand and project its cash balance. This state had large unliquidated obligations in its Drinking Water SRF, identified by EPA's Office of Inspector General.⁶⁸ According to EPA regional officials, the cash flow model has helped the state understand how to eliminate these unliquidated obligations.

Moreover, officials in most of the states we reviewed said they use cash flow models. Some states we reviewed that use cash flow models project their future lending capacity over 20 years, although others project for only 5 years. Cash flow models generally projected sources of revenue, including federal grants and interest paid on loans, as well as expenses such as debt payments, and program administration. Two of the four states we reviewed that do not use cash flow models told us that their states were in the process of developing models. EPA's Office of Inspector General recommended in its 2014 report that EPA work with states to use cash flow projections to manage their SRF funds, including their unliquidated obligations.⁶⁹ EPA maintained that its efforts to encourage states to use cash flow modeling were appropriate.

⁶⁷U.S. Environmental Protection Agency, *SRF Fund Management Handbook*.

⁶⁸U.S. Environmental Protection Agency, Office of Inspector General, 14-P-0318, July 16, 2014.

⁶⁹U.S. Environmental Protection Agency, Office of Inspector General, 14-P-0318, July 16, 2014.

Marketing and Outreach

Some states are also undertaking marketing and outreach efforts, which may improve their financial planning by developing a thorough understanding of the likely future demand from communities for SRF funds. EPA encourages states to engage in substantial outreach to existing or repeat borrowers to ensure that they continue coming to the SRF program for funding at regular, known intervals. EPA also encourages states to market their SRF programs to make sure that potential borrowers are aware of the SRF programs, which can contribute to keeping demand high and growing the SRF funds. Officials from some selected states told us they actively market their SRF programs and monitor demand closely.

Officials Stated They Cannot Sustain Their SRF Funds without Continued Federal Grants or Program Changes

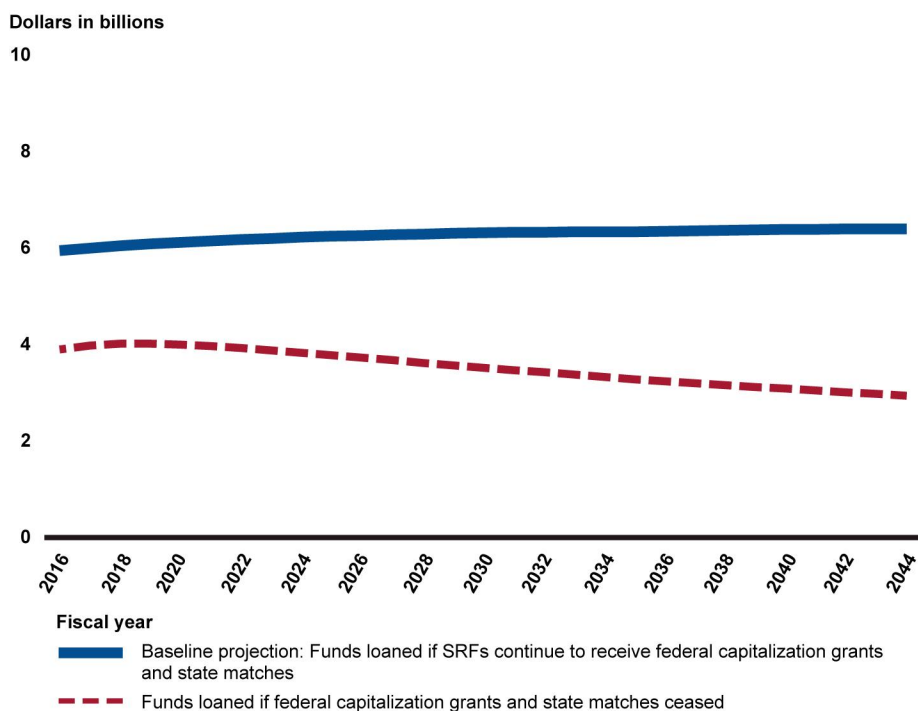
Officials in many of the 21 states we reviewed said that they cannot sustain their SRF funds at their current levels of assistance without continued federal grants or program changes, such as changes to the levels of assistance they provide. Several state officials told us that they rely on federal grants to cover the costs of the program—providing below-market interest rates and additional subsidization, covering the administrative costs of operating SRF programs, offsetting inflation, and supporting other activities, such as ensuring compliance with the public water system supervision programs under the Safe Drinking Water Act. Officials in many states said that if they no longer received further federal grants, their SRF fund balances would decline, and they would either have to decrease lending or increase revenue, such as raising interest rates charged on loans, charging additional administrative fees, or reducing subsidies to communities.

Officials in nearly all of the states we reviewed told us they have considered the effect of losing future federal grants as a source of revenue. Most states' cash flow models consider future capacity without federal funding. Officials in a few states told us that, without further federal funding, they would be able to maintain their loan capacity for some finite period of time. Officials in other states said that they would need to reduce their lending immediately and would support fewer water infrastructure projects. Many state officials we interviewed said that, if federal capitalization grants were discontinued, they would consider making changes to their SRF programs in accordance with their states' specific circumstances, including their state legal and regulatory frameworks, existing and anticipated demand levels, and the financial status of their SRF programs. An official in one state told us that federal

capitalization grants were the most important factor in determining their future loan capacity, according to their cash flow models.

Using EPA’s financial planning model and data for all states’ Clean Water and Drinking Water SRF programs, we analyzed the effect of discontinuing federal grants on the loan capacity of SRF programs nationally. Figure 6 shows a projection of how of states’ loan capacity would decrease over time in states’ Clean Water SRF programs if federal funding and state matches ceased.

Figure 6: Projection of Clean Water State Revolving Fund (SRF) Loan Capacity if Federal Funding and State Matches Ceased



