

Fundamentals of Water Utility Capital Financing

MANUAL OF WATER SUPPLY PRACTICES — M29, Third Edition

AWWA MANUAL M29

Third Edition



**American Water Works
Association**

Science and Technology

AWWA unites the entire water community by developing and distributing authoritative scientific and technological knowledge. Through its members, AWWA develops industry standards for products and processes that advance public health and safety. AWWA also provides quality improvement programs for water and wastewater utilities.

MANUAL OF WATER SUPPLY PRACTICES — M29, Third Edition

Fundamentals of Water Utility Capital Financing

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Foreword

The American Water Works Association (AWWA) strongly advocates that utility management, governing bodies, and regulatory agencies address ongoing water utility infrastructure capital requirements by recognizing that customers' and the general public's interests are best served through well-maintained and efficiently operated water systems that are supported by funding sufficient to meet each utility's annual operating and capital needs. In support of this position, AWWA has published and regularly updated its Manual of Water Supply Practices, *Water Utility Capital Financing*, M29, since the late 1980s and revised it to create the *Fundamentals of Water Utility Capital Financing*, M29, to assist utility stakeholders in addressing the capital financing needs of their water systems.

The financial condition of many water utilities is continually challenged by a variety of factors, such as adverse weather conditions, inflation of costs, economic changes, growth or decline in service demands, changes in environmental regulations, new construction, backlog of repairs and improvements, knowledgeable staff turn-over, and public pressure to keep water rates low. Regardless of such challenges, water utilities remain one of the most capital-intensive businesses. Despite the growing maintenance needs of aging water systems, many water utilities elect to postpone repairs, replacements, and rehabilitation expenditures to keep current operating costs and corresponding service charges as low as possible. The deferred capital expenditures invariably result in higher operating costs in the short run and also higher construction costs to address capital needs at a future date.

Through strategic business planning, a utility can attain many benefits that will help it systematically reach its short- and long-term infrastructure goals and objectives. The use of a strategic financial plan will demonstrate how the utility anticipates meeting its operating and capital needs during a specified planning period. Capital investments are necessary to maintain high-quality service to existing customers and to address the most important needs of the community. The capital plan should be consistent with, and supportive of, the strategic financial plan by addressing the utility's annual expansion, upgrade, replacement, reliability, and smaller recurring capital needs and by recommending appropriate financing sources.

Strategic financial and capital planning will provide a platform for communicating the utility's needs to the public, thereby gaining greater stakeholder confidence in utility management. As a result, investors become better informed of a utility's potential, and rating agencies are provided with timely support for more accurate debt ratings.

Whatever a particular water utility's capital requirements may be, knowledge of available alternatives for obtaining capital funds is a key element in developing successful financing plans. Some financing alternatives come into, or are phased-out of, current practice with changes in federal tax law and market conditions. Thus, an effective capital financing program should contain a variety of fundamental approaches to financing infrastructure that result in providing a systematic means of addressing the utility's needs over time. During funding of specific construction projects, the utility's financial advisor may be able to propose a current financing alternative that may provide greater benefit to the utility than that envisioned by the utility's financing plan.

PURPOSE

This manual provides a comprehensive overview of best management financing practices that water utility management should evaluate when determining short- and long-term strategies for meeting capital requirements. Only by thorough analysis of a particular water utility's long-term capital requirements and financial position will utility management be able to determine the feasibility of one or more specific financing concepts.

This manual is not intended to be, nor should it be considered, a complete text on water utility capital-financing concepts. A variety of other sources are available through various industry and professional organizations. Instead, the text should primarily be considered a guide for determining capital requirements, strategic planning, and financing alternatives. It also provides general information for those utilities considering the issuance of long-term debt. Each of these areas is critical to the capital planning and financing process but must be tailored to and reflect factors applicable to a local situation. No recommendations or opinions about the relevance of alternative forms of available financing have been provided. Determining the relevance of alternative financing options is considered to be the prerogative of utility management.

SCOPE

The material presented in this manual is intended for use by both government-owned and investor-owned water utilities. Because financing alternatives and markets may differ for these two primary types of utility ownership, financing alternatives for each are discussed in separate places in this manual.

This manual covers six general areas: (1) strategic capital and financial requirements planning, (2) identifying financing alternatives, (3) evaluating financing alternatives, (4) the process of taking a debt issue to the market, (5) participants' roles in the debt issuance process, and (6) special considerations for investor-owned utilities. Additional information regarding the requirements of different rating agencies is contained in appendix A.

Information presented in this manual has certain limitations. Water utility capital requirements continually change, as do financial sources available to the utility. At any given time, financing alternatives available to a utility depend on

- Tax laws and Internal Revenue Service (IRS) rules and regulations.
- Interest rates charged for various financing alternatives.
- A utility's credit rating.
- Decisions by governing bodies, by regulatory agencies, and, in some instances, by voters.

Appendix A provides information regarding the general requirements of bond-rating agencies, which is particularly useful as a utility considers the use of long-term debt and begins the process of going to the financial market.

The glossary at the end of this manual, which provides terms commonly used by the financial community, is a continuing step toward establishing uniformity of definitions. It will be revised and expanded as additional AWWA financial and accounting manuals are developed.

AWWA advocates that specific financing requirements for any particular water utility be based on sound economic, financial, accounting, and engineering principles. Often, the services of consultants and counselors experienced in such matters are required. When such advisors are employed, this document should serve as a resource that the policymakers and utility managers may draw on to guide their evaluations of the validity of any proposed financing alternative.

Several AWWA manuals and books that address financial management topics that may interest the reader are identified at the end of this manual.

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Chapter 1

The Capital Finance Planning Environment

The demands and expectations of water utility stakeholders (i.e., customers, regulators, and policymakers) create a challenging capital-financing planning environment for water utility management. In addition to demanding consistently safe and reliable drinking water, stakeholders expect water service to be provided efficiently, at minimum annual cost, and with minimal impact on ratepayers.

This chapter discusses the planning environment in which capital-financing decisions are made, as illustrated in Figure 1-1. The discussion emphasizes the importance of management comprehensively evaluating all assumptions used in capital program development. Management should perform this evaluation as it moves from strategic planning, reviewing historical capital programs, and assessing financial performance to developing specific action plans in which projects are prioritized. Comprehensive capital program planning requires more than life cycle costing. The financial impacts on utility operations and customers' bills must also be considered. Accordingly, utility management prudently integrates overall financial planning, revenue requirements planning, and rate-setting analyses into an iterative capital-financing planning process.

A fully integrated and cost-effective capital program and financial plan are rarely developed in a single attempt. Most utility managers prepare multiple planning scenarios before selecting a course of action to effectively address the outcomes expected by the utility's stakeholders. By their very nature, all plans must be considered living documents that are to be reviewed and updated regularly. The capital-financing planning environment water utilities face is one of challenge and continual change, requiring an integrated iterative planning process.

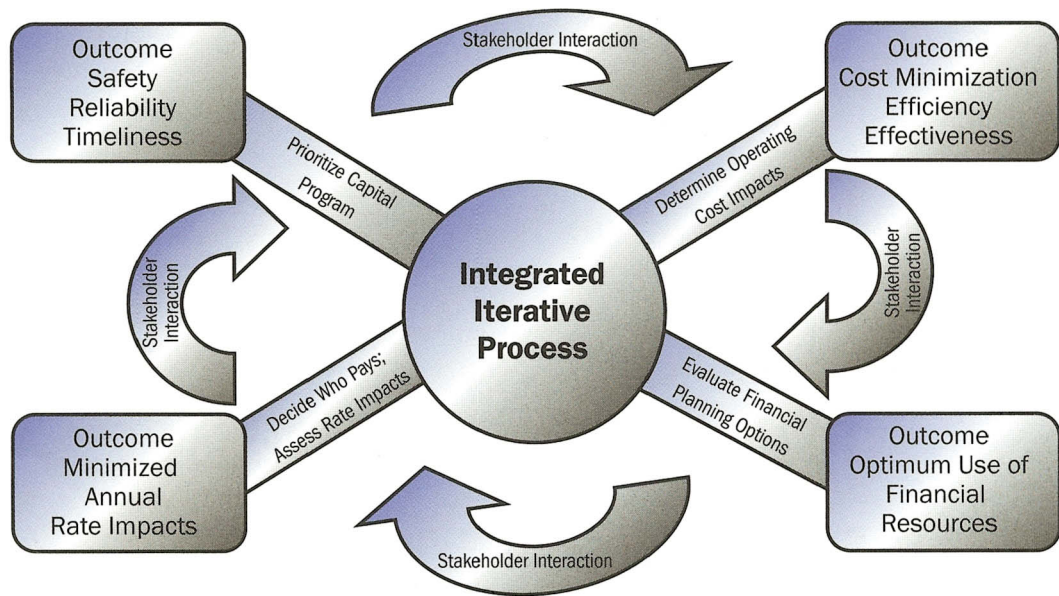


Figure 1-1 Financial planning flowchart

CAPITAL REQUIREMENTS STRATEGIC PLANNING

Strategic planning results in a formal document that communicates management's goals for the future to personnel, customers, investors, rating agencies, debt insurers, and the community as a whole. The plan provides a basic approach and structure through which a utility develops (among other activities) appropriation requests that reflect decisions about how resources will be obtained and used.

Strategic planning represents a long-term look into the future operations of a utility. As part of this process, management must define the goals and objectives that map a path between a utility's present position and its vision of the future. This definition includes a description of the utility's strategies and tactics for accomplishing those goals and objectives. Strategic planning also explicitly defines outcomes and outputs expected by management, providing a gauge that permits performance monitoring. It serves as a guide for management, influencing future resource allocation and operational decisions. Strategic planning is a dynamic and continual process providing management with direction for all operations, including capital additions and replacements.

A successful strategic planning process provides many benefits to a utility and to those affected by its operations. Strategic planning improves a utility's ability to anticipate and accommodate future conditions by identifying issues, opportunities, and problems. Management uses its strategic plan to develop a comprehensive master plan. The master plan addresses the entity's future capital requirements stemming from changes in service area demands, maintenance reports, and required replacements and improvements to the existing utility plant as facilities reach their expected useful lives.

Planning Components

In preparing a strategic plan, management should focus on the utility's mission and core values, as well as the operating philosophy to be used to meet future goals. Thus,

three component statements of strategic planning are

- mission,
- core values, and
- operating philosophy (goals, priorities, action plans, and progress indicators).

The mission statement describes a utility's basic reason for existence. This may be clearly stated by legislation, corporate documents, or local ordinance. Core values for a utility reflect the principles of conduct for carrying out the utility's mission. Finally, the operating philosophy defines the utility's goals, outlines key factors for evaluating success in achieving the mission and goals, and indicates the methods that will be used to implement strategies.

The strategic plan presents each of these components in comprehensive yet simply phrased statements. Starting with the mission statement, management narrows the focus to goals and then to detailed action plans. Each component of the strategic planning template shown in Figure 1-2 is guided by the previous one. At the fourth level, management defines its goals. Directed by the utility's mission statement and core values, management prepares stated goals for the utility. To reach these goals, management prepares detailed action plans for the future, generally ranging from 5 to 10 years.

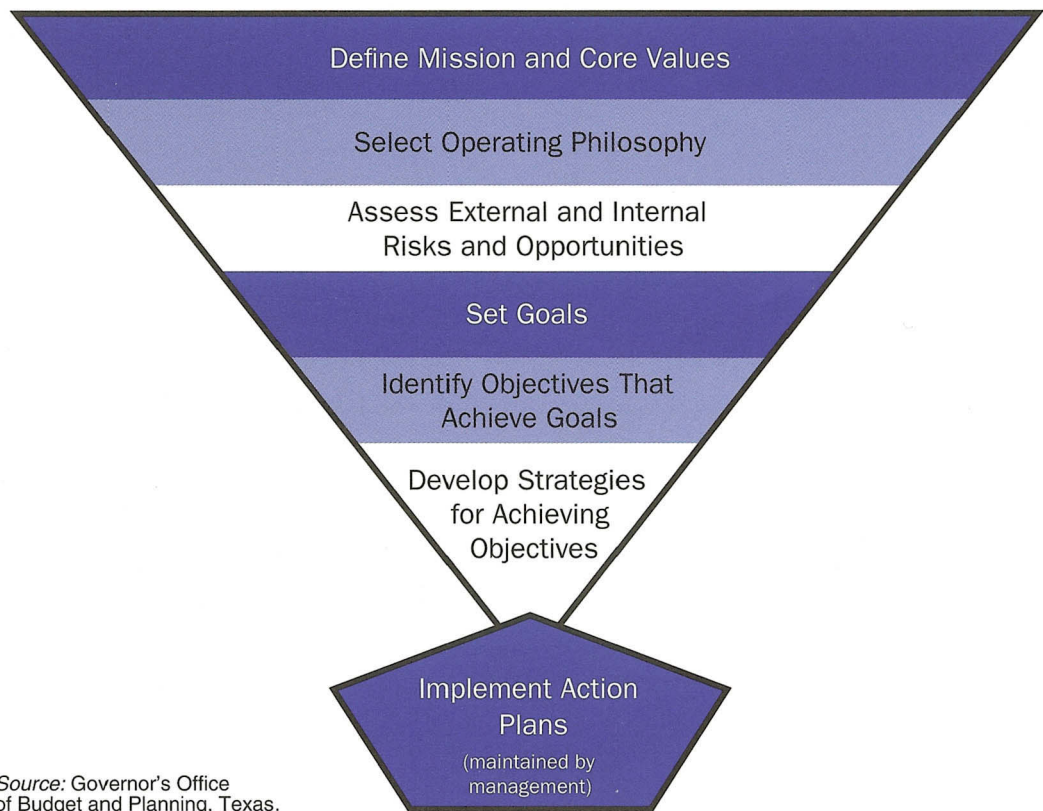
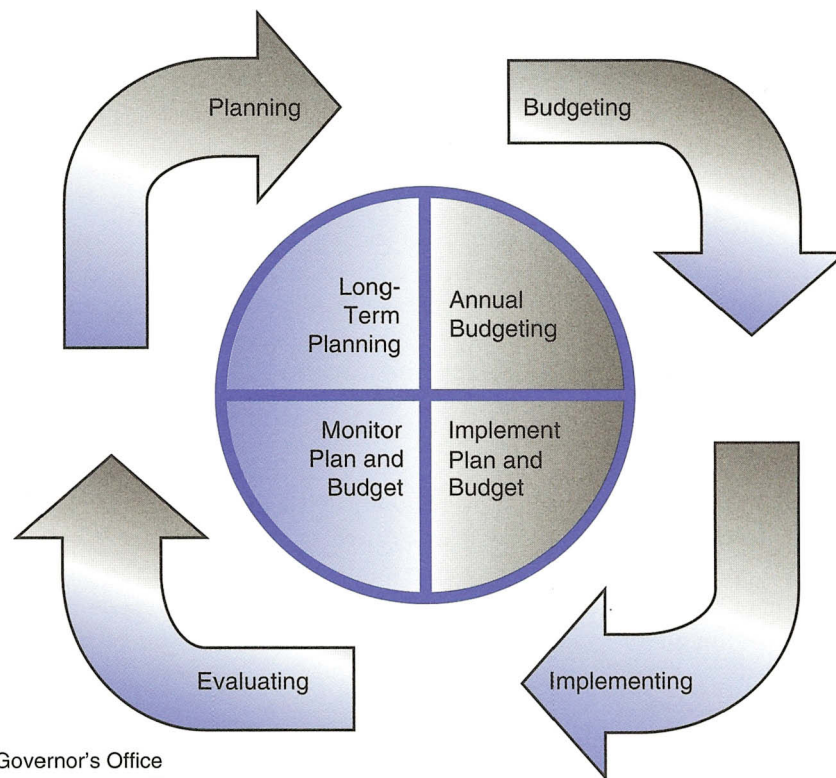


Figure 1-2 Strategic planning template



Source: Governor's Office
of Budget and Planning, Texas.

