



SRF Fund Management Handbook



March 2018
EPA-830-K-17-004



Note to Reader

The SRF Fund Management Handbook was first released in April 2001 following the October 2000 memo on “Implementation of CWSRF Financial Indicators” that established a suite of six indicators agreed to by a subgroup of the State/EPA Workgroup. In May 2013, a draft paper “CWSRF Financial Risks: Program Objectives, Risk Analysis, and Useful Tools” provided a sharpened focus on risks to the SRF program by assessing those risks in terms of their potential impact on strategic objectives. A Government Accountability Office (GAO) report on the SRF programs in August 2015 concluded that improved financial indicators could strengthen EPA oversight. In response to GAO’s recommendations, a new State/EPA subgroup was established to develop additional financial indicators. These financial indicators, along with key portions of the Financial Risks paper, were combined with the original SRF Fund Management Handbook to create this revised handbook, an in-depth analysis of how to measure the financial health of the SRF programs, spotlighting potential risks, and methods to avoid those pitfalls.

The financial risks found in this paper are meant to be cautionary, and may be more applicable to some programs over others or may not be applicable at all. From a national perspective, these risks are laid out to assist programs in their strategic management to mitigate or avoid any financial risks they might encounter.

This handbook, along with the “Overview of Clean Water State Revolving Fund Eligibilities,” the “Drinking Water State Revolving Fund Eligibility Handbook,” and the “Financing Alternatives for Nontraditional Eligibilities in the Clean Water State Revolving Fund”, are technical documents intended as reference works to be used for successful implementation of the SRF programs, and will be updated periodically as circumstances dictate. Our sincere appreciation to all EPA and state staff that contributed to this Handbook.

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TABLE OF CONTENTS

Purpose and Layout	3
Chapter 1. SRF Financial Objectives	4
1.1 Sufficient Staffing and Funding Capability to Administer the Program	4
1.2 Attain and Maintain a High Rate of Funds Utilization.....	6
1.3 Minimize Unliquidated Obligations by Ensuring Timely Disbursement of Funds.....	7
1.4 Effective Loan and Project Oversight.....	8
1.5 Sound Bond and Debt Management	8
1.6 Effective Management of Investments	9
1.7 Effective Use of Fee Revenues and Administrative Funds	9
1.8 Sound Accounting and Reporting Practices	10
1.9 Follow an SRF Strategic Business Plan.....	11
Chapter 2. SRF Strategic Planning	12
2.1 Evaluate Program Objectives and Risks	12
2.2 Assess Environmental and Public Health Needs.....	13
2.3 Assess SRF Financing Needs	13
2.4 Set Short- and Long-Term Financing and Programmatic Goals	14
Chapter 3. Fund Management Topics	15
3.1 Setting Loan Terms.....	15
3.2 Fund Resource Utilization.....	20
3.3 Administrative Resources.....	26
3.4 Fees.....	28
3.5 Loan Portfolio Management.....	30
3.6 State Match Bonds	34
3.7 Leveraging.....	37
3.8 Returns On Fund Investments	43
3.9 Sustainable Funding Levels.....	45
Chapter 4. Analytical Tools, Techniques and Indicators	50
4.1 Trend Analysis.....	50
4.2 Cash Flow Modeling and Financial Planning	51
4.3 Role of Auditing/Accounting in Financial Management	52
4.4 Today's Dollars or Present Value (Constant Dollars)	52
4.5 Grant Equivalency.....	53
4.6 Investment Return.....	54
4.7 Loan Portfolio Analysis	55
4.8 Key Financial Indicators	55
Chapter 5. Fund Management Tools and Training	65
Chapter 6. Additional Resources	68

PURPOSE AND LAYOUT

The purpose of this Handbook is to guide EPA and state SRF managers through the process of strategic Fund management by putting the major financial topics concerning the SRF programs in a single place to act as a valuable educational and reference tool for EPA and state SRF managers.

Chapter 1 outlines the primary financial objectives of the SRF program and the risks that could prevent a state from achieving those objectives. Chapter 2 includes a short overview of the strategic planning process in the SRF programs. Chapter 3 identifies nine key Fund management topics. While this does not identify all Fund management issues, those included provide an overview of the major Fund management discussions taking place at EPA and states. This chapter addresses each financial management topic individually and how it relates to SRF financial objectives and programmatic and financial risks. Many of the Fund management issues overlap, and the discussion for each issue seeks to succinctly identify and examine the relationship between that issue and other related fund management issues. Each issue is accompanied by one or more pertinent case studies of how a state has faced and answered some of the Fund management questions.

Chapter 4 groups together a comprehensive set of analytical tools and techniques used in Fund management. These include financial planning techniques and key SRF financial measures, along with a matrix that relates the application of each measure to important financial management questions. **Chapter 5 includes a list of other Fund management tools and training opportunities,** such as checklists, workshops, and reports that complement this Handbook. **Chapter 6 provides a list of websites that are helpful for additional study.**

IMPORTANCE OF CASH FLOW MODELING IN FUND MANAGEMENT

This Handbook frequently turns to the importance of cash flow modeling in SRF Fund management. Each of the topics in this Handbook requires a certain level of financial analysis to understand the financial implications of these choices. Cash flow modeling is the principal technique for analyzing the financial impact of decisions over time, given the financial complexity of SRFs; it is critical for effective strategic financial planning in the SRF.

Models can range from simple to complex. They enable programs to model how changes in key assumptions may impact Fund cash flows, assisting in the development of program policies. The large size and complexity of SRF programs in each state underscores the need for every state to have a custom financial model to analyze and track financial conditions and evaluate Fund management options. There is more information on cash flow modeling throughout this Handbook, with special focus on this topic in Sections 3.9 and 4.2.

CHAPTER I. SRF FINANCIAL OBJECTIVES

While there are many differences between state SRF programs in terms of total dollars managed, financial structure, environmental and public health priorities, and number of loan recipients, there are overarching environmental, public health, and financial objectives that affect each program.

The SRF program has two primary goals:

- To use SRF funds to achieve the greatest environmental and public health results by improving water quality, and
- To ensure that SRF funds are used efficiently and maintained in perpetuity.

There are a number of financial objectives that play a key role in programs achieving the goals described above. SRF programs are constantly balancing their Fund management activities to mitigate the risks of not meeting these objectives. For instance, setting a high interest rate may increase Fund earnings but they may reduce the environmental benefits as fewer entities can afford to implement important projects. This Fund management decision could result in low fund resource utilization (“pace”), resulting in the program not achieving a key financial objective.

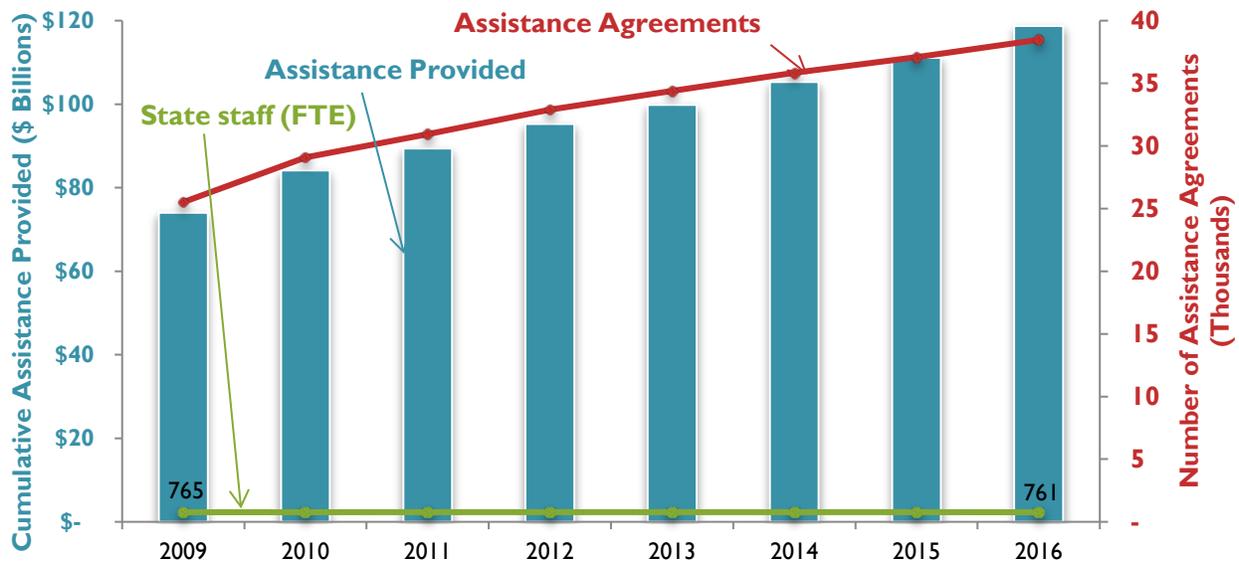
For each SRF program, the optimal approach will depend on state-specific factors such as the water quality and public health priorities, demand for financial assistance, availability and financial benefit of other assistance programs, state funding priorities, demographics and affordability, current market conditions, and legislative support. The following pages highlight nine key SRF financial objectives, although states may have additional financial and programmatic objectives.

I.1 SUFFICIENT STAFFING AND FUNDING CAPABILITY TO ADMINISTER THE PROGRAM

Appropriate staffing is essential for successful administration of an SRF program. To be an effective SRF program, each state must have reasonably sufficient staff to carry out the activities required. If the objective of having sufficient well-informed staff is not met in the long term, we may see other objectives of the programs not being met, potentially resulting in an overall decline in the success of the SRF. From a Fund management perspective, a lack of qualified financial staff and management attention can undermine the success of the program.

A 2017 survey of CWSRF programs found that staffing levels declined slightly from approximately 765 FTE (full-time equivalent) to 761 FTE between 2009 and 2016. At the same time, assistance provided (both dollar value and number of agreements) increased by more than fifty percent (Figure 1). Program requirements such as Davis-Bacon and American Iron and Steel have added to the challenges of managing and overseeing SRF programs. In the midst of these changes, EPA and many state SRF programs have had their budgets reduced, preventing them from filling open positions, receiving adequate training, or simply having sufficient time to do all of the work required.

Figure I: Programs Have Grown Substantially While Staffing Levels Have Remained Flat (2009-2016)



Despite these pressures, EPA and state staff continue to do an admirable job in managing their programs and ensuring the continued growth and success of the SRF. However, without ongoing support and training, the risks of noncompliance with federal regulations and of not meeting the other objectives of the program will increase. For instance, insufficient staffing or inadequate training may result in invoices not being comprehensively reviewed, resulting in improper payments.¹ Another potential result is that there may be less time to cross-train staff, which could result in delays or other problems in the event of staff absences. There may also be fewer opportunities to work on long-term projects that could improve the program’s effectiveness and reach in the future.

Potential Risks of Not Meeting Objective:

- Sub-par or insufficient funds utilization
- Insufficient project and program oversight
- Low morale
- Insufficient/poor training
- Incorrect skill sets
- Use of funds for ineligible purposes due to lack of training/oversight

States and EPA have worked to manage some of these challenges by using contractor support, developing Standard Operating Procedures (SOPs) to standardize processes, streamlining procedures, and attending SRF training workshops. EPA has also been successful in promoting hiring by highlighting staffing needs in Program Evaluation Reports (PERs), which are often read by high-level managers.

¹ An improper payment is defined by the Improper Payments Elimination and Recovery Act of 2010 as any payment “that should not have been made or that was made in an incorrect amount (including overpayments and underpayments) under statutory, contractual, administrative, or other legally applicable requirements; and includes any payment to an ineligible recipient, any payment of an ineligible good or service, any duplicate payment, any payment for a good or service not received (except for such payments where authorized by law), and any payment that does not account for credit for applicable discounts.” (Pub. L. No. 111-204)

Process Optimization Drills (POD) or LEAN exercises have helped some states improve staffing organization and streamline activities.

I.2 ATTAIN AND MAINTAIN A HIGH RATE OF FUNDS UTILIZATION

A primary indicator of success in the SRF is the rate of fund utilization, or pace. A high rate of fund utilization (Section 4.8.A) indicates that more funds are actively being used for projects. The rate of funds utilization is an indicator of the demand for funds as well as the ability of the state to award those funds to projects in a judicious manner. The rate of funds utilization is calculated as funds in executed loans as a percent of funds available. At the end of fiscal year (FY) 2017, CWSRF programs had executed loans accounting for 98 percent of all funds available nationally.² The DWSRF had a funds utilization rate of 96 percent nationally.

Low pace levels generally indicate that there is a lack of demand in a state. There can be a wide range of factors, such as underinvestment in marketing and outreach, unappealing financing terms, or the availability of significant grant funding in competing state programs. High pace levels do more than indicate high program demand. Due to the revolving nature of the SRF, higher pace could increase the returns to the program, resulting in more growth, and making more funds available to projects into the future compared to a state with lower pace levels.

There is significant flexibility in the SRF programs, which can help states maintain or increase demand for funding. Co-funding with other programs and expanded marketing to target audiences can attract new borrowers to the program. Other SRFs have had success by streamlining internal processes, taking on more of the burden from applicants (e.g., by conducting much of the environmental review), by expanding offerings into different loan types, or offering planning and design funding.

States that maintain high levels of fund utilization typically have the following qualities:

- They have significant knowledge of their customer base and nurture their relationships with large and repeat borrowers;
- They visit/talk to communities (both current and potential) customers frequently;
- They are creative and open-minded, and willing to seek a solution to a potential borrower's financing challenges. This has led to the creation of programs such as linked-deposit or CWSRF sponsorship structures;
- They seek to root out any inefficiencies in the program to make it as user-friendly as possible;
- They provide options to assist communities with the greatest difficulty in applying for a loan; and/or

Potential Risks Preventing Success:

- Low pace levels
- State does not strive for improvement
- Lack of outreach and relationship management
- Lack of pipeline of projects
- Inflexible loan terms discourage potential borrowers
- No co-funding with other programs
- Lack of technical assistance to small and disadvantaged communities
- State does not sufficiently highlight SRF benefits compared to other programs

² Unless otherwise noted, fiscal years are from July 1 to June 30.

- They have productive relationships with other financing programs in the state.

Several of the Fund management techniques discussed in this report impact, and are affected by, pace levels. For instance, fees can affect program pace, because non-program income can be used to fund water quality efforts that could lead to additional CWSRF loans. Cash flow modeling can help give SRF managers and prospective applicants greater clarity into the amount of funding that may be available in the future, allowing them to adjust their planning efforts accordingly.

I.3 MINIMIZE UNLIQUIDATED OBLIGATIONS BY ENSURING TIMELY DISBURSEMENT OF FUNDS

Together with meeting the objective of high fund utilization rates, disbursements play a key role in SRF fund management. At the end of FY 2017, disbursements as a percent of executed loans was 87 percent in both the CWSRF and the DWSRF (see Section 4.8.B for more information on this metric). Due to a variety of factors, it can sometimes take several years before the funds are disbursed to projects. Depending on the state's cash management approach, this can result in a build-up of cash or high unliquidated obligations of federal funds. States must commit and disburse all of their funds in a timely manner: federal, state, repayments, and bond funds (if leveraged).

A lack of movement of federal and non-federal funds leads to a lack of public health and environmental improvements realized, and may conflict with the message that the funds are in high demand. States that are able to revolve funds through their programs more quickly will generally see faster growth, resulting in more assistance provided over time. A state that does not award and disburse funds in a timely manner may see reduced interest earnings and assistance provided, resulting in a smaller program compared to a state that can maintain a faster pace.

States have used a variety of techniques to reduce unliquidated obligations. These include strategies such as offering planning and design funding, adopting a year-round application process, establishing deadlines for application milestones, and utilizing the advanced loan commitment option. Strategic marketing and outreach efforts have helped states increase their borrower pool. In addition, financial planning and cash flow modeling have helped states improve their insight into the funds that are available for commitment and disbursement each year.

Potential Risks Preventing Success:

- Loan agreements signed long before construction start
- Borrower infrequently requests disbursement
- State is not using First-In, First-Out (FIFO) for capitalization grant draws
- No pipeline of projects
- State does not apply for grant in first year
- State neglects repayment monies to clear out federal funds
- Accounting practices do not prioritize federal funds

I.4 EFFECTIVE LOAN AND PROJECT OVERSIGHT

The purpose of loan and project oversight is to ensure that the approved items are being constructed and paid for, that the SRF receives all repayments on time, and that improper payments are prevented. States conduct oversight through tools such as loan security mechanisms, loan tracking systems, invoice review, construction inspections, subrecipient monitoring, and subrecipient audits. In addition, following up on deficiencies is an essential element of program oversight. If states are inadequately staffed, loan oversight activities are often eliminated or trimmed, making the program more vulnerable to problems.

Potential Risks Preventing Success:

- Increased work-outs, defaults and delinquencies
- Improper payments
- Inadequate loan security
- Inadequate monitoring during repayment

Some states have revised their financial capability review procedures after an uptick in work-outs after the 2008 financial crisis. They have sought to strengthen the review and adopt additional loan security mechanisms. While many states review borrower audits annually, some go further by establishing “watch lists” and tracking news stories to help anticipate and prevent potential repayment issues.

I.5 SOUND BOND AND DEBT MANAGEMENT

States that issue state match and leveraged bonds have additional financial responsibilities. They must ensure that they are not overleveraging and eroding their Fund, that they will not run afoul of regulatory requirements, and that they have a sound financial plan.

Sound bond and debt management requires careful cash flow and financial planning, as well as careful management of loan terms and program demand. Leveraging too much or without a sound financial plan could erode the value of the assets in the Fund, while sound leveraging practices can result in more assistance provided in the long term. States should carefully plan their leveraging activities to ensure that they are not negatively impacting their SRF. This is discussed in detail in Sections 3.6 and 3.7. Sections 4.8.Q – 4.8.V provide several metrics that can help evaluate leveraging efforts.

Potential Risks Preventing Success:

- Overleveraging/leveraging without demand can limit program growth or require costly refundings
- Lower bond ratings increasing borrowing costs
- Mismanagement of funds if leveraged without appropriate expertise
- High demand states that do not wish to leverage may not achieve program goals

States have used efforts such as cash flow modeling to more precisely plan the sizing and timing of bond issues, while also adopting other strategies described in this Handbook to help ensure the bonds funds are disbursed quickly and efficiently.

I.6 EFFECTIVE MANAGEMENT OF INVESTMENTS

SRFs generally have a substantial amount of cash that is invested – even those states that carefully manage cash flows to maximize project funding. The State Treasurer’s Office or the SRF investment manager typically manages investments. In general, funds are invested along the following priorities: (1) liquidity, (2) low risk, and (3) returns. By focusing on short-term, liquid, and low risk investments, returns on SRF funds are generally low. However, there are opportunities to increase investment returns while still ensuring adequate liquidity and maintaining low risk investments by investing funds according to cash flow needs. Increasing the return on investment can help make additional funds available for projects. More information on investments and returns can be found in Sections 3.8, 4.6 and 4.8.M.

Higher investment earnings should not come at the expense of funding high priority projects; states should ensure they are still committing all available funds to projects. The nature of SRF projects is that funds are disbursed over time as construction proceeds while simultaneously repayments are coming in. SRF programs are able to fairly accurately predict these cash flows using modeling. By tracking investments with these cash flows, a portion of the funds could be invested in longer-term securities that have higher returns without negatively impacting funding of important water quality and public health projects. At the same time, states also need to keep an eye on the risk profile of their investments, as even some of the vehicles that were believed to be safe saw downgrades during the 2008 financial crisis. Several states have been successful at working with state investment authorities to more closely match investments to cash flow needs and increasing returns.

Potential Risks Preventing Success:

- Overinvestment in short-term securities with low returns
- Higher risk investments that may have uncertain returns
- Investments do not reflect cash flow needs
- Poor returns can impact leveraging, funds available, and available subsidies
- Overinvestment in long-term securities with penalty for early withdrawal for cash flow needs

I.7 EFFECTIVE USE OF FEE REVENUES AND ADMINISTRATIVE FUNDS

Fee revenues and administrative funds have specific eligibility criteria. CWSRF fee revenues require separate accounting for program and non-program income, and the uses differ based on those qualities and on how the fees are collected. In both the CWSRF and DWSRF, eligible uses vary based on whether the funds are deposited inside or outside the SRF program accounts. For DWSRF, if the fees are kept outside the SRF loan account, they can be used for any purpose under SDWA Section 1452: for more infrastructure loans, for administration of the DWSRF, or for any purpose eligible under the DWSRF set-asides.

States generally utilize fee revenues to supplement administrative funds. Some states use their fees to pay for programs that could draw more borrowers to the SRF or provide other water quality benefits.

Potential Risks Preventing Success:

- Use of fees for ineligible purposes
- Improper collection of fees
- Improper accounting of program and non-program income
- Insufficient planning leading to excessive fee balances

For example, they may fund circuit riders to help smaller entities with utility management or their SRF applications. They may also provide grants for water quality projects or SRF project planning and design. To avoid excessive fee balances, some states have triggers whereby funds are moved to the loan fund if the fee account balance reaches a certain level. More information on fees can be found in Section 3.4.