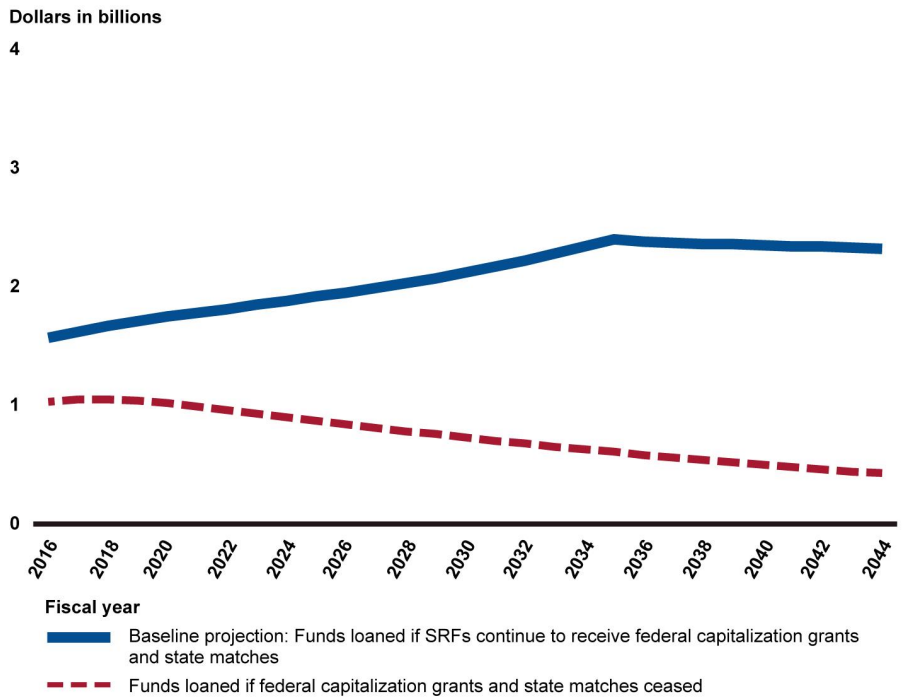
Source: GAO analysis of EPA financial planning model with GAO assumptions data. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies (e.g., to communities that may not be able to afford infrastructure improvements) are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

According to EPA and officials in some of the states we reviewed, the Drinking Water SRF programs' loan capacity would likely decrease to a lower overall level than that of the Clean Water SRF programs if federal funding and state matches were discontinued. Drinking Water SRF programs are newer and have received fewer grants than the Clean Water SRF programs. In addition, EPA officials told us that discontinuing federal funding for the Drinking Water SRF programs would affect communities by eliminating certain technical assistance funding. The SRFs fund state employees that work directly with communities to help them improve their technical, financial, and managerial capacity to manage their infrastructure.⁷⁰ Figure 7 shows the amount of states' lending capacity would decrease over time in the states' Drinking Water SRF programs, if federal funding and state matches ceased.

⁷⁰According to EPA officials, many communities that do not comply with federal drinking water requirements are often dealing with operational challenges, rather than infrastructure problems.

Figure 7: Projection of Drinking Water State Revolving Fund (SRF) Loan Capacity if Federal Funding and State Matches Ceased



Source: GAO analysis of EPA financial planning model with GAO assumptions data. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies (e.g., to communities that may not be able to afford infrastructure improvements) are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

EPA Reviews SRF Programs' Financial Performance, but Its Financial Indicators Do Not Demonstrate States' Abilities to Sustain Their Funds

As part of EPA's oversight responsibilities, EPA regional offices annually review SRF programs' financial performance by collecting and assessing financial information, including information related to states' abilities to sustain their funds. EPA directs its regional offices to review indicators of SRF programs' sustainability as part of this review; however, these indicators demonstrate the growth of the SRF programs compared to federal investment, not the states' abilities to sustain their SRF funds through growth of total assets, which is consistent with leading financial management practices. EPA has identified additional financial measures that are commonly used in financial analysis that could facilitate regional offices' assessment of SRF programs' financial growth and sustainability

but does not direct its regional offices to review these measures. In addition, the financial indicators EPA uses in its reviews do not demonstrate the sustainability of states' SRF funds. Specifically, the indicators do not include projections of the SRF funds' future conditions, which according to EPA's 2001 *Handbook* are important for estimating future SRF funding levels—that is, the sustainable lending capacity of states' SRF programs.

Regional Offices Annually Review SRF Programs' Financial Performance

EPA requires its regional offices to conduct annual reviews of states' SRF programs, and regional offices review a wide range of financial information about the status of SRF programs, including some information related to the sustainability of SRF funding levels and a set of financial indicators that includes one indicator for each SRF program that the agency intended would show financial sustainability. EPA's annual review guidance does not explicitly define or describe the sustainability of state SRF programs, but the 2001 *Handbook* describes how states can manage their SRF funds sustainably. According to the 2001 *Handbook*, the sustainability of a fund relates to the growth of the funds, as well as the ability of the funds to sustain lending capacity of the program; that is, the average dollar amount of funding that the program can provide each year. According to the 2001 *Handbook*, states' fiscal management of SRF funds requires understanding and balancing day-to-day financial decisions against the long-term performance of their SRF programs. State fund managers can describe growth using various measures such as return on net assets or net interest margin. They can also estimate the sustainable lending capacity of a program over time using current and anticipated—or future—fund management conditions. According to the 2001 *Handbook*, projecting financial activity using key assumptions about those conditions, such as capitalization, investments, loan interest rates, repayment terms, and retained earnings, is valuable for evaluating sustainable lending capacity.

The regional offices' reviews of SRF programs' financial performance assess the states' financial management of their SRF programs and may consider states' projections of future SRF fund conditions. During these reviews, regional officials told us they assess financial statements for states' SRF programs, independent audits of those financial statements, state reports, and other relevant information, and issue a performance evaluation report to states detailing the findings. Using a checklist of items to review, EPA regional officials assess the (1) long-term goals of the SRF programs, including factors that relate to sustainability, such as states' timeliness in making loans; (2) states' financial planning activities,

including any financial modeling used to develop states' plans; and (3) financial risks to states' SRF programs. In their reviews of states' financial planning activities, EPA regional officials may consider states' projections of future lending capacity, including future interest and earnings and other financial conditions to assess whether states can sustain their SRF funds in the future. In our analysis of the 21 selected states' annual review reports, 3 states' Clean Water SRF program reports and 4 Drinking Water SRF program reports addressed the future lending capacity of the SRF programs in some way. In our discussions with regional officials, officials from 8 of 10 regional offices told us that they reviewed states' projections of their future lending capacity, if they were available.

During their annual reviews, regional offices also use a set of financial indicators to assess the performance of states' SRF programs. EPA developed guidance for regional offices to use these financial indicators to "understand and assess" states' SRF programs. EPA issued a memorandum providing this guidance for state Clean Water SRFs in October 2000. The guidance identified six key financial indicators for regional offices to focus on during their annual reviews of state's Clean Water SRF programs (see table 1).

Table 1: EPA's Key Financial Indicators for Clean Water State Revolving Funds (SRF)

Clean Water SRF indicators	Description of what indicators measure
Federal return on investment	How many dollars in clean water investment were generated for each federal dollar expended
Percentage of executed loans to funds available	How many dollars in assistance were provided for each dollar made available for projects, or lending pace
Percentage of funds disbursed to executed loans	How quickly SRF-funded projects proceeded toward completion, or construction pace
Estimated additional loans made due to issuing leveraged bonds, only for states issuing leveraged bonds	How many dollars supported projects that otherwise would not have been supported without issuing leveraged bonds
Sustainability	How much the funds grew relative to federal and state investment, without adjustment for inflation
Estimated subsidy	How much estimated subsidy was provided (narrative description of the difference between estimated market rates and estimated average effective SRF interest rates)

Source: EPA memorandum Clean Water State Revolving Fund 01-3 (Oct. 31, 2000). | GAO-15-567

In February 2003, EPA issued a memorandum providing guidance that identified seven key financial indicators for regional offices to focus on in reviewing states Drinking Water SRF programs (see table 2).