Figure 1-3 Strategic planning and budgeting process

Action plans should be systematically implemented through the annual budget process. Management should undertake periodic assessments to measure both efficiency and effectiveness in reaching stated goals. Targets for specific actions must be determined during the planning phase, and the impacts of those actions must be measured during the implementation phase. These two questions should be asked:

- Are we doing what we planned to do?
- Are we getting the results we intended?

A good assessment process should answer both of the preceding questions. Strategic plans must be fluid and should be updated as changes occur or when the action plans do not yield the desired results. Figure 1-3 demonstrates this iterative process. The Governmental Accounting Standards Board (GASB) encourages governmental entities to experiment with performance measures and standards reporting to integrate performance measures into a utility's capital program.

Strategic planning is affected by numerous elements and assumptions. Some of these are influenced by a utility's actions; others are beyond the utility's control. These elements include

- availability of source water supply,
- federal and state regulatory mandates,
- water system infrastructure conditions,
- utility's existing financial condition,
- changes in customers' demands,

- service area demographics, and
- service area economic conditions.

Utility resources are allocated to address these and other factors based on the utility's mission statement and on the goals designed to enhance the utility's ability to achieve its mission. Goals addressing each of the preceding considerations should be prepared. However, some of these goals will likely conflict with others. Utility management must weigh the demands from each element and prioritize its goals. Lower-priority goals that conflict with other goals may receive little or none of a utility's resources.

The strategic plan provides direction for developing the utility's master plan and capital improvement program (CIP). The CIP provides the forecast of evaluations, studies, facilities plans, and tangible capital costs for a multiyear period, generally 5 to 10 years. Other utilities may use longer designated planning periods; for example, from the subsequent fiscal year to service area build-out.

Historical Performance of CIP Implementation

One of the most common characteristics used to measure strategic planning achievements is a utility's ability to implement its adopted CIP. A utility develops a schedule for completion of CIP projects based on its goals, and the schedule becomes a fundamental part of the utility's action plan. Figure 1-4 shows a sample CIP schedule of project priorities resulting from a utility's strategic planning process. An adopted CIP has a schedule and budgeted cost based on management estimates, as detailed in later sections of this chapter. The strategic plan provides management with basic guidance for determining when each CIP project will be implemented and how much of the utility's resources can be allocated toward completion of projects at any given time. Success in meeting strategic planning goals can be measured by comparing the budgeted CIP to actual work conducted during a period of time.

Ideally, the CIP will be completed on schedule, demonstrating management's ability to achieve its stated goals. However, there are numerous reasons a CIP schedule might not be met; these causes should be identified and evaluated. If schedule slippage is within management's control, management should take action to correct identified problems during its strategic planning efforts. If the schedule has slipped because assumptions used in developing the strategic plan have changed, the action plans (usually the utility master plan) may need reevaluation and change. Regardless of the reason for falling behind the CIP schedule, the utility needs to adjust its CIP to reflect its implementation capabilities and changes in its allocation of resources.

Management's ability to consistently implement the utility's CIP is one criteria used by bond rating agencies when determining a utility's credit rating.

System Population Changes

A fundamental consideration in determining a utility's future capital requirements is population change in the utility's service area. This information is essential to prepare demand estimates for a master plan and a CIP. Because obtaining creditable population forecast numbers can be difficult, management generally relies on a review of historical service area population patterns as a guide for planning future capital requirements. Historical billing information for a 5- to 10-year period may be readily accessible and may provide a reasonable basis for trends from which to project the number of customers in each class of service. A comparison of census population figures with customer accounts may provide a reasonable correlation from which to equate population with future numbers of customers.

Once historical population trends are developed, projections can be made for each

class of customer based on such trends, known changes to the demographics specific to each class, and economic trends such as industrial and commercial expansions or closures. In growth situations, this process includes an evaluation of local, county, and state projections for construction starts and estimates of construction activity until service area build-out is achieved.

Conservatism versus Optimism in Projections

For planning purposes, management typically develops a range of estimates to evaluate. This range starts with a conservative plan assuming the worst-case population change scenario and ends with a best-case population change scenario. Management then selects a baseline scenario for conducting the remaining portion of the planning process.

Worst and best cases can be interchangeable according to the priority of the considerations and assumptions used to develop a utility's strategic plan. For example, if new supply is a high priority because the utility does not have the capacity to serve additional demand, the worst-case scenario could be rapid increase in population growth and service demand. This scenario would require immediate and costly capital additions for supply, treatment, transmission, and distribution. Here, the best-case scenario could be slow population growth. However, if supply is not a high priority and the utility has excess capacity available, the worst case could be declining population served and the best case could be rapid increase in population served or new wholesale customers outside its retail service area that will enable the utility to take advantage of economies of scale.

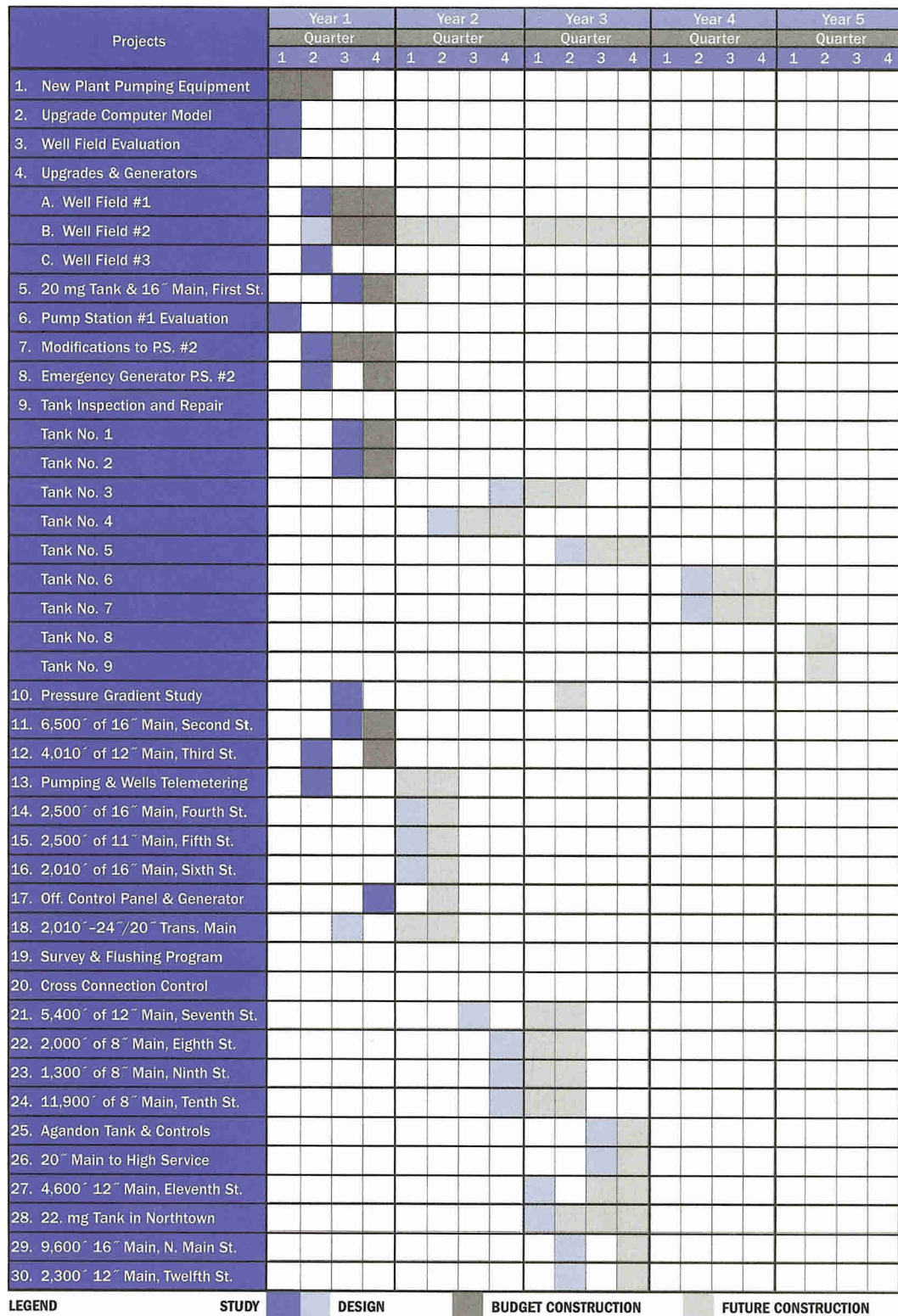
The acid test for any scenario is management's ability to demonstrate the probability that the chosen scenario will occur. In making the final presentation for budget approval, management must perform a "reality check" and choose one scenario for planning purposes. The chosen scenario should produce results representing the least degree of financial risk to the utility while ensuring that properly sized plant additions will be placed in service before capacity is required to meet increased demand.

Alternative scenarios may also be used in some situations, depending on the intended use. For example, growth and population projections suitable for facility planning purposes may result in higher financial risks for planning purposes. The goal of facility planning is to ensure that service demands can be met. Hence, increased population growth (worst-case) projections might be appropriate for facility-planning purposes. However, basing rates and revenue projections on the same population growth estimate may understate the actual required future rate levels and increase financial risk for the utility. The timing of future rate-revenue generation resulting from projected customer usage is a key financial planning element. Frequently, the use of two scenarios—one for facility-planning purposes and a second for financial planning—may be appropriate.

Customers' Service Needs

A utility generally has an obligation to serve all customers, both new and existing. The capital cost of providing service to new customers can be significantly higher than the embedded cost of serving existing customers. The strategic planning process should include a policy decision by management about cost recovery for growth-related additions to capacity (i.e., a determination of who pays for the cost of growth).

The answer to the question of who pays is not as clear as it would first appear. Not all additions to capacity benefit only new customers. Some plant additions may also



Source: Camp, Dresser and McKee.

Figure 1-4 Example CIP schedule

improve the quality of service to existing customers. Service objectives for existing and new customers are in many cases the same: water quality and safety, as well as service reliability. However, current customers seek to minimize the impact of growth on general service charges, while new customers would like to minimize front-end costs to connect to the water system.

To the extent that capital additions satisfy similar objectives for both new and existing customers, the question of who pays becomes uncertain. However, capital costs that clearly benefit only new customers can be funded by those new customers directly through various means, including system development charges, as discussed in detail in AWWA Manual M1, *Principles of Water Rates, Fees, and Charges*.

Integrated Resource Planning

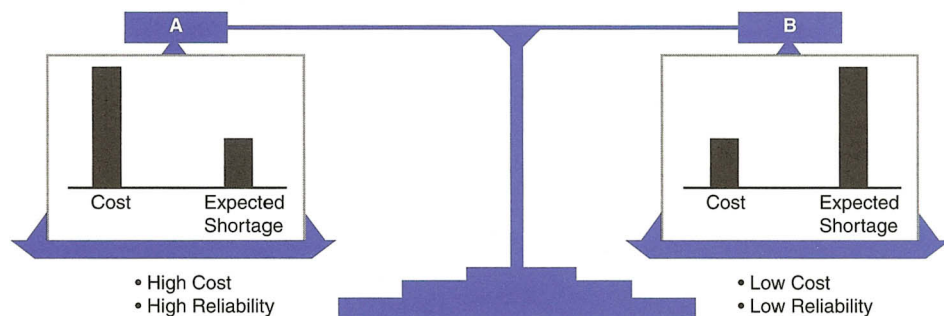
A water utility must look at all available methods of optimizing its operational and economic resources. Integrated resource planning (IRP) is a process to maximize available resources by considering a wide range of supply-side and demand-side resources. The process provides information on possible consequences and helps management judge the value of trade-offs among resource alternatives.

IRP for water utilities has its roots in a method of planning used by electric and gas utilities in the 1980s when supply was short and the cost of additional supply became a significant factor. Basically, strategic planning using IRP looks not only at cost and availability of supply but also at a utility's ability to manage demand. When properly applied, the IRP process leads to sound long-term decisions and lower overall costs.

