CHAPTER ONE

State Revolving Loan Fund Programs: Financial Viability Review of Public Borrowers

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SRF Credit Review/Risk Assessment of Borrowers

The goal of all SRF programs is to get repaid according to the loan terms. SRF programs also require a certain level of competence from borrowers to assure compliance with program accounting and auditing requirements. The amount of time and resources allocated to application review for credit quality and risks associated with lending depend upon a variety of factors, including:

Structure of the SRF Program – Direct loan structured programs may be easier to evaluate from a perspective of credit review, but also may have a preponderance of small borrowers with very weak credit. A leveraged SRF program, on the other hand, is more complex, involving both the credit quality of the underlying borrowers, and an understanding of issues related to the tax-exempt status of bonds. SRF programs may allow non-governmental participants to be borrowers or may rely solely on public revenue pledges, which requires a higher degree of credit review than a borrower with a general obligation pledge.

Approval Process - The involvement of a board in approval of individual loan requests may result in a more formalized process with specific thresholds for approval, approval with conditions, or denial.

State Laws Governing Debt Issuance - There are many differences among states and many differences among the laws that govern how debt is issued within states.

Credit Quality of Borrowers – If the primary borrowers of the program are larger communities with investment grade bond ratings providing General Obligation (GO) bonds to back the loan, the level of review may be rather minimal. If borrowers include small unsewered communities, the assessment may also involve educating borrowers on financial obligations and implications of undertaking a project with SRF funding. For such small borrowers, specific conditions may need to be met prior to approval of the loan, such as putting taxes or user fees in place, to generate an acceptable risk level for the loan.

This chapter is divided into two sections:

> **Section 1** includes a selection of material used by three different states in their analysis of borrowers. This is where the concepts identified elsewhere are put into policy, forms, and ratios that provide the basic analysis of the credit quality of the borrower.
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> **Section 2** presents an overview of public debt from a rating agency's perspective. It reviews four basic analytical areas to be assessed when evaluating general obligation backed debt, and additional factors to examine in the review of revenue backed debt. This is a good overview of the concepts and analysis used to determine credit quality of a borrower.

The information included in Section 2 can be useful to all types of SRFs, whether leveraged or direct loan structured. It also provides a very instructive primer on the criteria and financial indicators bond rating houses look at in their assessment of a community's capacity to incur debt.

For SRFs that leverage, this information will be familiar as it reviews the common elements considered in assigning a bond rating – both in program design considerations and in the credit quality of the underlying borrowers.

For SRFs that do not leverage, or for small borrowers, this information can assist both staffs that manage the SRF and ultimately, the prospective borrowers. From a state perspective, this chapter can help assess the borrower's ability to meet the financial and management responsibilities of the SRF program. After review, this section may provoke questions on whether the current individual state loan fund credit review policies and procedures are adequate or whether they need retooling. States may want to ask:

- *Are we getting the information needed to assess the credit quality and compliance with program requirements in a comprehensive and consistent manner?*
- *For borrowers that have less than ideal economic, demographic or financial conditions, should we collect additional information? What additional information is needed?*
- *What types of actions; i. e., adding loan conditions, requiring rate increases are needed before loan approval?*
- *What are the "red flags" and how do I recognize them?*

SRF structures, approval process, state laws governing debt issuance and credit quality vary greatly between the SRFs. Despite these differences, many aspects of public debt analysis are universal, and all should be able to glean information from this Handbook and benefit from its review. It should be noted that the key here is "public debt analysis," and while some of the analytical information may have application to private or nonpublic borrowers, it should be used with caution. The assessment of private credits is mainly a commercial banking function and differs substantially. Because the Drinking Water SRFs may lend to private sector borrowers,

and similar latitude is being considered for the Clean Water SRF, CIFA may undertake a separate section on analysis of private credits at some future time.

Section 1: SELECTED EXAMPLES OF STATE PRACTICES

Examples from three states are included in the Appendix. Much of the data used is gleaned from five years of financial statements, current budgets and tax collection information. No judgment is made as to what is the best practice or approach. The policies, forms and method of analysis each state has developed helps them provide a consistent basis for making recommendations to fund; require special conditions; determine the need for technical assistance; or to reject the loan.

Formats and terminology used in financial statements vary greatly depending on the firm that prepares the statements, state laws and financial report requirements and the borrower itself. Use of standardized forms allows for consistent review and analysis and enhances the ability to compare and contrast standard information with program/policy guidelines; providing a more comprehendible format from which to draw conclusions. Red flags are much easier to spot and allow the reviewer to ask the relevant questions, provide technical support, or send the borrower back to the drawing board – or beyond.

The State of Arizona (see Appendix A)

Arizona's Water Infrastructure Finance Authority (WIFA) has adopted formal policies for the review of projects for both public and private borrowers. The policies and examples of each are provided. The techniques that WIFA uses to analyze financial statements include: trend analysis, comparative analysis (using Robert Morris Associates and/or Dun and Bradstreet); income statement analysis; balance sheet analysis; and ratio analysis and projections.

The policy statements provide a good summary of what WIFA believes should be examined and under what conditions WIFA can reject the funding request. The policy and analysis allow for a consistent review and establish the ground rules for approving loans to borrowers.