Table 2: EPA’s Key Financial Indicators for Drinking Water State Revolving Funds (SRF)

Drinking Water SRF indicators	Description of what indicators measure
Return on federal investment	How many dollars in drinking water investment were generated for each federal dollar expended
Assistance provided as a percentage of funds available for projects	How many dollars in assistance were provided for each dollar made available for projects, or lending pace
Disbursements as a percentage of assistance provided	How quickly SRF-funded projects proceeded toward completion, or construction pace
Estimated additional assistance provided due to issuing leveraged bonds, only for states issuing leveraged bonds	How many dollars supported projects that otherwise would not have been supported without issuing leveraged bonds
Net return on contributed capital (sustainability) [Note A]	How much the funds grew relative to federal and state investment, without adjustment for inflation
Net return after forgiving principal [Note B]	How well states maintained their invested or contributed capital, after subsidies were provided, without adjustment for inflation
Set aside spending rate	How quickly the states are spending funds set aside for specific purposes

Source: EPA memorandum Drinking Water State Revolving Fund 03-02 (Feb. 25, 2003). | GAO-15-567

Note A: According to EPA officials, EPA changed the calculation for this indicator so that subsidies paid from SRF funds are not included. The officials told us that this change was intended to better reflect states’ financial performance because including subsidies in the calculation made it appear that states were losing funds even though they are required by law to provide the funds as subsidies.

Note B: EPA did not calculate this indicator at the national level for 2014 and has replaced it with a new indicator, “net return after repaying match bonds excluding subsidy.” EPA has not yet updated its official February 2003 guidance to reflect this change and so we are noting it in this table.

EPA’s Financial Indicators Do Not Demonstrate States’ Abilities to Sustain Their SRF Programs

The financial indicators that EPA regional offices use as part of their annual reviews of SRF programs’ financial performance do not demonstrate the sustainability of states’ programs. Instead, EPA’s indicators of SRF programs’ sustainability demonstrate the growth of the SRF programs compared with federal investment and not growth of total assets, which is consistent with leading financial management practices.⁷¹ In particular, EPA calculates the sustainability indicator for the states’ Clean Water SRF programs and the equivalent indicator for the states’ Drinking Water SRF programs (net return on contributed capital) as the total annual earnings of each program divided by the total amount of

⁷¹Lawrence Revsine, Daniel W. Collins, W. Bruce Johnson, *Financial Reporting and Analysis*, 2nd ed. (New Jersey: Prentice Hall, 2001).

federal grant funds and state matching funds contributed to the program for that year. The result of this calculation shows the amount of program funds in relation to federal and state investment, which is an incomplete picture of the programs' growth because it does not include all the programs' assets in the comparison. A more complete picture of program growth would be portrayed by calculating annual earnings compared with total net assets. Total net assets include all assets, such as loans and cash from interest earnings and other sources—not just federal and state funds—minus all liabilities such as bonds issued and other debts. Leading financial management practices consider indicators, such as return on net assets, as helpful financial indicators of program growth because they show how well a program can generate earnings relative to its assets.

In addition to EPA's financial indicators for reviewing state SRF programs, the 2001 *Handbook* includes financial measures that show states' overall financial management of their SRF funds and the growth of those funds. These include 10 financial measures that the 2001 *Handbook* describes as useful for identifying the growth of states' SRF programs.⁷² EPA developed these measures for states to use in managing their SRF funds, according to the agency's 2001 *Handbook*, and not for regional offices to use in their annual review of state SRF programs. EPA does not include these measures in its guidance identifying indicators that regional offices are to use when reviewing state SRF programs. EPA officials noted that the workgroup responsible for developing the financial indicators guidance considered a wide range of indicators, including those commonly used in evaluating financial performance, and selected indicators it believed at the time would effectively track the performance of the states' SRF funds.

The financial measures EPA developed for states to use include "return on net assets," a measure of growth that is calculated as net earnings divided by net assets (i.e., total assets minus total liabilities), as well as a measure of "net interest margin," which shows the net earning potential of an SRF program's funds. Net interest margin calculates a fund's interest

⁷²The 10 financial measures that the 2001 *Handbook* describes as useful for identifying the sustainable lending capacity of states' SRF programs are (1) loans as a percentage of total available assets, (2) loan principal repaid as a percentage of loans outstanding, (3) delinquency ratio, (4) interest rate spread, (5) net interest margin, (6) return on net assets, (7) internal capital formation, (8) debt to equity, (9) debt to performing assets, and (10) debt rating.

earnings, which equal the amount of a fund's interest earnings minus the amount of a fund's interest expenses divided by an average of total assets over the course of the year, directly showing a fund's growth from interest earnings. Both of these measures are consistent with leading financial management practices. Specifically, financial management practices indicate that, analyzing a variety of financial measures, such as return on net assets, is useful in evaluating an entity's financial position. EPA's 2013 draft Clean Water SRF report states that EPA's current financial indicators do not tell the "whole story" of states' financial performance. By including one or more of its financial measures for identifying the growth of states' SRF programs as indicators in its financial indicators guidance for regional office reviews of states SRF programs, EPA could better gauge the financial performance and growth of states' SRF funds.

EPA officials agreed that using the agency's financial measures would provide important information on financial performance related to growth. According to EPA officials, the agency included key measures that can be used to assess the status of the SRF programs, including net interest margin, in the 2014 standard operating procedure on "Compliance with Audit Requirements" for that reason. The officials said that the seven operating procedures build on existing guidance, such as the financial indicators guidance.

Although the 2001 *Handbook* and the 2014 standard operating procedure include measures for identifying the growth of states' SRF programs, neither these measures nor EPA's financial indicators for reviewing SRF funds project these funds' ability to continue lending into the future. EPA officials said that the states should project future conditions of the funds as part of their responsibilities for managing the SRF programs. However, by not including projections of the SRF funds' future conditions, the indicators are not consistent with EPA's 2001 *Handbook*, which states that such projections are important for estimating future SRF lending capacity. In addition, leading financial management practices commonly include projections of an entity's ability to continue to exist and grow into the future. According to EPA's financial indicator guidance, its financial indicators for both Clean Water and Drinking Water SRFs are calculated using information on states' past performance to reflect past conditions, rather than using that information to project future conditions. Specifically, EPA and the regional offices use sustainability indicators ("sustainability" for the Clean Water SRFs and "net return on contributed capital" for the Drinking Water SRFs) that demonstrate the current status of the states' SRF funds but cannot demonstrate whether the funds can be sustained in

the future. For example, EPA's sustainability indicator for the Clean Water SRF program of one state we reviewed reported "20 percent" for 2014, meaning that the program's past interest earnings equaled 20 percent of the total amount of its past federal grants and state match. However, EPA's sustainability indicator did not estimate the state's future lending capacity or indicate how long the state would continue to produce earnings.