IRP brings a relatively new dimension into the strategic planning process for water utilities and opens the door to explicit evaluation of options that were not previously considered, such as wastewater reuse, demand management, and planned shortages. Figures 1-5 and 1-6 illustrate the trade-offs IRP presents that water utilities have not generally analyzed in the past. An IRP process should result in a common perception by both the utility and the public as to what is acceptable for cost and levels of reliability. Figure 1-6 illustrates two possible cases for the same level of reliability, both of which are related to the investment policy of the utility.

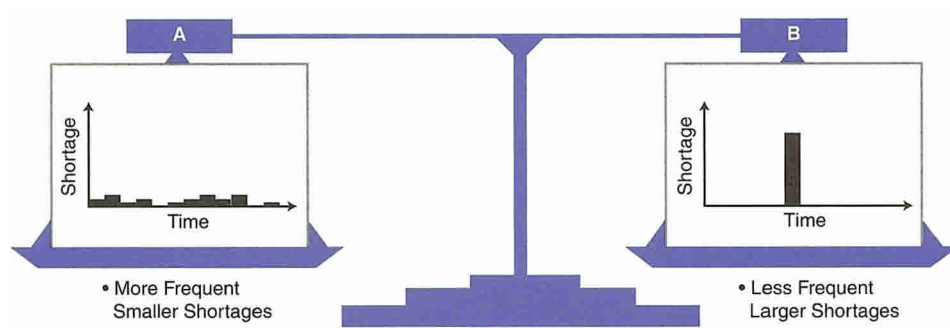
System Master Plan and Strategic Capital Requirements

A completed strategic plan enables a utility to develop a master plan of capital requirements including estimated costs and scheduling needed to complete identified capital projects. The master planning benefits are shown in Figure 1-7.



Source: E.F. Brigham

Figure 1-5 Trade-off between reliability and cost



Source: E.F. Brigham

Figure 1-6 Different aspects of reliability



Figure 1-7 Master planning benefits

From a master plan, the utility will develop a specific CIP. Both capital planning and CIP development are addressed in the next section.

CAPITAL BUDGETING

Within the framework of major objectives and policies established for a water utility, management must plan and control capital expenditures. Planning encompasses long- and short-term anticipation of customer needs for water service, selection and design of proper system infrastructure to meet customer needs, timely purchase or construction of required infrastructure facilities, and timely replacement and retirement of system assets. Such assets comprehensively may include supply, pumping, transmission, distribution, treatment, and storage structures and equipment; computer systems to monitor, control, record data, and report on various activities; and a variety of vehicles, construction equipment, and tools. Each of these assets may represent a significant investment.

The CIP should be prepared for a period of up to 10 years. In some cases, the CIP may tie into a master plan of 20 years or more in duration. The resulting multiyear capital expenditures plan should reflect management understanding of strategic objectives.

The annual capital budget is a one-year plan that covers additions, improvements,

and replacements to an existing utility system. This annual budget could be separated into major and routine capital projects. Major capital projects include proposed additions and improvements that involve relatively large expenditures and are of a non-recurring nature. Routine capital projects include proposed additions, replacements, and improvements involving relatively small expenditures that generally recur on an annual basis. The annual capital budget should be used to systematically implement the CIP.

Utility management should use its strategic plan to guide annual budgeting and capital expenditure requirements, periodically reviewing such factors as financial, water resources, system design, growth restrictions, infrastructure rehabilitation, and changing customer service requirements.

Utility Regulation

When planning capital requirements, utility management should know the requirements and dictates of all regulatory agencies at federal, state, and local levels. For investor-owned water utilities, regulatory control is usually exercised by a state regulatory agency. The authority given to these agencies is generally comprehensive. Government-owned utilities are either self-regulated (e.g., municipal authorities and some utility commissions) or directly controlled and regulated by local governments. In some states, government-owned utilities, or those serving across political boundaries, are regulated by state agencies. Such utilities should take positive steps to determine whether they are in compliance with these regulatory agencies or to verify that allowances in capital and operating budgets have been made to address deficiencies that become evident as a result of specific regulations. For example, legislation such as the Safe Drinking Water Act as amended has caused many utilities to make major modifications to CIPs. In general, long-range CIPs need to anticipate the effects of current and proposed legislation.

Developing the CIP

The process of developing a multiyear CIP should integrate all aspects of planning, so that not only are the priorities and timing of new facilities determined, but the impacts on operating and capital costs and associated rate revenue are also estimated. The effect of the CIP on personnel and material resources serves as the basis for planning the operation and construction activities the utility will perform. Remaining activities may have to be outsourced. Through this comprehensive evaluation process, the plan provides an instrument for control over capital expenditures. The multiyear CIP should be reviewed and revised annually. The current year should be dropped, the plans for the next several years reviewed and modified as necessary, and the program extended for one additional year to yield a new multiyear plan.

For the CIP to be useful as a planning and control document, the summary of anticipated capital expenditures should be supported by individual project budgets. Normally, each individual project budget specifies a project number, a description, the purpose and necessity of the project, the project's priority, the scheduled initiation and completion dates, a detailed cost estimate, an estimate of incremental operating revenues and expenses associated with the project, and, if applicable, the estimated return on investment. Although it may be difficult at times to trace the actual source of funds for individual projects, it usually is desirable to identify the intended financing source. This should help identify special financing opportunities, which may reduce the utility's total funding requirement.

Capital-Budgeting Techniques

Several capital-budgeting techniques or measures may be used to evaluate investment alternatives, such as return on investment, internal rate of return, net present value, and life cycle costing. Financial analysis textbooks should be referred to for more information on how to use these tools appropriately.

FINANCIAL REQUIREMENTS PLANNING PROCESS

The multiyear CIP provides a “road map” of capital improvements for a utility. The CIP guides the utility while carrying out the strategies developed in its strategic and master plans. To make this road map more useful, the utility should also develop a financial plan that describes the sources of money to initially construct facilities and then to operate and maintain the system after construction has been completed. Many utilities have pushed forward with a CIP only to discover that they lacked the resources to repay debt or to properly operate and maintain the system in the future. Capital finance-planning environments encompass an iterative process covering the elements in Figure 1-8.

Current Financial Condition

The first step in developing a financial plan is to characterize the utility’s current financial condition. This step will identify the following:

- Available financial resources that may be used to finance the capital program, such as existing unrestricted cash reserves, debt authorizations, developer charges, and future revenues,
- Existing burden on the utility, including outstanding debt, and
- Utility’s financial capacity to undertake a major capital program.

To assess its current financial condition, a utility must have accurate, detailed, and timely data that are generally summarized as information in comprehensive annual financial reports. To conform to GASB pronouncements, such reports for municipalities should contain

- Management’s discussion and analysis;
- Statement of net assets;
- Statement of revenues, expenses, and changes in fund net assets;
- Statement of cash flows; and
- Notes to financial statements.

Inaccurate data are not only useless, they are misleading. Even accurate data are of little help if they provide little information to make good decisions. In addition, if the data are out of date, they do little to assist in making timely decisions. Well-managed utilities maintain good financial information systems. Such a system begins with a detailed accounting system that tracks revenues, expenses, and investment assets over time and summarizes the results so that management can evaluate the current status of the utility and the changes needed for the future.

By using information contained in standard financial reports, a utility can calculate key financial indicators to assess its current financial condition. For example, evaluation of a utility’s capital structure—e.g., the ratio of outstanding debt to plant investment—may be one measure of a utility’s ability to support additional debt for



Figure 1-8 Capital finance planning—an iterative process

capital improvements. The financial community typically frowns on having municipal utility debt funding account for more than 70 percent of total funding.

In addition to financial information, a utility needs information on system use and customer accounting and billing. An asset management system will allow the utility to track by function the original costs, age, and accumulated depreciation of capital facilities. Maintenance frequencies and costs will assist the utility in deciding whether to repair or replace capital facilities. Comparing annual water bills per household to median household income may indicate whether a utility can reasonably raise rates to support a capital program.

To determine a community's ability to fund a capital program, financial analysts and rating agencies routinely measure financial performance. They rely on a compilation of financial, debt, socioeconomic, and management indicators, comparing them to regional and national averages to assess a community's ability to repay debt. By accurately determining its current financial condition, a utility is better able to assess the impacts of a proposed CIP.

Capital Financing Alternatives

After determining its capital requirements, a utility should identify the financing alternative that will best suit its needs and resources. This process is discussed in chapter 2.

Once a financing alternative is selected, the cash flows that result from it, as well as related operating expenses, must be integrated into a multiyear financial plan and the annual operating and capital budgets. The annual budgets present a picture of the course the utility is taking over the next fiscal year. They identify what operating and capital expenditures will be incurred, including routine annual capital improvements and capital cost recovery components during the first year of the multiyear capital program.

Revenues by source are typically identified in both the annual budget and the multiyear financial plan. These sources may include user fees, tax revenues, impact fees, and connection fees. As part of this process of identifying revenue sources for the plan, it is often necessary for the utility to evaluate any potential increases in or modifications to its revenue sources that may be necessary to support the identified capital and operating expense estimates.

If additional revenues will be needed, the utility must determine whether its level

of spending is imposing an undue financial burden on system users. If the increases associated with a particular alternative are perceived to be too significant, the planning process must be refined to either reduce project cost, adjust project scheduling, identify alternative long-term financing, or find different sources of revenue to support the financing.

AWWA Manual M1, *Principles of Water Rates, Fees, and Charges* strongly supports the Association's *Statement of Policy* regarding financing and rates, which stresses that the public is best served by revenue enterprises that are adequately financed through rates based on sound engineering and economic principles and that do not require subsidies from other entities.

However, sensitivity to financing and rate impacts on customers may come to the forefront in the development of optimal financial plans. Table 1-1 provides a checklist of questions about the impacts on system stakeholders that should be addressed during the development of an optimum capital-financing plan.

Forecasting Revenues and Costs

Strategic financial planning requires projections of utility revenues and costs over a CIP planning period and possibly for a longer term for a strategic master plan. Although projections for periods longer than 5 years become increasingly speculative, they provide insight into long-term impacts of current business decisions. Economic and regulatory conditions affecting future service requirements are uncertain, but long-term capital planning requires that the effects of the CIP on revenues and revenue requirements be demonstrated for a specified planning period.

Forecasts show proposed changes (1) in capital investment as a result of anticipated changes in service requirements, (2) in annual costs because of inflation or operating trends, and (3) in revenue because of changes in customers served or anticipated rate adjustments. Generally, these projections are based on historical trends adjusted for any known changes in future conditions. Trends in the Consumer Price Index, various construction cost indices, and municipal bond indices may be used to project current and anticipated new costs into the future.

Projections over the planning period can generally start with the annual budget. Revenues, operations and maintenance (O&M) costs, and capital expenditure projections are extrapolated over the planning period and adjusted for inflation, changes in service levels, and other anticipated changed conditions. Specific project-related O&M expense should also be included (e.g., additional operating personnel to staff a planned new water treatment plant).

Financial Planning: An Iterative Process

A typical complaint about financial planning is that, immediately on completion of plan development, the first exception to the plan that arises makes the plan obsolete. This reinforces the need for financial planning to become an iterative process in which utility management engages in continual stages of review, projection, evaluation, revision, and implementation so that any needs for additional income, new funding sources, or expense reductions to meet the utility's strategic service goals and objectives are promptly identified. The process results in a living document because the plan is updated at least annually.

As discussed previously in this chapter, broad evaluations of the financial impact of estimated future conditions should be based on multiyear analyses. Management should always consider the long-term impacts of bonding capacity, rate levels, and affordability for individual customers when planning major projects. Significant risk exists in planning for only one or two years. Evolution of current-year planning into

Table 1-1 Financial plan and rates checklist

Affordability Check		
YES	NO	
☐	☐	Are there unwarranted negative impacts on specific customer groups?
☐	☐	Are there unintended negative impacts on the local economy?
☐	☐	Has the public expressed concerns over its ability to pay?
Implementation Practicality Check		
YES	NO	
☐	☐	Are there limitations of metering devices?
☐	☐	Will the rate structure switch affect customers fairly?
☐	☐	Can utility billing procedures and software adapt to change in billing frequency?
☐	☐	Will customers accept large periodic rate increases instead of small annual ones?
☐	☐	Are variations in rate impacts by customer class acceptable to the public?
☐	☐	Are the cost and schedule of implementation reasonable?
☐	☐	Does the utility have acceptable staff levels?
☐	☐	Is there enough expertise on staff?

long-term perspective is imperative to minimize the possibility of making poor business decisions that have long-term ramifications. Utility management should anticipate future needs to make sound financial decisions.

MANAGING RISK IN THE CAPITAL FINANCING PROCESS _____

The role of utility management is to put assets at risk to achieve business objectives by recognizing financial, political, stakeholder, environmental, security, and regulatory risks. A broad definition of risk is the possibility of something unexpected occurring. According to this definition, risk may be alternately categorized as:

- The possibility of suffering harm; a danger.
- A factor, thing, element, or course involving uncertain danger; a hazard.
- The possibility of loss: an unacceptable probability.

Business risk may be defined as “the threat that an event or action will adversely affect an organization’s ability to achieve its business objectives and execute its

strategies successfully.” Water utilities face significant capital financing requirements to comply with increasing regulations, replace aging infrastructure, and meet growth-related increases in demand. Risks associated with meeting these capital requirements can be managed, reducing the variance between anticipated outcomes and actual result, through a combination of traditional and innovative methods.

There are at least two reasons for employing risk analysis in a utility’s capital finance decision making.

1. Decision makers should act with full knowledge of the facts.
2. Risk must be limited and managed.

Risk measurement plays a central part in risk management. Only when uncertainty may be quantified (i.e. when it is possible to assign a probability to uncertainty), do risk discussions become useful. Dealing with risk requires answers to three questions.