I.8 SOUND ACCOUNTING AND REPORTING PRACTICES

Financial reporting and audits are a key component of catching potential waste, fraud, and abuse in the SRF. CWSRF Regulations Section 35.3165(d) and DWSRF Regulations Section 35.3570(b) state that audits are due within 1 year after the end of the fiscal year, although OMB requires Single Audits – which satisfy this requirement – to be completed within 9 months. While SRF programs do not routinely have audit findings, those that occur are often related to inadequate internal controls, such as:

- Incorrect coding and data entry into the accounting system;
- Insufficient segregation of duties of accounting personnel;
- Poor reconciliation of financial data, particularly where two or more agencies implement the SRF;
- Improper payments; and
- Insufficient sub-recipient monitoring.

Potential Risks Preventing Success:

- Lack of audit may prevent improper internal controls or fraudulent activities from being identified
- Audit reports with uneven quality or missing information
- Inadequate response to audit findings due to lack of staff, expertise or other issues
- Improper payments due to lack of internal controls

With over \$165 billion in assets across the CWSRF and DWSRF, it is imperative that states have proper internal controls to protect them from waste, fraud, and abuse. While statewide Single Audits satisfy the requirement for an SRF audit, they may not show SRF-specific information and therefore may not have the necessary information for a thorough analysis of the SRF. Most states will do a separate audit in addition to the Single Audit.

For EPA, state financial statements and audit reports provide invaluable information for measuring program performance. Many of the metrics at the end of this report utilize data from financial statements. The Management’s Discussion and Analysis and Notes provide important information on program debt, investments, and other events which may not appear in the Annual Report or Intended Use Plans. Additional information on audits can be found in Section 4.3.

I.9 FOLLOW AN SRF STRATEGIC BUSINESS PLAN

Strategic planning by state SRF programs can help them establish program priorities and develop a plan for achieving those priorities while meeting their financial objectives. It is therefore a key component to effective Program and Fund management.

States that do not engage in strategic planning may find themselves a step behind, as they are not able to prepare for or react quickly to changes in conditions. For instance, these states may only fund those projects that come to them and not pursue projects that they believe will have the greatest impact on water quality. Or they may set financial terms of assistance without taking into account the short- and long-term impacts of these decisions.

States can benefit from strategic planning by:

- Funding more of the highest priority water quality and public health challenges through specific financing offerings and outreach efforts;
- Effectively making decisions on financing terms and leveraging to ensure Fund perpetuity;
- Experiencing sustained demand levels as the state uses a strategic approach to funding projects and reaching out to high priority project types and borrowers;
- Anticipating and preparing for major program risks, such as the end of capitalization grants; and
- Sustaining a high level of performance, which helps maintain and gain support from local entities and state and Federal decision-makers.

Potential Risks Preventing Success:

- State does not address highest priority water quality and public health issues
- Poor decision-making regarding leveraging, subsidies, loan terms
- Poor pace and demand
- Failure to anticipate or plan for major risks (e.g., end of grants)
- Poor performance and planning could result in loss of support from stakeholders

Chapter 2 provides additional direction on developing an SRF strategic plan.

CHAPTER 2. SRF STRATEGIC PLANNING

The most effective SRF Fund Management approaches follow an SRF strategic plan. A state that has identified its goals, needs and objectives is in the best position to identify what the optimal Fund management approaches are, such as loan terms, leveraging plans, and fees uses. This chapter provides a short outline of a typical SRF strategic planning effort.

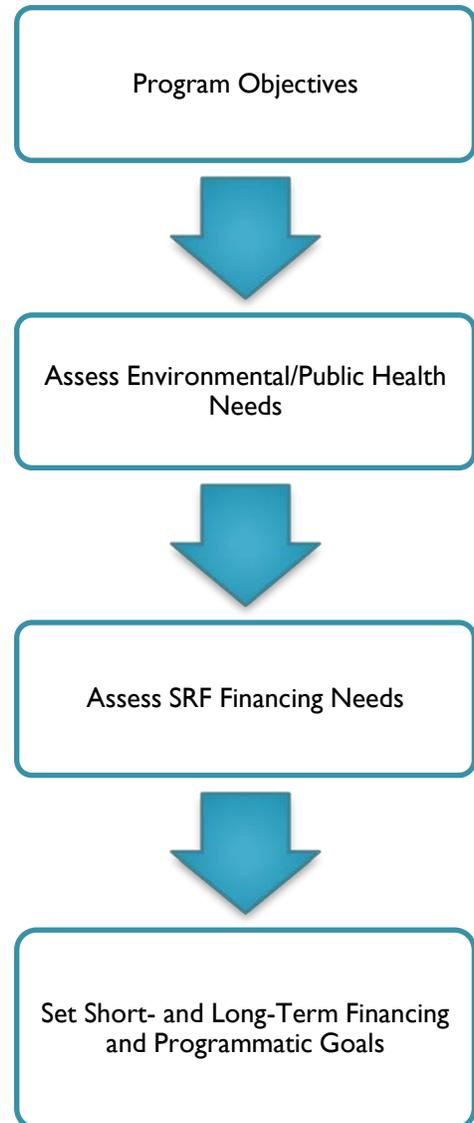
2.1 EVALUATE PROGRAM OBJECTIVES AND RISKS

SRF strategic planning starts with the establishment of program objectives. The SRF financial management objectives described in Chapter 1 are a starting point for states. States can also add additional objectives as desired.

An evaluation of the risks that may prevent a state from meeting its most important program objectives can help it evaluate programmatic needs or identify changes that may need to be made to ensure future success. For instance, a state with low pace levels would use that as a starting point to identify unmet environmental or public health needs and set programmatic and financial goals. This state could also evaluate the option of using fee revenues to fund planning and design grants, which could help bring new borrowers into the program.

For the DWSRF programs, states should take a broad look at the stressors on their utilities and take an annual look at the resources available to the state through both the DWSRF loan fund and set-aside accounts. A state should have strong communication and links between its state Public Water System program, infrastructure lending program, well head and source water protection program, capacity development program, and operator certification program. A robust discussion about the best use of funds overall should precede the submission of a capitalization grant application and set-aside works plans to ensure resources are used strategically and to greatest public health effect.

For DWSRF, SDWA Section 1452(g)(1)(B) mandates that the drinking water primacy agency be the state entity determining assistance priorities for the DWSRF program, including priorities assigned to projects and allocations of funds between the loan and set-aside funds. While this agency is the leader for funding priorities, strategic planning exercises should include financial, programmatic, engineering, and enforcement personnel.



2.2 ASSESS ENVIRONMENTAL AND PUBLIC HEALTH NEEDS

The pivotal activities of a water quality program are to identify the environmental and public health needs of the state. The basic question is, “What activities or projects need to be undertaken to achieve the program’s environmental/public health objectives?” Examples include identifying and protecting critical water resources, encouraging desirable uses of water resources, addressing the most serious threats to public health, and ensuring compliance with the Clean Water and Safe Drinking Water Acts.

Publicly available resources such as 303(d) lists of impaired waters, Safe Drinking Water Information System (SDWIS) data, state or regional water plans, and enforcement and compliance data, such as the Drinking Water Enforcement Targeting Tool (ETT), can be used to identify water quality and public health priorities. These assessments can be compared to funded projects using GIS mapping, for example, to identify areas where the SRF could increase its positive impact on water quality and public health. With this information, planning can be performed with respect to funding desired activities and projects. For instance, marketing and outreach activities can be developed to reach the borrower and project types that would most benefit water quality in the state, or fees can be used to fund grants or other programs that could result in additional SRF loans. Another result could be that the SRF decides to change its priority setting system to better reach high-priority needs and borrowers.

2.3 ASSESS SRF FINANCING NEEDS

A goal for an effective SRF could be to draw high-priority projects and borrowers to the program rather than waiting for projects to come in; this is called demand management. The next step in strategic planning is therefore to identify financing needs within the context of achieving the identified environmental and/or public health needs and SRF objectives. Evaluations of other financing options in the state and how they are addressing water quality priorities can provide insight into where the SRF could be beneficial. Using this information, states would consider what financing options and approaches would help bring those high-priority projects to the SRF program. For instance, to reach non-traditional projects that may not have a source of repayment, several states have implemented a sponsorship loan option whereby traditional borrowers can sponsor these non-traditional CWSRF projects in exchange for an interest rate discount. Marketing and outreach efforts would be targeted to these high priority projects and borrowers.

Managing demand also includes understanding how many dollars are required and when those dollars are required from the Fund. Projects take some time to get through the SRF application process, and many large projects require multiple years of construction. As municipalities plan out their Capital Improvement Programs (CIP) over time, SRF managers can work with them to assess when SRF funds are necessary through the planning and construction cycle. Demand management techniques are further described in Section 3.2.

The end result is to identify the demand for SRF funds over time and to adjust financing terms and activities accordingly to best enable the program to meet funding needs. Leveraging through bond issuance may be an opportunity where high levels of demand show that additional cash flows will be needed. Conversely, where demand appears to be low, lower interest rates, longer loan terms, and additional outreach may be called for.

2.4 SET SHORT- AND LONG-TERM FINANCING AND PROGRAMMATIC GOALS

The balancing of environmental/public health and financing needs with financing resources provides a foundation for establishing short- and long-term SRF financing goals. These can then be used to establish what projects and financial assistance can reasonably be provided over the near and longer terms. These goals also tie back to the program objectives identified in the first step of the strategic planning process. Goals can be large and small. Example goals could include: convincing the largest two cities in the state to seek SRF funding for the first time, increasing demand so leveraging is necessary within five years, implementing a fee so additional staff can be hired, or increasing funding towards water efficiency projects by twenty percent.

This process of setting goals ties to the Fund management concepts discussed in the next chapter of this Handbook. For instance, loan terms and fees can help or hinder a state's ability to meet the goals it has set for itself. Loan terms can change the types of projects funded, which impacts demand and can change the composition of the loan portfolio. Cash flow modeling is therefore an integral part of this goal-setting process: it allows the state to evaluate how the various goals and options impact the program in the short and long term.

Time is a critical element when considering Fund management. SRF financial management is a process that takes place over time and consists of a series of financial actions and decisions that have both short- and long-term implications. Due to the time value of money and the environmental and public health benefits of building projects sooner rather later, SRF assistance provided this year is not the same as assistance provided next year. Similarly, financial actions taken this year may have little impact until several years later. States should use at least a five year time horizon for financial planning. Many states use 20- or 30-year time horizons because those are the typical terms on loans and bonds. The longer the time horizon, the more uncertainty there is as conditions change, but it can provide a better idea of the sensitivity of various assumptions on Fund growth. States should consider both the short- and long-term implications of their Fund management decisions.

CHAPTER 3. FUND MANAGEMENT TOPICS

Effective SRF fund management is not the result of a single action or decision that results in a successful program. It is a result of a strategic process of identifying program environmental, public health, and financial goals. Program success depends on how a series of Fund management questions are identified, answered, and revisited over time. In this chapter, several of these key questions are discussed. The following list identifies those questions, with the appropriate subchapters.

- 3.1: Should loan terms be adjusted?
- 3.2: Are Fund resources being utilized effectively?
- 3.3: Does the Fund have sufficient administrative resources?
- 3.4: Should the state charge a fee and at what level?
- 3.5: Does the Fund have a sound loan portfolio?
- 3.6: What impact will borrowing for state match have on the Fund?
- 3.7: Should the Fund leverage/continue to leverage?
- 3.8: Does the Fund receive adequate returns on cash investments?
- 3.9: What is the sustainable funding level of the program?

The following pages discuss those nine key Fund management topics identified above. Each topic is tied to the SRF objectives outlined in Chapter 1 of this report. In addition, selected measures and indicators are noted, which can be calculated using formulas found in Chapter 4.

3.1 SETTING LOAN TERMS

SRF Objectives	Ensure Timely Use of Federal and Non-Federal Funds Attain and Maintain a High Rate of Funds Utilization Sound Bond and Debt Management Use of Fee Revenues and Administrative Funds Follow an SRF Strategic Business Plan
Selected Indicators³	Ratio of Undisbursed Project Funds to Disbursements (4.8.C) Sustainability as a Percent of Contributed Capital (4.8.E) Operating Net (4.8.O) Total Net (4.8.P) Unliquidated Obligations as a Percent of Grant Awards (4.8.F) Loans Outstanding as a Percent of Total Assets (4.8.H) Net Interest Margin (4.8.L)

In setting loan terms, states seek to balance the need to keep their programs appealing and low-cost while maximizing the rate of return on their funds. Given that the purpose is to enable public health and environmentally beneficial projects to proceed where cost and credit barriers exist, loan terms are critical factors to the entire program. The SRF interest rate subsidy is typically the primary factor in an

³ Refer to Chapter 4 for formulas and descriptions of the indicators. Specific indicators are noted in parentheses.

entity’s decision-making process. At the same time, interest earnings are the largest source of cash inflows into the program. Leveraged programs must also ensure that they have sufficient funds to pay debt service on their bonds. SRFs are continually faced with the question of what loan interest rates and repayment terms to use to help them meet their financial objectives. However, they are also concerned with meeting their programmatic objectives. To that end, many SRF programs set different interest rates for different types of projects or borrowers.

Loan terms include interest rates, financing terms (e.g., 20 or 30 years), and the use of additional subsidization. Each state has taken a different approach to setting loan terms. To be most effective, a state will take a strategic approach to setting loan terms and weigh the needs of the borrower to those of the state. The loan terms directly impact several factors, including:

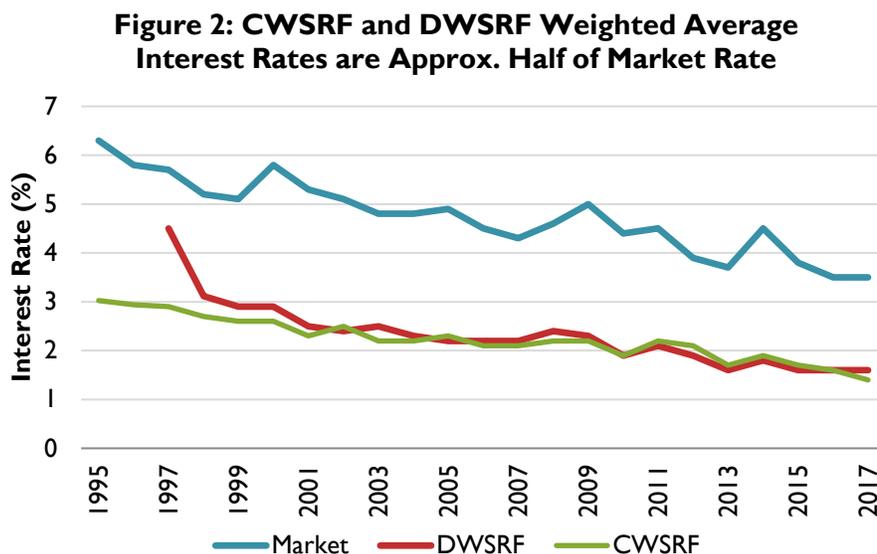
- The ability to make loans and market the program,
- The fund utilization rate,
- Composition of the loan portfolio,
- Ability to leverage or borrow for state match, and
- Long term sustainable funding levels.

Many states charge a “base” rate of approximately half of the market interest rate. They may then have different loan terms for different types of projects, such as green infrastructure, nonpoint source, or disadvantaged community projects. Discounted interest rates, financing terms, and additional subsidization are tools that can help drive high-priority projects to the SRF.

States and EPA can use a variety of metrics to analyze how effectively they are setting loan terms. Loan terms that make the program unappealing to borrowers can result in increasing Unliquidated Obligations and Undisbursed Funds Ratio, while Loans Outstanding as a Percent of Total Assets may decrease as loan volume drops. Metrics such as Operating Net, Total Net, and Sustainability/Retained Earnings can be used to measure the growth of the Fund and program perpetuity. Net Interest Margin would be used to determine whether the program’s revenues are sufficient to cover its expenses. To get an adequate picture, trend analysis and cash flow modeling should be used for any metric.

INTEREST RATE

CWSRF regulations Section 35.3120 and DWSRF Section 35.3525 require that SRF loan interest rates be between zero percent and the market rate, as determined by the states. EPA does not define market rate, although many states use the 20-year General Obligation Bond Buyer Index. Historically, SRF interest rates have averaged approximately half the market rate (Figure 2).



States that leverage must ensure that their interest rates are sufficient to make debt service payments, grow the program, and achieve all bond covenant requirements. Due to the substantial cash flows in the programs, most leveraged states can achieve these objectives without charging higher interest rates than direct loan states.

In many states, interest rates are set by state regulations. For instance, New Hampshire's Code of Administrative Rules sets the interest rate for 20 year loans at 80 percent of the market rate minus one percent. Such requirements can be somewhat limiting, but states may be successful in finding other ways to add flexibility if needed.

States can use financial modeling to understand how different loan terms and project types may impact the long-term growth of the Fund.

FINANCING TERM

The length of time that a borrower has to repay an SRF loan also impacts the loan's affordability. A longer repayment period will result in a lower annual debt service payment. For the SRF, this reduces the amount of funds revolving to new loans each year. However, because the state is collecting interest over a longer period of time, the total repayment amount will be greater.

CWSRF Amendments passed in 2014 authorize states to make loans for up to 30 years or the useful life of the project, whichever is less, starting on October 1, 2014. Prior to that, CWSRF programs were limited to loans of up to 20 years. The DWSRF program may provide loans up to 30 years or the expected design life of the project for disadvantaged communities (as defined by the state).

SRF regulations require that principal and interest repayment must begin within one year of project completion. States vary in when they begin repayments, with some starting during construction while others wait until a year after project completion. States may also offer different repayment structures:

- **Level debt service:** Periodic equal total payments of principal and interest, resulting in lower principal payments early and larger principal payments later. Most SRF loans have level debt service.
- **Level principal:** Periodic equal payments of principal over the loan amortization period, while interest included in total payments declines over time.
- **Gradual ramp-up:** Periodic payment of principal and interest increases over time. The resulting principal payment in early years is lower than level debt service.
- **Balloon payment:** Majority of principal is paid at the end of the loan amortization period. Interest (if charged) is paid on the outstanding loan balance until the balloon payment is made.

What is a bond purchase agreement in the SRF?

Some states purchase a bond from their communities rather than issue a loan. They are able to do this under the eligibility allowing states to refinance or purchase local debt obligations.

Functionally they act in the same way as a loan. Some states are required by law or policy to purchase a local bond. In other cases, a community may prefer to issue a bond to the SRF. It can sometimes result in higher costs due to the need for bond counsel.

Each of these approaches to repayment can be designed with unique variations. States may also restructure existing loans for borrowers in distress. For instance, principal payments can be deferred for several years until the borrower’s financial status improves.

SRF programs, in an effort to mitigate the effects of a 30-year loan, could charge entities that are *not* disadvantaged a slightly higher interest rate in exchange for a longer loan maturity. One reason for doing so is to increase the return on the loan, thereby reducing the negative impact of the longer maturity on program growth. A 30-year loan will have a lower annual payment than a 20-year loan with the same principal. Increasing the interest rate slightly on the 30-year loan can raise the return to the CWSRF while maintaining the benefit of lower annual payments to the borrower compared to a 20-year loan term (Figure 3).

Figure 3: Comparison of Annual and Total Debt Service Payments for \$1,000,000 Loan

Loan Term	Annual Interest Rate	Annual Payment	Total Payment
20 Years	2.2%	\$62,343	\$1,246,868
30 Years	2.5%	\$47,778	\$1,433,329

ADDITIONAL SUBSIDIZATION

States have the ability to provide an additional subsidy to borrowers beyond the subsidy provided by the below-market interest rate. The additional subsidy may be provided in three forms:

- **Principal forgiveness:** A portion of the loan’s principal is forgiven and must not be repaid;
- **Grant:** A portion of project funding is provided as a grant; and
- **Negative interest:** A negative interest rate can be charged, which reduces the total repayment amount to something less than the original principal.

DWSRF regulations Section 35.3525(b) allow up to 30 percent of a state’s capitalization grant to be used for additional subsidization for disadvantaged communities. Since 2010, however, federal appropriations have required different levels of additional subsidies.

At its inception, the CWSRF did not include provisions for additional subsidization. Starting in 2010, appropriations bills included a requirement for additional subsidies for the CWSRF. The 2014 CWSRF Amendments added language to the CWSRF statute permanently allowing states to use a portion of their capitalization grant amount for additional subsidies, when the annual appropriation is greater than \$1 billion. However, annual appropriations language may change the required and allowable amounts.

States must make many decisions when weighing how to allocate the additional subsidy. While it can be a useful tool for funding projects that may otherwise not qualify for financing, the additional subsidy represents principal that will not revolve back into the program for future loans. In addition, states must consider what projects will receive subsidies and how those projects will be selected. While some states utilize affordability metrics to allocate subsidies, others target their subsidies towards high priority water quality or public health projects. Financial modeling can help states make these decisions on how best to allocate their additional subsidies.