EPA officials also said that the indicators that use information on past performance can inform future SRF fund performance. While past performance can provide some indication of future financial performance, by forecasting SRF funds' future lending capacity, EPA can better assess states' SRF programs' ability to sustain their lending capacity, consistent with leading financial management practices. Forecasting can consider a variety of factors such as future interest earnings and inflation rates. Although some states are using information on past performance to develop projections to assess sustainability of their SRF funds, and the degree to which they can accelerate lending, not all are, and EPA does not use the results of state projections as indicators. However, EPA has information available to develop future-looking indicators to help assess states' abilities to sustain their lending capacity, such as by using its financial planning model, which is capable of estimating state SRF programs' future loan capacity with and without continued federal funding. In our discussions with EPA officials, they said that future-looking indicators could be helpful for understanding the financial sustainability of SRF funds. The officials said that it is important to ensure that the agency uses a set of indicators to demonstrate the various goals of the SRF programs, including providing environmental benefit, subsidies to assist communities that cannot afford loans, and ensuring the financial sustainability of the SRF programs.

Conclusions

The Clean Water and Drinking Water SRF programs have been successful not only in providing billions of dollars of federal funding for drinking water and wastewater infrastructure but also in creating an innovative way to finance such infrastructure while achieving environmental and health benefits. Federal contributions to the SRF programs have been key to capitalizing the SRF funds and making them viable sources of funding, although some factors limiting the growth of SRF funds are a result of federal program requirements. States successfully manage their SRF funds and balance the programs' goals of providing financial assistance for environmental and health benefits with sustaining their SRF funds. Many states have taken various actions to increase the revenues flowing into their SRF funds, yet according to their

own assessments, their SRF funds cannot be sustained at current assistance levels without continued federal funding.

EPA's role in reviewing and overseeing the financial management of state SRF programs has been important in ensuring that these programs are fulfilling their mission and continuing to revolve funds for future use. However, the financial indicators EPA regional offices use as part of their annual reviews of SRF programs' financial performance do not demonstrate the sustainability—that is, the growth of SRF funds and their ability to sustain lending into the future—of states' SRF funds. EPA's 2001 *Handbook* identifies financial measures that are consistent with leading financial management practices, as does EPA's 2014 standard operating procedure for "Compliance with Audit Requirements." By including one or more of the financial measures for identifying the growth of states' SRF programs as indicators in its financial indicators guidance for regional office reviews of states' SRF programs, EPA can better gauge the financial performance and growth of states' SRF funds. Further, neither EPA's financial indicators nor its financial measures in the 2001 *Handbook* or the standard operating procedure demonstrate sustainability or estimate the effect of potential changes in federal funding levels, lending capacity, or state financial management decisions on the funds. By using information on past performance to develop projections of SRF funds' future lending capacity, consistent with leading financial management practices, EPA can better assess states' SRF programs' sustainability. EPA officials said that they would consider incorporating future-looking indicators into future updates to the agency's financial indicator guidance.

Recommendations for Executive Action

To improve EPA's review and oversight of the SRF program, we recommend that the Administrator of EPA direct the Office of Water to take the following two actions:

- Update the financial indicators guidance to include one or more of EPA's financial measures for identifying the growth of states' SRF funds.
- Use information on SRF funds' past performance to develop projections of SRF programs by forecasting future lending capacity during regional office reviews of states' SRF programs using factors such as future interest earnings and inflation rates.

Agency Comments and Our Evaluation

We provided a draft of this report to EPA for comment. In its written comments, reproduced in appendix III, EPA generally agreed with the findings and recommendations in our draft report and noted that the agency planned to take action consistent with the recommendations. In particular, for our recommendation that EPA update its financial indicators guidance, EPA's written comments stated that it plans to update this guidance during fiscal year 2016 by reviewing existing guidance such as its 2001 *Handbook* and its standard operating procedures, and by forming a joint state-EPA workgroup to ensure that the indicators effectively capture SRF programs' growth and sustainability. For our recommendation that EPA should develop projections of SRF programs by forecasting future lending capacity, EPA's comments stated that it will work with the states during fiscal year 2016 to develop projections and form a state-EPA workgroup to ensure that these projections are accurate and support regional office reviews of SRF programs. EPA requested that the recommendation be clarified to specify that projections need to account for forecast of future interest rates and rates of inflation. We clarified our second recommendation. We did not mean, however, to limit the forecasts to just these two factors and clarified this as well. EPA also provided technical comments that were incorporated, as appropriate.

In addition, we sent relevant portions of the draft report to the appropriate agencies in the 21 states we interviewed for their review and comment. Some of the states provided technical comments, which we included, as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Administrator of the Environmental Protection Agency, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or gomezj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Alfredo Gómez". The signature is written in a cursive style with a large, stylized 'G'.

J. Alfredo Gómez
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This report examines the financial sustainability of the Environmental Protection Agency's (EPA) Clean Water and Drinking Water State Revolving Funds (SRF) over the long term. The objectives of this report are to examine (1) factors that can affect states' abilities to sustain their SRF funds; (2) selected states' actions to enhance the financial management of their SRF funds and state officials' views about whether they can sustain their SRF funds; and (3) steps, if any, that EPA takes to review states' abilities to sustain their SRF funds as part of its oversight responsibilities.

To examine the factors that can affect states' abilities to sustain their SRF funds, we analyzed EPA documents and interviewed EPA officials, experts in SRF financial management, and officials from a nongeneralizable sample of 21 states. We identified and selected nine public financial experts based on their current affiliation with the Environmental Financial Advisory Board, who are prominent experts in water infrastructure finance, business, and government, and have contributed to reports about SRF programs, and requested that they name others who also have expertise in the area; we selected nine experts using this technique. We selected states that have a range of SRF financial management approaches by first dividing the 50 states into two groups using EPA data: those that have used their SRF funds to leverage (to sell bonds) and those that have not done so. We further divided each group of states into the four different census regions across the country,¹ and identified the states' SRF balances, on the basis of EPA data. We selected 16 states: 2 with the lowest and highest SRF balances in each census region, for each of the leveraged and nonleveraged groups of states. Of these 16 states, experts identified 1 as using innovative investing strategies. We selected 5 additional states, 2 that experts identified as also using innovative investing strategies, and 3 that experts identified as having noteworthy experience in managing SRF funds. We selected states in these groups to provide a range of experiences and examples, including 12 states that issued leveraged bonds and 9 that did not, and 3 states that used innovative investing strategies to grow their SRF funds, which is important for our purposes because investing is a principal way to sustain SRF funds. Because this

¹The 21 states we selected were Arkansas, California, Connecticut, Delaware, Iowa, Louisiana, Maine, Michigan, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Texas, Vermont, Washington, and Wisconsin.

is a nonprobability sample, data from these states cannot be generalized to other states and their SRF programs, but this sample provided valuable insights about the range of SRF financial management.