1. What major risks does the utility face?
2. To what extent will the utility be impacted positively or negatively with each identified risk?
3. What is the probability that gain or loss will occur with an identified risk?

The following discussion of water utility risks is adapted from Moody’s Investors Service research titled *Analytical Framework for Water and Sewer System Ratings*, August 1999 (Figure 1-9).

Regulatory risk. *Can the water system meet current and future regulatory requirements?* Regulation is frequently the driving factor for capital improvements. The primary tools for addressing this risk are development of a long-range facilities plan that identifies necessary capital improvements and participation in the USEPA Partnership for Safe Water, with voluntary water quality goals that are more stringent than regulatory standards.

Construction risk. *Can the project be constructed on time and on budget with full capabilities?* For success, the key tools are using proven designs, realistic schedules, managed startup risks, and reasonable cost estimates. Construction risk is generally considered to be low for most water utility projects.

System size and customer base. *Can the system size support necessary capital improvements while fully funding O&M?* A water utility is limited in the opportunities to change the customer base. However, the approaches that can balance the risk are: ensuring that growth does not place an additional burden on the existing customer base but instead pays for itself; seeking to gain the benefits of a larger-sized utility through partnerships and process improvements; and ensuring that acquired systems also do not place an additional burden on the existing customer base, but likewise pay for themselves.

Local economy and customer base. *Can the water system meet the changing needs of the local economy and population?* There are limited options available to a water utility regarding the composition of its customer base other than ensuring that business development initiatives are cost-based and provide, where possible, diversity to the customer base so as to not be too dependent on any one sector of the business economy. And new construction and infrastructure replacement should be coordinated with other public improvements, such as road and sewer construction.

Governance and management quality. *Are management practices institutionalized, recognized by political leaders, and able to withstand personnel change?* Of



Figure 1-9 Major risks facing water utilities

all of the risk factors identified, this has the most opportunity for management influence, including development of strategic and operational plans, participation in AWWA QualServe self-assessments and peer reviews, involving customer feedback in key decisions, ensuring professional certifications for staff, and routine audits of financial results.

Strategic focus. *Does the water system adequately anticipate asset maintenance, upgrades, and expansion?* This requires assessment of the condition of the water system, clearly identifying system performance objectives, with strategies and funding to accomplish the objectives.

System demand and capacity. *Can the water system meet current and future system maximum day and maximum hour demands?* Long-range facility plans that identify necessary capital improvements are essential for system construction planning, financial planning, and rate planning. And consistent measurement and monitoring of demand patterns for hydraulic modeling and system planning can also support cost-of-service ratemaking.

Maintenance of assets. *Is the water system maintained to operate in perpetuity?* This may be the single largest risk issue facing older water systems. Water systems have been designed for a wide spectrum of useful lives, based on materials and design standards. The objective is to provide the continuous investment necessary to operate the system in perpetuity. This requires an inventory of aboveground and buried infrastructure, including condition and performance history. Preventative maintenance programs can keep assets operating successfully over their design life, but infrastructure rehabilitation and replacement is needed to ensure sustainability. Implicit in this is a determination that there should be no long-term deferred maintenance.

Regulatory compliance. *What is the regulatory compliance record of the water system?* A time-consuming but valuable task is to compile an inventory of regulations affecting your utility and to assign responsibility for compliance know-how to a specific individual for each. In addition, it is critical to rapidly and accurately respond to each occasion of a notice-of-violation.

Rates, rate structures, and rate-making flexibility. *Do rates and charges reflect all financial commitments of the water system?* The primary tools for managing this risk are regular cost of service rates studies based on best practices, long-term financial planning that includes all financial requirements, and full-cost pricing with no interclass rate subsidies.

Liquidity. *Are revenues adequate to cover debt service and both recurring and one-time charges?* This risk can be managed through financial modeling to forecast cash balances, complying with minimum debt service coverage and investment requirements, timing of investment maturities to meet capital requirements, and insurance programs that provide a full range of liability coverage.

In addition to these practices, water utilities can incorporate a combination of preventative controls established to keep risk events from occurring, detective controls that alert management to problems and irregularities that have already occurred, and corrective actions for those errors that are detected. Utilities interested in the most sophisticated practices can adopt a framework of internal controls and enterprise risk management, such as developed by the Committee of Sponsoring Organizations of the Treadway Commission.

In a changing and unpredictable world, risk management provides a strategically based, comprehensive framework for identifying risks, avoiding pitfalls, and seizing opportunities to grow stakeholder value. How utility management perceives the probability of something occurring may determine how they deal with the prospect of that event. When equipped with an awareness of potential events, utility management can foresee potential variations in performance or likely effects of events on future performance. Management may develop a better understanding of the risks they are taking in relationship to the strategy they are pursuing, may better deploy utility resources, and may become more confident in their utility's ability to perform as expected.

Risk management enables a utility to communicate more effectively with the investment community about the risks taken and the potential variations in the company's performance, therefore reducing uncertainty and lowering the cost of capital. Utilities that understand risk and manage it strategically have the best chance of striking the optimum balance between risk and reward. Doing so is fundamental to creating value.

SUMMARY

Developing an integrated and cost-effective capital program and financial plan should include the steps in Table 1-2.

Table 1-2 integrated and cost-effective CIP development

STEP	ACTIONS
1	Develop formal CIP documents for a 5- to 10-year period. Avoid planning near-sightedness.
2	Prioritize all projects based on established criteria that fit the community's population patterns and customers' service expectations.
3	Seek advice from stakeholders. Keep them informed about the utility's operational and financial needs and proposed rate adjustments. Consider the use of formal public hearings or advisory committees to fully explain utility capital needs and financing requirements and to engender public support before rate adjustments. Be sensitive to customers' budget or planning cycles through proper rate notification.
4	Understand the integrated and iterative process of capital and financial planning and rate level adjustment determinations. Evaluate the integration of funding sources, bonding requirements, business risks, and impact on rates—either individually or in total—before identifying or ranking projects for the capital program. Consider ways of controlling the impact on rates by shifting risks to growth customers through the use of system development charges and other developer-related charges.
5	Integrate performance measurements into a utility's capital program and financial planning to assist stakeholders in assessing accountability and in making economic, social, and political decisions.



Chapter 2

Identifying Financing Alternatives

As a good management practice each time a utility's financial plan is updated, utility management should review its financing alternatives for capital projects. Management's goal should be to identify the alternative or combination of alternatives that provides the utility with funds needed to support the identified capital program in the most effective manner. In other words, how can capital improvements be paid for without causing rate shock to the utility's customers?

This chapter defines and discusses various types of traditional funding available to water utilities. Capital improvement financing alternatives typically include internal sources, such as cash from operating revenues or accumulated reserves investment, as well as external sources, such as debt, grants, and leases, or a combination thereof. Privatizing and outsourcing of some operations may also be acceptable substitutes for some types of capital investment. After specific financing alternatives have been identified, the utility should explicitly evaluate the advantages and disadvantages of each source of funds. The evaluation process is discussed in chapter 3. Because financial markets continually change, this list of alternatives is not meant to be all-inclusive.

INTERNAL FUNDING

Many utilities pay for some system improvements with internal funding. This "pay-as-you-go" financing is often used to pay for smaller or short-term capital projects, or to reduce new debt interest expense related to large capital projects by partially funding construction costs from revenue. Internal sources of cash can include dedicated tax revenue, water rate revenue, impact fees, system development charges (SDCs), and contributions from developers and customers. Cash produced by system development charges and similar fees are typically dedicated to be used to pay for growth-related capital costs. New customers are required to "buy into" the system at a similar level of service provided to existing customers.

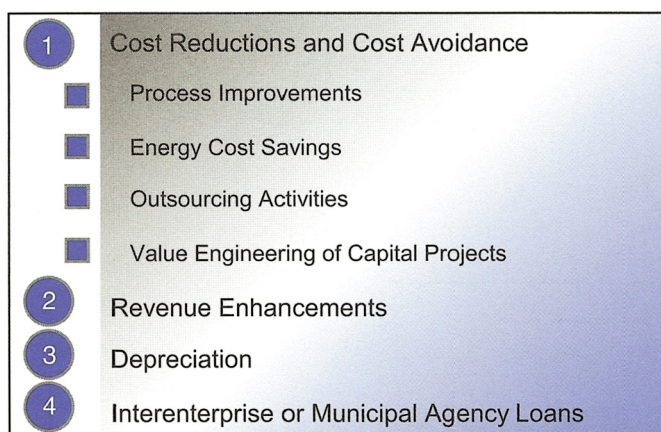


Figure 2-1 Internal utility capital financing

If specified in enabling legislation, revenue from front-end capital cost recovery charges may also be used to pay for system capacity and operating costs related to new customer service. Municipalities may charge a fee that reasonably equalizes the original cost of construction between current and future users of the system. In general, those charges must bear a fair and reasonable relationship to the costs of the services or improvements that are provided to the customers on whom the charge is imposed; however, the statutes and case law in each jurisdiction provide differing standards for the lawfulness of such charges. Any proposed charge that is based on a standard other than strict cost recovery (e.g., one that aims to provide fair compensation for costs previously borne by existing users that continue to benefit new users) should be carefully examined according to the laws of the particular jurisdiction to determine their legal defensibility. Courts have ruled that existing customers cannot benefit from new customer capital cost recovery revenue and must pay all operating and capital costs related to system capacity reserved to serve them.

To maximize the portion of operating revenues available for capital financing, utilities often look at one or more of the following (Figure 2-1).

Cost Reductions and Cost Avoidance

Within the category of cost reductions and cost avoidance, many actions can increase the cash available for capital projects. The actions available to most utilities are

- process improvements
- energy cost savings
- outsourcing and contract operations
- value engineering reviews of planned capital projects

Process improvements. An operational review to maximize the efficiency of an organization can often release operating funds to be used for capital improvements. Process improvement involves dividing operations into processes and evaluating the effectiveness of each process. Once each process has been reviewed, operations can often be streamlined by eliminating wasteful practices, introducing standard practices, providing better training, or increasing use of automation. Opportunities for savings, such as through competitive bidding or the use of fixed-cost annual contracts, are often found as a result of an operational review. The adoption of a formal asset management system can also be used to reduce capital expenditures over time by focusing on maintenance, repair, and

replacement activities and their associated budgets to produce the lowest life-cycle costs for major assets.

Why is process improvement an effective cost-reduction method? Processes evolve over time and often contain duplicate tasks, incremental work steps, or outdated methods. This scope creep adds time to processes. Additional time usually results in increased labor or duplicated costs. A high number of approvals required in the course of a process often indicates that an operations review is needed. Additional approvals may have been incorporated into a process that at some earlier points did not consistently produce the desired results. The approvals were added to the process to catch costly errors. By eliminating unnecessary steps and improving the remaining steps, a utility can improve the process itself, thereby spending less money on materials, equipment, and labor for associated activities. Such savings will release funds that can be used to pay for capital improvements.

Energy cost savings. Energy to operate treatment and distribution system pumping facilities represents a significant operating expense for water utilities. Rate structures employed by electric utilities often include substantial demand charges for high energy use during peak usage periods. A demand charge poses a problem for utilities because customer demands for water service and electric service often coincide. Such demands lead to the very result that the utility wants to avoid: high electric usage during peak periods.

However, there are solutions for high electric demand charges. For example, better management of system operations may be achieved through the use of supervisory control and data acquisition (SCADA) systems, written policies, and operator training. Petroleum or propane gas-driven pumps can be installed and used during peak electric use periods to reduce demand charges or to prevent the utility from being placed in a higher rate bracket. Distribution system storage tanks can be filled during off-peak hours so that additional pumps do not have to be turned on during peak hours to address this need. As energy costs climb, the implicit ratios and trade-offs inherent in the design of capital facilities need to be examined and perhaps updated.

Electric and gas companies generally employ multiple rate structures. In most cases, a utility could potentially meet the criteria for several structures. By becoming familiar with the structures and negotiating for the most advantageous one, a water utility can realize significant savings.

In addition, some energy utilities have different rate incentives for different types of fuel. The water utility should account for these rate differentials in the analysis of what types of pumps to use. Converting from one fuel source to another may also at times be economical because the energy utility may be offering incentives that cover some or all of the conversion costs.

With the deregulation of electric and gas rates, it may be advantageous for a water utility to examine the feasibility of joining a purchasing consortium or pool, to negotiate long-term power or gas rates as part of a larger group of energy consumers.

Outsourcing activities. Water utility operations include a wide variety of activities. While many of these activities may be performed more cost effectively by the utility, some activities may be more efficiently and effectively performed by others. Such activities should be considered for outsourcing. The following are examples:

- Sometimes significant capital outlays are required for equipment that is only seldom needed. Private businesses may be able to buy this equipment and contract with several entities to use it more fully. Because the cost of the equipment is spread over several entities, everyone can save money. Sharing of seldom-used equipment or facilities by two or more water utilities could also reduce costs.
- Contracting can also be used to handle peak activity that base staffing levels

cannot support. An engineering division can be staffed at a level to handle normal design activity, and consultants can be employed when design and construction levels exceed the capabilities of the base staff.

A useful exercise when evaluating a utility's efficiency in performing an activity is to determine the cost of outsourcing that activity and then require the utility to meet or beat that cost. If the utility cannot operate at a cost that is competitive with outside entities, the utility should either re-engineer the process to become competitive or contract the function. Some utilities have internal groups formally bid against outside contractors as a way to maintain cost-sensitive pressure on the utility. Of course, some essential functions and controls must be kept in-house to assure control over critical aspects of infrastructure and operations.

Value engineering of capital projects. If a water utility has large dollar capital projects in its CIP, management may benefit by engaging an engineering firm, other than the design firm, and a general contractor to independently review the design of the capital project before putting it out to bid. Value engineering will result in suggestions for the elimination of unnecessary features, use of alternative materials, changes in operating processes, changes in construction methods, and possibly verification of the project's immediate need. The use of value engineering is a best management practice for large construction projects, and spending a relatively small amount for a second opinion can often produce significant savings in construction costs. Additionally, if value engineering determines that project implementation is not an immediate need and may be postponed, a significantly smaller impact on utility finances may be achieved.