GRANT EQUIVALENCY

SRF loans can also be viewed from the approach of *grant equivalency*. Financing a project at the market rate has no subsidy and a grant equivalency of zero. A low-interest SRF loan will have a subsidy compared to the market rate and a grant equivalence. A \$1 million SRF loan at 1 percent is equivalent to grant for 25 percent of the project (\$250,000) and a market rate loan of 4 percent for the remainder of

the project. Grant equivalency is calculated as the reduction in present value cost of a financing option compared to assistance at market rates. This is more extensively discussed in Section 4.5.

SPOTLIGHT: Oregon CWSRF

Oregon's CWSRF program has several different interest rates and terms for different project types. Interest rates are set quarterly, based on the average Bond Buyer rates of the previous quarter. When a loan agreement is signed, the interest rate is fixed for the life of the loan. From October 1 through December 31, 2017, interest rates were as follows:

1. Planning: 0.89% for up to 5 years.
2. Small Communities & Communities below Statewide Median Household Income (MHI): Range from 0.89% to 1.48% for loans with maturities from 5 years to 30 years.
3. All Other Borrowers: Range from 0.89% to 2.95% for loans with maturities from 5 years to 30 years.
4. Sponsorship: Treatment facilities can sponsor nonpoint source projects in exchange for a reduced interest rate. The interest rate on the combined loan is reduced so the annual cost is the same as the treatment project alone, or 1 percent, whichever is higher.

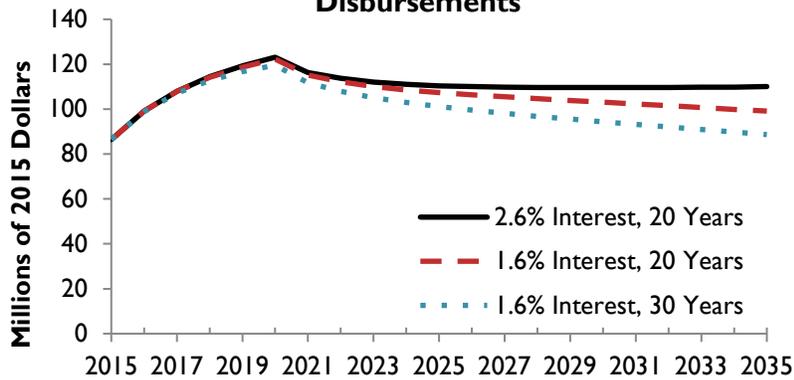
THE BORROWER'S PERSPECTIVE

From the borrower's perspective, the SRF is competing with other state and federal financing options as well as the municipal bond market, bank loans, and other private financing. They will seek the financing option that is most advantageous. In fact, surveys of communities in several states find that financing terms and ease of use are foremost on their minds when they are considering financing projects.

EPA's FACT (Financing Alternatives Comparison Tool) program and FACT-Lite were developed to assist entities in making their financing decisions. FACT enables entities to do a side-by-side comparison of the total and annual costs of up to 15 financing options, including loan-grant combinations. FACT allows users to incorporate the individualized costs that may occur with each financing source, such as any perceived additional costs that result from the requirements that accompany SRF financing. The results compare the financing costs of the options being considered on an annual basis as well as over the life of the financing.

EPA's Financial Planning Model and state cash flow models can be used to model the potential impact of different loan terms on the program. Figure 4 shows the potential impacts of changing interest rates on a *hypothetical state SRF program* using broad assumptions. In this analysis, all factors including demand remain the same while the interest rate is changed. The chart shows that when all else is equal, a lower interest rate will decrease Fund disbursements over time because the interest earnings revolving back to the Fund decline. There is further decline if the length of loans increases to 30 years. However, lower rates and/or longer loan terms could potentially increase demand, which may ultimately increase revolving levels. Total interest earnings are greater for 30 year loans compared to 20 year loans (at the same interest rate), but the funds revolve more slowly due to the longer repayment term. This example demonstrates the importance of using cash flow modeling when evaluating the potential impact of changing loan terms in an SRF program.

Figure 4: Comparison of Annual Fund Disbursements



In some cases, loan terms are prescribed in state rules or legislation (or a similar mechanism). This limits some of the state’s flexibility to change terms if demand increases or decreases, but does not diminish the importance of financial planning to account for other events or terms that are not subject to state rules or legislation. Over the years, some states have worked to make the Rules (or equivalent) as flexible as possible,

putting more of the management decisions in documents that can more easily be adjusted if conditions change.

RISK ANALYSIS

Loan terms are perhaps the greatest drivers of program growth in the SRF. They play an important role in helping the state achieve financial objectives. Interest rates that are too high could dampen demand, limiting program growth. Very low interest rates could result in high demand levels but also hamper growth by severely limiting earnings on the loans. While maximizing additional subsidies may increase demand, it reduces the funds revolving back into the program. Extending all loans to thirty years reduces the annual repayment amount, slowing down how quickly funds revolve through the program, although it can result in higher interest earnings over the entire term of the loan. Selecting loan terms requires the SRF fund manager to find a compromise between funding projects at a meaningful subsidy level and preserving capital to fund projects into the future. Cash flow modeling can assist SRF managers in determining how it should establish its loan terms to best balance program growth and demand.

3.2 FUND RESOURCE UTILIZATION

SRF Objectives

Ensure Timely Use of Federal and Non-Federal Funds
 Attain and Maintain a High Rate of Funds Utilization
 Follow an SRF Strategic Business Plan

Selected Indicators

Executed Loans as a Percent of Funds Available (4.8.A)
 Disbursements as a Percent of Executed Loans (4.8.B)
 Ratio of Undisbursed Project Funds to Disbursements (4.8.C)
 Federal Return on Investment (4.8.D)
 Sustainability as a Percent of Contributed Capital (4.8.E)
 Operating Net (4.8.O)
 Total Net (4.8.P)
 Return on Net Position (4.8.M)
 Set-Aside Spending Rate (4.8.W)

Regardless of the level of capitalization or the availability of additional capital through leveraging or other sources, each SRF has a pool of financial resources at its disposal. A key question is, “Are those

resources being used as efficiently as possible?” An SRF that is efficiently using its funds is consistently putting all available dollars into projects and quickly re-lending repayments to new projects. States that are most effective at utilizing their fund resources maintain high demand levels through outreach and attractive loan terms, while managing their internal processes so loan application approvals and disbursement processing are efficient.

One of the metrics used to measure fund resource utilization is Executed Loans as a Percentage of Available Funds (also known as “pace”). Assistance provided is equal to executed loans. Funds available includes capitalization grants, state match, transfers, interest earnings (loans and investments), loan principal repayments, and net bond proceeds (minus debt service reserves).

Many CWSRF and DWSRF programs have fund utilization rates at or near 100 percent, indicating that states are, on average, committing almost all available funds to loans. Some states have rates higher than 100 percent because they use an advanced loan commitment approach, whereby they make loan commitments in anticipation of future availability of funds (described later in this section). Pace levels have been increasing in the DWSRF in recent years as states have focused on getting more projects to sign loan agreements and start construction in a timely manner (see text box).

Efficient use of fund resources also includes how funds revolve through the program. A program may have a high pace level, indicating that it commits (almost) all available funds to loans, but it may still have high cash balances because it commits funds prior to project planning and design, or the internal loan processes could be slow. This may be demonstrated through measures such as high levels of undisbursed funds, high unliquidated obligations, high/growing cash balances, declining net position, and low/no internal capital formation.

The text box “Getting Projects to Construction” highlights several approaches states have taken to get projects to disburse funds more quickly. Chapter 4 includes several metrics that can be used to analyze these factors, such as Operating Net, Total Net, and Return on Net Position. Metrics and cash flows should not only be measured at a moment in time, but their trends should be evaluated to determine whether the state is effectively using funds over longer time periods.

Funds utilization does not only concern the use of federal and state match funds, but also repayments and bond funds. As Section 3.7, Leveraging, explains, leveraged bonds are most appropriate when existing capitalization and repayment funds are insufficient to satisfy the demand from high-quality projects. The ongoing emphasis on expending federal funds as quickly as possible should not result in an accumulation of repayments and earnings. Funds utilization measures should include all available funds.

Getting Projects to Construction

States have implemented many different strategies to get projects to draw construction funds more quickly after committing funds. A partial list is below:

- Rank projects only if planning and design are complete.
- Offer planning and design loans or grants to assist project development.
- Contract with third-party assistance providers to work with small, rural communities.
- Station SRF staff throughout the state to work with communities directly.
- Accept applications and funding projects year-round so they apply when ready.
- Require that loan agreements be signed within 6 or 12 months of priority ranking.
- Base interest charges on undrawn funds.
- Assign dedicated staff to work with small and disadvantaged communities.
- Minimize application requirements for large municipalities/repeat customers.

The efficient use of SRF funds intersects all of the primary SRF financial objectives. An SRF that is effectively managing its funds and efficiently using available resources, while keeping an eye towards managing risks to the program, is in a position to achieve the financial objectives of the SRF.

PROGRAM CHARACTERISTICS

Programs that efficiently use their available resources have several characteristics in common, including:

- **Cash flow planning:** Effective utilization of SRF funds requires knowing how much money is actually available now and in the near term. States that engage in cash flow modeling don't only know what they have available to commit today, but they plan for the inflows and outflows of funds in the near and long term, and can develop program strategies accordingly. More information on this topic can be found in Section 3.9. Sustainable Funding Levels.
- **Sustained high demand levels:** States that have high levels of demand are typically well-known among their communities due to their outreach efforts. Additionally, they may have strong relationships with their communities, particularly large and repeat borrowers. Several state approaches to maintaining high demand levels are discussed below.
- **Efficient disbursement of funds:** The efficient disbursement of funds is a key element of effective funds utilization. This not just encompasses responding to disbursement requests within a short period of time, but also ensuring that borrowers regularly come in for disbursements. For instance, some states have clauses in loan agreements requiring monthly disbursement requests. Knowledge of how funds are typically disbursed to projects is a key element of effective cash flow planning.
- **Efficient internal processes:** States that have efficient internal processes are always working to streamline the application and loan disbursement processes as much as possible. One way in which states have worked to streamline demand is by conducting a LEAN, Kaizen, or Program Optimization Drill (POD) event. During these events staff analyzes each step in the SRF process and identifies streamlining opportunities. An example of California's POD is highlighted in Section 3.3, Administrative Resources.

MANAGING DEMAND

Some certainty over near term demand levels can significantly facilitate financial planning and management efforts. States have taken several approaches to try to make it easier for entities to participate in the SRF and encourage repeat borrowing, thereby creating more confidence in demand levels. Tactics states have used to manage demand include:

- **Incentive programs:** Most states have instituted incentive programs to attract new or high priority project or borrower types. A typical approach is to lower the cost of the loan by using principal forgiveness and/or reduced interest-rate or interest-free loans. States have also offered sponsorship, linked deposit, and pass-through programs to make the SRF more accessible to nonpoint source, decentralized, and other nontraditional project types. These programs help encourage participation in the SRF and help reach high-priority water quality projects that may not otherwise qualify for financing.
- **Streamlined applications:** SRF programs have worked several angles to streamlining application processes, from developing templates, online applications, and internal process streamlining.
- **Frequent borrower programs:** Regular borrowers of the SRF are generally well-versed in the requirements of the program and may therefore benefit from streamlined processes.

- Programmatic lending:** The programmatic lending approach allows the SRF to fund a segment of an entity’s Capital Improvement Program (CIP) on a cash flow basis. The entity prepares a number of projects to be SRF-eligible, generally well in excess of the funding that the SRF has available for the entity. As any of the projects are constructed, invoices are submitted to the SRF, until all of the available funds are expended. Using this methodology, the state may fund only a portion of a large number of projects, compared to funding a small number of projects in their entirety. A benefit of this plan is that if any of the projects are stalled, there are other projects already in progress that can receive those funds, ensuring that the SRF funds are expended efficiently. The entity benefits because the SRF is able to commit a stable amount of funding on an annual basis. See Minnesota example in the text box.
- Advanced loan commitment:** Many states are able to commit funds in anticipation of the future availability of funds. At the same time that a program is making disbursements to projects, it is receiving repayments from other projects and earning interest. As a result, a state can commit funds in excess of what it has available today, knowing that it will be receiving repayments and interest earnings as those commitments translate to disbursements. This approach requires careful financial planning but can help ensure that the state fully utilizes all available funds. Some states are prohibited by law or regulation from committing funds that are not immediately available. Refer to the North Carolina example on page 24.
- Phased funding:** Large projects that will take several years to construct can be broken down into annual phases. Each phase accounts for the expected cash flows for the year. This eliminates the need for the SRF to commit a very large sum of funds that will not be disbursed for several years. It gives the SRF the knowledge that it can guarantee funding for a project over several years, decreasing the uncertainty in the level of demand from year to year. Large projects, such as pipe replacement throughout a community, are particularly conducive to this methodology. Florida uses a phased funding approach for many of its projects: in the first year, the loan agreement covers the amount of construction activity that is expected to occur in that year; in the following year, the loan is amended to include that year’s funding need, and so on. The state commits each year’s funding amount before it processes any new loans. This phased process utilizes a single loan agreement and amortization schedule.

SPOTLIGHT: Minnesota Clean Water State Revolving Fund Programmatic Lending

Minnesota uses a programmatic lending approach with its largest borrower, the Metropolitan Council (Twin Cities).

The CWSRF uses cash flow modeling to determine the funds it can make available to Met Council over a 12-month period. A single loan agreement is signed for that amount, with multiple projects listed in the loan agreement. The project totals exceed the loan amount. Many of the projects are carried over from previous years, when the CWSRF funded their planning and design. Each project typically has a 20-year useful life, so the SRF is able to use a single amortization schedule for each loan.

Met Council provides detailed spreadsheets with each monthly disbursement request that track costs on a project level; invoices are provided in PDF format.

In November 2015, the CWSRF signed a \$70 million loan with Met Council, partially funding over 50 projects. Minnesota believes that this program adds stability to their SRF, while Met Council can also plan for a stable amount of funding each year.

- **Managing the project pipeline:** At any point in time, SRFs generally have a number of projects in the “pipeline.” These are projects currently in the application phase or expected to apply for financing within the next 1-3 years. Tracking the progress of these projects helps the state stay ahead of potential delays and also forms a picture of future demand. The state can look ahead at the projects in the pipeline and make decisions about outreach activities (e.g., if the pipeline has few projects) or if leveraging may be needed (i.e., if the pipeline is large). Illinois maintains a comprehensive project pipeline whereby staff follows up with projects on the priority list at least every six months to obtain updates on progress and estimated construction start dates.
- **Co-Financing:** SRF programs can work in partnership with other state and federal financing programs to jointly fund projects. This can help bring projects to the SRF that may not otherwise apply for financing. For example, a system or community may not be aware of the SRF or may require grant funding to help make the project affordable. Funding projects with other programs can help increase overall financing provided by the SRF and serve as a marketing tool. Several states, including Arizona, use a “one-stop shop” approach where financing programs work together to allocate funding to projects.
- **Marketing and outreach:** Marketing and outreach are essential components of an SRF program and help create demand for the program. Marketing activities can be tailored to the types of projects that the state considers a high priority and can encompass a wide range of activities. EPA offers a range of marketing tools and opportunities for SRF programs, including a step-by-step guide to developing a marketing plan.

SPOTLIGHT: North Carolina Advanced Loan Commitment

North Carolina has implemented an advanced loan commitment model allowing it to commit funding to more projects than it has in funds available at that time. After conducting an analysis of existing projects, it was able to divide projects into three size categories: smaller than \$1 million, \$1-10 million, and greater than \$10 million. They were able to develop estimated outlay schedules at 6 month intervals for each project category. For instance, projects under \$1 million tended to disburse the first 65 percent of funds within the first 6 months, and the remaining amount in the second six months.

The state used this information, as well as assumptions and data on projected project start dates to establish estimated program outlays for all active projects.

On the revenue side, it uses repayment schedules for active and future projects and estimated interest earnings to estimate the inflow of funds. In addition, it uses a range of values for future capitalization grants. Utilizing this data, the state develops high and low revenue and outlay projections for every six months. With a minimum fund balance of \$50 million as a buffer, it is able to develop project commitment levels taking into account future funds availability.

The advanced loan commitment strategy has allowed North Carolina to achieve a cumulative pace (assistance provided as a percent of funds available) level of 101 percent in 2017 without leveraging.

Other states utilizing this approach include Oregon (a direct loan state) and Iowa (a leveraged state).

LOAN GUARANTEES

SRF statutes not only allow states to provide assistance to projects through loans and purchases of debt obligations, but they also enable SRF programs to guarantee or purchase insurance for local obligations where it would improve credit market access or reduce interest rates. While not utilized by any state

until New York in 2013, there is increasing interest in this assistance tool among states. A guarantee is a commitment by the SRF that in the event there is a default on the local obligations, the SRF will make up the shortfall. Bonds guaranteed by the SRF will receive that SRF program's credit rating; most SRFs have a AAA rating. Because of the possibility that the SRF may have to pay debt service on the obligation, any guaranteed projects must be SRF-eligible.

The SRF may benefit from a loan guarantee for several reasons, including:

- It does not require outlays or pledge of SRF funds, except in the event of a significant default;
- It can increase the amount of assistance provided without requiring an outlay of funds; and
- It can improve water quality and public health by helping other projects be constructed at lower cost.

The entity may benefit because:

- The financial strength of the SRF providing the guarantee can reduce the cost to the beneficiary,
- It can help a beneficiary establish market presence at lower cost, and
- It can lower the project costs even if the SRF does not have capacity to award a traditional loan.

A loan guarantee does not require an outlay of funds unless there is a default. The SRF must ensure, however, that it has sufficient equity available to make debt service payments on the guaranteed bonds if necessary. For instance, New York includes the potential debt service payments on the bonds it has guaranteed in its debt service coverage ratio calculations. Due to the fact that guarantees are a new use of SRF resources, we are likely to see many variations and iterations as other states begin to utilize this option.

SPOTLIGHT: New York CWSRF Guarantee of Homeowner Energy Efficiency Loans

In 2013, New York's CWSRF, which is implemented by the New York State Environmental Facilities Corporation (NYSEFC), provided a guarantee on \$24 million in bonds issued by the New York State Energy Research and Development Authority (NYSERDA). In 2009, NYSERDA created a \$42.5 million revolving loan fund to finance energy audits and energy efficiency updates and retrofits for residents, small businesses, not-for-profits, and multi-family buildings. With over \$30 million tied up in loans within three years, NYSERDA sought to securitize its loan portfolio and sell it to investors, freeing up funds to underwrite new loans. The bonds would be repaid from the repayments on the homeowners' loans.

Because the NYSERDA program was relatively new, rating agencies were initially unwilling to award a strong credit rating and bond insurance was not an option after the 2008 credit crisis. The resulting high interest rate would have limited NYSERDA's ability to provide low-cost loans to homeowners. NYSERDA was also keen to establish a bond presence for its energy efficiency program.

A guaranty from the CWSRF program enabled NYSERDA to receive a AAA credit rating on its bonds. New York's Section 319 Nonpoint Source Management Plan identifies atmospheric deposition from fossil fuels as a significant source of water quality impairment. As a result, this arrangement was eligible for CWSRF financing under Section 603(c)(2) of the Clean Water Act.

The guaranteed bonds are subordinate to NYSEFC's leveraged bonds. NYSERDA borrowers' repayments are substantially higher than the debt service on the bonds, ensuring that it is unlikely that the guarantee will have to be used if some homeowners default on their loans. In addition, an \$8.5 million reserve account was established to reimburse the NYSEFC if it becomes necessary to draw on the guarantee.

RISK ANALYSIS

Programs that are not using all of their SRF available funds in a timely manner and maintaining a rate of funds utilization risk building large cash balances. This could result in the state not maximizing the potential benefits of the SRF on water quality and public health. In addition, having balances of unutilized funds could lead to a loss of support for the SRF on a national level (through lower or no capitalization grants) or state level (through loss of appropriated state match).

SPOTLIGHT: Iowa Cash Management

As a result of efforts to streamline their process, expand outreach, and implement creative funding options for non-traditional projects, Iowa's CWSRF and DWSRF programs have seen substantial up-ticks in demand. The state uses cash flow modeling and advanced loan commitment to maximize lending capacity and plan for leveraging.

The state recognized that due to construction schedules, it did not need to have funds on hand for the entire project at loan closing. Reviewing the historical patterns of expenditures, the state determined that it disbursed on average \$14 million per month in the CWSRF. It uses cash flow modeling to ensure it never falls below 1.5 times monthly disbursements. Knowing that it takes months to prepare a bond issuance, IFA projects its cash flow for six to nine months in advance. When projections show it will be dropping below this limit, the state begins preparations to issue leveraged bonds. Iowa has issued leveraged bonds of approximately \$70 to 250 million across both programs every 1 to 2 years since 2009. Because the state has an established bond team, it is able to issue bonds with 3 to 4 months' notice.