We used a standard set of questions to interview officials in each selected state to ensure we consistently captured their views on various aspects of each of our objectives. We conducted interviews in person for 3 of the states and also conducted site visits of infrastructure projects that received SRF funds because they reflected the range of attributes that we used to select states, and were in proximity to our office; while there, we spoke to officials in charge of the states' SRF programs and visited infrastructure projects identified by the state officials. We did not receive information from every state selected on every topic discussed in these interviews. Further, officials in some states provided relevant information in addition to our questions, which we have analyzed and included as appropriate. For these reasons, we did not receive responses from 21 states for every topic. We analyzed the content of these interviews and related documents to identify the main themes and develop summary findings. Two GAO analysts separately conducted this analysis, placing officials' responses into one or more categories, then compared their analyses. All initial disagreements regarding the categorizations of officials' responses were discussed and reconciled. The analysts then tallied the number of responses in each category. To characterize state officials' views and key themes we identified throughout this report, we defined modifiers (e.g., "nearly all") to quantify officials' views as follows:

- "nearly all" represents officials from 19 to 21 states,
- "most" represents officials from 12 to 18 states,
- "many" represents officials from 8 to 11 states,
- "some" represents officials from 4 to 7 states, and
- "a few" officials represents officials from 2 to 3 states.

We also used an EPA financial planning model to analyze the extent to which various factors may affect SRF funds. We used the model to project potential effects on future SRF lending capacity, for all states combined. EPA's financial planning model pulls inputs from the National Information Management System database. To assess whether it was reasonable and appropriate to use EPA's financial planning model, we (1) compared the outputs of the EPA model against the outputs of three state cash flow models using the same assumptions as the state models, (2) interviewed knowledgeable EPA officials on the details and calculations embedded in the model, (3) reviewed documentation about the model, and (4) conducted a high-level review of the conceptual structure and

formulation of the model to ensure it followed acceptable cash flow modeling techniques. We found that the use of the model was reasonable and appropriate for our purposes. EPA's financial model uses financial data for 1988 to 2014 for the Clean Water SRF and 1997 to 2014 for the Drinking Water SRF. We assessed the reliability of this data by checking it against source data provided by EPA and found it sufficiently reliable for the purposes of this report.

We used EPA's financial planning model to create a baseline model to project the funds that SRFs could loan nationally if current SRF financial management practices and funding levels continue; this baseline projection is based on averages for the last 3 years in several areas. Specifically, we made the following assumptions for the baseline projections:

1. SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014.
2. Inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index.
3. Federal and state investment is assumed to continue, equivalent to the recent 3-year average.
4. Subsidies are assumed to continue, equivalent to the recent 3-year average.
5. Administrative expenses are assumed to continue, equivalent to the recent 3-year average.

To examine the actions that selected states have taken to enhance the financial management of their SRF programs and state officials' views about whether they can sustain their SRF funds without continued federal funding, we obtained and analyzed Environmental Financial Advisory Board reports from 2008, 2011, and 2014. We generally reviewed the methodologies in each of the board's reports to assess the soundness of their findings and determined that they were sufficiently sound for use in this report. We reviewed state reports such as annual reports and intended use plans. We reviewed EPA guidance and reports, such as memorandums, annual reports, state activity updates, and a July 2014

EPA Office of Inspector General's report.² To assess the soundness of the Inspector General's report, we reviewed the methodology and spoke to officials in the Office of Inspector General responsible for reviewing and reporting on EPA's oversight of the states' SRF programs. We determined that the report's findings were sufficiently sound for use in this report. In addition, we interviewed officials in the selected states about actions they have taken to enhance the management of their SRF programs and funds. We also discussed states' projections of their SRF funds into the future, if available. We then used EPA's financial planning model to project SRF funds into the future under two scenarios, one with increased average interest rates and one without continued federal funding, all other assumptions held the same. To further understand the states' SRF funds, we also obtained and examined Clean Water SRF financial data (1988 through 2014) and Drinking Water SRF financial data (1997 through 2014) from EPA's National Information Management System database which uses data collected from the 50 states in the country and Puerto Rico. To assess the reliability of this EPA data, we corroborated the data with relevant sources and interviewed EPA officials responsible for compiling the data. On the basis of our work, we determined that the data are sufficiently reliable for the purposes of this report.

To examine what steps, if any, EPA takes to review states' abilities to sustain their SRF funds, we interviewed and obtained information from EPA program officials at the national and regional levels, including officials from all 10 EPA regional offices that oversee the states in our sample. To understand leading practices for evaluating an entity's financial sustainability, we reviewed leading financial management practices,³ because financial sustainability relates to the financial performance of a business or financial entity such as the SRF funds. Financial management practices commonly use a variety of indicators to describe the financial performance of an entity such as the SRF funds. We compared the financial measures used in financial management practices with EPA's financial indicators and their use. We obtained and

²U.S. Environmental Protection Agency, Office of Inspector General, *Unliquidated Obligations Resulted in Missed Opportunities to Improve Drinking Water Infrastructure*, 14-P-0318 (Washington, D.C.: July 16, 2014).

³Lawrence Revsine, Lawrence, Daniel W. Collins, W. Bruce Johnson, *Financial Reporting and Analysis*, 2nd ed. (New Jersey: Prentice Hall, 2001).

analyzed copies of regional reviews of selected state SRFs for fiscal years 2013, the most recent year for which such reviews were available. We also reviewed EPA's financial indicators from the National Information Management System and the system's data dictionaries. We interviewed EPA program officials at the national and regional levels, as well as state officials involved in the management of the SRF programs.