Revenue Enhancements

Most utilities receive general revenue from several different stakeholders and investments. Stakeholders include

- developers (to support system expansion)
- builders (to offset the cost of installing new meters or distribution lines and facilities)
- water customers (to pay for the cost of treating and delivering water)

Utilities should establish fees and charges that recover the cost of providing service to each group to prevent unintentional subsidizing of one group by another. Also, efforts should be made to ensure that all service provided is billed. For example, the utility's engineering support provided to developers and builders for reviewing utility aspects of their site plans and for installing service connections and meters should be billed based on site needs. Programs should be established that minimize unaccounted-for water. Such water is costly because money is spent to obtain and treat water that is never sold. Revenue can be increased or costs reduced through testing and changing out faulty meters or through a leak detection survey to identify needed repairs. More extensive information on water meters can be found in AWWA Manual M6, *Water Meters—Selection, Installation, Testing, and Maintenance*.

Most utilities receive interest earnings on invested idle funds, either through daily investment of funds needed in the short-term or longer-term investment of funds needed in the future. Interest rates vary by length of investment. Careful management of idle funds investment, especially longer-term investment of funds intended for capital projects, should provide additional revenue for the utility that minimizes future revenue needs.

- Federal law regulates the rate of interest earned on borrowed funds. If a municipality must have funds on hand before authorizing project construction,

a large project requiring more than one year's building time will generate significant interest earnings. Such interest earnings must be recognized in the sizing of the associated debt issue. A smaller debt issue may reduce future annual debt service requirements.

- A municipality can earn higher rates of interest on longer term investments of its revenue sources. For example, customer contributions in the form of system development charges may be invested at a higher yield than daily pooled investments until they are used for capital projects.

Depreciation

Including depreciation as a cost, or systematic return of owner's invested capital, to be recovered through water rates is a method of generating revenues internally to fund capital improvements. Accumulated depreciation approximates the value of the infrastructure that needs to be replaced over time. If appropriate levels of annual depreciation are used to set rates and those internally generated funds are set aside for the replacement of worn-out capital infrastructure, a utility will be in a position to maintain its financial integrity and limit the use of debt financing.

If depreciation is included in the cost of service, the principal portion of debt service and routine capital costs cannot be included as cost-of-service to prevent the double recovery of capital costs. Depreciation is typically included as a component of the utility basis cost-of-service allocation methodology, as opposed to a cash basis cost-of-service method. If depreciation is used as a cost element, the return on rate base must also be included as a cost-of-service element. Failure to include return as a cost-of-service component will cause serious cash flow problems for the utility because the combination of depreciation and return is intended to cover a utility's annual capital funding needs.

Investor-owned utilities and those government-owned utilities regulated by individual states are generally required to employ the utility basis cost allocation methodology in their ratesetting. However, state regulatory agencies limit the amount of depreciation and the investment on which a return may be earned to the level of original cost assets that the owners have built with the owners' resources. Although investor-owned utilities own all assets under their control regardless of funding source, regulatory agencies do not want investor-owned utilities to profit from the investment in fixed assets contributed by others. When investor-owned utilities replace contributed assets with facilities funded by the owners' resources, the utilities may recover depreciation and earn a return on such facilities.

Government-owned utilities are generally self-regulated and may define depreciation and return as applying to all of their assets regardless of funding source. When such utilities accept contributed assets, they agree to operate, maintain, and replace such facilities. However, government-owned utilities only major sources of revenue are from water rates. By including all of annual depreciation and earning a return on a rate base that includes all undepreciated portions of assets in its rate calculations, government-owned utilities may generate sufficient funds to pay debt service on outstanding bonds and meet its recurring annual capital needs. The depreciation period is based on the useful life of the asset. If an asset is debt-financed, it may have a useful life (basis of depreciation) of 50 years, but a bond term of only 20 years. Depreciation for a specific new asset will not produce sufficient cash to repay, in a timely manner, the principal portion of the debt on that asset. However, annual depreciation is generated from all assets, many of which do not have debt associated with them. Unless a utility is highly leveraged by debt funding, there will generally be sufficient total annual depreciation to cover the total annual principal costs of outstanding debt.

Intramunicipal Enterprise Fund or Intermunicipal Agency Loans

Frequently, one or more utilities are included with a water utility in municipal utility enterprise funds for financial reporting purposes. A more financially stable utility, which has temporarily available surplus operating or capital funds, could make a short-term two- to five-year loan to a utility attempting to become revenue self-sufficient and at interest rates similar to the investment earnings rates that the municipality receives on its investment of idle funds. The loan may help the receiving utility to phase-in new rates over time as it improves its financial position. If another municipal agency has available surplus funds, a similar internal loan could be made.

EXTERNAL FUNDING

As discussed in the previous section, internal funding mechanisms frequently finance some of a utility's capital needs and are an appropriate method for short-duration, low-cost routine capital projects. Utilities often pay for such projects on a pay-as-you-go basis (e.g., from existing customers through rates for service or from interest earnings on investment of utility funds). For more expensive major capital projects, however, utilities usually need to find an outside source of money. External sources can include debt, equity contributions (such as grants), customer contributions, tax benefit districts, or private sector investment. To stay financially healthy, a utility should balance the manner in which it finances capital projects with a combination of internal and external funding. This section describes each of these external funding sources and their characteristics (Figure 2-2). Chapter 3 discusses some of the advantages and disadvantages of each source and provides suggestions for evaluating each source of funding.

Debt Financing

Major capital projects are frequently funded with some form of debt. Debt financing allows a utility to raise more funds for capital projects than would be feasible on a pay-as-you-go basis, and it allows the utility to repay those funds over time. Debt can be repayable over various periods. The length of time between borrowing and fully repaying determines whether the debt is considered long-term or short-term debt. Debt that must be repaid in one year or less is usually considered short-term debt. Debt that is repayable over longer periods may be called intermediate- or long-term debt.

The nature of the promise to repay debt may differ in various ways. Some debt may require that a portion be repaid each period; other debt may have periodic interest payments but require the full principal amount to be repaid at the end of the term. The utility may make a general promise to repay debt, or it may provide specific collateral as security for its repayment obligation.

Debt may be raised from various sources, both public and private. How easily a utility can access these sources and how much it will be able to borrow will depend on its size, its current financial condition and ability to repay the debt, and the impact the debt will have on its rates.

Common short-term debt. Short-term debt may take the form of bank loans, notes, commercial paper (CP), or floating-rate demand notes.

Bank loans. Loans from banks can be structured as term loans or as lines of credit. A term loan is repayable at a specific future date. A line of credit is an arrangement under which the borrower can borrow and repay money from time to time as needed. A line of credit may be committed or uncommitted. According to an uncommitted line, loans are made at the bank's discretion with terms set at the time

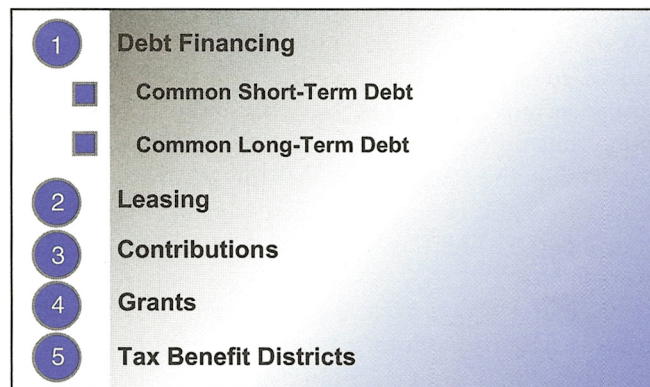


Figure 2-2 External utility capital financing

of borrowing. In contrast, with a committed line of credit, the utility and the bank enter into an agreement that (1) sets the terms under which borrowings may be made and (2) obligates the bank to honor requests for borrowings during the duration of the agreement as long as the borrower meets predetermined credit criteria. A committed line of credit generally requires that the borrower pay a fee to the bank in return for having a source of funds available.

Bond-, tax-, grant-, and revenue-anticipation notes. A note is an unsecured debt, usually with a maturity under 10 years. The various types of anticipation notes are promises by a municipal issuer to repay the borrowed amount from a source of money that the utility will receive in the future, such as a future bond issue (in which case the note is called a bond-anticipation note or BAN), anticipated revenues (revenue-anticipation note or RAN), taxes (tax-anticipation note or TAN), or grants (grant-anticipation note or GAN).

Commercial paper and tax-exempt commercial paper. CP is an unsecured short-term promissory note with an average maturity of 30 to 45 days. The notes, which according to security regulations have a maximum maturity of 270 days, are intended to be refinanced (rolled over) continuously for periods that may exceed 1 year. CP may be issued by investor-owned or government-owned utilities. When CP is issued by a state or local government, it is called tax-exempt commercial paper (TECP). CP or TECP differs from other interim financing in that it is generally rated by a national rating agency and is supported by a backup source of funds, such as a bank line of credit, a letter of credit (LOC), or another credit facility, to protect the purchaser of the notes from default in the event the utility cannot sell a new issue when a maturing issue becomes due. The use of TECP by municipal issuers has increased because of financial market demands. TECP is a prime investment instrument for tax-exempt money market funds.

Floating-rate demand notes. Floating-rate demand notes are securities on which the interest rate changes at predetermined intervals (often monthly) and that give the purchaser of the security the right to demand that the seller (utility) redeem the notes at each interest adjustment date. Floating-rate notes are usually issued in \$100,000 denominations and are placed primarily with money market funds or other large institutional buyers.

Common long-term debt. Long-term debt may take the form of a note, a debenture, or a bond. Both notes and debentures are unsecured borrowings. Notes generally have maturities under 10 years and debentures have maturities of 10 years or more. While the term bond in strict usage means a secured debt, in general usage, it can refer to various kinds of secured or unsecured debt. In this manual, *bond* refers to all types of long-term debt.

General obligation bonds. General obligation bonds, referred to as *GO bonds*, are

debt obligations issued by a government entity, such as a state or local government, and backed by a pledge of the entity's full faith and credit. GO bonds can be issued only by units of government that have the authority to tax. Water utilities that are separate from local governments may not have this authority. GO bonds are secured by an unconditional pledge that the issuing government will, if necessary, levy unlimited taxes to repay the debt. This is the strongest pledge the government can provide, and it is usually regarded by investors and rating agencies as the strongest form of bond security. Therefore, a GO bond generally has the lowest cost of the various financing vehicles available to local governments.

Because GO debt is issued by a state or local government, interest paid to the lender is usually exempt from federal income taxes. Depending on state tax laws, this debt may or may not be exempt from state income taxes. Municipalities should conduct further analysis if debt is used for any activity that may be associated with private use. Examples to scrutinize carefully are construction projects related to private/public partnerships and design, build, and operate contracts. Utilities must ensure that constructed facilities are used for the public good to ensure tax exempt status. Another important consideration between the use of GO and revenue bonds is that GO bond issuance often requires a public vote. Revenue bonds typically do not. At times, the public may vote down bond referendums. Utilities have the advantage in that they can usually issue revenue bonds without referendums.

Revenue bonds. Revenue bonds are debt obligations issued by local governments or other public agencies. Principal and interest on revenue bonds are secured by (and may be payable only from) the specific revenues named in the bond documents. Revenue bonds are commonly used to finance activities that generate revenue and that are expected to be self-supporting, such as a water utility. Periodic debt service payments on revenue bonds issued by water utilities are usually paid from water rates and miscellaneous revenue, although all system revenues typically secure the bonds by covenant.

With a revenue bond, debt repayment may depend on timely completion of a project, on adequate rate or charge structure, and on sound fiscal management of the enterprise. For this reason, the bonds are assumed to be riskier and will have a higher interest rate than a GO bond issued by a comparable issuer. Investors' acceptance of revenue bonds is highly dependent on the service or project to be financed and on the creditworthiness of the borrower. The "spread" (difference) of interest rates between GO bonds and revenue bonds has narrowed (decreased) as investors and financial markets have become comfortable with revenue bonds.

Most revenue bond agreements or indentures contain provisions, or covenants, that are intended to enhance marketability by providing investors with additional assurances that their money will be repaid. The following are among the provisions typically included in revenue bond documents:

- A rate covenant, by which the issuer agrees to set rates sufficient to meet all operating costs and some multiple of debt service. For example, there may be a requirement that net revenues available after operating costs will be sufficient to cover 125 percent of debt service. The extra 25 percent is presumed to be available for revenue financing other capital costs needed to keep the system in good financial and working order.
- A flow-of-funds requirement that specifies the order in which revenues will be used. For example, there may be a requirement that revenues be used first to pay O&M expenses, then for debt service, then to replenish reserve funds, and then for costs associated with system repairs or replacement.
- The establishment of a fund to set aside money to ensure debt service payments are made on a timely basis or to cover debt service for some period

of time in the event of a revenue shortage. This deposit of money is called a *debt service reserve fund*, and the indenture generally requires that the fund be administered by a third party, such as the trust department of a bank. For example, many agreements require the reserve amount to be equal to the maximum debt service in any year during which the bonds are outstanding.

- A parity test, which provides that additional bonds may not be issued unless historical and projected revenues indicate that there is sufficient revenue to avoid dilution of coverage on outstanding bonds. The test is typically testified by the chief financial officer or by an independent third party, such as an auditor, feasibility consultant, or consulting engineer.

Sometimes a government adds a GO pledge to a revenue bond backed by a specific source of revenues, such as the net revenues of a water system. These bonds are referred to as *double-barreled bonds* because they provide the dual security of a dedicated revenue source with the general taxing power of the government.

Bonds with credit enhancements. A municipality or utility may have difficulty issuing debt, especially if it has not issued debt before, does not have a credit rating, and is unknown to the investment community. One option available to this type of organization is to borrow from a local bank or other institution where the organization's creditworthiness is more easily demonstrated.