The State of Colorado (see Appendix B)

The Colorado Water Resource and Power Development Authority prepares a credit report on the borrower along with its recommendation for funding. The report is a good example of summarizing financial data, calculating ratios for comparison purposes and analyzing trends. The Colorado program undertakes a revenue analysis, a financial analysis with eighteen indicators and an examination of management. This approach can identify specific areas of weakness, as well as strengths the borrower might have in a fairly objective way. Identified areas of weakness need to be understood and explained to the loan review committee.

The State of Louisiana (see Appendix C)

The Louisiana Department of Environmental Quality has developed a credit analysis work plan designed to provide a pass/fail recommendation after the credit review of the conditions and trends of a borrower, as well as the analysis of various types of revenue to be used to back the loan. The format is in a question/answer form. The forms help put the numeric analysis into words and to summarize the conclusion drawn from the analysis.

Section 2: INTRODUCTION TO TAX AND FEE SECURED DEBT ANALYSIS

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General Obligation (GO) tax backed bonds are regarded as the broadest and soundest security among tax-secured debt instruments. One factor accounting for this strength is that they create a link between public and personal debt. A homeowner unable to pay his property taxes will forfeit his house just as surely as if he could not pay his mortgage, and an unlimited-tax GO pledge enables a trustee to invoke mandamus to force the issuer to raise the tax rate as much as necessary to pay off the bonds.

Property-tax-supported bonds have other strengths as well. The property tax tends to be a steady and predictable revenue source for municipalities, and when a vote is required to issue them, bondholders have some indication of taxpayers' willingness to pay. On the other hand, it always has been an unpopular tax. The value of real property is not necessarily linked to household income and, therefore, to the ability to pay property taxes. Also, property assessment is not always done in a consistent fashion and is slow to respond to changes in economic value. In 1932, property taxes provided local governments with 97% of their total revenues. Today, the aggregate figure is closer to 80%, and the specific percentage varies greatly by type of municipal entity. While cities and towns have been shifting to more reliance on sales taxes, income taxes, and various fees and charges, counties and school districts remain very reliant on the property tax. Political and legal barriers to raising property taxes, combined with fewer federal and state dollars flowing to local governments, have put considerable pressure on the general funds of all types of public issuers. The inability to raise needed revenues has serious credit implications; issuers need flexibility to deal with future problems.

However, beyond these general strengths and weaknesses, there are an enormous variety of credit characteristics among GO bonds. For example, there are unlimited- and limited- tax GOs. Some issuers of limited-tax GOs are well below their taxing limits, while others are tight against theirs, with little flexibility to react to emergencies. Depending on the location, some issuers need a vote of the people to authorize GO bonds. Some GO bonds are issued by cities that currently levy no property tax at all; while certain others may be unlimited-tax bonds, but are supported almost entirely by one taxpayer in financial difficulty, such as a local factory.

GO DEBT

When a state or municipal issuer sells a GO bond, the issuer pledges its full faith and credit to repay the financial obligation. Unless certain tax revenue streams are specifically restricted, the GO issuer frequently pledges all of its tax-raising powers. Typically, local governments secure the obligation with their ability to levy an unlimited ad valorem property tax; state governments, which have a different tax structure, usually pledge unrestricted revenue streams, such as sales or income taxes. The capacity and willingness of municipal governments to repay their GO debt can be assessed by examining four basic analytical areas:

- economy,
- financial performance and flexibility,
- debt burden, and
- administration.

Economic Base

The economic base is the most critical element in determining the credit quality and risks associated with an SRF loan as it incorporates local and national economic factors.

The foundation of a community's fiscal health is its economy. Financial growth prospects and volatility of major revenue sources depend on the performance of the local economy. Economic conditions also influence the affordability and range of services delivered by a government in such categories of expenditures as social welfare, education, health care, and public safety.

An issuer's geography and proximity to transportation networks, cities, and markets plays a key role in the economic development of a community. The infrastructure of an area, including the road network, utility systems, and transportation facilities, will also be important. These two areas provide background about how a specific economy has developed to date but also provide information on the future growth prospects of a community.

Demographics

The demographic characteristics of a community also factor heavily into economic analysis. The local population base is profiled in terms of age, education, labor skills and competitiveness, and wealth and income levels. Demographic analysis also considers the impact of annexations and the effect of migration patterns, specifically looking at growth and shifts in population over several decades. Wealth characteristics are a very critical element of a demographic review. High wealth and income characteristics are viewed very favorably, often contributing to superior debt repayment capabilities.

Tax Base

The key factors are size, structure, and diversity. Tax base composition is reviewed to identify proportionate contributions from residential, commercial and industrial tax revenue sources. To determine the degree of concentration, the leading taxpayers are profiled and assessed for their direct and indirect effects on the local economy. If a particular base is highly reliant on a few taxpayers for property taxes, there is vulnerability to any changes in the taxpayer's assessment, especially when property taxes comprise a large portion of the revenue base. Significant changes in the tax base can be analyzed to determine whether the causes are structural or cyclical. Assessed valuation trends are analyzed over the past five to 10 years, as well as the level of building permit activity over the same time period.