As of June 30, 2017, Iowa had \$920,635,001 in total leveraged bonds outstanding in its CWSRF and DWSRF. The state has issued almost \$1.17 billion in leveraged bonds in both programs since 2009. Since that time, it has averaged \$219 million in assistance provided and \$208 million in disbursements each year in both programs.

3.3 ADMINISTRATIVE RESOURCES

SRF Objectives	Sufficient Staffing and Funding Capability to Administer the Program Effective Loan and Project Oversight Effective Use of Fee Revenues and Administrative Funds Sound Accounting and Reporting Follow an SRF Strategic Business Plan
Selected Indicators	Executed Loans as a Percent of Funds Available (4.8.A) Disbursements as a Percent of Executed Loans (4.8.B) Ratio of Undisbursed Project Funds to Disbursements (4.8.C) Federal Return on Investment (4.8.D) Loans Outstanding as a Percent of Total Assets (4.8.H) Delinquency Ratio (4.8.J)

“Does the program have sufficient administrative resources?” is a common question posed by SRFs. SRF programs must ensure that if they are to manage the Fund in perpetuity, that they have the administrative resources to do so.

Since the passage of amendments to the CWSRF in 2014 and the DWSRF in 2016, states have additional resources to provide for operating their SRFs. States may also use program and non-program income from fees for administration of the funds (Section 3.4). These fees are not part of the limit on administrative costs set by the Federal Water Pollution Control Act and the Safe Drinking Water Act.

States drawing their administrative funds from their capitalization grants must also ensure that they are using the first-in, first-out (FIFO) method for drawing those funds. They should not be maintaining small amounts of funds in grants because they are to be used for administration; they should draw those administrative funds from the oldest grants first. In the CWSRF, states drawing administrative funds from their capitalization grants must use the appropriate proportionality ratio.

Because having adequate staffing is key to managing a growing, well-functioning SRF program, many of the indicators that would be considered are those that relate to program pace levels, such as Executed Loans as a Percent of Funds Available. In addition, a high Delinquency Ratio could indicate that there is insufficient staffing or expertise to conduct an effective financial capability review.

PROGRAM STAFFING

The primary use of administrative funding is staff salaries and benefits. Sufficient staffing is essential to a successful SRF program. This topic is discussed in more detail in Section 1.1. In some states, the administrative funding available is insufficient and a fee must be added to add additional resources. In other programs, state hiring restrictions may hinder the SRF's ability to hire. In some cases, EPA has been able to help the state obtain additional staff by pointing out deficiencies in the annual Program Evaluation Report (PER), which are shared with top-level management at the state agency. In other cases, a state has been able to use contracts to help manage the workload. A workload study can be a valuable tool for determining whether there is sufficient staff to conduct essential activities and ensure proper oversight.

PROGRAM ORGANIZATION

Program organization and staffing are closely intertwined. Program organization refers to the staffing structure as well as internal SRF processes – how does information and decision-making flow through the program? States can undertake a Process Optimization Drill (POD), LEAN, Kaizen or other similar approach to analyze internal processes. These exercises can help identify (a) areas that can be streamlined or improved, (b) activities that require more or less staffing or different staff configurations, (c) areas where technical assistance or other contracts may be beneficial, and (d) other areas for

What can Admin funds pay for?

Administrative funds can be used to pay for “reasonable costs of administering the SRF,” including but not limited to:

- SRF staff salary and benefits;
- Equipment for SRF use, such as computers, vehicles, software;
- Consulting fees (financial, legal, management);
- Cost of issuing debt;
- Cost of servicing loans;
- Support contracts with other State programs or third-party providers;
- SRF marketing and outreach expenses; and
- Technical assistance activities for systems. In the CWSRF, there may be a reasonable expectation that it will result in a loan application.

Ineligible expenses include:

- Fully funding staff that work part-time in the SRF or shared equipment (costs must be pro-rated),
- Administering the construction grants program, and
- Administering permit programs.

improving the program so it achieves its strategic goals. Refer to the text box for a description of California’s POD.

SPOTLIGHT: California Process Optimization Drill

As part of a larger strategic management study, California’s DWSRF participated in a 2-day Process Optimization Drill (POD) event in 2014. The POD included creating a value stream map of each discrete process in the work flow to identify the tasks performed, the time associated with each task, and the number of hand-offs and approvals necessary before advancing to the next process. The POD focused on 3 problem areas: Priority Setting & Invitation Process, Loan Process, and Claims/Disbursements. A suite of 22 efficiency opportunities were identified as a result of the POD. All staff that participated in any way in these processes participated in the POD and contributed to the recommendations.

The POD results and recommendations were incorporated into the management study. The findings and recommendations were used to inform the new loan process and organizational structure when the program was moved from the Department of Health to the State Water Resources Control Board.

RISK ANALYSIS

Insufficient administrative resources could prevent a state from achieving its goals and objectives, with negative financial implications. States with inadequate staff may develop a backlog of applications or disbursement requests, see a decline in demand due to a lack of outreach, or conduct insufficient oversight of projects. At the extreme end, lack of staff may lead to accounting irregularities, fraud, and abuse.

3.4 FEES

SRF Objectives	Sufficient Staffing and Funding Capability to Administer the Program Effective Use of Fee Revenues and Administrative Funds
Selected Indicators	Executed Loans as a Percent of Funds Available (4.8.A) Net Interest Margin (4.8.L)

Many SRF programs charge fees on loans. In most cases, fees are used by states to help pay for the administration of the program. Depending on how the fees are assessed and where they are deposited, fee income can also be used for various other purposes, including state match, eligible projects, activities eligible under the DWSRF set-asides, and other water quality purposes.

Loan fees may be used to supplement the administrative funds allowable through the Clean Water Act and Safe Drinking Water Act. Other potential uses of fees depend on whether they are considered program income or non-program income and if they are deposited into or outside the Fund. The SRF programs have specific regulations as to the potential uses of fee income collected. States should ensure that they closely track the collection and deposit of fee income to ensure that they are only used for eligible purposes.

ADMINISTRATIVE FEES

A state may consider charging borrowers a fee when the needs are greater than the administrative funds available through capitalization grants. Administrative fees usually take the form of an application fee, a loan closing fee, a loan servicing fee, or a fee on the outstanding principal balance. Various fee systems should be evaluated to project the revenue generated by each system or combination of systems and its sufficiency for meeting administrative costs. Fees should also be evaluated with respect to fairness across segments of borrowers.

For many states, the imposition of an administrative fee has been accompanied by an off-setting reduction in the loan interest rate to avoid increasing the total loan cost for the borrower. This reduction of interest earnings reduces the amount of funds available for future loans, affecting Fund growth. Metrics such as Net Interest Margin can be used to analyze the impact of this practice. The cost of administrative fees should be factored into subsequent analyses of SRF loan interest rates to ensure that the fees are reasonable. Some states will also transfer funds from the fee account to the loan account if fee account balances reach a certain level.

OTHER USES OF FEES

Fees can be used to help increase demand for the SRF, resulting in an increase in the measure Executed Loans as a Percent of Funds Available and other pace-related indicators. Some states use their fees to fund circuit riders or third-party assistance providers, which can help smaller entities obtain SRF loans. Fees can also be used to fund programs such as planning grants or water audits, ultimately leading to additional SRF loans. They can also fund other water quality improvements. SRF financial managers should evaluate fee uses to determine whether they are benefiting the SRF, water quality, or public health, and whether they serve programs that may otherwise not receive necessary financial assistance.

SPOTLIGHT: Georgia Water Audits

The 2010 Georgia Water Stewardship Act required that water systems serving over 3,300 people conduct annual water audits. The Act took a phased approach, with larger systems having to submit the audit in 2012 and smaller systems in 2013. The audits are posted online at the Georgia Environmental Protection Division's (EPD) website.

In 2012, the Georgia Environmental Finance Authority (GEFA) conducted a series of three workshops that trained over one hundred small water systems in conducting water loss audits, culminating in the completion of the audit by the March 1, 2013 due date. Subsequently, GEFA provided technical assistance for leak detection, finished water meter testing, and customer meter testing for small and large water systems. Large systems were also offered technical assistance for pipe control assessments, pressure management evaluations, and district metered area evaluations. In 2016, GEFA and EPD conducted a Qualified Water Loss Auditor Training Program.

GEFA uses DWSRF set-aside funds to provide the workshops and small system technical assistance. Technical assistance for large systems and the water loss auditor training program are paid for using DWSRF fees. Work is conducted by contractors. GEFA expects that the free technical assistance will result in additional SRF projects as systems seek financing to implement improvements identified through the water loss audits.

Georgia's DWSRF charges a one-time 1 percent closing fee on all loans.

RISK ANALYSIS

While fees can be an important piece in the puzzle of running an effective SRF program, depending on how the fee is charged, it can also reduce interest earnings on the Fund. States should evaluate this impact and be prepared to adjust its fee, if necessary, from time to time.

There are additional accounting and reporting requirements associated with fees. Programs should ensure it is clear to EPA whether they are depositing their fees inside or outside their SRF fund, as that impacts eligible uses of the fees. In addition, in the CWSRF, they will have to track program income and non-program income to ensure fee revenues are utilized only for eligible purposes.

3.5 LOAN PORTFOLIO MANAGEMENT

SRF Objectives	Effective Loan and Project Oversight Follow an SRF Strategic Business Plan
Selected Indicators	Loan Principal Repaid as a Percent of Loans Outstanding (4.8.I) Delinquency Ratio (4.8.J)

The loan portfolio is the total of the loans that an SRF has under its management (in disbursement and repayment). SRF financial managers analyze the loan portfolio on an ongoing basis to evaluate the financial condition and ability of loan recipients to repay the loans. The capacity of borrowers to repay loan principal and interest could have a major impact on the financial condition of the SRF and its ability to meet financial and environmental/public health objectives.

The presence of weak segments or credits within the loan portfolio is not an inherent flaw in the management of the SRF. A program's objective may be to focus loan support on financially weak borrowers to support projects that achieve desired environmental or public health results. A state may choose to set lower interest rates or introduce other flexibilities in loan terms to make participation possible for weaker credits. The financial condition or strength of the loan portfolio must be monitored to assess uncertainty over future loan repayments and to establish loan loss reserves (or prepare for losses) when appropriate. This assessment can also inform cash flow modeling and projection efforts. In addition, it can provide feedback on the program's credit review process by determining if it is adequate to categorize the financial capability of borrowers and whether it properly identifies borrowers that are of higher credit risk.

A simple test of the soundness of the loan portfolio is to see if all scheduled loan principal and interest payments have been paid on time: Have there been any defaults, late payments? Has the state restructured any loans? What was the cause of the default, late payment or restructuring? Was it due to a shortcoming in the financial review or oversight by the SRF or due to larger economic conditions that could not have been foreseen?

Answering these questions may help financial managers ascertain whether there are weaknesses in the loan portfolio and whether those weaknesses are avoidable through changes in review or oversight.

States and EPA can use metrics such as Delinquency Ratio and Loan Principal Repaid as a Percent of Loans Outstanding to analyze loan portfolio management. These metrics will help illustrate whether the creditworthiness review is sufficient to ensure repayment on the loans.

TECHNICAL, MANAGERIAL, AND FINANCIAL CAPACITY REVIEW

Loan portfolio management starts at the applicant credit review. The credit review aims to assess the potential risk of each applicant to determine whether it qualifies for an SRF loan and what types of loan security provisions may be required, such as reserve requirements and collateral. One of the primary elements of the credit review process is an analysis of whether the applicant has the ability to construct and operate the water project while maintaining affordable user rates. Most states undertake some financial analysis or modeling to evaluate how operating revenues, operating costs, and debt service costs will change over a 3 to 5 year period. In addition, they may consider local economic conditions to evaluate how the ability of the borrower to operate the facility and collect adequate user fees may change over time.

As states evaluate the creditworthiness of applicants they must also make decisions on the amount of risk they are willing to accept to fund their highest-priority projects. These projects may obtain additional subsidies and lower interest rates to help make the loan more affordable, or additional security provisions may be required.

DWSRF regulations require that a Technical and Managerial review take place in addition to the Financial Capacity review (also called a TMF review). While not explicitly required by the regulations, many CWSRF programs conduct a similar review. This aspect of the review analyzes whether the borrower has the technical and managerial capacity to implement the construction project and operate it effectively in the long term.

LOAN PORTFOLIO ANALYSIS

Loan portfolio analysis requires an understanding of the financial condition of each borrower. If most of the borrowers have a bond rating, then their bond ratings can be used to assess the overall financial condition of the portfolio. For example, the loans outstanding could be categorized in the following way: 44 percent are A-rated or higher, 34 percent have B-ratings, and 32 percent are not rated. A portfolio that is heavily skewed towards unrated or low-rated credits may warrant a closer review. The text box on page 32 shows an example of Maryland's loan portfolio. SRF programs where borrowers do not require bond ratings can do a similar type of breakdown using the results of financial capability reviews performed at the time of the loan application.

For SRF programs with loan portfolios that have a large proportion of financially weaker borrowers, there may be offsetting factors that should be taken into consideration that increase the assurance of repayment. Such factors include loan provisions that provide additional security for loan repayment beyond revenue pledges, such as asset pledges, state aid intercepts, or a General Obligation pledge.

SPOTLIGHT: Nebraska AWIN Program

Nebraska's Assessing Wastewater Infrastructure Needs (AWIN) program was developed to estimate future conditions in Nebraska communities. The information is used to help minimize the financial burdens for struggling communities by developing sustainable projects. AWIN was developed as SRF and other state staff became concerned about the ability of small, shrinking communities to effectively operate and maintain facilities while maintaining affordable user rates.

AWIN uses factors such as population change, per capita income, average age of residents, and infrastructure needs to develop a "sustainability risk" score. Each community receives a score and is categorized as low, moderate, or high risk. This rating is incorporated into the CWSRF funding process, including the allocation of principal forgiveness.

SPOTLIGHT: Maryland Water Quality Financing Administration CWSRF Loan Portfolio Evaluation Process

Maryland's CWSRF program closely tracks the credit quality of its loan portfolio. Many borrowers are well-established communities with their own credit ratings. As environmental priorities have evolved, a greater percentage of SRF borrowers have become smaller communities without a credit rating. As of June 30, 2015, 63 of 90 outstanding borrowers did not have a credit rating. At the same time, larger borrowers with credit ratings made up the majority of the assistance provided: 83 percent of outstanding loan balances are in projects with credit quality of A or better.

Outstanding Balance and Borrower Credit Quality as of June 30, 2015

Rating (Moody's)	Outstanding Principal Balance	% of Assistance	% of Loan Agreements
Aaa	\$352,909,398	38%	7%
Aa	\$399,220,581	43%	22%
A	\$19,830,933	2%	1%
Baa	\$-	-	-
No Rating	\$148,006,803	16%	70%
Total	\$919,967,715	100%	100%

Borrowers without a credit rating require additional review of financial capability and are tracked on an ongoing basis. Financial statements are collected annually for both the enterprise and general funds and the information is entered into a financial analysis spreadsheet. The spreadsheet is used to calculate standard industry ratios, including current ratio, debt service coverage, cash as a percent of current liabilities, and total assets as a percent of total liabilities.

The ratios are compared to industry standards and to prior year's data. The results of the evaluation, along with analysis of other economic and demographic information is used to identify potential weak credits in the loan portfolio and update a watch list of borrowers with potential financial problems. This information allows Maryland to actively oversee all aspects of its loan portfolio and to maintain a high degree of confidence for loan repayment.

Some SRFs will take a subordinate position to a borrower's municipal bonds. The subordinated position reduces the probability that the SRF would be made whole in the event of a default. However, there may be mitigating factors, such as additional security features like a debt service reserve. For some borrowers, the financial capability review and debt service coverage ratios may show that there are substantial resources to pay both the senior and subordinated debt, and that an additional security pledge may be unnecessary.

The composition of the loan portfolio is particularly important for leveraged SRFs. The three biggest credit rating agencies, Fitch, Moody's, and Standard & Poor's, use credit quality characteristics of borrowers as a major component of the SRF credit rating. Some states maintain a direct loan portfolio and a leveraged loan portfolio, with the stronger credits included in the leveraged portfolio. This helps ensure that weaker credits with a higher likelihood of default, late payment, or restructuring do not impact the SRF bond rating.

Loans to individuals, nonprofit groups, and private businesses for nonpoint source and other nontraditional projects add complexity to loan portfolio analysis. Such loans may be structured differently from loans to traditional governments (note: in some states, state law only permits lending to governmental entities). The source of revenue to repay the loan may be unique to the project and borrower's circumstances. Collateral to secure the loan may play a larger role in the loan structure because the borrower does not have broad taxing authority. Some states utilize conduit lending arrangements with other state agencies or financing institutions to reduce the administrative burden and protect the SRF. Other programs, such as sponsorship loans, reduce the burden on nonpoint source project sponsors to find a repayment source.

Oregon's underwriting process for DWSRF loans uses different criteria for local governments, private borrowers, and homeowners associations. For private borrowers, one component is an in-depth analysis of the liquidity, solvency, and trends through an analysis of three years of financial statements and supporting documentation. Security and collateral also differ for private borrowers compared to local governments. Types of security include liens on real property, corporate or personal guarantees, and mortgage liens.

More information on loan portfolio analysis can be found in Section 4.7.

SUBRECIPIENT MONITORING

A borrower's finances can change over the course of the twenty to thirty year repayment period of an SRF loan, making subrecipient monitoring a key element of SRF portfolio management.

Most states require that their borrowers submit audited financial statements annually even if a Single Audit is not required of them.⁴ States should review these financial statements carefully and follow up with the borrowers if they see concerning information or trends, such as indications that the borrower is not meeting debt coverage requirements, declining revenue trends, and expenses increasing in an unexpected way. The notes to the financial statements can provide valuable information regarding economic trends and other potentially emerging financial issues. Programs should follow up on the information in the audits if they see anything that could impact the ability of the borrower to repay the loan. Some states, like Texas (see text box) go beyond the audits to do comprehensive subrecipient monitoring to attempt to get ahead of potential problems. In the same vein, California tracks local news stories of its borrowers to catch local events that may impact the community's ability to repay their loan.

SPOTLIGHT: Texas Water Development Board

The Texas Water Development Board, which manages the SRFs and several other water quality programs, has a team dedicated to loan monitoring. They review annual financial statements, including indicators, such as coverage ratios, collection rates, and property values. The state has developed an extensive checklist to assist in this review and to ensure that a comprehensive review of the financial statements is conducted each time. Borrowers may be placed on a watch list for additional monitoring. The team meets monthly and portfolio reports are completed on a regular basis.

⁴ Under 2 CFR Part 200 subrecipients with loans in an amount equal to the capitalization grant are required to undergo a Single Audit if they expended at least \$750,000 (in 2015) in federal funds in a year.

RISK ANALYSIS

States that do not engage in sufficient loan oversight and portfolio management may find that they see more work-outs or delinquencies than may be expected. The lack of oversight may also result in more projects with inadequate security mechanisms to protect the SRF in the event that the borrower is having trouble making debt service payments. A state that does not track borrowers during repayment may find itself surprised if payments are missed. These findings may especially impact leveraged SRFs, as defaults could result in downgrades in their bond rating, raising the cost of borrowing.

From a strategic planning perspective, management and oversight of the loan portfolio will help the SRF program determine whether it is reaching its highest priority project types or communities. Analyzing the make-up of the loan portfolio, combined with outreach and marketing techniques, can help the SRF use a targeted approach to securing borrowers and reach its highest priority projects.

3.6 STATE MATCH BONDS

SRF Objectives	Sound Bond and Debt Management Ensure Timely Use of Federal and Non-Federal Funds
Selected Indicators	Sustainability as a Percent of Contributed Capital (4.8.E) Operating Net (4.8.O) Total Net (4.8.P) Net Interest Margin (4.8.L) Debt to Net Position (4.8.Q)

States must describe their source of state match in their capitalization grant application and deposit that state match on or before the date on which it makes cash draws.⁵ States may obtain the 20 percent state match through appropriation, local match, non-program income, or state match bonds. Most SRF programs have used bonds at some time to obtain state match, generally because they were unable to receive an appropriation, which is the preferred source. Figure 5 summarizes the use of the match bonds in the CWSRF. The text box on page 35 outlines the four types of state match bonds.

When an SRF borrows for state match, interest earnings from the program may be used to repay principal and interest on the match bonds. Loan principal must return back to the Fund and cannot be used to retire state match bonds. Repayments on match bonds reduces the financial resources of the SRF, as those interest earnings could have been used to fund new projects. As a result, borrowing for state match does impact the growth of the Fund. However, due to the large cash flows in the SRFs, the financial impact of borrowing for state match is limited – and far outweighed by the impact of not receiving the capitalization grant. States

Figure 5: CWSRF Programs that Have Issued Debt for State Match (FY 1988-2017)

	Direct Loan Program	Leveraged Loan Program	Total
Borrow for State Match	7 (14%)	17 (33%)	24 (47%)
Do Not Borrow for State Match	15 (29%)	12 (24%)	27 (53%)
Total	22 (43%)	29 (57%)	51 (100%)

⁵ While the CWSRF and DWSRF statutes require that state match be deposited prior to grant payment, in practice EPA has sought for the funds to be available at the same time or prior to Federal cash draws.

and EPA can analyze the impact of state match borrowing using metrics such as Operating Net, and Total Net. Operating Net and Total Net help illustrate Fund perpetuity, and how match bond interest expenses impact program growth.