We conducted this performance audit from May 2014 to August 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Financial Indicators for Clean and Drinking Water SRF Programs

The Environmental Protection Agency (EPA) uses a set of financial indicators as part of its review of the financial management of states' SRF programs. This appendix provides the cumulative results for these indicators in aggregate for the 50 states that had State Revolving Fund (SRF) programs for fiscal year 2014, the most recent data available.¹ According to EPA guidance, these indicators are intended to assess the performance of the states' SRF programs. These indicators were established in 2000 for Clean Water SRFs,² and in 2003 for Drinking Water SRFs.³ EPA established six key financial indicators for the Clean Water SRF programs (one is narrative and is not included here) and seven key indicators for Drinking Water SRF programs. Each key indicator is calculated in EPA's National Information Management System database, which houses financial data collected by EPA from states. Table 3 shows the indicators for the Clean Water SRF program, which are aggregated from the Clean Water SRF programs in all 50 states.⁴

Table 3: Key Clean Water State Revolving Fund (SRF) National Financial Indicators, Cumulative as of June 2014

Indicator	National cumulative value
Federal return on investment	256%
Percentage of executed loans to funds available (pace of lending)	98%
Percentage of funds disbursed to executed loans (pace of construction)	88%
Estimated additional loans made due to issuing leveraged bonds, leveraged states only	\$31.8 billion
Sustainability (cumulative retained earnings as a % of total federal and state investment)	20%

Source: EPA. | GAO-15-567

¹Puerto Rico also has SRF programs; for the purposes of this report, when we refer to data encompassing the 50 states, data from Puerto Rico is also included.

²EPA memorandum Clean Water State Revolving Fund 01-3 (Oct. 31, 2000).

³EPA memorandum Drinking Water State Revolving Fund 03-02 (Feb. 25, 2003).

⁴EPA also includes one narrative financial indicator for Clean Water SRFs, "narrative description of the difference between estimated market rates and estimated average effective interest rates," but we did not include it because EPA has not published a narrative summary for this indicator for 2014.

Table 4 shows the national indicators for the Drinking Water SRF program, which are aggregated from the Drinking Water SRF programs in all 50 states and Puerto Rico.

Table 4: Key Drinking Water State Revolving Fund (SRF) National Financial Indicators, Cumulative as of June 2014

Indicator	National cumulative value
Return on federal investment	176%
Assistance provided as a percentage of funds available for projects (pace of lending)	93%
Disbursements as a percentage of assistance provided (pace of construction)	86%
Estimated additional assistance provided due to leveraged bonds, for leveraged states only	\$5.3 billion
Net return on contributed capital (sustainability) [Note A]	12%
Net return after forgiving principal	[Note B]
Set-aside spending rate	86%

Source: GAO. | GAO-15-567

Note A: According to EPA officials, EPA changed the calculation for this indicator so that subsidies paid from SRF funds are not included. The officials told us that this change was intended to better reflect states' financial performance because including subsidies in the calculation made it appear that states were losing funds even though they are required by law to provide the funds as subsidies.

Note B: EPA did not calculate this indicator at the national level for 2014 and has replaced it with a new indicator, "net return after repaying match bonds excluding subsidy." EPA has not yet updated its official February 2003 guidance to reflect this change and so we are noting it in this table.

Appendix III: Comments from the Environmental Protection Agency



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

JUL 23 2015

OFFICE OF
WATER

Mr. Alfredo Gomez
Acting Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Gomez:

Thank you for the opportunity to review and comment on the Government Accountability Office's (GAO) draft report, "State Revolving Funds: Improved Financial Indicators Could Strengthen EPA Oversight (GAO-15-567)." In this draft report, the GAO examines the following: (1) factors that affect selected states' abilities to sustain their SRF funds; (2) selected states' actions to enhance their SRF funds and views about sustaining their funds; and (3) steps that the Environmental Protection Agency (EPA) takes to review states' ability to sustain their SRF funds as part of its oversight. The purpose of this letter is to provide the EPA's response to your findings, conclusions, and recommendations.

The EPA agrees with the GAO's findings, conclusions, and recommendations. We are pleased to note the GAO's conclusion that the Clean Water and Drinking Water State Revolving Fund (SRF) programs have been successful as innovative sources of financing for water and wastewater infrastructure improvements that achieve environmental and health benefits. The GAO acknowledges that this is driven by the states' successful management of these programs, which balances the goals of providing affordable financing for critical projects with protecting the sustainability of the SRF funds. The report not only illustrates how the states have achieved this success by enhancing their financial management of their programs, but also highlights the important role that continued federal appropriations will have in ensuring that this trend continues.

Though the report acknowledges the importance of EPA's oversight in maintaining the success of the SRF programs, it also notes that EPA's current financial indicators do not adequately demonstrate the growth of the SRF programs and their ability to lend into the future. The EPA appreciates the GAO's constructive recommendations and will work with its state partners to develop and include formal indicators that more fully capture the sustainability and the future lending capacity of the SRF programs.

We provide our significant responses to your recommendations below, and offer more technical comments to the draft report as an enclosure.

GAO Recommendations and EPA Responses:

The GAO recommends that the EPA take the following two actions to improve its review and oversight of the SRF programs.

**Appendix III: Comments from the
Environmental Protection Agency**

Recommendation 1: Update the financial indicators guidance to include one or more of EPA's financial measures for identifying the growth of states' SRF funds.

EPA Response: The EPA agrees with this recommendation and will update this guidance during FY 2016. As recommended by the GAO, the EPA will review existing guidance such as the SRF Financial Management Handbook and Standard Operating Procedures to identify financial indicators that can be incorporated as part of this effort. The EPA will also form a joint state-EPA workgroup to ensure that any newly added indicators effectively capture the growth and sustainability of the SRF programs.

Recommendation 2: Use information on SRF funds' past performance to develop projections of SRF programs' future lending capacity during regional office reviews of states' SRF programs.

EPA Response: The EPA agrees with this recommendation and will work with the states during FY 2016 to develop projections of future lending capacity of the SRF programs. This effort will involve the formation of a state-EPA workgroup to help ensure accurate estimates that effectively support regional office reviews of the SRF programs.

The EPA appreciates the effort the GAO has expended in conducting this review, and it agrees with the GAO's findings, conclusions, and recommendations. Thank you for the opportunity to provide comments on the draft report, and the EPA looks forward to working collaboratively with you in the future. If you have any question, please contact Howard Rubin, of the DWSRF, at (202) 564-2051, or Mark Mylin, of the CWSRF, at (202) 564-0607.

Sincerely,


Kenneth J. Kopocis
Deputy Assistant Administrator

Enclosure

cc: EPA GAO Liaison Team
Andrew Sawyers (OWM)
Raffael Stein (OWM)
Peter Grevatt (OGWDW)
Ronald Bergman (OGWDW)
Mark Mylin (OWM)
Howard Rubin (OGWDW)

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

J. Alfredo Gómez, (202) 512-3841 or gomezj@gao.gov

Staff Acknowledgments

In addition to the individual named above, Susan Iott (Assistant Director), Abigail Brown, Antoinette Capaccio, Lee Carroll, George Depaoli, Nicole Dery, John Forrester, Cindy Gilbert, Tom James, Paul Kinney, Jon Melhus, Mehrzad Nadji, Alison O'Neill, and Kiki Theodoropoulos made important contributions to this report.