Employment Base

The composition, output and diversity of the employment base are prime considerations in evaluating the strength of the economy. The employment base provides the primary strength of a community and is often an attraction for continued economic growth and viability. Specifically:

- the industry mix and employment by sector to identify diversification trends or structural changes in the economy over time. Contributions from manufacturing, services, trade, construction, government and agriculture sectors, and how these have changed over time relative to national and state trends;

- concentration in major employers or reliance on particular industries;

- employer commitment to the community- importance of local facilities and employees to the overall strategy of local employers, business development plans, age of plant, and industry prospects. This is increasingly important if the employment base is concentrated;

- unemployment rates over the last decade and labor force growth are focused on including performance through recession to gauge the cyclicality of the underlying base. Of increasing concern is the match between jobs and the skill level of the labor force. An economy may generate strong employment growth but if the local labor force is not adequately prepared to function in those jobs, there are structural economic problems. Analysis of this component of the employment base will be increasingly important as technology continues to play a greater role in all aspects of today's job market;

- the regional patterns of employment and growth will also be reviewed to the extent that a municipality participates in a regional economy; and

- the level of retail sales as well as growth trends over time are analyzed, particularly when communities rely on sales tax revenues for operations as well as debt service repayment.

Summary

Generally, those communities with higher income levels and diverse economic bases have superior debt repayment capabilities. They are better protected from sudden economic shocks or unexpected volatility. Nevertheless, a strong economy does not always ensure an ability to meet debt payments. It is extremely important for a borrower to be able to capitalize on its primary economic strengths in terms of revenue collection. This leads to another very critical factor in credit evaluation – the financial management and performance of an entity.

Financial Indicators

Financial analysis involves several areas:

- accounting and reporting methods;
- revenue and expenditure structure and patterns;
- annual operating and budgetary performance;
- financial leverage and equity position;
- budget and financial planning; and
- contingency financial obligations, such as pension liability funding.

An analysis of these factors will present a clear indication of the financial strengths and weaknesses of a borrower. This analysis also will provide the framework for judging capacity to manage economic, political and financial uncertainties.

Operating Account Analysis

Operating account analysis includes an examination of operating trends focusing on the structure of revenue and expenditure items, primarily within the general fund and debt service funds. If other funds are tax supported or include revenues related to general government purposes, they also have relevance in developing a complete understanding of financial performance.

Revenue analysis. Diverse revenue sources are preferable, as they can help to strengthen financial performance. While property taxes tend to be among the most stable revenue sources, the failure or inability to levy taxes on nonresidential economic activity can represent a lost opportunity. The increasing use of fees not only creates a new revenue stream, but also places the burden for municipal services on the users of the services.

Although a balanced composition of revenues gives an issuer the flexibility to meet all of its financial obligations, it does not protect against general economic decline. For example, if a government's tax collections depend on several major revenue sources, the direct and indirect effects of an economic downturn can be broad enough to significantly affect revenue performance.

The composition and stability of major revenues, such as:

- property, sales and income taxes
- user charges
- intergovernmental aid
- investment income

should all be examined over a three- to five-year period to review for unusual patterns in revenue performance that could lead to significantly different financial performance in the future.

Expenditure analysis. Similarly, expenditure composition and stability are analyzed in the context of revenue patterns. Large expenditure items are identified and examined to determine if continued expenditure growth could endanger existing services or require additional taxing

efforts. To the extent that certain spending items are extraordinary or nonrecurring, their effect on long-term financial performance is discounted.

Transfers. The effect of any revenue transfers among other governmental and capital funds are considered in the review of financial performance. When the general fund and/or interfund transfers support debt service fund, one should review the policy guidelines and historical transfer practices. Deterioration in revenue transfers that represents a deviation from past policy could be viewed as a sign of fiscal stress.

Balance Sheet Analysis

The balance sheet examination focuses on liquidity, fund balance position and the composition of assets and liabilities. In considering appropriate fund balance levels, several variables are important:

- the volatility and patterns of the tax revenue stream,
- the predictability of government spending,
- the availability of unencumbered reserves or contingency funds, and
- the ability of public officials to sustain a strong financial position.

The fund balance position is a measure of an issuer's financial flexibility to meet essential services during periods of limited liquidity. An adequate fund balance should be considered a credit strength.

Debt Factors

The analysis of debt focuses on the nature of the pledged security, the debt repayment structure, the current debt-servicing burden, and the future capital needs of an issuer. Accelerated debt issuance can overburden a municipality, force the reduction of necessary services, and consequently lead to lower ratings. Alternatively, a low debt profile may not necessarily be a positive credit factor, since it may indicate under investment in capital facilities.

Investment in public infrastructure is believed to enhance the growth prospects of the private sector. Neglecting critical capital needs may impede economic growth and endanger future tax revenue generation. Although some capital projects are discretionary and can be deferred in difficult economic periods, the failure to maintain existing facilities can create a backlog of projects. Eventually, when the backlogged projects are funded, the cost may prove burdensome to future taxpayers.

In difficult fiscal situations where municipalities face operating deficits, some entities choose long-term financing of accumulated deficits as a solution. Referred to as "bonding out" of financial problems, it is not viewed as a permanent cure, and may complicate ultimate resolution of the crisis.

Type of Security

A GO pledge takes various forms that provide different degrees of strength. Unlimited ad valorem property tax debt, secured by a full faith and credit pledge, usually carries the strongest security. However, during a period of fiscal stress, debt service competes with essential services, such as police and fire protection.

Limited ad valorem tax debt, or a limited-tax pledge, carries legal limits on tax rates that can be levied for debt service. This type of security should be viewed more as a means to limit debt issuance than as a strict cap on revenues available to retire debt. In a limited-tax situation, the tax base's growth and the economy's health are often more significant credit factors than the limited source of payment. In fact, a limited tax bond can be rated on par with unlimited bonds if there is enough margin within the tax limit to raise the levy or if other tax revenues are available for debt service.