Some states repay that debt over time, while others retire their bonds immediately on award of the capitalization grant – sometimes within one day of bond issuance.

In simplistic terms, borrowing for state match can be thought of as providing “temporary” matching funds. At the time the match funds are borrowed, the state has the full 20 percent match available for projects. Over time, as interest earnings are used to repay the match bonds, the interest earnings that would have otherwise remained with the SRF are lost to repay the bonds. At the end of the bond repayment period, there are no matching funds remaining from the match bonds since they have been repaid. The program is left with the original grant amount, plus accumulated net earnings after repaying the bonds. States that retire match bonds immediately upon award of the capitalization grant limit the impact of borrowing because interest does not accrue on the bonds.

SRF Financial Analysts can use financial modeling to understand how borrowing for state match may impact the program in the long term. A baseline scenario estimates near and long-term funding using assumptions deemed appropriate by the state. Next, a scenario would be added where state match is borrowed. The difference between the two scenarios is the cost of borrowing for state match. Demonstrating the impact of borrowing for state match may be valuable for presenting the case to request a match appropriation from the state legislature. An example of such an analysis is illustrated in Figure 6. On the other hand, borrowing for state match would be preferable to forgoing capitalization grants due to a lack of matching funds.

Types of State Match Bonds

Debt service paid by the state government

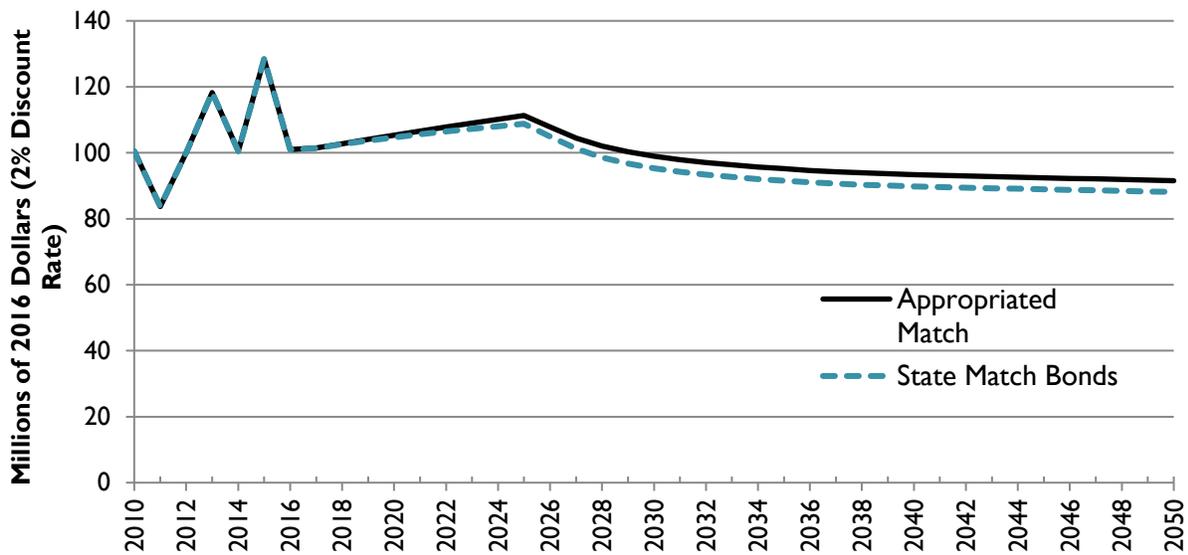
1. General Obligation (GO) bonds. The state government issues GO bonds and uses general fund revenues to repay the debt. GO bonds are backed by the state’s full faith and credit and taxing authority.
2. GO bonds placed in the SRF. The state deposits a GO bond in the SRF and pays annual debt service to the SRF to retire the bond. This is very uncommon.

Debt service paid by the SRF

3. GO bonds repaid with SRF revenues. The state issues GO bonds backed by the state’s full faith and credit, but bond debt service is paid by the SRF using interest earnings.
4. State match revenue bonds. The SRF issues match bonds and uses interest earnings to retire the bonds. This is the most common approach.

Source: EPA. “State Match Options for the State Revolving Fund Program.” February 1997. EPA 832-B-97-003

Figure 6: Comparison of Annual Project Disbursements



RISK ANALYSIS

While state match bonds have a fiscal impact on the Fund (if they are paid back using interest earnings), state SRF programs have sufficient assets today that the impact is reasonably small. The primary risks to the SRF are whether the program has sufficient staff and resources to do the oversight and reporting required of issuing bonds.

States must ensure that EPA has approved the structure for the match bond deposits and the flow of funds, and that all future match bond issues follow the approved structure.

SPOTLIGHT: Montana CWSRF

Montana has issued General Obligation bonds to meet its CWSRF state match requirements since it received its first capitalization grant. The GO bonds are repaid with interest earnings on SRF loans and are further secured by the full faith and credit of the state. In 2015, Montana issued a \$24,365,000 GO bond to provide state match for the federal FY 2014 and future capitalization grants. Montana charges a 0.25 percent fee on loans. Excess fee that is not required for program administration is swept and used towards state match (subject to CWSRF regulations). State match contributions have totaled 49 percent of capitalization grants (including ARRA) as of June 30, 2017. The state uses the excess match to help satisfy the high level of demand for funding.

As of June 30, 2017, Montana had issued \$67.2 million in state match bonds of which \$27.8 million was outstanding. The 2015 bond issue for \$24,365,000 has bond ratings of Aa1 (Moody’s), AA (Standard & Poor’s), AA+ (Fitch). Montana does not issue leveraged bonds.

3.7 LEVERAGING

SRF Objectives	Sufficient Staffing and Funding Capability to Administer the Program Sound Bond and Debt Management Attain and Maintain a High Rate of Funds Utilization (“Pace”) Ensure Timely Use of Federal and Non-Federal Funds Effective Management of Investments Follow an SRF Strategic Business Plan
Selected Indicators	Executed Loans as a Percent of Funds Available (4.8.A) Disbursements as a Percent of Executed Loans (4.8.B) Ratio of Undisbursed Funds to Disbursements (4.8.C) Operating Net (4.8.O) Total Net (4.8.P) Net Interest Margin (4.8.L) Return on Net Position (4.8.M) Debt to Net Position (4.8.Q) Debt to Performing Assets (4.8.R) Debt Service Coverage Ratio (4.8.T) Interest Coverage Ratio (4.8.U)

Leveraging through the issuance of bonds can be an effective tool for providing greater project assistance than a direct loan program for near-term needs. Additional monies to provide assistance are obtained through the issuance of bonds secured by assets of the program. Leveraging is a valuable option for states with substantially more demand than they have funds available today. Effective use of leveraging requires careful financial planning and management.

Leveraged programs have the responsibility of being sophisticated financial planners because it can affect their access to the municipal bond market. Effective management of the SRF is also necessary to ensure that leveraging levels match the demand for funding. SRF programs that leverage must work towards a variety of SRF financial objectives, including sound debt management; ensuring high pace levels so all funds, including bond funds, are utilized efficiently; and effective management of investments.

Cash flow modeling, trend analysis, and analysis of financial metrics can help inform whether a state is leveraging appropriately. Trends in indicators such as Executed Loans as a Percent of Funds Available, Ratio of Undisbursed Project Funds to Disbursements, and Disbursements as a Percent of Executed Loans, combined with cash flow modeling, can be used to analyze whether program demand and cash flow needs exceed the availability of funds, making leveraging necessary to satisfy program needs. Net Interest Margin, Return on Net Position, Operating Net, and Total Net are all indicators of the financial growth of the SRF. Net interest margin helps inform whether the interest earnings are greater than interest expenses on bonds, while return on net position, operating net, and total net help analyze whether the SRF is growing and program earnings are greater than expenses. Debt to Net Position and Debt to Performing Assets tells the financial analyst how leveraged a program is relative to its assets, while Debt Service Coverage Ratio and Interest Coverage Ratio indicate whether the program will be able to make debt service payments on leveraged bonds with available net earnings.

The text box below outlines the three key questions to ask before leveraging.

KEY QUESTIONS FOR LEVERAGING

Three key issues must be carefully considered when asking whether a Fund should (continue to) leverage:

1. Are Fund resources being used efficiently?

If no, the State should first ensure it is utilizing all Fund resources efficiently before leveraging because there are existing resources that could be used to fund projects.

2. Is there strong, sustained demand for funding and are all available resources being fully utilized?

If all existing resources are fully utilized and the state reasonably anticipates that high demand levels will continue, then there may be value in leveraging to fund more projects today.

3. Is the state administratively capable of managing a leveraged program?

Leveraged programs must ensure they have the staff and expertise to effectively work with financial advisors, bond counsel, rating agencies, auditors, and investors, and to have a clear understanding of the financial issues and implications of leveraging decisions. In addition, they must have the staff capacity to oversee the additional loan volume.

TYPES OF LEVERAGING

There are two types of leveraging used by SRF programs that issue bonds: reserve fund and cash flow (or blended rate) leveraging. In the early years of the SRF, states primarily used the reserve fund option. However, most states now employ cash flow leveraging.

The key difference between these methods is related to the debt service reserve set aside to secure the bonds. In reserve fund leveraging, the reserve is “oversized” and often is 40 to 60 percent of the bonds outstanding. These reserves provide enhanced security for the bonds and are invested to produce sizeable interest earnings which help to pay off the bond debt service. The reserve was often funded by the capitalization grant.

Cash flow leveraging uses a more traditional reserve fund of approximately 10 percent of the bonds outstanding (and sometimes no reserve at all). This allows the use of smaller bond issues to fund an equivalent amount of projects. States have found that an oversized reserve is no longer necessary for a top bond rating due to the program’s very high cash flows, perfect history of leveraged bond repayment, solid history of loan repayment, and investors’ many years of experience and comfort level with the SRF program. The high cash flows help ensure that the coverage ratios on the debt are sufficiently high.

States can also leverage their programs using co-financing and guarantees. While these do not require the issuance of bonds, they augment the funds available to the SRFs by utilizing other available resources, enabling SRF programs to fund more projects than they otherwise would have the capacity to fund. These financial tools are discussed in more detail in Section 3.2.

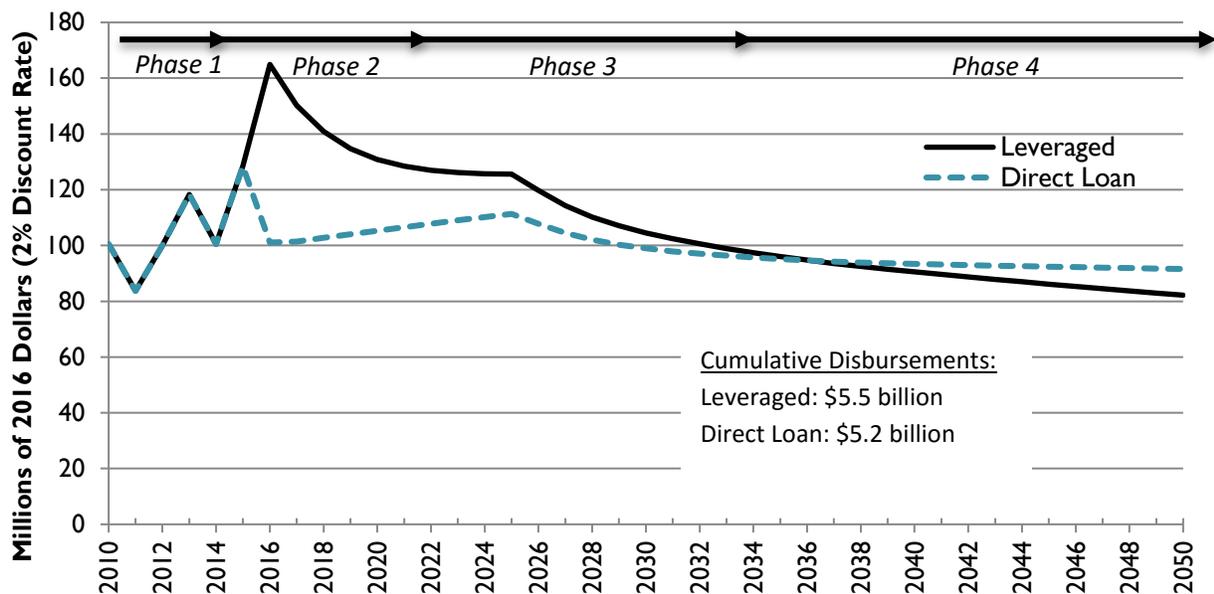
ASSISTANCE PROVIDED

If two programs are the same in all aspects, except that one leverages and the other does not, then the leveraged program should be able to provide more assistance sooner than the non-leveraged (direct loan) program. Over time, however, the direct loan program may build program equity faster than the leveraged program because the leveraged program uses earnings generated from loans and investments to make debt service payments. At some point in time, the amount of *annual* assistance provided in the non-leveraged program *may* exceed that of the leveraged program, though the *cumulative* assistance provided by the leveraged program will remain greater. A number of factors will dictate when and if annual assistance offered by direct loan programs will exceed that of leveraged loan programs, the most important of which are:

- Rate of inflation,
- Loan interest rates,
- Bond interest rates,
- Rate of return on investments, and
- Frequency and level of bond issuance activity.

Figure 7 illustrates this concept by comparing a leveraged program to an otherwise identical direct loan program. As the graph demonstrates, even though the direct loan program will eventually provide more annual assistance than the leveraged loan program (phase 4), the leveraged program still provides more cumulative assistance. By providing greater assistance sooner than the direct loan program (phase 2), the leveraged program is able to buy more “bricks and mortar” over time due to the erosive effect inflation has on purchasing power.

Figure 7: Comparison of Annual Project Disbursements



Most states carefully calibrate leveraging so they don't diminish the perpetuity of their SRF. States generally only leverage when the cash is needed and only in the amount needed. They seek to avoid leveraging so much that they are expending such a large percentage of their operating funds on repaying their bonds that they are not able to grow their programs. An important factor is the difference

between interest earnings on loans and investments and interest expenses on bonds. On average, leveraged states have not charged higher interest rates than direct loan states. Therefore, they calibrate their leveraging activity and resources to provide the additional assistance today without significantly diminishing program growth.

USING FINANCIAL MODELING TO EVALUATE LEVERAGING

Evaluating new or additional leveraging requires detailed financial modeling and financial planning. A financial advisor and/or underwriter will assist the state in financial planning; however, the state should ensure it has sufficient expertise on staff to independently evaluate and analyze the recommendations. The process for evaluating leveraging should begin by establishing a reasonable baseline plan that projects the financial future of the SRF using all of the relevant operating assumptions for the program without any new or additional leveraging.

All SRF programs, but particularly states that leverage or are considering leveraging, should conduct cash flow modeling to evaluate their programs. To effectively plan for leveraging, state Financial Managers should ask:

1. How much funding is needed to satisfy demand (or how much funding is needed to finance the projects the state would like to fund)?
2. What is the shortfall – how much leveraging is required to obtain the needed cash?
3. When will the funds be needed to satisfy cash flow requirements?
4. What impact will leveraging have on the Fund in the near and long term?

Modeling Tools

- State cash flow model
- SRF Financial Planning Model

The first step is an evaluation of the project pipeline and project funding patterns. Careful consideration of the project list may show many projects may not proceed in the expected timelines. In addition, projects may construct over several years and the program may not require the cash for those projects to be available up-front.⁶ Cash flow modeling that incorporates assumptions on how funds are disbursed to projects over time will help states evaluate when cash is needed, and therefore when leveraging may be necessary to satisfy cash flow needs. States may also choose to consider whether other options, such as increasing co-funding with other financing programs or utilizing a loan guarantee, may satisfy those cash needs in a way that is preferable to the state.

IMPORTANT QUESTIONS

1. How much money is needed to fund projects?
2. How much leveraging is required to obtain the needed cash?
3. When will the funds be needed to satisfy cash flow requirements?
4. What impact will leveraging have on the Fund in the near and long term?

IRS regulations under the Tax Increase Prevention and Reconciliation Act of 2005 (TIPRA) require that SRFs must reasonably expect to spend 30 percent of bond proceeds within one year and 95 percent of bond proceeds within three years. These regulations underscore the need to engage in financial modeling prior to leveraging. Several states will disburse state funds first for projects and then

⁶ Some State SRF regulations require all project funds to be available at the time of loan closing while other states are able to operate on a more real-time cash flow basis based on construction progress. This significantly impacts cash flow needs, with the former states requiring significantly more cash on hand than the latter states.

reimburse themselves with bond funds when they are issued. Other states will issue short-term notes to cover cash flow needs and retire those periodically with larger long-term bond issues.

The steps on page 40 will help a state evaluate leveraging needs in the short term. In the long term, SRF programs will make assumptions about factors such as demand, capitalization grants, loan terms, and discount rates. Longer-term evaluations will help the state determine whether its leveraging plans are a net positive for the program. A trend analysis will also help inform whether the current conditions necessitating leveraging are the result of program growth over time or a momentary blip.

The fundamental trade-off to consider with leveraging is the benefit of financing more projects in the short-term versus potentially reduced annual project funding in the longer term. The environmental and public health benefits of supporting projects sooner may favor leveraging. When the time value of money is considered, there may also be a net economic benefit from leveraging by funding projects sooner rather than later. A fundamental requirement is the adequacy of demand for leveraged funds.

RISK ANALYSIS

Leveraged states are responsible for ensuring they have the demand and internal resources (e.g., staffing, expertise) to manage a leveraged SRF program. Leveraging too much or without a sound financial plan can erode the value of the assets in the Fund in the long term. Effective cash flow management can help SRF programs leverage only when needed.

Failure to achieve TIPRA requirements would trigger mandatory special redemption provisions, which would be costly for the SRF. To date, state SRFs have managed their leveraging activities to avoid this action, but a state without a sound debt management strategy and adequate demand may miss these deadlines or neglect to spend down their Federal or recycled funds in favor of spending bond funds.

A state without a strong debt management and project oversight strategy may also eventually see reduced bond ratings. This could occur, for example, if it includes many borrowers in the pool with subpar credit quality.

Another requirement of leveraging is having sufficient, adequate expertise on staff, which includes both financial expertise and technical staff that can review the additional projects that would be funded. Inadequate staffing could result in mismanagement of the funds, poor performance, high costs, or costly refundings.

SPOTLIGHT ON: Alabama Leveraging Analysis

Alabama began leveraging its CWSRF program in 1990 and its DWSRF program in 1999. In 2006, the state asked EPA, with help of a consultant, to evaluate whether it should continue to leverage.

Using EPA's SRF Financial Planning Model and financial ratios such as Operating Net and Total Net, it was found that Alabama was performing about average compared to other leveraged states. However, due to the high level of leveraging, there was little money left to grow the Fund once interest expenses and loan subsidies were factored in. The report concluded that in the long run, if the state kept leveraging as aggressively as it was, the corpus of the Fund would be negatively impacted.

As a result of this study, Alabama was able to demonstrate to decision-makers that it should discontinue leveraging for the time being. By reevaluating its leveraging process, Alabama avoided many of the risks of over-leveraging and poor bond management.

Finally, states that have high demand but do not wish to leverage risk not being able to achieve their program goals. These states may not be maximizing their potential benefit to water quality or public health, which can have long-term consequences for state residents.

SPOTLIGHT ON: Massachusetts Green Bonds

Massachusetts is one of several SRF programs, including Connecticut, New York, and Iowa, to issue SRF “green” bonds in recent years. Massachusetts issued \$207 million in green bonds on April 13, 2017. The tax-exempt bonds have a final maturity in 2047 and received AAA/Aaa/AAA ratings from Standard & Poor’s, Moody’s, and Fitch Ratings. They have a true interest cost of 3.4 percent. The “green” designation is a voluntary designation to denote that the proceeds will be used for environmentally beneficial purposes.

The Massachusetts Clean Water Trust (formerly the Massachusetts Water Pollution Abatement Trust) operates the CWSRF and DWSRF programs in conjunction with the Massachusetts Department of Environmental Protection. The CWSRF has leveraged almost each year since 1993 and the DWSRF since 2000. The Trust chose to market the bonds as green bonds as a tool to broaden their investor base and to have more of an opportunity to tell the story of the SRF and the projects being funded, helping to differentiate the bonds from the rest of the municipal market.

Massachusetts followed the four voluntary Green Bond Principles in writing its Official Statement:

- Use of Proceeds: A description of each of the projects that will receive bond proceeds.
- Project Evaluation and Selection Process: Document describes SRF process, such as priority setting and engineering review.
- Management of Proceeds.
- Post-Issuance Reporting: Reporting on use of proceeds in the SRF Annual Reports.