Appendix V: Accessible Data

Accessible Text and Data Tables

Data Tables for Figure 3: Federal Grants and State Match Funding for Clean Water and Drinking Water State Revolving Fund (SRF) Programs, Fiscal Years 1987-2014 (Dollars in billions)

Clean Water—State Revolving Fund

Fiscal year	States match	Federal investment
1988	0.04	0.25
1989	0.24	1.15
1990	0.25	1.37
1991	0.32	1.97
1992	0.32	1.89
1993	0.33	1.89
1994	0.36	1.27
1995	0.32	1.33
1996	0.39	1.73
1997	0.2	0.78
1998	0.26	1.24
1999	0.23	1.3
2000	0.36	1.4
2001	0.26	1.31
2002	0.3	1.34
2003	0.24	1.3
2004	0.26	1.31
2005	0.2	1.05
2006	0.22	0.87
2007	0.17	1
2008	0.3	0.81
2009	0.13	4.57
2010	0.19	1.59
2011	0.31	1.82
2012	0.27	1.56
2013	0.23	1.35
2014	0.3	1.84

Drinking Water—State Revolving Fund

Fiscal year	States match	Federal investment
1988	0	0
1989	0	0
1990	0	0

Fiscal year	States match	Federal investment
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0.02	0.36
1998	0.18	1.21
1999	0.19	0.77
2000	0.18	0.82
2001	0.18	0.78
2002	0.25	0.8
2003	0.19	0.78
2004	0.22	0.83
2005	0.17	0.82
2006	0.17	0.79
2007	0.12	0.76
2008	0.15	0.92
2009	0.17	2.7
2010	0.18	1.12
2011	0.24	1.05
2012	0.18	1.08
2013	0.14	0.86
2014	0.18	0.87

Source: GAO analysis of EPA data. | GAO-15-567

Note: The spikes in funding in 2009 are because of increases from American Recovery and Reinvestment Act of 2009 funding.

Accessible Text for Figure 4: Project Application and Payment Process States Generally Follow in Managing Clean Water and Drinking Water State Revolving Funds (SRF)

1. States compile SRF loan applications from communities;
2. States score projects by awarding points for improving environment or public health;
3. States develop intended use plan and priority list for projects;
4. States select community projects and offer SRF loans;
5. Communities pay for project work and seek reimbursement;
 - Periodic loan repayments (forward to “States’ SRF fund”);
6. States SRF fund;

- Periodic loan disbursements (back to “Communities pay for project work and seek reimbursement”).

Source: GAO analysis of State Revolving Funds (SRF) program documents. | GAO-15-567

Note: These steps are a general representation of the funding application and approval process. The exact order and timing of the steps may vary by state or program.

Data Tables for Figure 5: Projection of Clean Water and Drinking Water State Revolving Funds’ (SRF) Loan Capacity with Higher Interest Rates (Dollars in billions)

Projected funds loaned by Clean Water State Revolving Fund (SRF)

Fiscal year	Funds loaned if SRFs charged interest rates similar to recent average market rates	Funds loaned if SRFs increased interest rates by 1 percent compared to recent average SRF interest rates	Baseline projection: funds loaned if SRFs continue to charge interest rates similar to recent average SRF interest rates
2016	6.64	6.44	5.95
2017	6.74	6.52	6
2018	6.84	6.6	6.05
2019	6.94	6.69	6.09
2020	7.05	6.77	6.12
2021	7.15	6.85	6.15
2022	7.25	6.92	6.18
2023	7.35	7	6.2
2024	7.45	7.07	6.23
2025	7.54	7.14	6.25
2026	7.64	7.21	6.26
2027	7.74	7.28	6.28
2028	7.83	7.35	6.29
2029	7.93	7.42	6.31
2030	8.02	7.48	6.32
2031	8.11	7.55	6.33
2032	8.2	7.61	6.33
2033	8.3	7.67	6.34
2034	8.39	7.74	6.34
2035	8.48	7.8	6.34
2036	8.57	7.86	6.35
2037	8.68	7.93	6.36
2038	8.78	8	6.37
2039	8.89	8.07	6.38
2040	8.99	8.14	6.39
2041	9.1	8.21	6.39
2042	9.2	8.28	6.4

Fiscal year	Funds loaned if SRFs charged interest rates similar to recent average market rates	Funds loaned if SRFs increased interest rates by 1 percent compared to recent average SRF interest rates	Baseline projection: funds loaned if SRFs continue to charge interest rates similar to recent average SRF interest rates
2043	9.3	8.35	6.4
2044	9.41	8.41	6.4

Projected funds loaned by Drinking Water State Revolving Fund (SRF)

Fiscal year	Funds loaned if SRFs charged interest rates similar to recent average market rates	Funds loaned if SRFs increased interest rates by 1 percent compared to recent average SRF interest rates	Baseline projection: funds loaned if SRFs continue to charge interest rates similar to recent average SRF interest rates
2016	1.82	1.74	1.57
2017	1.89	1.81	1.62
2018	1.95	1.87	1.67
2019	2.01	1.92	1.71
2020	2.06	1.97	1.75
2021	2.12	2.02	1.78
2022	2.17	2.07	1.81
2023	2.23	2.11	1.85
2024	2.29	2.16	1.88
2025	2.35	2.21	1.92
2026	2.41	2.27	1.95
2027	2.47	2.32	1.99
2028	2.54	2.38	2.03
2029	2.61	2.44	2.07
2030	2.69	2.5	2.12
2031	2.77	2.57	2.17
2032	2.85	2.64	2.22
2033	2.94	2.71	2.28
2034	3.04	2.8	2.34
2035	3.14	2.88	2.4
2036	3.15	2.88	2.38
2037	3.16	2.88	2.37
2038	3.18	2.88	2.36
2039	3.19	2.89	2.36
2040	3.21	2.9	2.35
2041	3.23	2.9	2.34
2042	3.25	2.91	2.34
2043	3.27	2.91	2.33

Fiscal year	Funds loaned if SRFs charged interest rates similar to recent average market rates	Funds loaned if SRFs increased interest rates by 1 percent compared to recent average SRF interest rates	Baseline projection: funds loaned if SRFs continue to charge interest rates similar to recent average SRF interest rates
2044	3.28	2.92	2.32

Sources: GAO analysis projection using EPA financial planning model with GAO assumptions data. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

Data Table for Figure 6: Projection of Clean Water State Revolving Fund (SRF) Loan Capacity if Federal Funding and State Matches Ceased (Dollars in billions)