Double-barreled bonds are secured by an enterprise system's revenues, such as water or sewer user charges. They also carry a full faith and credit pledge, but taxing power is used only if the enterprise's revenues are insufficient. A well-run enterprise system can enhance the general government's credit by making substantial financial contributions to the general fund. In contrast, a troubled utility can threaten the integrity of the general fund. Credit implications may be positive when the enterprise has:

- a solid track record of self-support (no reliance on tax revenues);
- covenants to maintain rates; and
- other provisions that would work to prevent a potential fiscal drain on the general fund.

GO bonds are considered self-supporting when the enterprise can pay debt service and operating expenses from its own operating revenues. Such a self-supporting enterprise could use the full faith and credit support of a municipal government without diminishing the credit quality of the government's overall GO debt.

Special assessment bonds may have speculative characteristics, since economic and financial risks can be concentrated in relatively small parcels of property. Some of these credit concerns can be allayed if the bonds are on parity or have a senior lien on ad valorem property taxes or other legal protections. Low project risk and economic incentives for timely repayment also can mitigate credit concerns.

Maturity Schedule

The maturity schedule can become important in some circumstances. Prudent use of debt dictates that the debt's term matches the useful economic life of the financed facilities. For example, three-year bonds issued to finance police cars would be appropriate, while 15-year bonds would be viewed negatively.

An average maturity schedule for capital projects is one in which 25% of the debt rolls off in five years and 50% is retired in 10 years. A faster maturity schedule may be desired to avoid increased interest costs, but can place undue strain on the operating budget.

Debt Limitations and Needs

One needs to look for realistic debt limitations that permit the issuer to meet its ongoing financing needs. A city near its debt limit has less flexibility to meet future capital needs, but more importantly, may be unable to borrow money in the event of an emergency. Restrictive debt limitations often result in the creation of financing mechanisms that do not require GO bond authorization or voter approval.

One should look at debt limitation in conjunction with an examination of the community's future financing needs. Municipalities should regularly review their critical capital needs and schedule capital improvements for the project's life cycle. The history of past bond referendums is one indication of the community's willingness to pay for such improvements.

How does one measure debt burden against a community's ability to repay. Three indicators of that ability are:
• the tax base,
• the wealth and income of the community, and
• total budget resources.

In general, a debt burden is considered high when **debt service payments represent 15%-20% of the combined operating and debt service fund expenditures.** This benchmark will vary with the structure of government and the level of services that an issuer provides. Many single purpose districts such as sanitary sewer districts may have debt service payments as high as 40% and be considered reasonable.

Administrative Factors

As municipal operations expand and become more complex, an understanding of the organization of government is a prime necessity. The powers of a municipality establish the entity's ability to plan for changes in the political, economic and financial environment, and the capacity to respond in a timely fashion. The entity's degree of autonomy is affected by home rule powers, as well as legal and political relationships between state and local levels of government.

The range and growth potential of services provided by the issuer also are examined in relation to the capacity to provide such services. The ability of officials to make timely and sound financial decisions in response to economic and fiscal demands can depend on the tenure of government officials and frequency of elections. The background and experience of key members of the administration are important considerations if they affect policy continuity and ability to reformulate plans.

Documenting the Planning Goals

Adherence to long-range financial plans is considered a reflection of good forecasting and planning. To clarify and communicate these plans, long-range financial planning goals and objectives should be documented. Income statement and balance sheet projections should be part of the planning documents. The ability to make accurate short-range forecasts to ensure the availability of funds for seasonal and other short-range requirements is of prime importance. Financial objectives should be closely aligned with projections included in the operating budget to reflect future operating and capital budget growth.

Financial Management

Financial management is a major factor in the evaluation of state and local government creditworthiness. Past performance measured against original plans, depth of managerial experience, and background of key leaders all have an impact on the bottom line.

Major aspects of financial management include:

- economic analysis and revenue forecasting,
- tax policies,
- governmental accounting practices,
- financial strategies, and
- debt management.

Increasing attention is being paid to **risk management**. Risk management analysis includes investigating the adequacy of insurance coverage for accidents, health and potential lawsuits for public officials' liability, as well as investments, swaps and other hedges.

Annual Budget

An **operating and capital budget,** along with at least three years of financial audits; provide basic documentation in assessing administrative capability and intent.

Timeliness of budget adoption is a factor in considering the efficiency of the budget process. In contrast, late budgets are a hindrance to planning and can be indicative of political or administrative difficulties.

A sound budget plan should anticipate risk elements that lie outside of administrative control, such as the uncertainty of economic performance and potential effects on major revenue sources. The administration is expected to present a realistic budget and exhibit willingness to address necessary intra-year revenues and expenditure changes to meet fiscal targets. Continuous budget surveillance should be maintained to identify problem areas and enable timely budget adjustments.

Capital Improvement Program

A well-documented capital improvement program (CIP) should include the following components:

- the outlook for capital needs;
- the flexibility to modify the program in difficult economic periods; and
- the ability to finance improvements through operating surpluses.

Since the reliance on long-term debt can have burdensome consequences on a government's budget, the ability to identify and use other operating funds for capital purposes can be a financial strength. The discussion of historical construction management experience also can carry implications for a government's ability to meet its project completion schedules within budgetary constraints.