The bonds marketed differently than non-green bonds. The Trust uses radio and online advertising, as well as emails, to reach individuals in Massachusetts that may be interested in purchasing bonds. In addition to working with the bond syndicate to sell the bonds through traditional means, the Trust works with a retail brokerage firm to reach individual investors.

The Trust finds that the Green Bond designation resulted in new interest from retail investors as well as other investors that have typically not shown interest in their bonds. These investors show greater interest in the specific projects being funded than the Trust saw in its previous bond issues.

The Trust has found that the process for selling green bonds was not substantially more difficult than conventional municipal bonds, and it better enabled them to tell the story of the SRF and differentiate the bonds from the rest of the municipal market.

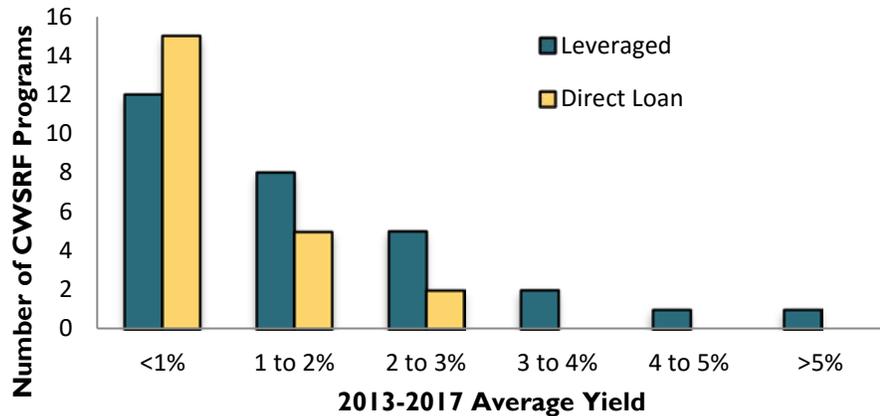
3.8 RETURNS ON FUND INVESTMENTS

SRF Objectives Effective Management of Investments

Selected Indicators Investment Yield (4.8.K)

After loan interest rates and other loan terms, the next most important area of SRF earnings comes from interest earnings on cash and investments held by the SRF. A 2011 survey by EPA’s Environmental Financial Advisory Board found that in 60 percent of states, the investment authority lay with the state Treasurer or Investment Board. The SRF Administrators are responsible for fund management in the remaining 40 percent of states, though their investment policies often incorporate state statutory language governing investment policies and procedures.⁷ SRF funds are typically invested in conservative investments such as U.S. Treasuries, money market funds, commercial paper with the highest ratings, and in-state municipals. Funds are typically maintained in short-term investments, so they are easily accessed if needed. Some states have been successful at investing funds according to their cash flow needs, with a mix of short and longer-term maturities, which can earn a higher rate of return.

Figure 8: CWSRF Average Investment Returns (FY 2013-2017)



Yields on investment returns naturally move with market rates. Since 2008, SRF investment yields have been low due to the low-interest market rate environment. As Figure 8 shows, this environment is reflected in SRF investment returns. Returns earned by leveraged states appear to generally have been higher than those earned by direct loan states between FY 2013 and 2017.

States that leverage and issue state match bonds have additional complexity relating to arbitrage. Arbitrage primarily impacts states that utilize the reserve fund leveraging model. Still, earnings on bond-funded loan accounts are limited to the yield on the bonds. Arbitrage is the difference between the interest rates on bond proceeds and the interest rates at which the proceeds are invested. Section 148 of the Internal Revenue Code requires that arbitrage earnings on tax-exempt bonds be rebated back to the government.

INCREASING INVESTMENT YIELDS

SRF Financial Managers can involve themselves in investment decisions even where the authority lies with a state Treasurer or Investment Board. In some cases, they may be maintaining funds only in short-term investments because of a lack of comprehensive understanding of program cash flows. By working closely with investment managers, SRF managers may be able to create portfolios with a mix of short

⁷ EPA Environmental Financial Advisory Board, “SRF Investment Function: Current Status and Prospects for Enhancing SRF Sustainability.” January 2011.

and long-term maturities that better reflect program cash flows. Because investments with higher maturities generally earn a higher rate of return, this can increase overall investment yields, resulting in more funds available for loans in the long term.

EVALUATION OF INVESTMENT YIELD

Investment yields should be monitored on a routine basis, typically monthly. The information required can usually be obtained from monthly investment reports. Such reports should provide basic transactional information on the investment accounts and periodic posting of interest earning and gains and losses on investments. SRF Financial Managers can review the information supplied in each report to calculate the investment yield for each major investment account group and collectively for all fund investments. This will provide an indication of the average return over the period of each account group and in total. The results can be compared to typical market rates for similar investments as reported in financial publications (e.g., Morningstar). More information on calculating investment yields can be found in Section 4.6.

When significant deviations are found between actual investment returns and market rates for comparable investments, the differences should be investigated. Low returns for a particular type of investment could indicate (but may not be limited to):

- Investment earnings are not being properly posted to an SRF account,
- There are excessive trading losses on investments,
- Investments are made in inappropriate investment vehicles, or
- Time lapses on investment deposits (uninvested funds).

While higher than expected returns are appealing, such instances should also be evaluated because they may indicate (but may not be limited to):

- A lack of understanding of the investment group,
- Inappropriate (e.g., high risk) investments that could cause problems in the future,
- Misstated financial information, or
- Higher than expected cash balances due to project delays.

Any potential investment problems can usually be corrected quickly. However, they must first be identified as problems by conducting routine investment reviews.

RISK FACTORS

Higher investment earnings can result in more funds available for loans. However, these earnings should not come at the expense of funding projects – states should still strive to maximize funding of high priority projects each year. A careful view of the risk of the investment vehicles is necessary, as even some of the vehicles that were believed to be safe saw downgrades during the 2008 financial crisis. An excess of high-risk investments could result in losses, which would diminish lending ability over time. States must therefore carefully balance the desire to improve earnings with a need to maintain low risk.

While states typically invest in short-term, liquid securities, adding longer term securities to the mix will help increase earnings on the Fund. In doing so, states should manage those investments to match cash flow needs. Over-investing in long-term securities could result in penalties if funds must be withdrawn early to meet cash flow needs. A program with a comprehensive investment policy would describe how it invests its funds and manages risk.

SPOTLIGHT: New York Clean Water and Drinking Water State Revolving Fund

The New York Environmental Facilities Corporation (EFC) implements the Clean Water SRF, and is the financial manager for the Drinking Water SRF. EFC is responsible for investments of SRF funds not actively in loans. The EFC invests SRF funds in a combination of short-term securities with maturities of less than one year and long-term securities. Investments remain in conservative vehicles, as they believe it adds a level of certainty of the interest rate subsidy that the program will be able to provide to borrowers. As of September 30, 2017, 51.2 percent of equity investments were in short-term investment vehicles, including Taxable Money Market Funds. The remaining 48.8 percent was held in municipal bond funds with a weighted average maturity of 11.51 years (NYSEFC, “Annual Information Statement”, October 1, 2017).

Overall, permitted investments include U.S. Treasury, agency or government-sponsored entity GSE obligations, direct obligations of the State of New York, federally or state-secured or guaranteed bank deposits, money market funds, and other highly-rated investments. Investment agreements or repurchase agreements must be collateralized by securities (obligations of, or guaranteed by, the U.S. Government or the State of New York and any FDIC coverage) with a fair value of not less than 102% of the amount on deposit.

The EFC’s investment strategy is set by an Investment Committee comprised of the President and CEO, Chief Financial Officer, Controller, General Counsel, and the Assistant Director of Investments.

3.9 SUSTAINABLE FUNDING LEVELS

SRF Objectives

Sufficient Staffing and Funding Capability to Administer the Program
Attain and Maintain a High Rate of Funds Utilization (“Pace”)
Ensure Timely Use of Federal and Non-Federal Funds
Sound Bond and Debt Management
Follow a CWSRF Strategic Business Plan

Selected Indicators

Executed Loans as a Percent of Funds Available (4.8.A)
Disbursements as a Percent of Executed Loans (4.8.B)
Ratio of Undisbursed Project Funds to Disbursements (4.8.C)
Sustainability as a Percent of Contributed Capital (4.8.E)
Loans Outstanding as a Percent of Total Assets (4.8.H)
Net Interest Margin (4.8.L)
Return on Net Position (4.8.M)
Operating Net (4.8.O)
Total Net (4.8.P)
Debt to Net Position (4.8.Q)
Debt to Performing Assets (4.8.R)

A valuable benchmark for an SRF is the sustainable funding level that the program can achieve – that is, the amount of funding that the SRF can provide each year. The establishment of funding levels is more than simply the sum of capitalization grant, state match, repayments, transfers, and bonds (if issued). Other factors, such as interest rates, loan terms, investment earnings, portfolio make-up, set-asides (DWSRF), and administrative funding all impact a program’s funding levels.

Maintaining an SRF program where funding levels are sustainable will help the program achieve several financial objectives. SRF regulations require that Fund balances must be available in perpetuity (CWSRF Regulations Section 35.3115 and DWSRF Regulations Section 35.3500). Certain new policies, such as 30-year financing and principal forgiveness requirements may initially cause a decline in these levels, but states should manage these options to limit the negative impacts. Using financial planning, SRF managers can estimate what the sustainable funding levels will be over time based on current and anticipated assumptions, such as demand, loan terms, capitalization levels, and leveraging.

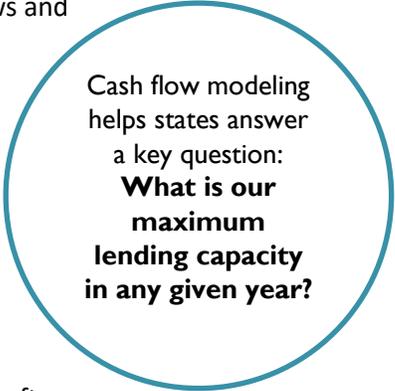
The majority of the indicators and metrics identified in Chapter 4 will help inform whether a state is setting sustainable funding levels and operating its program in perpetuity. To be most effective, these metrics should be evaluated over time utilizing a trend analysis. Cash flow modeling is also a key factor in helping the state determine whether it is making the right decisions today to protect the long-term health and perpetuity of the SRF.

SETTING FUNDING LEVELS

Each year, states make decisions on how much funding they can provide to projects. The goal should be to develop an approach for achieving sustainable funding levels that match the demand for funds. Achieving this balance requires cash flow modeling. Cash flow modeling helps inform states of the fund impacts of their decisions: set the interest rate too low and demand may be high but sustainability low, but set the interest rate too high and demand and sustainability may be low. A good time to do this exercise is at the beginning of the SRF funding cycle, as the state establishes financing policies, updates its strategic plan, and begins receiving pre-applications.

CASH FLOW MODELING

Revolving funds are dynamic and require the active balancing of cash inflows and outflows. By using cash flow models to maximize lending, states can optimize public health and environmental protection. Cash flow models are essential tools for effective SRF fund management to establish sustainable funding levels and to ensure cash balances remain at a reasonable level. Cash flow modeling will help states improve planning efforts, predict the availability of funds, develop better funding lists, evaluate loan terms, and assess leveraging needs. While many states utilize financial advisors for cash flow modeling, models that can be operated by SRF staff can help the state better evaluate financial options and assist in decision-making. Cash flow models can be complex or reasonably simple, and effective cash flow models can be built using Microsoft Excel or similarly widely-available software.



Cash flow modeling helps states answer a key question:
What is our maximum lending capacity in any given year?

There are several components to a sound cash flow model, including, but not limited to:

- **A pipeline of projects:** Includes all the projects that are ready to proceed or are currently developing an SRF application for funding in the next 1-3 years. Illinois keeps a comprehensive project pipeline whereby staff regularly contacts project sponsors to discuss when they plan to proceed to construction. Using historic disbursement patterns by project size, Illinois is able to model how quickly they will disburse funds to those projects and when they will receive repayments.
- **Capitalization grant assumptions:** Many states take a conservative approach to planning for capitalization grants.

- Disbursement and repayment assumptions: Over time, a state may identify trends in the pace of disbursements across different project types or sizes. It also informs repayments on loans. These average disbursement trends and repayment projections, in combination with the project pipeline, can give the state a picture of cash flowing into and out of the program.
- Fungibility: Any CWSRF or DWSRF source (except set-asides) can be used to pay for any eligible expense. For instance, principal forgiveness loans can be paid from any CWSRF or DWSRF loan funds and project financing is not tied to specific capitalization grants or other funding sources. The principles of fungibility; first-in, first-out; and equivalency greatly simplify cash flow modeling.
- Other assumptions: States will be required to develop assumptions for interest rates, loan terms, future loan volume (outside the pipeline), bond rates, administrative funds, and more.
- Discount rate: The discount rate is used to calculate the present value of future cash flows, therefore taking the effects of inflation into account in longer-term models (see Section 4.4 for more information on discount rates).

Using a cash flow model, states can run scenarios to answer questions about future SRF lending. For example, they can consider how their capacity would change without capitalization grants, with changes in interest rates, or with increased leveraging. Using these scenarios, states can evaluate how their decisions may impact the financial conditions and cash balances of their program in the short and long term, and the impact that they have on sustainable funding levels. A state can identify what cash balance levels it is comfortable with (e.g., 6 months of average disbursements) and determine the corresponding lending and leveraging capacity.

RISK ANALYSIS

States that do not engage in cash flow planning may put their programs at risk. Without cash flow modeling, states cannot establish a long-term sustainable funding level. This could lead to over-commitment of funds, which could reduce the funds available for projects in the long term, or it could lead to under-commitment, resulting in unspent federal, recycled, or bond funds and high cash balances. Modeling is also necessary to analyze the potential impacts of different loan terms, subsidies, portfolio structures, and capitalization grant levels. Leveraged states must use cash flow planning to determine when and how much to leverage, and to ensure leveraging does not negatively impact asset growth in the long term.

Planning is also necessary in order to manage program demand. Demand management includes decisions on outreach and where and how to draw funding lines. It can also include working closely with large borrowers to ensure a stable source of demand over a number of years, which can help a program maintain sustainable funding levels.

Strategic planning and sustainable funding levels go hand-in-hand. Without a strategic planning effort, it is difficult to identify priorities and manage contingencies, therefore making it difficult to maintain a sustainable funding level in the long term. Without such planning efforts, a state may only fund projects that come to them for funding rather than pursuing projects that could have the greatest impact on water quality or public health, or they may charge an interest rate so low that it impedes the growth of the program.

SPOTLIGHT: Illinois FOCUS Cash Flow Model

Illinois developed the FOCUS (Financial Oversight and Cash-Flow Utilization in the SRF) model to evaluate 30 year cash flows. The model uses data from their SRF Loan and Grants Tracking System (LGTS) to obtain real-time repayments and disbursements on existing projects. Illinois also closely tracks projects developing SRF applications. Using the expected construction start dates provided by applicants (and updated throughout the year by SRF staff) as well as historic disbursement patterns, they are able to estimate outlays and repayments for projects expected to go to construction within the next one to three years. Finally, the State uses estimated loan volumes for up to thirty (30) years. FOCUS also tracks fee income and uses. The model enables Illinois to make assumptions on annual loan terms, discount rates, bond rates, capitalization grants, and DWSRF set-aside uses.

Implemented in 2014, Illinois has been using FOCUS to estimate annual loan commitments and plan for leveraging. A very high demand state, Illinois is keen on funding as many projects as possible within its leveraged bond issuance capabilities. Using FOCUS, the state is able to more precisely estimate the funds available for loans and anticipate when leveraged bond cash flows will be needed. The model also allows them to adopt an advanced loan commitment model. The model includes financial indicators and charts which enables them to obtain a quick overview of the Fund's health and allow for easier presentation to management. It also facilitates discussions with the program's financial advisors as they discuss leveraging strategies.

SPOTLIGHT: Minnesota Capacity Model

Minnesota uses a capacity model to determine the fundable range on its project priority list and determine the long-term lending capacity of its program under various scenarios. Minnesota uses the financial model to determine the sustainable lending capacity each year, and establishes a fundable range in its Intended Use Plan that is 2 to 3 times that amount. This is based on historical experience that fewer than half of the projects in the fundable range actually sign a loan agreement by the end of the fiscal year. For placement on the IUP, the entity must have all the planning work completed, but loans are not signed until the project is bid and ready to start construction.

Minnesota considers four primary scenarios in its modeling effort:

- Baseline lending capacity without new capitalization grants;
- Sustainable capacity with conservative assumptions of future grants;
- Expected lending volume for the upcoming year
- Lending at the high end of the possible volume for the upcoming year

For each scenario, the state considers the lending amount for the current year and the long-term annual capacity. Therefore, Minnesota knows what the impact would be if more projects proceed to construction than expected. In addition, they are able to use this modeling to show the state legislature what the impact of the 20% matching funds have on lending capacity.

The establishment of a long-term sustainable funding level also helps potential borrowers plan ahead. The cash flow model gives Minnesota's CWSRF the ability to utilize a programmatic lending approach with its largest borrower, Met Council (Twin Cities) (as explained further in Section 3.2) because it can forecast the sustainable lending capacity long-term.

Figure 9: SRF Program Objectives vs. SRF Fund Management

The following table shows how the SRF fund management topics discussed in Chapter 3 intersect with the SRF program objectives laid out in Chapter 1. Effective management of program funds is essential to the effective operations of an SRF program.

		Fund Management Issues (Chapter 3)								
		3.1 Setting loan terms	3.2 Fund resource utilization	3.3 Administrative resources	3.4 Fees	3.5 Loan portfolio management	3.6 State match bonds	3.7 Leveraging	3.8 Returns on Fund investments	3.9 Sustainable funding levels
Program Objectives (Chapter 1)	1.1 Sufficient staffing			○	○			○		○
	1.2 Timely use of funds	○	○					○		○
	1.3 High rate of funds utilization	○	○					○		○
	1.4 Effective oversight			○		○				
	1.5 Sound debt management	○					○	○		○
	1.6 Use of fee revenues and administrative funds	○		○	○					
	1.7 Effective management of investments								○	
	1.8 Sound accounting and reporting			○						
	1.9 Strategic business plan	○	○	○		○				○

CHAPTER 4. ANALYTICAL TOOLS, TECHNIQUES AND INDICATORS

This chapter provides a discussion of the analytical tools and techniques that were identified earlier in this Handbook and are commonly used in support of SRF fund management.

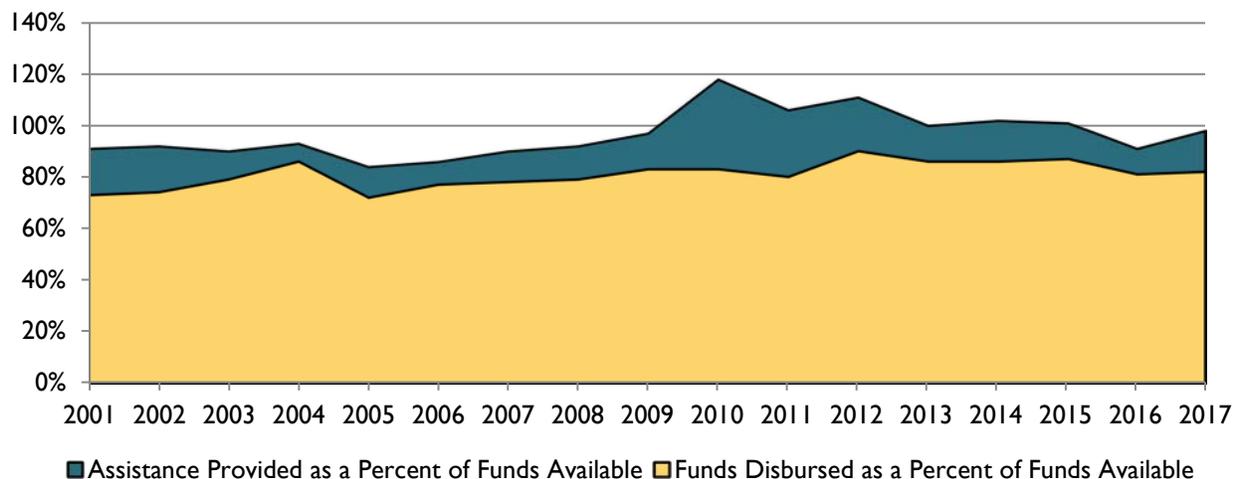
4.1 TREND ANALYSIS

Trend analysis is a key element of effective SRF fund management and oversight. Many of the indicators and metrics discussed in this report look at a moment in time. By considering trends over a five or ten year period, financial managers and analysts can consider how the picture has changed over time. This can give a view as to whether various policies have been effective, how the addition of certain requirements impact loan demand, and what changes may be necessary to preserve the Fund in perpetuity.

Both NIMS (National Information Management Systems) data and other financial measures should be used in the trend analysis. Any of the measures described in this chapter can be used for trend analysis using information from financial statements. At least one EPA Regional Office maintains tracking spreadsheets with key financial data from its states (gleaned from audit reports) to track trends over time.