Another option is to obtain a credit enhancement, generally in the form of bond insurance or a letter of credit from a well-respected and financially sound entity. Under such an arrangement, the utility will pay a fee to have the financially sound party, such as an insurance company or bank, guarantee to the investor in the bond's official statement that it will ensure the timely payment of principal or interest or both. The addition of a guarantee by a large, well-known entity with high credit ratings makes a bond more attractive to investors, resulting in a lower bond interest rate.

Strong municipal financial and economic positions and high bond interest rate levels are also situations where credit enhancements may warrant consideration. Credit enhancements may add a level of stability to the entire municipality's financial situation. Some municipalities may employ credit enhancements regularly as a matter of policy. When interest rates are high, credit enhancements, depending on the creditworthiness of the issuing company, may result in the highest credit rating for the municipality and a lower bond interest rate.

Unless the savings in debt interest cost over the life of the bond, with a credit enhancement, is significantly greater than total debt interest costs without enhancement, third-party credit enhancements may not be appropriate. Utilities should evaluate the savings in debt interest cost over the life of the bond, with and without credit enhancements. If there are no savings, the utility may want to consider other factors in making its decision, such as the municipality's historical financing practice or policies. Employing credit enhancements is as much of a policy issue as it is a cost issue.

Interim (temporary) financing. It is not unusual for a utility to begin construction of a capital project before the final construction cost for the project is known. In such cases, interim (temporary) financing is often used. Typically, a lender will issue a line of credit to be used to pay for the construction costs, and the utility will draw on the line of credit as needed. When construction is finished or when the utility has a reliable estimate of the final construction cost for the project, the interim financing is paid off by including the amount borrowed on an interim basis in the total amount of the long-term debt.

An alternative would be to issue consecutive bonds with each covering a portion of project construction. The first issue covers a significant portion of estimated costs that permits the initial phases of construction. The second issue, called a *completion*

bond, covers all remaining costs of the project when they are better known. Purchasers of the first issue are notified, in the bond's first official statement, that a completion bond will be issued. The staging of bonds has an additional benefit of permitting the utility to phase-in rates over a period of two or more years to cover both issues.

Governmental loans. Federal and state agencies provide a valuable source of lower-cost financing through a number of programs that supply infrastructure financing. The federal Rural Utilities Service (RUS, formerly the Farmers Home Administration) is the most common provider of loans to rural and economically depressed areas for water and wastewater system improvements. Amendments in 1996 to the Safe Drinking Water Act establish a state revolving fund (SRF) program to provide loans to water utilities for capital improvements at interest rates at or less than market rates. A similar program under the Clean Water Act has supplied low-rate loans for wastewater treatment facilities for many years. The utility's financial advisor should be aware of current sources of governmental loans and should be consulted about the structure and terms of loans available to the entity.

Leasing

A lease is an arrangement between the owner of property (lessor) and the user of property (lessee) that gives the lessee the right to use the property for a defined period in return for meeting certain requirements, including the payment of rent. Leases may be attractive for municipal utilities as a means of acquiring the use of needed equipment and facilities when debt limitations restrict direct purchase and ownership. Leasing in some of its forms is treated as debt for financial reporting purposes, and leasing is generally viewed as a substitute for debt financing.

Because leasing often involves tax benefits to the lessor and tax implications to the lessee, and because it is subject to the interpretations of the IRS, it is a complex form of debt financing. Tax acts passed in 1984 and 1986 substantially reduced the benefit of tax-oriented leasing. Utility managers should retain experienced legal assistance when considering a lease because tax laws are constantly changing.

Sources of lease financing include large banks, equipment manufacturers, real estate development firms, and major leasing companies. Most firms provide preliminary lease-rate quotes, which may be used to compare lease costs against ownership costs. The major categories of leasing likely to be encountered by a finance staff that is considering how to finance a new facility or new equipment include direct leases, leveraged leases, and certificates of participation.

Direct leases. With a direct lease, the lessee negotiates the equipment or facility specifications, as well as the rental terms, with the lessor. After the lease is signed, the lessor purchases the equipment or constructs the facility exactly as specified in the lease agreement. When the equipment or completed facility is delivered, the lessee ensures all specifications have been met, then formally accepts the facility before making payments.

Leveraged leases. A leveraged lease is similar to a direct lease (which is sometimes called a *nonleveraged lease*), but it is more complex because another party is involved. The additional party is the entity that provides funds to the lessor for constructing the facility or acquiring the equipment.

Certificates of participation. A certificate of participation (COP) is a security backed by an interest in a stream of rental payments. The lessor is generally a governmental entity, often one specifically created to enter into lease transactions, and payments received by certificate holders are generally tax-exempt.

The financial advisor should be able to explain the current treatment of a COP transaction under any local debt statutes. The advisor should also be able to explain the current market requirements with respect to common restrictions concerning use of property, the flow of funds, security for the certificate holder, and the basis for tax

exemption. Restrictions placed on the lessor concerning use of property and disposition of lease payments establish security for the certificate holder and the basis for tax-exempt interest payments from local government.

Contributions

Customer contributions of money or property are a common and important form of capital for water utilities. Historically, customer contributions have been related primarily to customer capacity in supply, treatment, storage, and distribution system facilities. Customers are frequently required to purchase their meters and pay for the installation of taps and services. Developers are often required to provide distribution mains, fire hydrants, and customer connections for new subdivisions as contributions in aid of construction. While these contributions relieve a water utility of some of its capital needs, they often do not provide financing for major supply, treatment, or distribution facilities.

Some utilities require developers to pay customer advances for construction of subdivision facilities. The utility may reimburse the developers during a specified period as new customers connect to the system. Any funds remaining at the end of the period are retained by the utility as contributions in aid of construction.

Government-owned utilities may also include funds provided through intergovernmental transfers as contributions if those funds are not intended to be repaid from utility revenues. This type of contribution is often used to cover a portion of capital requirements for specific facilities, and the funds may be provided by the local government from GO bond proceeds, property, or sales tax revenue.

Grants

Development of public water supplies has traditionally been a local responsibility. Unlike the wastewater industry, the drinking water industry has not had a large federally funded grant program. With limited federal spending and state revolving loan programs, a conservative financial plan does not count on federal grant money. This is true even as federally mandated drinking water quality standards require additional capital investment by local utilities.

However, a few grants from various federal and state agencies exist for physical plant security and rural or economically depressed areas. For example, the federal RUS provides grants and loans for rural water and sewer systems and communities with populations of fewer than 10,000. The ratio of grant to loan funding from RUS is a function of the median household income of the population served.

Tax Benefit Districts

Many local governments have employed tax benefit districts to cover the costs of local water distribution facilities serving specific portions of a utility's service area. For example, by majority vote of the benefiting property owners, a local government could establish several tax benefit districts to initially fund, operate and maintain, and replace local facilities. The local government may also establish and own backbone facilities for supply, treatment, transmission, and storage to serve the benefit districts on a wholesale water rate basis. In some situations, for example, multiple tax benefit districts could be provided wholesale water service by a nearby incorporated community within a county. In other situations, large populated counties adjacent to large cities may fund all or a significant part of their water systems' capital and operating costs from a single tax benefit district.

When raising water rates to fund infrastructure replacements is met with customer and policymaker objections, employment of tax benefit districts to address

critical local facility replacement needs in specific portions of a utility's service area may be a logical alternative.

SUMMARY

There are many sources of funds for capital improvement. Among these are internal sources, such as savings from improved operations and revenue enhancement, and external sources, such as grants, loans, and tax benefit districts. Because of the size and long-term usefulness of capital assets associated with most CIPs, government-owned utilities generally rely on debt for a large proportion of their capital-financing needs. Investor-owned utilities typically rely on reinvestment of utility net income, new investment from additional stockholders, and customer and developer contributions to meet their capital needs.

Chapter 3

Evaluating Financing Alternatives

Influencing Factors	
1	Legal
2	Financial
3	External

Determining whether a particular funding alternative is the best choice for a particular project is influenced by the legal environment, financial factors that affect all issuers, financial considerations specific to the issuer, and other external factors. Legal factors may restrict the size and type of debt that a utility may use. Financial factors include the condition of the capital markets, as well as the affect that the alternative will have on the utility's

future financial flexibility. External factors include whether the alternative is likely to be accepted by governing authorities and the public. This chapter discusses these factors and some advantages and disadvantages of the various financing alternatives discussed in chapter 2.

LEGAL FACTORS

The first step in evaluating a proposed financing alternative is to determine whether that alternative is available to the utility under the various laws, regulations, and governing documents to which the utility is subject. The utility's financial advisor and bond counsel, along with in-house counsel, should be able to discuss the various laws and regulations that are relevant to the availability of a particular financing alternative. If the alternative is not currently permitted, the utility may want to evaluate the costs, time requirements, probability of success, and risks involved in seeking a change in its operating environment. These factors can be evaluated against the benefit that the utility would gain if the alternative were available. If the changes needed to make the alternative available are not feasible, the utility should seek another option.

An investor-owned utility may be subject to rules promulgated by the local regulatory body, as well as to previous indenture language, corporate resolutions, and

language in the utility's by-laws. A government-owned water utility is often subject to restrictions in its governing documents, as well as local and state laws. Both types of utilities are subject to various federal laws if they wish to borrow on a tax-exempt basis.

Governing Documents

Legal factors affecting debt issuance are frequently found in a utility's own enabling documents, whether those documents represent the original authorization or subsequent actions of the utility's board or other oversight agency. The governing documents for a government-owned utility may establish limits on borrowing, either as an absolute cap or as a ratio. They may also identify what types of debt can be issued, including negotiated or competitive sales, restrictions on private placements, selection of the finance team, and other considerations. Most jurisdictions also have established rules about the investment of bond proceeds, with an emphasis on the preservation of capital.

Additional legal restrictions may be established by legislation or board action authorizing previous debt issuance. For example, a previous resolution may have already pledged certain assets as security for another debt issue. As a result, assets and revenues may not be available to support an alternative currently under consideration unless the new debt is subordinated to the old. This may affect the feasibility and cost of the alternative.

State Law

State laws frequently address the legal structure and borrowing capacity of local government entities, including municipal utilities and utility authorities. The requirements for voter approval of debt issuance are generally found in state statutes.

Federal Law

Federal law affects utility borrowers in several ways. The Securities and Exchange Commission (SEC) has extensive regulations that apply to public debt offerings made by investor-owned utilities. In addition, through its regulation of the underwriters, the SEC also mandates that government-owned issuers make certain information available regarding the utility's financial situation beginning at the time of borrowing and continuing until the debt is retired. Although the issuer's bond counsel often handles many of these activities, the issuer has the ultimate responsibility for ensuring compliance. If the utility, whether investor-owned or government-owned, wishes to borrow on a tax-exempt basis, it needs to comply with arbitrage regulations concerning:

1. The maximum amount of interest that may be earned on borrowed funds after the transaction is completed and before the funds are expended on capital projects, and
2. How long the funds can be held before the issuer is subject to penalties and possible loss of the tax-exempt status of the issue.

Bond counsel and the financial advisor should be able to explain what is required from the borrowing utility in such a way that the utility can assess the cost or administrative burden or both associated with the various laws and regulations when evaluating the appropriateness of a financing alternative. If the utility is for some reason unable to comply with these requirements, it should choose other financing alternatives.

FINANCIAL FACTORS

Before making any decision regarding the way a capital project will be financed, a utility should carefully consider financial factors that influence which financing plan is most appropriate. If the plan includes new borrowing, financial considerations are also a factor in deciding which debt instrument is most appropriate. Among the financial factors specific to the issuer that need to be considered are

1. Whether the proposed alternative is compatible with the overall objective of the financing program, and
2. Whether selecting the proposed alternative will increase or reduce the utility's flexibility in the future.

As a part of its long-term financing objectives, the utility may have set targets for such things as the proportion of its debt that will be variable rate, the maximum amount of debt it will incur as a percentage of fixed assets, or a maximum annual amount for debt service per connection. Accordingly, utility management should evaluate how the proposed alternative will help or impede it in meeting these targets.

Financial factors that affect all borrowers include the current interest rate levels and terms, whether there is a general consensus about the level and direction of interest rates, the outlook for economic activity, and whether there are proposed legal or tax changes that make borrowing more or less difficult than usual. Several of these factors are discussed in more detail in the following sections.

Ability to Meet Covenants and Satisfy Revenue Requirements

The indenture requirements of existing debt are similar to the legal factors discussed previously in that they may contain provisions that affect a utility's ability to issue new debt. For example, existing bond covenants may specify that rates be established at a sufficient level to meet certain requirements. The documents may also require the utility to meet specific debt service coverage (which may be calculated on either an accrual or a cash basis).

Debt service coverage is defined as annual net revenues (gross revenues minus O&M expense) divided by total annual debt service (principal and interest on outstanding debt) with the result expressed as a percentage or times factor. For example, general obligation bonds require debt service coverage of 100 percent or a times factor of 1.0; senior lien revenue bonds may require debt service coverage of 110 percent or 1.10 times; and junior lien revenue bonds may require debt service coverage of 125 percent or 1.25 times. Rating agencies additionally expect the total of all utility debt service, including that for general obligation and revenue bonds and any other debt, to be covered by a minimum of 100 percent or 1.00 times.

The utility must be able either to satisfy the covenant or to amend existing provisions when the new revenue bond debt is issued. When the dollar amount of the new revenue bond debt is greater than the dollar amount of all outstanding revenue bonds, the new covenants may replace existing covenants because new issue purchasers are assumed to have voted-in the new covenants with their bond purchases. Otherwise, an amendment may not be possible unless the old debt is repaid or financially defeased (i.e., where sufficient front-end funds including future investment earnings associated with the funds are turned over to the control of a third-party paying agent to pay the debt service when it becomes due for the remaining life of the debt).