Property Tax Administration

Administrative factors to look at include the issuer's property valuations and assessment trends, changes in assessment ratios, assessment procedures and the valuations by assessment categories (industrial, commercial, utility, and residential), and how the assessment ratio applies to the different classes of properties. Property tax administration also is analyzed by focusing on tax rates, levies, collection rates on a current and a total basis (which includes delinquencies) and delinquent tax collection procedures, which are examined over 10 years. Tax due dates and delinquency rates are noted for their possible cash flow implications. An administration's taxing flexibility is an important factor in assessing risks of making a loan, if delinquencies run at a high level.

Benchmarked General Obligation Ratios

Various ratios represent benchmarks that analysts usually consider high, low, or moderate. Key ratios help separate the significance of ratio variations for each independent ratio.

A related criteria element is the weighing of one ratio against another in the analysis process. Variation in any factors can influence the credit quality or risk associated with making a loan. However, the heavier weighting usually placed on economic factors reflects that a wealthy and diverse economic base can afford higher debt burdens, or recover from financial problems more easily through a modest tax hike, than a poor economic base that might have more limited and less forgiving governmental options. Debt ratios include measuring debt levels against population, personal income and tax base.

A note of caution. Ratios do not tell the whole story. They are only a portion of what can be used in an analysis. Economic, administrative, structural or subjective factors may outweigh any of these ratios. Numbers alone cannot determine an entity's willingness to meet its financial obligations. Numbers alone cannot reveal a history of late budgets or the operating restraints presented by the state/local framework. In addition, a municipal entity's trends in any of these ratios may be more important than the historical ratios.

REVENUE BONDS

Security provisions. A user fee rather than the general taxing power of a municipality typically secures revenue bonds. As a result, the security for revenue bonds can be narrower than that for a tax-backed obligation. For example, user fees established for a water system can be the sole security for water revenue bonds, while a GO bond can call on property, income and sales taxes to meet debt service requirements, as well as all other operating costs of the entity.

Service area. Projects or systems financed by revenue bonds serve areas that may or may not be associated with predetermined geographic boundaries, such as city or county limits. Wastewater treatment systems may serve areas beyond city limits, based on drainage basins or economies of scale associated with large capital projects.

Voter authorization. Revenue bonds, unlike tax-backed bonds, are typically not subject to voter authorization.

Revenue-raising flexibility. Because dedicated user fees, which are tied to consumption of a service or product, typically support revenue bonds it is often easier to increase fees as compared to taxes.

These differences do not make one type of loan more creditworthy or riskier than another. Each debt is evaluated based on its own circumstances and characteristics. However, it historically has been true that most "full faith and credit" tax-backed obligations are more secure than revenue obligations, primarily because of the differences in the aforementioned security features. But, as with all rules, there are exceptions. In many larger cities, revenue obligations are often rated higher than tax-backed bonds because the enterprise has narrow responsibilities, is typically removed from politcal pressures and maintains monopoly status.

FINANCING WATER AND SEWER

A municipality or a completely independent authority that serves one or more municipalities can issue infrastructure debt. As a result, infrastructure financings often cover many different jurisdictions. Security for this type of debt can vary considerably, but is typically a single dedicated revenue stream directly related to the services provided. For example, revenues from the sale of water can secure bonds sold to build a drinking water system.

Since many infrastructure facilities operate in a competitive environment in the area of economic development, the level of rates and charges for users of the facility is important to the analysis. Analysis of the service area economy, legal provisions and financial performance also will be integral to determining the credit quality, and ultimately the risk in providing a loan.

Economic Considerations

The service area economy of a utility is a focal point in the evaluation of credit risk. The economic analysis is used to measure the stability of a utility's customer base, the need for

capital spending, the affordability of rates and the employment opportunities available to its customers.

Elements examined in the economic analysis include income trends, employment and growth. *Income trends* are examined not only in absolute figures, but also compared with local, state, and national averages. Income indicators reflect a service area's capacity to support current and future rates. Other measures of wealth and economic vitality include housing values, property tax base growth trends and retail sales activity. In addition to measuring wealth, these components help to demonstrate the prospects for growth.

Employment. As with a system's revenue stream, the job base is of higher credit quality if it is diverse and demonstrates little susceptibility to cyclical fluctuations in any single industry or sector. Unstable employment patterns can shrink a system's revenue stream and lead to increased rate-sensitivity. Seasonal employment usually exacerbates the expense and difficulty of providing for a system's peak demand. A list of the service area's leading employers and system customers, and assessment of their level of commitment to the local economy via their past, present and future levels of employment, will help make the determination.

Growth rates, both historical and projected, of key demographic statistics. Essential statistics include population, housing starts, building permits, occupancy rates, and system connections. Trends are examined to assess the potential for future revenue increases. Additionally, these statistics provide insight into the pressures that may be exerted on system capacity. Management's success in accurately projecting and planning for growth is a critical credit factor, especially in small, but rapidly expanding, systems. Poor planning or too rapid expansion can lead to higher debt, higher rates and lower margins, all potential negative credit factors.

Management Assessment

Management's ability to implement measures on a timely basis to proactively shape a utility's financial and operating condition, as opposed to reacting to external events should be understood. While this aspect of a credit evaluation is somewhat subjective, standard yardsticks are available to measure management's performance in setting and achieving stipulated objectives. To determine management's control, one could look at the quality of planning techniques, such as demographic and rate studies, financial forecasts, and capital improvement programs. The extent to which these documents are factored into current budgets and long-term plans can be evaluated. To determine the effectiveness of management's actions, the plans can be examined against the actual results.