Figure 10 illustrates a possible analysis of a state's lending. The chart compares assistance provided to funds disbursed as a percent of funds available. This state has regularly committed more than 100% of funds available (using advanced loan commitment). A large difference between commitments and disbursements would indicate that project commitments may be made too early in the project process or that borrowers are not regularly submitting disbursement requests. This state appears to have reduced the difference between commitments and disbursements from the high point in 2010-2011.

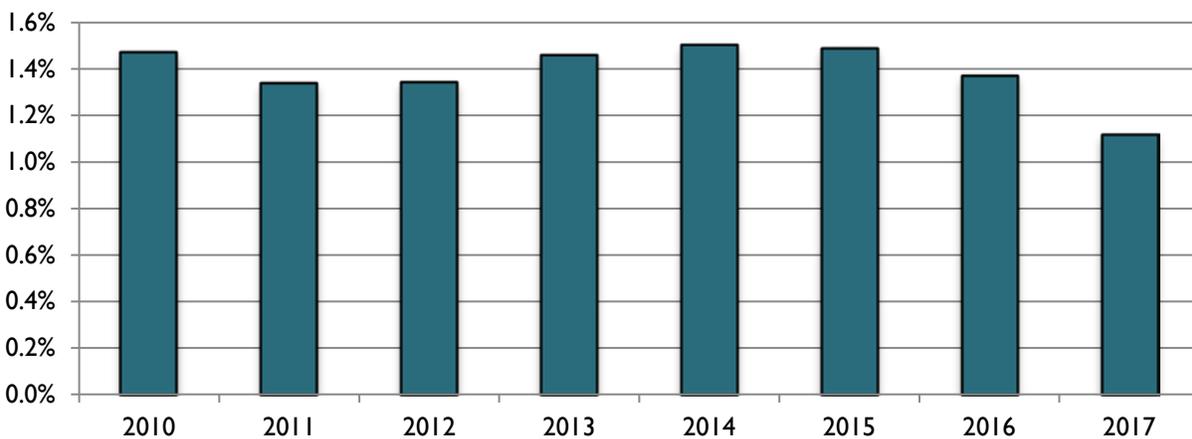
Figure 10: Assistance Provided vs. Disbursed in a State CWSRF



Cash flow modeling helps financial analysts look ahead into the future. Trend analysis can play a beneficial role here, as well. For instance, a state with high demand considering a significant amount of leveraging long-term could look at indicators such as Total Net and Operating Net going forward to analyze what impact their decisions have on Fund perpetuity.

An example of an analysis utilizing financial statements is trends in Net Interest Margin. Net Interest Margin indicates whether the program has positive or negative earnings from its basic operations, and is calculated using interest revenues, interest expenses, and total assets. High net interest margin indicates the program is growing because interest revenues exceed expenses. Figure 11 shows the trends in Net Interest Margin in a leveraged state. This chart shows that the Net Interest Margin has remained positive and remained approximately level over time. A strong decline in this metric could indicate that changes in operating practices may be necessary, such as decreasing leveraging activity or increasing interest earnings.

Figure 11: Trends in Net Interest Margin in a State SRF



4.2 CASH FLOW MODELING AND FINANCIAL PLANNING

Effective SRF financial management and oversight requires a certain level of cash flow modeling. The complexity and size of SRF programs speaks to the need for states to engage in comprehensive cash flow modeling. Projecting the financial activity of an SRF requires key assumptions about capitalization, the use of funds, investments, loan interest rates and repayment terms, use of debt, and retained earnings. Typically presented as year-by-year financial projections over a time horizon of 10 or more years, cash flow modeling assists states both in short- and long-term planning. For example, it can help identify loan capacity for the next year, but also demonstrate the long-term impacts of extending loan terms. Cash flow modeling and financial planning is an ongoing process that requires periodic updating to reflect actual program operations and current market conditions.

SRF financial projections require year-by-year (or sometimes month by month) calculation of the inflows and outflows of funds. The primary inflows of funds are federal and state capital, bond proceeds, interest income from loans and investments, fees, and loan principal repayment. The primary outflows are loan disbursements, administrative expenses, interest expense, bond issuance cost, and principal repayment on bonds. SRF financial analysts will have to make critical assumptions about each of these factors in the development of cash flow models. It is beneficial to conduct a sensitivity analysis to

understand how great the impact of certain changes in the assumptions would be on program cash flows.

EPA's Financial Planning Model was developed to aid in this effort. The Planning Model is updated annually with NIMS data and distributed at the fall Council of Infrastructure Financing Authorities (CIFA) conference. Many states have implemented their own cash flow or capacity models adapted for their own program's specific structure and needs.

Refer to Section 3.9 for more information on the role of cash flow modeling in SRF Fund management.

4.3 ROLE OF AUDITING/ACCOUNTING IN FINANCIAL MANAGEMENT

To effectively monitor the financial side of the SRF program, managers must have timely and reliable financial information available that thoroughly covers the essential areas of their program. Annual audits are required by CWSRF and DWSRF regulations. An SRF financial audit is conducted to provide an opinion on whether the financial statements are stated in accordance with accounting principles generally accepted in the United States, and that they are presented fairly, in all material respects. An audit opinion – other than an unqualified or unmodified opinion – needs to be addressed as well as any audit findings.

SRF programs are considered “Enterprise Funds” by the Governmental Accounting Standards Board (GASB). Enterprise funds are established to account for operations that are financed and operated in a manner similar to private business enterprise. GASB Statement No. 34, *Basic Financial Statements – and Management’s Discussion and Analysis – for State and Local Governments* establishes financial reporting standards for state and local governments, including SRF programs.

SRF programs use the accrual basis of accounting whereby revenue is recognized when it is earned and expenses are recognized when the liability is incurred.

Audits are not just important to ensure that an SRF is accurately reporting its financial position, but it can also be an important Fund management tool. Many of the ratios calculated later in this Chapter use data from audited financial statements. A best practice is to track key financial metrics, such as Net Position, from the financial statements from year to year to identify trends.

Important SRF Audit Resources

- Title 2 Part 200 Subpart F, Cost Principles, Audit, and Administrative Requirements for Federal Awards
- EPA Audit Guide for Clean Water And Drinking Water State Revolving Fund Programs (September 2002)
- SRF SOP, “Compliance with Audit Requirements”

4.4 TODAY'S DOLLARS OR PRESENT VALUE (CONSTANT DOLLARS)

Definition Dollars received today have a different monetary value than dollars received in the future or the past due to two factors: inflation and the time preference of money or risk associated with receiving money now versus at another point in time. In order to perform valid analyses, a dollar received in the past or future must be adjusted to

reflect its value in today's dollars. This adjustment is commonly referred to as calculating the present value of past or future dollars.

Calculation Today's dollars or present value is calculated by first identifying the dollar amount of each payment and the date when the payment will be made. The payment amount is then discounted over the time period from the date of the payment to the present using the cost of capital or borrowing rate for the entity receiving the payment (also referred to as the discount rate). Multiple future and/or past payments can each be discounted to their present value and added together to compute the total present value of a series of payments or cash flows received in the past or future.
Present value (PV) = $PMT_1/(1+i)^{n_1} + PMT_2/(1+i)^{n_2} + PMT_3/(1+i)^{n_3} + \dots$
 PMT_1 = future or past value of the first identified payment
 i = periodic discount rate or cost of capital, usually current borrowing interest rate
 n = number of compounding periods from the present at interest rate i (time periods must be consistent with the periodic interest rate). Positive values of n represent future periods and negative values represent past period.

Illustrative Usage Payment of \$1,000 in 2 years. Current borrowing rate of 4.5% per year.
Present value (PV) = $\$1,000/(1+0.045)^2 = \$1,000/1.0920 = \$915.73$

Illustrative Usage Payment of \$1,000 in 2 years and \$500 received 3 years ago. Current borrowing rate of 4% per year.
Present value (PV) = $\$1,000/(1+0.04)^2 + \$500/(1+0.04)^{-3} = \$924.56 + \$562.43 = \$1,486.99$

4.5 GRANT EQUIVALENCY

Definition The equivalent value of SRF or other subsidized financial assistance as if it is received as a direct grant. The grant equivalency is the benefit received by a borrower resulting from financing project costs at a below-market interest rate. In other words, an SRF loan at a below-market interest rate can be considered equal to a partial grant and partial market-rate loan. *Note: this is not related to the equivalency concept that applies to Federal requirements, whereby certain Federal requirements only apply in the amount equal to the Federal capitalization grant.*

Calculation Grant equivalency is calculated by computing the present value cost (see 4.4) of each financing option using the current market cost of borrowing as the discount rate. The percentage difference between the present value (PV) of each option is the grant equivalent amount.

Grant equivalency = $100 * (PV \text{ of Option A} - PV \text{ of Option B}) / PV \text{ of Option A}$

Illustrative Usage Project cost of \$1,000,000
Option A: Financing at Current Market Rates
Market rate: 4%
Annual level debt service over 20 years: \$73,582
Present value cost at 4% is \$1,000,000

Option B: Borrowing from an SRF

SRF rate: 2%

Annual level debt service over 20 years: \$61,157

Present value cost at 4% is \$831,140

Calculation of PV: $(61,157/(1+4\%)^1 + 61,157/(1+4\%)^2 + \dots + 61,157/(1+4\%)^{20})$

Grant equivalency = $((\$1,000,000 - \$831,140)/\$1,000,000) * 100 = 16.9\%$

Figure 12: Grant Equivalence Reference Table

		SRF Rate				
		0.0%	1.0%	2.0%	3.0%	4.0%
Market Rate	4.0%	47%	25%	17%	9%	0%
	5.0%	38%	31%	24%	16%	8%
	6.0%	43%	36%	30%	23%	16%
	7.0%	47%	41%	35%	29%	22%

4.6 INVESTMENT RETURN

Definition The total return received on an investment over a finite period of time. The calculation must account for all earnings, gains, losses and expenses that are directly attributable to the investment. Investment returns must account for new investments and withdrawals from accounts that are independent of investment returns.

Calculation Investment return is the net change in the value of an investment from the start of a period to the end of a period, accounting for all financial activity attributable to the investment. The investment return is expressed as a percentage of the investment value at the start of the period.

$$\text{Investment Return} = 100 * (\text{EV} - \text{BV} + \text{E} - \text{X}) / \text{BV}$$

EV = ending value of the investment or group of investments that corresponds directly to the investment(s) at the start of the period (i.e., proper adjustments for deposits and withdrawals)

BV = beginning value of the investment or group of investments at the start of the period

E = all earnings properly allocated to an investment(s) that are not reinvested (not included in EV)

X = all expenses properly allocated to an investment(s) that are not deducted directly from the investment(s) (not included in EV)

Illustrative Usage Investment of \$1,000 at the start of the year.
 Investment is worth \$990 at the end of the year.
 Interest earned from the investment for the year, but not reinvested, is \$79.
 Investment advisory fees allocated to the investment, but not deducted from the investment, for the year is \$24.

$$\begin{aligned} \text{Annual Investment Return} &= \frac{100 * (\$990 - \$1,000 + \$79 - \$24)}{\$1,000} \\ &= \frac{100 * \$45}{\$1,000} = 4.5\% \end{aligned}$$

4.7 LOAN PORTFOLIO ANALYSIS

Definition Loan portfolio analysis consists of segmenting an SRF’s loan portfolio by the credit quality of the borrowers. Such analysis is used to evaluate the credit quality of a loan portfolio and, therefore, the financial risk an SRF faces for loan repayment.

Calculation Each loan recipient must be categorized by credit condition or financial capability. The dollar amount of loans outstanding are then grouped by the available categories to calculate the proportion of loan dollars in each category. Bond ratings provide a convenient set of categories to measure credit condition. However, many SRF loan recipients may be unrated. SRFs can categorize loan recipients into ranges of financial capability from strongest to weakest based on their financial capability reviews.

Illustrative Usage Total SRF loans outstanding of \$5,800

Financial Capability	Loan Amount	Percent of Total
Strong	\$1,500	25.9%
Above Average	\$2,300	39.7%
Average	\$1,400	24.1%
Below Average	\$600	10.3%
Weak	\$0	0.0%
Total	\$5,800	100.0%

Over 65 percent of the loan portfolio is rated above average or higher, and almost 90 percent is average or above, indicating a financially strong loan portfolio.

4.8 KEY FINANCIAL INDICATORS

NIMS reports include various indicators and metrics that help tell a story about an SRF’s financial performance. They do not tell the whole story, however, and EPA and states can gain a deeper understanding of an SRF’s performance by delving into additional ratios and metrics using financial statements and other resources. As explained in Section 4.1, these measures and indicators should be reviewed over time to identify positive or negative trends in performance.

Figure 13 arrays each of the metrics against a sampling of specific fund management questions. The table indicates how these metrics can be used to answer specific questions about the management of a state SRF program. The questions are only a sample of the types of issues that these metrics can help analyze. Those metrics that apply only to leveraged states are indicated in the table and in the text.

NIMS reports include both annual and cumulative data. Due to year-to-year variations in program cash flows, cumulative figures are typically more informative, and are therefore generally utilized in the analysis. The other financial measures identified in this section are based on commonly used financial analysis techniques used to assess the financial performance of self-supporting entities.

Whenever possible, benchmark data is provided. Where national data is provided as a benchmark, it should be noted that that includes both leveraged and direct loan states, so the numbers may not always line up perfectly. As a result, it is a good practice to compare the state with other similar states. However, all SRF programs are structured differently, so care must be taken when comparing SRF programs to each other or national data.

Figure 13: Fund Management Questions and Potential Metrics

	All States														Leveraged States					DWSRF			
	Executed Loans as a Percent of Funds Available	Disbursements as a Percent of Executed Loans	Ratio of Undisbursed Loan Funds to Disbursements	Federal Return on Investment	Sustainability as a Percent of Contributed Capital	Unliquidated Obligations as a % of Grant Award	Undisbursed Loan Assistance Liability	Loans Outstanding as a % of Total Assets	Loan Principal Repaid as a % of Loans Outstanding	Delinquency Ratio	Investment Yield	Net Interest Margin	Return on Net Position	Current Ratio	Operating Net	Total Net	Debt to Net Position	Debt to Performing Assets	DSR as a % of Bonds Outstanding	Debt Service Coverage	Interest Coverage Ratio	Debt Rating	Set-Aside Spending Rate
1	Is the Fund growing over time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>						<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>								
2	Should loan terms be adjusted?	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>		
3	Does the fund receive adequate return on investment?				<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>		
4	Are fund resources being utilized effectively?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>								<input type="radio"/>
5	Does the fund have a sound loan portfolio?							<input type="radio"/>	<input type="radio"/>														
6	Is sufficient project assistance being made available?	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>													
7	Does the fund have sufficient administrative resources?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>														<input type="radio"/>
8	Should the fund leverage/continue to leverage?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
9	What impact will borrowing for state match have on the fund?				<input type="radio"/>						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
10	What impact will set-asides or capitalization grant transfers have on the program?					<input type="radio"/>		<input type="radio"/>								<input type="radio"/>	<input type="radio"/>						<input type="radio"/>
11	What is the sustainable funding level of the program?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>		

4.8.A. ASSISTANCE (EXECUTED LOANS) AS A PERCENT OF FUNDS AVAILABLE

Definition This indicator is commonly referred to as “pace” and it measures how well the state is putting its available funds into loans. In NIMS, “CWSRF/DWSRF Assistance” and “Executed Loans” are the same. Assistance includes loans, pass-through and linked-deposit loans, refinancing, guarantees, and sub-state revolving funds.

Calculation
$$\frac{\text{Cumulative Assistance}}{\text{Cumulative Funds Available for Projects}} * 100$$

Source NIMS

Illustrative Usage States should target pace levels near or above 100 percent. States that are lagging in this measure, or have declining pace levels, may need to review loan policies and procedures, and outreach techniques. Nationally, pace was 98 percent for the CWSRF and 96 percent for the DWSRF in 2017 (cumulative). States with pace levels greater than 100 percent are generally practicing advanced loan commitment. Pace does not measure how quickly funds are disbursed once the loan agreement has been signed.

4.8.B. DISBURSEMENTS AS A PERCENT OF EXECUTED LOANS

Definition This measure provides some insight on how quickly states are disbursing funds to projects.

Calculation
$$\frac{\text{Cumulative Project Assistance Disbursed}}{\text{Cumulative Assistance Provided}} * 100$$

Source NIMS

Illustrative Usage When loans are signed, it is important that those funds are disbursed in an expeditious manner. If loan agreements are signed while a project is still in the planning phase, it may take several months or even years before construction starts and the majority of loan funds are disbursed. Where funds are disbursed more quickly, repayments start sooner and the funds revolve more quickly in the program. Pace only measures how funds are put into loans, but not how they are expended. Nationally, this figure was 87 percent for both the CWSRF and the DWSRF in 2017 (cumulative).

4.8.C. RATIO OF UNDISBURSED PROJECT FUNDS TO DISBURSEMENTS

Definition This measure provides some insight on how efficiently SRF funds are revolving by examining a program’s disbursement rate over time and comparing it to cash on hand.

Calculation
$$\frac{\text{Undisbursed Project Funds}}{\text{3-Year Average Annual Disbursements}} * 100$$

Source NIMS. Undisbursed Project Funds = Total Funds Available – Total Disbursements
3-Year Average Annual Disbursements = Sum of past 3 years of annual disbursements, divided by 3.

Illustrative Usage SRF programs must balance cash inflows and outflows. This ratio measures how efficiently a program is able to disburse funds. A high figure could indicate that the state has significant cash on hand and may not be revolving funds through the program quickly. A low figure could indicate that the state is efficiently disbursing available funds.

4.8.D. FEDERAL RETURN ON INVESTMENT

Definition The federal return on investment indicates reflects how successful SRF programs have been at turning capitalization grants into loans that revolve and earn interest.

Calculation
$$\frac{\text{Cumulative Project Assistance Disbursed}}{\text{Cumulative Outlays}} * 100$$

Source NIMS

Illustrative Usage As funds revolve through the SRF, every dollar in federal capitalization can be turned into more than one dollar in loans. Repayments are reloaned to new projects and bonds are issued with the backing of existing assets to allow for even more projects to be constructed, resulting in a program that with proper management will continue to grow in perpetuity. The Federal Return on Investment is an indicator of how well the program is operating from the perspective of each federal dollar invested. Nationally, the Federal Return on Investment was 272 percent for the CWSRF and 187.1 percent for the DWSRF in 2017 (cumulative), indicating that \$1 of federal funds invested in the program has resulted in \$2.72 or \$1.87 in projects in the CWSRF and DWSRF, respectively.

4.8.E. SUSTAINABILITY AS A PERCENT OF CONTRIBUTED CAPITAL (EXCLUDES SUBSIDY)

Definition Sustainability is an indicator of perpetuity, and may be referred to as “retained earnings.” It reflects the earnings of the program as a function of new funds coming in.

Calculation
$$\frac{\text{Loan Interest} + \text{Investment Interest} - \text{Interest on Bonds} - \text{Match Bond Principal Repaid}}{\text{Federal Contributions Adj. for Transfers} + \text{State Contributions} - \text{Total Cumulative Subsidy}} * 100$$

Source NIMS

Illustrative Usage Negative sustainability indicates that funds being used for interest on bonds and state match repayments exceed the interest earnings on the funds. Additional subsidies required since 2009 also put pressure on the earnings of the program. States with consistently negative sustainability may not be growing. The indicator does not reflect the eroding effect of inflation, which can exacerbate the impact.

States that do not leverage or issue state match bonds will generally not have negative sustainability.

4.8.F. UNLIQUIDATED OBLIGATIONS AS A PERCENT OF GRANT AWARDS

Definition	Unliquidated obligations (ULO) are a measure of how quickly the state is drawing Federal funds.
Calculation	$\frac{\text{Undrawn Federal Grant Funds}}{\text{Total Grant Awards}} * 100$
Source	Data on awarded and drawn Federal grant funds are found in COMPASS
Illustrative Usage	ULOs are an important focus at EPA. High levels of ULOs indicate to outside parties that the SRF funds may not be needed, which could result in lower or complete elimination of appropriations. If there are open grants going back a number of years, it can also indicate that the state is not using the First-In, First-Out (FIFO) method of cash draw, whereby funds are drawn from the oldest grants first. EPA's goal is that all but two of the most current capitalization grants be fully drawn and closed out.