Even if the plan is to repay the old debt, new investors may not be willing to accept a lower coverage ratio without a significant increase in the interest rate. Unless the utility's revenue stream is fairly predictable, a lower coverage ratio may result in

the bonds receiving a lower credit rating. When evaluating what coverage is appropriate, investors look at historical data in conjunction with projections, and they assess the reasonableness of the assumptions on which projections are based. They do this to evaluate the quality of the revenue stream pledged to pay bondholders. They will examine intraperiod fluctuations and their causes, as well as the sensitivity of the revenue stream to adverse external events. The more volatile the revenue stream (and the greater the risk), the more coverage is needed to attain similar investment protection as an issue with lower coverage but higher-quality revenues. The issuer should perform a similar analysis:

1. To assess the reasonableness of being able to obtain a lower coverage ratio, and
2. To answer questions that arise during the marketing process.

In using the financing plan to assess the impact of new financing, the utility should ensure that both its revenue and its cash needs are met over the planning horizon. This means that sufficient working cash must be available after debt service on the new debt is considered. As noted in chapter 1, this is often an iterative process that balances financial requirements with financing options. As an example, if utility rates are to be left unchanged for two or more years, the financial plan should show that sufficient reserves, such as a rate stabilization and operating reserves, will be built up during the first half of the rate period to finance an expected deficit in the latter half of the rate period. If sufficient revenues are not shown, the planner may want to evaluate whether

1. The utility's governing board would be willing to consider annual, biennial, or triennial rate increases, or
2. It is possible to restructure the new obligation in a way that fits better with existing obligations to enable the utility to meet both covenants and cash requirements during each rate period.

Impact of Debt Portfolio

If debt is an alternative consideration, the issuer should be aware of the amounts and types of debt currently outstanding and how those obligations will influence or be influenced by the new financing. Some specific concerns regarding the existing debt portfolio include

- The structure of existing debt relative to new debt. How will the repayment terms of the new debt fit in with existing obligations? Are the same revenues pledged? Are payment and reporting dates the same? What will this mean in terms of administration? If there is variable-rate debt, when will rate changes occur on the various obligations, and what will this do to the organization's overall risk profile and budgetary process?
- The need and ability to create relative levels of subordinated debt (junior lien bonds) issued at different times for different purposes. Can new obligations be secured equally with existing senior lien obligations? If not, how will that affect the marketability of the new debt? What flexibility in bond covenants may be employed with the use of junior lien bonds that is not available with senior lien bonds, which will achieve financial and operating objectives?

- The ability and desire to refund, or defease, existing debt to do one or both of the following: take advantage of improved interest rates and facilitate revisions to bond covenants. Are there restrictions in current indentures that could be solved with a refinancing? Have interest rates moved sufficiently so that refunding is economically justified? How will the limitations on advance refunding of tax-exempt debt affect what alternatives are available? Investor-owned utilities will also want to be aware of how the transaction will affect reported earnings per share and what effect this may have on a given utility's stock price.
- The impact of current indebtedness on the borrower's creditworthiness. Is the utility more or less leveraged than its peers? What affect will another debt issue have on the credit rating? How will that debt issue affect the prices of currently outstanding debt? What affect will an adverse impact on the price of outstanding debt have on the marketability of the utility's new debt (and, for investor-owned utilities, on stock price)? Does the utility have the ability to raise revenue, in the case of revenue bonds, and to meet the provisions of the rate covenant? What effect will the ability or inability to raise rates have on the utility's credit rating and ability to increase the amount of outstanding debt?

Rating agencies use financial ratios when evaluating a utility's creditworthiness. Utility management should ensure that financial ratios are developed for their financial plans and compared to other similarly sized utilities. AWWA's benchmark manual contains good financial ratios that may be used to compare the utility to others.

Market Conditions and Access

Utilities that issue new bonds or refund existing debt should be aware of those market factors that influence financial decisions. The bond markets have tremendous diversity. Corporate markets as well as the municipal markets are influenced by the economic outlook, US Treasury activities, the shape of the yield curve, and general investor sentiment. In addition, the municipal markets are influenced by proposed federal tax law changes, as well as by proposed changes in the requirements and specifications for issuance that are promulgated by the states.

If the markets are in an unsettled state, there could be advantages to using a negotiated sale or private placement (if available) rather than a public competitive sale because the issuer would have more flexibility in settling the time of sale. A negotiated sale is the sale of bonds directly to an underwriter and differs from a competitive sale, which requires public bidding by the underwriters. Similarly, if the yield curve is flat, long-term interest rates may be comparable to short-term interest rates, which may influence the desired length of debt amortization. To properly assess the impacts of these and other market-related concerns and conditions, issuers typically rely on competent professionals in a variety of fields, including the bond counsel, the financial advisor, and the underwriter. The assistance provided by these professionals is discussed in chapter 5.

EXTERNAL FACTORS

After a utility has determined that it is legally able to pursue the financing option it has selected and (if it has selected a borrowing) has assured itself that it will have the resources to repay the loan on a timely basis, it must address certain external considerations. Among these are whether the utility has public support for the capital improvements and for the financing plan to be used. These two matters are

usually intertwined, and often the financial factors drive public debate on the capital program.

Most borrowings by government-owned utilities require citizen approval, either directly through referendum or indirectly through actions of an appointed board or elected council. Investor-owned utilities may need board approval, regulatory body approval, or both. Accordingly, the capital-financing vehicle should be selected with consideration for its acceptability to the general public, the utility's authorizing body, or both. The utility staff should consider its ability to explain, justify, and successfully advocate the capital items to be financed, as well as the financial assumptions underlying the borrowing. A significant factor influencing public acceptance is the impact on customer costs. In jurisdictions where a ballot initiative is required for debt issuance, utilities should take particular care to evaluate the political and financial climate before approaching voters.

Securing necessary administrative and legislative approval should be seriously considered. The need for public approval, whether directly or through elected or appointed representatives, should not deter a utility from using a financing mechanism it believes is appropriate and well suited to a necessary and specific capital program. However, the likelihood of acceptance and approval of the proposed borrowing improves as financing alternatives are presented with greater clarity and understanding to public representatives. Interactive computer financial modeling tools can aid in the demonstration of short-term and long-term customer impact of alternatives and can help justify a financing recommendation. This review and reporting of operations, budgets, and forecasts provides an added level of security. However, borrowers should recognize that more complex and innovative financial products will face closer scrutiny.

The level of scrutiny for government-owned utilities has remained high since the mid 1990s when the SEC clarified the responsibilities of elected and appointed officials to understand the structure and risks inherent in bond issues to which they give their approval. Issuers who contemplate using derivative products and innovative or nontraditional financing should plan carefully to explain their proposed transaction to boards or elected bodies. Even issuers who contemplate using traditional borrowing vehicles should thoroughly evaluate their financing decisions and be able to answer questions from overseers who are not familiar with such arrangements.

COMPARISON OF COMMON FUNDING ALTERNATIVES ---

This section describes some advantages and disadvantages of funding alternatives commonly used by water utilities, including general obligation bonds, revenue bonds, state revolving loan funds, leases, contributions, grants, tax benefit districts, and bond structure variations (Figure 3-1). Definitions and characteristics of these options are provided in chapter 2.

General Obligation Bonds

GO bonds are usually the lowest-cost form of debt financing available to local government because they are backed by a pledge of the entity's full faith and credit. Investor familiarity with this traditional standardized form of financing makes GO bonds very marketable. Costs of issuance are generally lower than those associated with revenue bond financing, not only because the cost of marketing a bond with wide market acceptance is lower, but also because the documentation associated with a GO issuance is less complex than that required for revenue bond financing. Because GO bond financing does not require the restrictive covenants, special reserves, and higher debt service coverage associated with revenue bonds, current revenues are not overly restricted, or pledged, and can be used for other purposes.

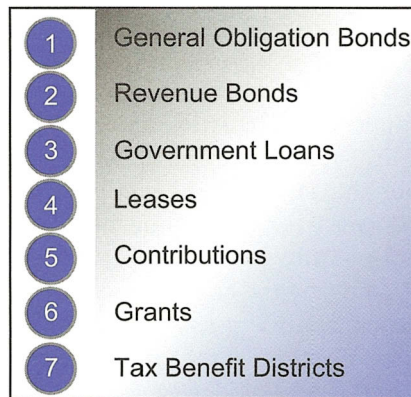


Figure 3-1 Common funding alternatives

While the issuance of GO bonds has many advantages, there are also certain drawbacks to this form of financing. One of the most significant disadvantages is that increases in the amount of GO debt must generally be authorized by the electorate. At a minimum, this increases the time needed to develop proceeds to finance capital projects. In addition, many states limit the amount of GO debt that can be issued or the interest rates that can be paid. These debt and interest rate ceilings on GO bonds may be restrictive in areas where tax reform propositions have been passed. Additional state or local government restrictions may exist in regard to the length of amortization of the bonds. This would tend to make the GO bonds' structure somewhat less flexible than with other forms of borrowing. Finally, the utility must compete with other government agencies for available bond proceeds needed to fund their capital projects. Such competition may cause delays in the utility implementing its capital program.

Revenue Bonds

Revenue bonds offer important benefits to the issuer. They provide a mechanism for recovering costs of specific services, such as water supply, directly from the users that benefit from the services. Revenue bonds are available to agencies that do not have taxing authority to issue GO bonds. Unlike most tax-supported debt, revenue bond issuance does not usually require voter approval, although voters generally have a right to petition for a referendum. Revenue bonds also avoid possible dilution of the government's pledge of full faith and credit, because generally such bonds are not included in the issuer's debt limit. In addition, when issuing revenue bonds, the issuer has some flexibility to structure the new obligation in such a way that its debt service wraps with existing obligations debt service to enable the utility to meet its annual cash requirements and debt covenants.

Revenue bond financing also has some disadvantages. Because principal and interest on revenue bonds are secured by and payable exclusively from revenue received from system operation or from the project being financed, market acceptance of these bonds is highly dependent on the service or project to be financed and on the nature and reputation of the issuer. For this reason, revenue bonds generally command higher interest rates than do GO bonds.

Higher interest rates and marketing difficulties are particularly apparent with regard to enterprises that do not have established earnings potential or a history of financial operations. Revenue bonds also frequently contain numerous provisions that potentially make a revenue bond borrowing more administratively cumbersome than a

GO borrowing. Indenture provisions—such as requirements for special reserve funds and debt service coverage ratios, as well as limitations regarding the amount of future debt that can be issued—may also decrease the issuer's future flexibility. The provisions often make it difficult to issue additional bonds, and they may trigger refinancing or refunding of outstanding debt before the issuer had planned to retire the debt or at times other than when economic savings would result.

Finally, initiating a revenue bond program is more complex and generally requires more time than GO borrowing. Revenue bonds usually have more complex legal, engineering, and trustee contributions. Therefore, the related issuance costs are also higher. Utilities financing system projects typically need to provide an independent demonstration of engineering and financial feasibility for the financial community. A revenue bond issue's added cost has important implications for an issuer. In some instances, the benefits of revenue bond financing may not be worth the added cost. A variety of factors, such as total debt, issue size, rating, and bond proceeds, should be considered in making the choice between using revenue and GO bonds.

Government Loans

Government programs, such as the USEPA Drinking Water State Revolving Fund (DWSRF) program, make low-cost loans and other types of assistance available to public water systems to finance the cost of water infrastructure. According to the DWSRF program, capitalization grants are awarded to states, which then utilize these funds to establish and administer state revolving loan fund programs.

Benefits of the SRF loans include below market interest rates, potentially lower issuance costs, and few, if any restrictive covenants. However, SRF programs are often very competitive, require compliance with complex state requirements, and are dependent on the availability of funds in comparison to the value of projects under funding consideration. According to the DWSRF program, states are required to prioritize the use of funds to projects that “address the most serious risk to human health; are necessary to ensure compliance with the requirements of the Safe Drinking Water Act; and, assist systems most in need, on a per household basis, according to state-determined affordability criteria.” Therefore, timing of project funding needs and the prioritization of the project based on the project's purpose are considerations that affect the suitability of SRF loans. In addition, the amortization period of government loans is usually a fixed term that is specified by the program.

Leases

Leases often provide additional flexibility to a utility. For example, a leased facility can often be obtained more quickly than one constructed by the utility. Leases can be offered at taxable or tax-exempt rates. A lease at a taxable rate may be more expensive to a government-owned utility than using funds from other sources. However, if the utility has only a short-term need for specialized equipment, or if equipment is expected to become obsolete before it wears out, the utility may find it advantageous to lease the equipment, even at the higher rate, especially if the equipment can be returned or upgraded before reaching the end of its useful life.

The most obvious benefit of a leveraged lease is the low cost. Lessors can pass on a portion of their tax savings to the lessees, resulting in a lower cost for the latter. A disadvantage of a leveraged lease is the complexity and initial cost in arranging such financing. Transaction costs of 8.0 to 9.0 percent may be involved.

A lease in the form of a COP has many of the same advantages and disadvantages as a revenue bond. The cost to the utility to obtain funds through the use of a COP structure depends both on the credit rating of the utility and on how essential

the leased facility is to the utility. A COP secured by essential facilities is more attractive to investors because it is generally secured only by rental payments on the leased facility.

Contributions

Contributed funds permit a utility to ensure that new users share in the full cost of developing utility service capability. Contributions may be used to expand service into new areas or for upgrading facilities to accommodate new users. In either case, the utility may keep the level of costs that need to be recovered from current revenues lower than might otherwise be the case. Contributions may help postpone or reduce the amount of future rate increases. They may also pay reserve capacity that existing customers may otherwise have paid for over a number of years. Through a utility's use of contributed funds, current customers are less likely to be asked to subsidize future growth or rehabilitation.

The disadvantages of contributed funds include the inconsistent levels and timing of the funds receipt. Typically, capital investment precedes the receipt of contributed funds because capital facilities are constructed in anticipation of increased demands. A utility must have extra capacity in its water facilities in service prior to physically being able to serve new customers. Contributions' receipts usually depend on growth cycles and the demand for utility services, which can be difficult to precisely predict. For those capital projects in which a utility shares construction costs with others, the utility may have particular difficulty planning the timing of such project expenditures.