Particular attention should be given to the utility administrators' independent capacity to implement rate increases and capital improvement programs. Autonomy in rate setting is viewed as a decidedly positive factor, given that it insulates the utility from exposure to political interference that might deter a timely and adequate adjustment. If favorable action by a public board, city council or state public service commission is required, what is management's ability to work with these entities to attain approval of its requests?

Rate-setting policies also are examined and considered crucial, given the current regulatory environment, the overall capital-intensive nature of utilities, and the increasing competitiveness

in this sector. Has management raised rates consistently and promptly? A tendency to avoid rate action until the financial position deteriorates and then hit customers with a large increase is viewed negatively.

WATER AND SEWER OPERATING AND FINANCIAL CRITERIA

Municipal water and wastewater utility systems face the challenge of meeting state and federal environmental regulations, as established by the Safe Drinking Water Act and the Clean Water Act, and the need to implement capital improvement programs designed to satisfy future needs. A system's ability to comply with these demands without diminishing financial integrity or rate affordability and competitiveness is a critical factor. Financing through state revolving funds is one method of meeting these requirements.

Analysis of these utilities takes into account customer profile and usage trends, compliance with environmental regulations, the adequacy of system capacity, rates and historical and projected financial data. Documents reviewed include the engineer's report, the capital improvement program, any rate studies and the master plan.

ANALYSIS OF RETAIL UTILITIES

An essential component of the assessment of a utility is the examination of legal provisions related to its debt. As defined in a bond indenture or resolution, the legal provisions make clear the issuer's responsibilities and the bondholder's recourse in the event of the issuer's noncompliance.

As many factors are incorporated in the credit analysis, a strong legal package alone will not eliminate risks. Nevertheless, liberal legal covenants are viewed as a weakness and could serve as a warning of high risk and modest credit quality.

The most important legal provisions reviewed are the security pledges, rate covenants, additional bonds tests and debt service reserve.

Security

Security is the source of payment pledged by the borrower. The most common form of security for utility bonds is system net revenues. Some issuers elect to secure bonds on a gross revenue basis. However, pledged system revenues should always be sufficient to cover debt service and operating expenses and, therefore, does not differentiate between net and gross revenue pledges.

Similarly, off-balance-sheet debt obligations of retail utilities that are usually secured by system operating expenses, are rated on par with the utility's senior lien debt. Typically, these payments are take-or-pay obligations with wholesale agencies. On the other hand, subordinate lien debt tends to be rated at least one notch lower than senior bonds.

Rate Covenant

The rate covenant establishes the minimum level of debt service coverage a system must provide on a fiscal year basis. The rate covenant is analyzed in relation to the overall situation of the individual system. Generally, a mature system with stable operational and financial performance will not need as strong a covenant as a system that can be subject to volatile financial margins or anticipates a large capital program.

A strong covenant addresses all obligations-senior and subordinate debt - as well as other system fund requirements. Typically**, rate covenants for retail systems range from 1. 10 times (x)-1. 25x the annual principal and interest requirements of senior lien debt**. This extra margin provides bondholders with additional financial protection. Sufficiency-only rate covenants of senior lien debt are generally weak, since any minor revenue short fall or expenditure overrun could lead to covenant violation and necessitate a withdrawal from the debt service reserve fund. However, credit should be given to borrowers that consistently set and achieve internal coverage policies in excess of their rate covenant requirements. Increasingly, the coverage levels to which a system performs, outweigh legal provisions.

A covenant that allows the borrower to use existing cash reserves, otherwise known as "carryover coverage," or one-time revenue sources, could have negative consequences, especially if such funds are forecast to be necessary for coverage compliance.

Finally, a rate covenant should outline any corrective measures required by the borrower in the event of a violation. Provision for a timely and mandatory revision of rates is an important mitigating measure.

Flow of Funds

The flow of funds specifies the order and timing in which system revenues are used to meet the obligations created by the indenture. Of critical importance to assessing risk and the credit quality is the lien position of debt service payments in relation to other system obligations outside of ordinary operations and maintenance costs. Also, established reserve funds, such as debt service reserve and renewal and replacement accounts maintained at specific funding level, provide additional cushion for debt service payments and system maintenance.

The flow of funds defines the borrower's ability to transfer surplus funds out of the system. Such transfers can drain the utility's cash position or restrict capital improvements otherwise financed from earnings. Transfer payments limited to a specific formula, such as a percentage of revenues, partially offset this concern. Frequency of payments to the debt service fund range from monthly to semiannual transfers. From a financial perspective, monthly deposits are preferred, since this approach allows a smooth buildup of the debt service fund and an early indication of any shortfalls.

Additional Bonds Test

The purpose of the additional bonds test is to protect the security. Whether the borrower's right to offer senior or parity bonds at a later time can result in a dilution of coverage is a factor of concern.

A strong additional bonds test for parity debt reads: *"prior to issuance of additional debt, net revenues for the prior 12 months or preceding fiscal year must equal at least 125% of the maximum annual debt service requirement, taking into account the issuance of proposed bonds. "* A test that measures historical earnings is preferred, since it is less speculative than those based on revenue projections.

Often, projected tests rely on assumptions that might not be realized, such as future rate increases or revenues generated by new facilities. Likewise, adjustments to historical net revenues to reflect new customers, rate increases, or contracts for additional services can weaken an otherwise strong historical earnings test.