Fiscal year	Baseline projection: funds loaned if State Revolving Funds continue to receive federal capitalization grants and state matches	Funds loaned if federal capitalization grants and state matches ceased
2016	5.95	3.9
2017	6	3.98
2018	6.05	4.02
2019	6.09	4.02
2020	6.12	4
2021	6.15	3.97
2022	6.18	3.93
2023	6.2	3.88
2024	6.23	3.83
2025	6.25	3.78
2026	6.26	3.73
2027	6.28	3.68
2028	6.29	3.62
2029	6.31	3.57
2030	6.32	3.52
2031	6.33	3.47
2032	6.33	3.43
2033	6.34	3.38
2034	6.34	3.33
2035	6.34	3.28

Fiscal year	Baseline projection: funds loaned if State Revolving Funds continue to receive federal capitalization grants and state matches	Funds loaned if federal capitalization grants and state matches ceased
2036	6.35	3.24
2037	6.36	3.2
2038	6.37	3.16
2039	6.38	3.12
2040	6.39	3.09
2041	6.39	3.05
2042	6.4	3.01
2043	6.4	2.98
2044	6.4	2.94

Sources: Projection using EPA financial planning model with GAO assumptions. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies (e.g., to communities that may not be able to afford infrastructure improvements) are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

Data Table for Figure 7: Projection of Drinking Water State Revolving Fund (SRF) Loan Capacity if Federal Funding and State Matches Ceased (Dollars in billions)

Fiscal year	Baseline projection: funds loaned if State Revolving Funds continue to receive federal capitalization grants and state matches	Funds loaned if federal capitalization grants and state matches ceased
2016	1.57	1.03
2017	1.62	1.05
2018	1.67	1.05
2019	1.71	1.04
2020	1.75	1.02
2021	1.78	0.99
2022	1.81	0.96
2023	1.85	0.93
2024	1.88	0.9
2025	1.92	0.87
2026	1.95	0.84
2027	1.99	0.81

Fiscal year	Baseline projection: funds loaned if State Revolving Funds continue to receive federal capitalization grants and state matches	Funds loaned if federal capitalization grants and state matches ceased
2028	2.03	0.78
2029	2.07	0.76
2030	2.12	0.73
2031	2.17	0.7
2032	2.22	0.68
2033	2.28	0.65
2034	2.34	0.63
2035	2.4	0.61
2036	2.38	0.58
2037	2.37	0.56
2038	2.36	0.54
2039	2.36	0.52
2040	2.35	0.5
2041	2.34	0.48
2042	2.34	0.46
2043	2.33	0.44
2044	2.32	0.43

Sources: Projection using EPA financial planning model with GAO assumptions. | GAO-15-567

Note: For the baseline projections, we made the following assumptions: (1) SRF interest rates for loans to communities are assumed to be 2.3 percent for Clean Water SRFs and 2.2 percent for Drinking Water SRFs, equivalent to the recent 3-year average weighted interest rate charged by SRFs, for state fiscal years 2012 through 2014; (2) inflation is assumed to be 1.6 percent, equivalent to the recent 3-year average inflation rate according to the Consumer Price Index; (3) federal and state investment is assumed to continue, equivalent to the recent 3-year average; (4) subsidies (e.g., to communities that may not be able to afford infrastructure improvements) are assumed to continue, equivalent to the recent 3-year average; and (5) administrative expenses are assumed to continue, equivalent to the recent 3-year average.

Agency Comments

Environmental Protection Agency

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Accessible Text for Appendix III: Comments from the Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

Internet Address (URL): <http://www.epa.gov>

OFFICE OF WATER

July 23, 2015

Mr. Alfredo Gomez Acting Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Gomez:

Thank you for the opportunity to review and comment on the Government Accountability Office's (GAO) draft report, "State Revolving Funds: Improved Financial Indicators Could Strengthen EPA Oversight (GAO-15-567)." In this draft report, the GAO examines the following: (1) factors that affect selected states' abilities to sustain their SRF funds; (2) selected states' actions to enhance their SRF funds and views about sustaining their funds; and (3) steps that the Environmental Protection Agency (EPA) takes to review states' ability to sustain their SRF funds as part of its oversight. The purpose of this letter is to provide the EPA's response to your findings, conclusions, and recommendations.

The EPA agrees with the GAO's findings, conclusions, and recommendations. We are pleased to note the GAO's conclusion that the Clean Water and Drinking Water State Revolving Fund (SRF) programs have been successful as innovative sources of financing for water and wastewater infrastructure improvements that achieve environmental and health benefits. The GAO acknowledges that this is driven by the states' successful management of these programs, which balances the goals of providing affordable financing for critical projects with protecting the sustainability of the SRF funds. The report not only illustrates how the states have achieved this success by enhancing their financial management of their programs, but also highlights the important role that continued federal appropriations will have in ensuring that this trend continues.

Though the report acknowledges the importance of EPA's oversight in maintaining the success of the SRF programs, it also notes that EPA's current financial indicators do not adequately demonstrate the growth of the SRF programs and their ability to lend into the future. The EPA appreciates the GAO's constructive recommendations and will work with its state partners to develop and include formal indicators that more fully capture the sustainability and the future lending capacity of the SRF programs.

We provide our significant responses to your recommendations below, and offer more technical comments to the draft report as an enclosure.

GAO Recommendations and EPA Responses:

The GAO recommends that the EPA take the following two actions to improve its review and oversight of the SRF programs.

Recommendation 1: Update the financial indicators guidance to include one or more of EPA's financial measures for identifying the growth of states' SRF funds.

EPA Response: The EPA agrees with this recommendation and will update this guidance during FY 2016. As recommended by the GAO, the EPA will review existing guidance such as the SRF Financial Management Handbook and Standard Operating Procedures to identify financial indicators that can be incorporated as part of this effort. The EPA will also form a joint state-EPA workgroup to ensure that any newly added indicators effectively capture the growth and sustainability of the SRF programs.

Recommendation 2: Use information on SRF funds' past performance to develop projections of SRF program's future lending capacity during regional office reviews of states' SRF programs.

EPA Response: The EPA agrees with this recommendation and will work with the states during FY 2016 to develop projections of future lending capacity of the SRF programs. This effort will involve the formation of a state-EPA workgroup to help ensure accurate estimates that effectively support regional office reviews of the SRF programs.

The EPA appreciates the effort the GAO has expended in conducting this review, and it agrees with the GAO's findings, conclusions, and recommendations. Thank you for the opportunity to provide comments on the draft report, and the EPA looks forward to working collaboratively with you in the future. If you have any question, please contact Howard Rubin, of the DWSRF, at (202) 564-2051, or Mark Mylin, of the CWSRF, at (202) 564-0607.

Sincerely,

Signed by
Kenneth J. Kopocis
Deputy Assistant Administrator

Enclosure

cc: EPA GAO Liaison Team
Andrew Sawyers (OWM)
Raffael Stein (OWM)
Peter Grevatt (OGWDW)
Ronald Bergman (OGWDW)
Mark Mylin (OWM)
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