4.8.G. UNDISBURSED LOAN ASSISTANCE LIABILITY

Definition	This indicator measures whether the state is placing all currently available resources in assistance agreements and is in compliance with the timely and expeditious use requirement.
Calculation	$\frac{\text{Cumulative Assistance} - \text{Cumulative Project Assistance Disbursed}}{\text{Total Current Assets}} * 100$
Source	Assistance and disbursement data is found in NIMS Total Current Assets is found in the Statement of Net Position
Illustrative Usage	<p>When this measure is 100%, it indicates that the outstanding amount in loan agreements exactly equal currently available (cash and other easily accessible) resources. If the measure is below 100%, the state is not committing all available resources to loans. If the measure is above 100%, the program is making advanced loan commitments, whereby it signs loan agreements in anticipation of the receipt of additional funds through repayments or bonds. SRF programs should show a figure near or above 100%.</p> <p>A state with a high percentage of undisbursed liabilities could have a ULO problem or be building up a large amount of repayment funds. This could indicate, for instance, that the state is committing funds too early in the project design process, and that the funds are not being used efficiently.</p>

4.8.H. LOANS OUTSTANDING AS A PERCENT OF TOTAL ASSETS

Definition	The proportion of available fund resources that are in outstanding loans.
Calculation	$\frac{\text{Loans Outstanding (Current and Noncurrent)}}{\text{Total Assets} - \text{Debt Service Reserve}} * 100$
Source	All information can be found in the Statement of Net Position
Illustrative Usage	The largest share of the Total Assets should be in Loans Outstanding (Current and Noncurrent) as issuing loans is the primary purpose of the SRF. A high figure indicates almost all available resources are being put into loans. A low or

declining figure indicates that the fund is being underutilized and that measures should be taken to increase demand or speed up the application process, for example. Nationally, this figure was 79% for the CWSRF and 70% for the DWSRF at the end of FY 2017.

4.8.I. LOAN PRINCIPAL REPAYED AS A PERCENT OF LOANS OUTSTANDING

Definition Indicator of the rate at which funds are being repaid, and therefore, are available to revolve into new loans.

Calculation
$$\frac{\text{Loan Principal Repaid}}{\left(\frac{\text{Loans Outstanding (Beginning of Year)} + \text{Loans Outstanding (End of Year)}}{2}\right)} * 100$$

Source Loan Principal Repaid: Statement of Cash Flows
Loans Outstanding (Current and Noncurrent): Statement of Net Position

Illustrative Usage A mature loan portfolio with primarily 20 year loans that are repaid in level payments each year will repayments of 9 to 10 percent of the outstanding loan balance each year. Shorter loan maturities will increase the percentage of loan principal repaid; this indicates that the program is revolving rapidly. On the other hand, programs with more twenty to thirty year loans will have lower percentages. Nationally, this figure was 7.6% for the CWSRF and 7.4% for the DWSRF at the end of FY 2017.

4.8.J. DELINQUENCY RATIO

Definition Loans are delinquent when they do not make their debt service payments on time. Typically a payment that is 15 or 30 days beyond the due date is considered delinquent. The timing is defined by the state.

Calculation
$$\frac{\text{Delinquent Loans}}{\left(\frac{\text{Loans Receivable (Beginning of Year)} + \text{Loans Receivable (End of Year)}}{2}\right)} * 100$$

Source Delinquent loans: Delinquent loan amounts should be included in the audit and Annual Report
Loans Receivable (beginning and end of year): Statement of Net Position

Illustrative Usage Delinquent loans can cause problems in a portfolio, particularly if the program is leveraged. Delinquent loans can pose financial risk and result in liquidity problems, as cash is not coming in at the expected rate. Delinquencies are rare in the SRF, but if the state has multiple delinquencies in a year, a review of the financial capability review and loan oversight procedures may be necessary.

4.8.K. INVESTMENT YIELD

Definition The rate of return on investments is an indicator of the reasonableness of investment earnings. Together with loan interest earnings, investment earnings are the main sources of income for the SRF and play an important role in allowing the SRF to provide loan subsidies.

Calculation
$$\frac{\text{Investment Income}}{\left(\frac{\text{Cash \& Equivalents} + \text{Debt Service Reserve (Beginning of Year and End of Year)}}{2}\right)} * 100$$

Source	Investment Income: Statement of Revenues, Expenses and Change in Net Position Cash and Equivalents and Debt Service Reserve: Statement of Net Position
Illustrative Usage	Very low investment yields may indicate that funds are not being invested in a way that maximizes returns while ensuring funds are needed for cash flows. In such cases, more active management can benefit the program. At the same time, SRF funds should not be invested in high-risk investments. Investment yields can be compared to other states and evaluated by the type of investment to determine if they are appropriate.

4.8.L. NET INTEREST MARGIN

Definition	This measure is an indicator of the net earning potential of the SRF. The net interest earnings of the SRF directly impacts the program's growth.
Calculation	$\frac{\text{Interest Revenue} - \text{Interest Expense}}{\frac{\text{Total Assets (Beginning of Year)} + \text{Total Assets (End of Year)}}{2}} * 100$
Source	Interest revenues and expenses: Statement of Revenues, Expenses and Change in Net Position. Includes interest from loans, investments and bonds Total Assets (beginning and end of year): Statement of Net Position
Illustrative Usage	A positive value indicates that the CWSRF has positive earnings from its basic operations. High net interest margin indicates the program is growing more quickly. A negative figure indicates that interest expenses on bonds are greater than interest earnings, which can result in declining net position. Nationally, this figure was 0.5% for the CWSRF and 0.9% for the DWSRF at the end of FY 2017.

4.8.M. RETURN ON NET POSITION

Definition	The Return on Net Position is an indicator of the financial performance of the SRF.
Calculation	$\frac{\text{Change in Net Position}}{\text{Net Position (Beginning of Year)}} * 100$
Source	Statement of Revenues, Expenses and Change in Net Position
Illustrative Usage	A positive return on net position indicates that the SRF is growing and has positive earnings. A negative return on net position indicates that the Fund is being eroded because the program's expenses are greater than revenues, even after Federal capitalization and state match are included. The largest expenditures in the SRF are typically bond interest expense and additional subsidy provided; reducing these expenses can help increase the return on net position.

4.8.N. CURRENT RATIO

Definition	This ratio is an indicator of whether the SRF has sufficient funds available in the near term to cover short-term liabilities. It is a measure of the program's liquidity.
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Calculation	$\frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$ Total Current Assets includes cash and equivalents, current loan receivables, current investments, and other current receivables. Total Current Liabilities includes current bonds payable, current interest payable and other current liabilities.
Source	Statement of Net Position
Illustrative Usage	The current ratio represents the state's ability to cover its short term costs. If this figure is below 1, it indicates that the program does not have sufficient liquid funds available to cover its bills in the short term, indicating that it could go into insolvency. Generally, a buffer is added to get a ratio of at least 1.5.

4.8.O. OPERATING NET

Definition	Operating Net is a measure of the growth of the fund from operating activities.
Calculation	$\text{Loan Interest} + \text{Investment Interest} - \text{Match Bonds Repaid} - \text{Bond Interest Expense} + \text{Interest Paid from Capitalized Interest Account}$
Source	NIMS
Illustrative Usage	Operating Net is the earnings of the Fund after match bond expenses are paid – it is the growth of the Fund prior to the addition of capitalization grants, match, and leveraged bonds. Programs with little or no Operating Net are not growing financially, and may be losing value once inflation is factored in. High levels of operating net indicate that the program is growing and could provide more assistance into the future.

4.8.P. TOTAL NET

Definition	Total Net augments the Operating Net by adding the loan principal revolving in the program. It is a measure of perpetuity and internal growth of the program.
Calculation	$\text{Operating Net} + \text{Loan Principal Repayments} - \text{Leveraged Bond Principal Repaid}$
Source	NIMS
Illustrative Usage	Total Net is an indicator of whether the SRF program is growing. If the Total Net is substantially higher than Operating Net, it indicates that the program is revolving quickly.

4.8.Q. LEVERAGED STATE: DEBT TO NET POSITION

Definition	This measure is an indicator of how leveraged an SRF program is.
Calculation	$\frac{\text{Bonds Outstanding (Current and Noncurrent)}}{(\frac{\text{Net Position (Beginning of Year)} + \text{Net Position (End of Year)}}{2})} * 100$
Source	Statement of Net Position

Illustrative Usage A state that has a high percentage of debt to net position is more leveraged, which means that it has more funds available for loans in the near term, but it also has greater liabilities.

4.8.R. LEVERAGED STATE: DEBT TO PERFORMING ASSETS

Definition This is a measurement of the amount of performing assets (assets earning interest) that are derived from borrowed funds. This is an indicator of how leveraged the state is.

Calculation
$$\frac{\text{Leveraged Bonds Outstanding}}{\text{Cash} + \text{Investments} + \text{Loans Receivable} + \text{Debt Service Reserve Fund}} * 100$$

Source Statement of Net Position

Illustrative Usage Highly leveraged programs will have a large proportion of their interest-generating assets generated from borrowed funds.

4.8.S. LEVERAGED STATE: DEBT SERVICE RESERVE AS A PERCENT OF BONDS OUTSTANDING

Definition This is an indicator of the size of the debt service reserve fund.

Calculation
$$\frac{\text{Debt Service Reserve Fund}}{\text{Leveraged Bonds Outstanding}} * 100$$

Source Statement of Net Position

Illustrative Usage A reserve fund leveraged state will have a high percentage for this measure. A cash flow leveraged program will have closer to 10 percent of outstanding debt in reserves. An increasing number of states have no debt service reserve due to high cash flows.

4.8.T. LEVERAGED STATE: DEBT SERVICE COVERAGE RATIO

Definition The debt service coverage ratio is a measure of the program's ability to meet interest and principal payments on bonds with available net earnings.

Calculation
$$\frac{\text{Change in Net Position} + \text{Bond Interest Expense} + \text{Loan Principal Repayments}}{\text{Bond Interest Expense} + \text{Bond Principal Repayments}}$$

Source Change in Net Position and Bond Interest Expense: Statement of Revenues, Expenses and Change in Net Position
Loan Principal Repayments and Bond Principal Repayments: Statement of Cash Flows

Illustrative Usage Debt service coverage ratio indicates how much cash is available after expenses are paid to cover debt service payments. A coverage ratio of 1.1 or 1.2 is typical. A ratio below 1 indicates that there aren't sufficient cash flows to make debt service payments.

4.8.U. LEVERAGED STATE: INTEREST COVERAGE RATIO

Definition The interest coverage ratio is a measure of the program's ability to meet interest payments on bonds with available net earnings.

Calculation	$\frac{\text{Change in Net Position} + \text{Bond Interest Expense}}{\text{Bond Interest Expense}}$
Source	Statement of Revenues, Expenses and Change in Net Position
Illustrative Usage	The interest coverage ratio indicates how well the SRF is able to cover interest on debt service payments. A coverage ratio of 1.2 or higher is typical.

4.8.V. LEVERAGED STATE: DEBT RATING

Definition	This is the rating assigned by the rating agencies – Standard & Poor’s, Moody’s and Fitch – to assess the relative financial risk associated with the SRF bonds.
Illustrative Usage	<p>Bonds are rated on a scale of AAA (best/least risky) to C or D (most risky). AAA, AA, A and BBB rated debt is considered “investment grade” bonds while bonds rated below that are considered “below investment grade” or “junk” bonds. The higher a bond is in the scale, the lower the interest on the bond.</p> <p>The credit rating is itself a measure of risk. A bond with a rating of BB or lower is considered high risk by rating agencies and investors, and the borrowing costs will be higher for both the SRF program and its loan recipients. A state with a low credit rating may reconsider its loan portfolio to consider whether it includes too many risky borrowers.</p>

4.8.W. DWSRF: SET-ASIDE SPENDING RATE

Definition	This is a measure of how efficiently states plan for and draw down awarded set-aside funds. It calculates the cumulative DWSRF set-aside spending as a percent of the cumulative net amount awarded for set-asides.
Calculation	$\frac{\text{Cumulative Set-Aside Activity Dollars Expended/Committed}}{\text{Cumulative Net Total Amount Awarded for Set-Asides}} * 100$
Source	NIMS
Illustrative Usage	If the set-aside spending rate is high, it indicates efficient resource planning and drawdowns. If this rate is low, it may indicate that the state reserved too much in set-aside funding in the short-term. Nationally, this rate was 91.4 percent in 2017.

CHAPTER 5. FUND MANAGEMENT TOOLS AND TRAINING

Besides this Handbook, the SRF has a slate of tools to assist in fund management and financial analysis. However, these tools are only as effective as the ability of EPA and state staff to implement them. They cannot replace the need for dedicated financial analysts at the state and Regional levels who can focus on day-to-day and long-term fund management.

SRF TRAINING WORKSHOPS

EPA tries to reach each state and Region at least every two years for a 2-3 day SRF workshop. The workshop topics range from beginner to more advanced, and are an invaluable mechanism to bring staff from different states together in a room for several days to discuss issues and share best practices. More than two decades of experience have shown that the workshops are the most effective way to educate staff about the program, introduce issues and share best practices.

SOPs (STANDARD OPERATING PROCEDURES)

EPA SRF SOPs, which serve to supplement the Training Workshops and create a step-by-step description of what EPA Regional staff should be doing during different aspects of their annual cycle, including the Annual Review. The SOPs are intended to be “living documents,” which are periodically updated as policies or requirements change. Additional SOPs are being written each year.

ANNUAL REVIEWS

The Annual Review is a central component of EPA’s annual cycle. During the Annual Review, EPA Regional staff conducts a programmatic and financial review of state SRF programs. The purpose of the Annual Review is to determine how the SRF is achieving the goals and objectives of the Clean Water Act or Safe Drinking Water Act, to assess the state’s performance of activities identified in the Intended Use Plan and Annual Report and how the state manages risk, to determine compliance with the EPA capitalization grant agreement, to evaluate the financial status of the SRF based on the long term goals of the Fund, and to assess strategic management of the Fund. Regions use tools such as Annual Review checklists and Program Evaluation Reports to document the findings from the review.

CHECKLISTS

Several checklists have been developed to assist in the oversight of the SRF. Three checklists are used for the Annual Review: programmatic review, project file review, and transaction testing. A checklist has also been developed for the review of the Intended Use Plan. The checklists play a critical role in ensuring that reviews are comprehensive and as uniform across states and Regions as possible.

ANNUAL AUDITS	Almost all states conduct independent audits of their SRF programs. The audits review the financial statements and a program’s internal controls. The audits may be one of the first places where potential risk areas are identified in a state.
HANDBOOKS, GUIDANCE AND MEMOS	Handbooks, guidance and memos complement SOPs and workshops because they spell out the requirements of the SRF for specific topic areas. EPA releases a USB drive each fall with all memos and guidance that have been issued throughout the life of the program. This is a valuable resource for SRF staff with questions about specific processes or requirements and provides a comprehensive history of the program. It includes papers on innovative topics and projects, such as the Eligibilities Overview, Nontraditional Project Financing paper, and case studies on projects of interest.
Q&A’S	EPA has developed comprehensive Questions and Answer guides for both the CWSRF and DWSRF programs. These Q&A’s provide additional clarification on the provisions in the CWSRF and DWSRF regulations. In addition, EPA included Q&A’s with the interpretive guidance for amendments to the CWSRF made as a result of the Water Resources Reform and Development Act. The Q&A documents are being updated at the time of finalizing this Handbook.
STATE TRENDS	Headquarters will continue to develop state trends based on data from the National Information Management System. These trends can support regional reviews of state programs by identifying potential programmatic and financial issues. In addition, the trends can also help facilitate conversations between the states and regions regarding the CWSRF programs’ general performance and future direction.
REGIONAL REVIEWS	EPA Headquarters conducts annual reviews of the Regional Offices. The Regional Reviews are intended to give Headquarters feedback on how Regions are working with states and discuss any issues. In addition, periodically, EPA Headquarters accompanies Regions on their site visits of states. These trips provide invaluable information about weaknesses at both the Regional and state levels, and also gives EPA an opportunity to learn more about individual state programs.
STATE MANAGEMENT STUDIES AND FINANCIAL PLANNING ASSISTANCE	EPA, through a contractor, has facilitated several state management reviews. These are in-depth studies of a state’s operations, with the objective of identifying potential risk areas and system bottlenecks. These reviews assist states in identifying their weaknesses and provide an implementation plan for eliminating those weaknesses. The in-depth studies allow for more risk areas to be identified than is often the case during a traditional Annual Review.
LOAN AND GRANTS TRACKING SYSTEM (LGTS)	EPA SRF, through a contractor, has facilitated the development of computerized loan and grant tracking systems in a number of states. This tool allows SRF staff to manage the financial and programmatic aspects of their program and their cash flows.

**FOCUS CASH
FLOW MODEL**

EPA SRF, through a contractor, has facilitated the development of the FOCUS (Financial Oversight and Cash-Flow Utilization in the SRF) model. This Microsoft Excel-based model can be developed for individual SRF programs to enable comprehensive cash flow planning. FOCUS can be integrated with LGTS for real-time updates to cash flows.

**FINANCIAL
PLANNING
MODEL**

EPA's SRF Financial Planning Model can assist states and Regions in financial management and decision-making. It is an Excel-based tool that allows programs to identify the potential impacts of decisions such as interest rates charged, changes in demand, leveraging, and fee use. It assists in making more informed financial decisions, which can help improve fund management and mitigate risks.

**FINANCING
ALTERNATIVES
COMPARISON
TOOL (FACT)**

FACT and FACT-Lite (a simplified version of FACT) are tools that help entities compare the overall costs of SRF financing with other financing options. This Access-based tool allows entities to plug in the various costs of construction and financing for all of the potential funding options they are considering. The output is an objective calculation of the annual and lifetime costs of each of the financing options being considered. It can play a critical role in marketing the SRF.

CHAPTER 6. ADDITIONAL RESOURCES

The following is a selection of online resources that can be used for additional study of the various topics covered in this Handbook. With websites changing constantly, this list may be considered a starting point, with new resources potentially becoming available over time. For SRF-specific educational resources, refer to the list in Chapter 5. Some websites require registration. Unless noted, all are free of cost.

BASIC FINANCIAL DEFINITIONS

- Investopedia - Dictionary. <https://www.investopedia.com/dictionary/>

ACCOUNTING AND FINANCIAL MANAGEMENT

- Government Finance Officers Association (GFOA). GFOA publishes “Governmental Accounting, Auditing, and Financial Reporting” (aka the “Blue Book”), which incorporates GASB standards. It also publishes best practices, research reports, and training guides on topics such as debt management, cash management, and investing. <http://www.gfoa.org>
- Governmental Accounting Standards Board (GASB). GASB is the source of Generally Accepted Accounting Principles (GAAP) used by state and municipal entities. GASB Pronouncements set the standards for financial reporting. The Reference Library has fact sheets, plain-language articles, and other resources. <http://www.gasb.org/home>

MUNICIPAL BONDS

- California Debt and Investment Advisory Commission. CDIAC (part of the California State Treasurer’s Office) hosts seminars throughout the year on basics of debt issuance. Presentations as well as recordings from past seminars are available. <http://www.treasurer.ca.gov/cdiac/seminars/index.asp>
 - A 2015 Series on Municipal Debt Essentials has many presentations on issuing municipal bonds. <http://www.treasurer.ca.gov/cdiac/seminars/2015/20150317/materials.asp>
- Electronic Municipal Market Access (EMMA) from the Municipal Securities Rulemaking Board (MSRB). All bond Official Statements and continuing disclosure documents are posted and searchable. <https://emma.msrb.org>

UTILITY MANAGEMENT AND BUDGETING

- University of North Carolina Environmental Finance Center, “Financial Health Checkup for Water Utilities.”: Presentation and Excel tool. The presentation also includes links to one-page fact sheets on key utility financial ratios, what they mean, and desired benchmarks.
 - <https://efc.sog.unc.edu/sites/www.efc.sog.unc.edu/files/2016/presentation%20slides%20-%20Financial%20Health%20Checkup%20for%20Water%20Utilities.pdf>
 - <https://efc.sog.unc.edu/reslib/item/financial-health-checkup-water-utilities>

BOND RATING AND CREDIT REVIEW METHODOLOGIES

Leveraged SRF Rating Criteria (note: these are updated regularly, so check the websites for updates)

- Fitch Ratings, “U.S. Public Finance State Revolving Fund and Municipal Finance Pool Program Rating Criteria.” <https://www.fitchratings.com/site/re/904507>
- Moody’s Investors Service, “Rating Methodology: U.S. State Revolving Fund Debt.” https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBM_PBM148698
- Standard & Poor’s, “U.S. Public Finance Long-Term Municipal Pools: Methodology and Assumptions.” https://www.standardandpoors.com/en_US/web/guest/article/-/view/type/HTML/id/1902367

Water & Sewer Rating Criteria (note: these are updated regularly, so check the websites for updates)

- Fitch Ratings, “U.S. Water and Sewer Revenue Bond Rating Criteria.” <https://www.fitchratings.com/site/re/890402>
- Moody’s Investors Service, “Rating Methodology: US Municipal Revenue Debt.” https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBM_1095545
- Standard & Poor’s, “U.S. Public Finance Waterworks, Sanitary Sewer, and Drainage Utility Systems: Rating Methodology and Assumptions.” https://www.standardandpoors.com/en_US/web/guest/article/-/view/type/HTML/id/1857533
- Kroll Bond Rating Agency, “U.S. Municipal Water and Sewer Revenue Bond Rating Methodology.” https://www.krollbondratings.com/show_report/1038

FINANCE AND GOVERNING NEWS SOURCES

- Governing. <http://www.governing.com>
- The Wall Street Journal (fee). <https://www.wsj.com>
- Bloomberg News. <https://www.bloomberg.com>
- The Bond Buyer (fee). <https://www.bondbuyer.com>