Debt Service Reserve

A fully funded debt service reserve is important, since it provides an additional layer of protection for bondholders. The usual minimum debt service reserve requirement is equal to the lesser of 125% of average annual debt service, 10% of bond proceeds, or maximum annual debt service.

This restricted reserve is expected to be funded from bond proceeds or built up from pledged revenues, usually over no more than five years. The former approach adds more credit strength. Substitution of a cash-funded reserve by a surety bond and/or letter of credit (LOC) obtained from a creditworthy entity, also is acceptable. If the reserve fund is tapped to meet debt service payments, a replenishment schedule within 24 months should follow.

From a credit perspective, debt service reserves are more important for weaker utility systems that exhibit asset or customer base concentration, a shallow service area economy, or cash flow constraints. Absence of a fully funded reserve for systems with these characteristics may result in a lower rating. On the other hand, the rating of an issuer that exhibits stable system operations, a strong economy and an excellent financial track record may not be affected by establishing only a partially funded reserve.

Customer Profile

Credit quality reflects operational factors, including customer mix, service area demand and user concentration, within the context of the system's rate and financial flexibility. The customer count is disaggregated into residential, commercial, and industrial classes to better discern the importance of one type of user to the system. A balance between the three categories provides the most stable and efficient operating profile. For example, while more residentially concentrated systems may experience less cyclicality of demand during recessions, the gap

between average and peak daily use tends to be wider than with more industrial systems, thus requiring greater capital investment.

Studying trends in usage helps to determine the sensitivity of the system to economic cycles and future capital needs. With the availability of an ample source of water and excess treatment plant capacity, growing demand can be advantageous by providing additional revenues through rates and connection charges. On the other hand, rapid economic expansion makes planning difficult and can place a great burden on a utility to upgrade system capacity and bear potentially significant additional operating and capital costs.

Care should be taken to assess any one customer responsible for more than 5% of revenues to determine that customer's stability, commitment to the service area, and contribution to the bottom line. If the top 10 users account for more than 10%-15% of revenues, the system tends to be more susceptible to fluctuations, especially if these are in similar or related industries.

Regulations

The credit quality of a municipal system is a reflection of management's ability to implement necessary capital improvement programs to satisfy new and pending regulations while avoiding "rate shock". Although the cost of full compliance with the new and pending rules under the Safe Drinking Water and Clean Water Acts is unknown, prudent management must anticipate the potential impacts and financial burdens on their systems. Failure to comply with permit requirements could lead to a ban on additional water and/or sewer connections, thereby obstructing a community's economic growth, as well as possible fines.

In short, an efficient planning technique, reflected by a solid record of meeting past goals, can enhance a credit rating. One index of planning capability is the status of plant and line maintenance; if a system is properly maintained, it will reduce the need for major repairs. Some measures are water-line loss ratios, inflow-infiltration studies and the presence or absence of an ongoing maintenance program.

Water systems. Satisfying the rules imposed by the Safe Drinking Water Act amendments requires additional treatment of potable water to meet a multitude of maximum contaminants level standards (including lead/copper, radon a most recently arsenic), and substantial investment to filter surface water sources and groundwater supplies. The filtration rule is potentially the most expensive standard, because many systems that previously provided little treatment beyond chlorination are now required to build filtration plants. These regulations are expected to result in increased capital spending and operating costs for drinking water systems and higher water bills for their ratepayers.

Wastewater systems. The Clean Water Act regulations seek to control effluent quality, sludge disposal, and, increasingly, storm water discharge and the reduction or elimination of combined sewer overflows (CSOs). During the past decade, secondary treatment, as mandated by the Clean Water Act of 1972, was the primary focus of wastewater programs nationwide. Under the Clean Water Act Amendments of 1987, the EPA promulgated final rules requiring cities and certain industries to obtain federal permits for controlling the quality of storm water discharge. The cost of managing these pollutants may be high, dependent on local conditions.

Similarly, the cost of total CSO elimination, where applicable, could be as much as five times that of installing secondary treatment, since it could entail the complete separation of all sanitary and storm water flows or substantial expansion of existing treatment facilities.

Other Operational Factors

Operating factors include operational capacity, in terms of the sizing of treatment plants and the collection and distribution systems, source and supply of a dependable water yield, often affected by water rights, aquifer depletion and/or saltwater intrusion, and commitments for wholesale delivery. An assessment of these factors in the context of service-area growth and the cost of providing additional water to sustain growth should be undertaken. Also, the source of water is evaluated in light of its ambient quality and the potential effects of federal and state environmental regulation. For example, as described above, the filtration rule greatly influences the relative cost of surface versus groundwater supplies. Similarly, those water utilities that rely on imported water from another agency are subject to, and often have little authority over, the costs borne by the wholesaler.

The available safe yield of water and the capacity of pumping systems and treatment plants are compared with the aggregate customer average and peak daily demand. The amount of storage is assessed as an important component in meeting peak demand and providing reliability. Again, one can evaluate this data in conjunction with an assessment of demographic and use trends. Significant excess capacity may indicate overbuilding and heavy fixed costs for the current user base. Alternatively, the need for capital spending is apparent if a system experiences, or is forecast to experience, a shortfall in supply or treatment and distribution capacity.

One can apply the same criteria to evaluating wastewater systems. Peak and average customer flows as compared with the collection and treatment plant capacity is a critical factor. Additional questions are asked of managers of sewer facilities, such as the method for disposing of sludge and other issues related to effluent discharge and treatment.

Water and Sewer Rate Criteria

In analyzing the rates charged to customers, there are a number of important factors: rates compared with neighboring communities and/or similar systems; rates in relation to the service area's economic wealth and income levels; and the rate-setting process.

The competitiveness of rates compared with neighboring communities can be an important aspect of users' willingness to pay current bills and accept further rate adjustments. Also, high rates can impede economic development, particularly if nearby areas with comparable levels of service charge lower utility fees. In some instances, commercial siting is partly a function of the reliability and cost of utility service.

Affordability of rates need to be looked at in the context of local wealth and income indicators. For communities characterized by income levels far above those of state and national averages,

high rates may not necessarily mean less rate flexibility. On the other hand, communities with lower wealth levels and competitive fees may be more constrained in rate-setting, because small increases tax a ratepayer's discretionary income more heavily.

Finally, the rate-setting process, such as the number of required approvals, the length of time necessary to implement adjustments and the policies and track record of the approving entity are important credit factors. Management's approach and ability to implement timely and adequate rate increases is a key aspect. To avoid "rate shock," management must phase in higher rates over a period of years, which is preferred to implementing a single large increase on an infrequent basis. Management's ability to automatically pass through purchased water or contracted wastewater treatment cost adjustments is a positive sign.

Timely and prudent rate changes strengthen overall credit quality, especially as capital costs grow. Large increases are politically more visible and sensitive, so establishing public awareness programs of system needs and federal requirements can facilitate acceptance of rate programs.

Financial Data

An utility's financial position is an important credit factor. Financial analysis focuses on past performance to determine the utility's stability and consistency. This is accomplished by evaluating three to five years of historical fiscal results and comparing them with planning and budgeting forecasts and policies. These policies are viewed as successful when management achieves a stable fiscal performance through all phases of an economic cycle.

Individual examination is given to balance sheet and income statement figures, including debt factors, accounts receivable, liquidity, and income. Debt factors are examined for overall debt levels and historical and projected fixed charge coverage. Fixed charges include debt service on the utility's own debt, plus any off-balance-sheet debt obligations associated with unconditional contractual obligations. The key focus is the adequacy of a cushion to ensure uninterrupted payment of total fixed charges.

Credit judgment of debt service coverage levels incorporates economic and operational factors. An utility serving a fully developed community that complies with environmental regulations requires less of a debt service cushion than a system in a growth area with a substantial capital program. Additionally, systems that depend on a few major customers for a large share of revenues need a more significant margin to protect fiscal integrity in the event of a delinquency or shut-down of one of these users. Likewise, a reliance on one-time revenues, including connection fees, to support ongoing operations is viewed as a negative factor.

Revenues and net income levels are examined to ensure that all costs, including required deposits into renewals and replacements fund, are recovered through adequate rates. What is the utility's liquidity status? Accounts receivable to operating income are reviewed to gain an understanding of the collection’s environment. A cash flow history and forecast may be required if receivables consistently total more than 15% of operating revenues, assuming a monthly collections cycle. Other measures of liquidity, such as the quick and current ratios and the level of working capital, are compared with annual operating expenses and other system needs.

The level of short-term debt, including variable-rate bonds, relative to total debt, also is assessed to determine sensitivity to changes in interest rates or an inability to remarket short-term paper. A significant exposure to short-term debt, combined with other operating risks, can increase risks associated with making a loan.

INTERFUND TRANSFERS ARE NOT RISK OR COST-FREE

In times of economic or financial stress, policy makers often look to outside sources to fill the gap between what the public demands in services and what it may be willing to accept in the form of new taxes. Transferring cash from enterprise funds to general governmental funds frequently is a tempting option. However, transfers do not come free of costs or risk.

Before choosing the transfer option, policy makers should fully explore the long-term implications for all of the affected funds and enterprises. In short, a well-researched, flexible, consistent and well-communicated transfer policy is likely to contribute to credit quality. Established transfer policies help enterprise managers address long-term capital needs and design their competitive strategies. In addition, the general government, managers and policy makers will have less room for disagreement and debate if a transfer policy is well established and maintained. This contributes to overall efficiency. Alternatively, the absence of a policy is likely to lead to difficulty.

Not Viewed in Isolation

It should first be noted that a transfer policy is only one among many factors examined as part of an analysis of revenue and GO debt. Transfer policies are not analyzed arbitrarily or in isolation of other factors; rather, transfers are viewed in the context of each city's fiscal, economic and operating performance over time. Although they typically are not a crucial factor, transfer policies can lend important insight into a city's political and fiscal environment. At times, transfers alone can be critical factors affecting a rating.

The absolute dollar amount of a transfer is less important than the method or policy by which it is derived. A more important consideration is whether the transferred amount is based on a consistently applied and well-thought out policy. In fact, a well-defined and predictable use of transfers can enhance credit quality.

How much is too much? The answer depends on unique circumstances in each community. For example, if a transfer occurs without regard for its impact on an enterprise's competitive position or in lieu of needed capital investment, there likely will be a weakened enterprise revenue bond rating. Likewise, if a transfer comprises too large a portion of a general fund budget, and if some events weaken the enterprise's ability to continue raising the level of transfer, there likely will be a weakening of the community's GO rating with consequent effects on revenue bonds, as well.