Grants

Using grant funds, if available, generally helps utilities keep total costs of new construction or rehabilitation low for current users. Entirely grant-based funding of capital projects does not necessarily lead to an increased level of required utility revenues to support the operation of the new facilities. However, with partial grant funding, there may be a tendency for local governments to oversize systems or facility capacity because the utility's money goes considerably farther. Because such oversized facilities may not work as efficiently, oversizing may result in higher operating expenditures and greater annual cash expenses. This could impact water rates for the life of the facilities.

Most grant funding requires increased reporting and strict compliance with grant provisions. This could be a disadvantage if the utility's needs change in the future. Change in use may require the utility to incur unforeseen expenditures at a future date or require its outright repayment of the grant itself. Few pure grant funding programs exist, and applications to programs that are currently available are highly competitive and based on need.

Tax Benefit Districts

Typically, new water distribution facilities have been contributed to water utilities by developers who in turn recover their capital costs from purchasers of their developed properties. These purchasers generally debt finance their acquisitions and write the interest costs off of their annual income taxes. Rehabilitation of local facilities using tax benefit districts offers customers the same benefit while providing the utility with funds to make needed infrastructure improvements. Depending on how the benefit districts are defined, capital funds may also be available for the districts' proportional shares of utilities' backbone facilities replacements. The use of tax benefit districts may help utilities defray the costs of infrastructure replacement in a manner that

parallels how the utility originally acquired the infrastructure.

The disadvantage of using tax benefit districts pertains to the need to establish the district or to increase the tax limits for rehabilitation purposes by a majority vote of the customers and undeveloped properties that will benefit from the service. Properly defined needs and corresponding benefits explained to property holders in the district and responsible public officials will generally provide the required positive vote. However, a considerable public relations effort may be required by the utility to convince district property owners who may want to dissuade the utility from initiating improvements. There also may be a perception that, if the vote fails, a negative vote becomes a referendum against the utility for making improvements to its facilities in the area. However, a negative vote means that the utility must employ some other means of financing the needed improvements.

For utilities that have historically financed improvements and rehabilitations to their systems through general schedules of rates and charges for service applicable to all customers, the use of tax benefit districts will fundamentally change and potentially complicate their financing. The use of multiple tax benefit districts may result in the total cost of utility service being different in each district. These differences may affect the pattern of customer growth in the service area. This in turn may affect the utilities' capital planning and ability to provide timely service to each district. Some districts may feel that their needs are ignored while other districts' needs are addressed.

Historically, utilities have elected to spread their costs to all customers to minimize observable differences in utilities' costs to serve the various parts of their service areas. This practice tends to minimize customers' publicly expressed dissatisfaction with utilities' rates and charges. Without the use of cost averaging during ratesetting, some communities may become concerned that customers who can afford to pay will benefit by lower billings for utility service and those who cannot afford to pay may pay more than a perceived fair share.

BOND STRUCTURE VARIATIONS

An issuer can increase the marketability of its bonds by using a variety of bond structures to address specific market conditions. For example, during periods when interest rates are expected to increase, investors are more interested in floating-rate debt. However, this is also the time when issuers are interested in fixing rates at current levels. Investment bankers continually try to satisfy both interests by developing new bond structures and instruments that offer acceptable terms to both parties. Historically, such structuring included the development of variable-rate demand obligations (put bonds), floating-rate obligations, original-issue discount (OID) bonds, zero-coupon bonds, and capital appreciation bonds (Figure 3-2). The issuer should be aware that if it selects such variations to sell the bonds, it may be accepting more interest rate risk. The issuer should discuss alternative structures in depth with its financial advisor and ensure that it understands both the benefits and the risks it can expect. Characteristics, advantages, and disadvantages of several of these structures and instruments are discussed in the following paragraphs and are summarized in Table 3-1.

Variable-Rate Demand Obligation (Tender-Option or Put Bonds)

The most significant advantage of variable-rate demand obligations is the interest savings, which can be substantial. Investors are willing to accept a lower rate on these instruments during a period of steep yield curves because the put option provides a

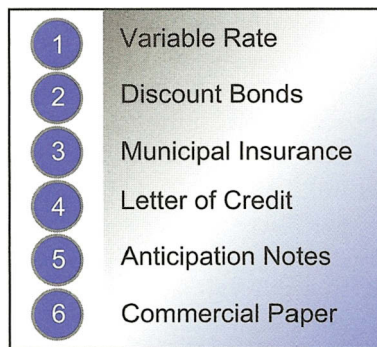


Figure 3-2 Bond Variations

way to exit the bonds at par before maturity if an investor needs to do so. A put option provides the bond holder with the right, but not an obligation, to sell the bonds within a certain time period for a specified price.

The amount of savings will, however, vary with market conditions, the credit rating of the issuer, and particular put-option features. In addition, the LOC fee, any insurance premiums, and the cost of funds potentially borrowed against the LOC can offset potential savings.

Discount Bonds

Discount bonds have two primary advantages for the issuer: lower interest costs and a generally lower overall yield to maturity. There are a number of reasons investors are willing to accept a lower yield and lower interest income from discount bonds. In states where the face value of a discount bond can be used to meet pledging requirements, the same dollar amount can buy considerably more face value of discount bonds than of conventional bonds. Similarly, individual investors can purchase a large par amount of discount bonds at a relatively low cost. Discount bonds are also advantageous during a period of active tax swapping, when they are in considerable demand.

Bonds with extreme discounts, such as zero-coupon or capital appreciation bonds (CABs) have additional advantages. First, with these instruments, the investor no longer has reinvestment risk, so these bonds are particularly attractive to investors during periods when interest rates are expected to decline and only lower-yielding reinvestment options are anticipated. Second, zero-coupon bonds appeal to a broad market because they are often purchased by individual investors, for whom a \$5,000 bond might be prohibitively expensive, to provide money for future educational or retirement needs. Because these bonds are attractive to investors, many investors accept a lower yield to maturity than on a conventional bond. Another advantage to the issuer is that a zero-coupon bond incurs fewer administrative expenses, because there are no semiannual interest payments.

CABs are distinct from traditional zero-coupon bonds because the investment return is considered to be in the form of compounded interest rather than the accreted original issue discount. For this reason, only the initial principal amount of a CAB would be counted against a municipal issuer's statutory debt limit, rather than the total par value, as in the case of a traditional zero-coupon bond.

A disadvantage of discount bonds for an issuer is that the issuer must sell a greater par amount of bonds to realize the same amount of bond proceeds. This could present problems if the issuer's legal debt authorization is limited. Another consideration for an

issuer is that redeeming discount bonds early is expensive. Exercising call provisions at premium or even at par can raise the yield on the bonds considerably.

Bonds with extreme discounts also have disadvantages for issuers. The issuer must carefully structure appropriate sinking-fund provisions to ensure that requisite funds will be available at maturity to meet balloon payments due at that time. Also, some states prohibit excessive discounting of bonds. In other instances, state or local debt limitations or maximum debt authorizations may inhibit the sale of capital appreciation or zero-coupon bonds. Further, it may be difficult to convince the public that issuing bonds with a par value many times greater than bond proceeds is appropriate.

Bonds With Municipal Bond Insurance

The advantage of using bond insurance or other credit enhancements to achieve the highest possible credit rating is to enable a low-rated issuer to pay a lower interest rate than its own credit rating would normally allow. The use of insurance may also broaden the market for the bonds because some investors demand bond insurance or a minimum rating.

The disadvantages and risks associated with the use of municipal bond insurance include the front-end deduction of the entire insurance payment from bond proceeds, thereby reducing the amount of funds available for construction projects. In addition, bond insurance may not be available to all issuers. To spread their risk, insurers may have limited underwriting capacity in certain geographic areas or with regard to particular types of bond issues. Insurers also frequently impose restrictions on bond issues they underwrite, including requiring reserve funds, high coverage requirements, or enforceable rate covenants.

Bonds with LOC

The advantages of using an LOC to enhance the rating on a bond are the same as those previously discussed for bond insurance. LOC support can produce considerable interest savings for an issuer. Also, LOCs may be a requisite component of such financing techniques as variable-rate demand bonds and CP.

A disadvantage of using LOCs is that few banks provide commitments beyond 5 to 10 years, so most issues supported by LOC have relatively short maturities or are structured to provide for retirement of the debt before expiration of the LOC. Bonds issued for shorter periods tend to have higher annual debt service payments than might otherwise be the case, resulting in a greater financial effect on utility financing. Also, the cost of securing an LOC can add measurably to the ongoing expenses of a bond issue. The fee charged is generally payable on an annual basis and represents a fixed percentage of the amount of bond funds secured by the LOC. In addition, utility administrative costs may increase because of requirements to file regular financial reports with the bank issuing the LOC.

Bond-, Tax-, Grant-, and Revenue-Anticipation Notes

The major advantage of issuing bond-anticipation notes (BANs), tax-anticipation notes (TANs), grant-anticipation notes (GANs), or revenue-anticipation notes (RANs) instead of long-term bonds is the lower interest rate. At risk, however, is the issuer's ability to enter the long-term bond market at rates less than current interest rate levels when the notes mature. If rates do not decline measurably, future financing costs may increase. Also, if legislation permits, the temptation to roll over the outstanding notes with another short-term issue may overburden the municipality with short-term debt.

Commercial Paper (and Tax-Exempt CP)

The primary advantage of CP for an issuer is the extremely low interest rate. Because of its short maturities, superior credit quality, and ready liquidity, CP is a prime investment instrument for money market funds. Because of the strong demand for short-term securities by funds and individual investors, the interest rates on CP are the lowest of all instruments.

There are, however, a number of disadvantages to CP financing. The initial start-up and operating costs of such a program may be greater than those of alternative short-term borrowing methods. They include the cost of the backup credit facility, bond counsel fees, and transaction costs associated with administering the program. Consequently, \$50 million is the generally accepted minimum issue size. Once CP has been issued, the recurring refunding and sale process that gives CP the characteristics of a continuous securities offering requires daily staff commitment. Issuers also assume all the risks of short-term borrowing when they issue CP. Depending on market conditions, the maturing issues may not be refinanced with new commercial paper. Another consideration for tax-exempt issuers is that if the backup line is drawn on, the new loan will probably carry a taxable interest rate.

SUMMARY

When evaluating alternative methods of financing capital expenditures, a utility will need to consider the legal and financial environments in which it operates, as well as the advantages and disadvantages of the various forms of financing that are available. In making a selection, the utility will want to consider not only its financial capacity but also the public acceptability of the various alternatives. How the various alternatives will affect the utility's future financial flexibility and how they fit within its long-term financial strategy are also important considerations.

Table 3-1 Comparisons of funding alternatives

	Funding Alternative	Key Components	Advantages	Disadvantages	Conditions Favoring the Alternative
1.	GO bonds	Pledge of full faith and credit; tax-backed debt	Strongest security for investors; low debt interest and issue costs	Must seek voter approval; legal debt capacity limitations	Healthy or growing tax base; no debt ceiling concerns; city healthier than enterprise
2.	Revenue bonds	Pledge of enterprise revenues; provides a dedicated funding stream	Generally requires no voter approval; no draw on debt capacity or tax base; user fee schedules	Higher debt interest cost than GO bonds, more complex and costly sale than GO bonds	Enterprise healthier than city; city at or near debt ceiling for GO debt; relieve new tax pressures
3.	Government loans	Loans available through federal or state programs	Below market interest rates; low issuance costs; few restrictive covenants	Competitive; selection may be based on project prioritization; inflexible debt amortization terms	Projects with long lead time before funds are needed, or that receive a high priority ranking
4.	Double-barrel or combination bonds	Pledge of revenues backed by pledge of full faith and credit	Additional security for enterprise shortcomings; revenue pledge may keep bonds out of debt limit	Must seek voter approval; may have legal debt capacity limitations	Enterprise may not have a record of debt issuance or is in some distress; poor market interest in the debt
5.	Tender-option or put bonds	Long-term bonds with tender option prior to maturity; issue has short-term debt characteristics	Takes advantage of lower short-term rates	Requires credit facility to ensure redemption funds; savings vary with market; more complex and costly	Best used during periods of steep interest yield curves
6.	Floating rate or variable rate bonds	Rates linked to a market, treasury, or interest rates index; periodically revised; high-low limits set	Lower rates because issuer assumes full interest rate risk; popular in a volatile bond market	Costly to administer; uncertainty of future debt service payment levels; higher risk to issuer	Attractive investments when investors expect interest rates to rise
7.	Zero-coupon or capital appreciation bonds	Long-term bonds with deep discounts from par; no interest payment before maturity	Lower interest rates because issuer assumes full reinvestment risk; low administrative cost	Sinking fund must meet balloon payment at term; maximum debt approval may be difficult to obtain	Less prevalent since 1986 Federal Tax Act changes; check state restrictions on deep bond discounting
8.	OID bonds	Long-term bonds sold with low interest rate at discount below par	Lower interest costs to issuers; lower overall yield to maturity	Greater amount of bonds must be sold to realize same amount of proceeds	Attractive during periods when interest rates are thought to be declining

(Table Continued Next Page.)

Table 3-1 Comparisons of funding alternatives

9.	Bonds with municipal bond insurance	Purchase of bond insurance gives issuer a Triple-A bond rating	Low to medium credit ratings become Triple-A; lower interest expense	Insurance payment paid from bond proceeds; there may be additional insurers' limits	Investment-grade rating needed; insurance cost less than interest payment spread for credit ratings
10.	Bonds with LOC	Major banks to cover debt service payments in case of issuer default	Lower interest cost to issuer because of upgrade of rating	Expense to obtain an LOC; higher costs for administration	Need to raise ratings; banks' creditworthiness exceed that of issuer
11.	Bond-, revenue-, tax-, and grant-anticipation notes	Short-term borrowing for less than one year; bank LOC is security	Lower interest costs to issuer	High issue/administrative costs; with interest rate rise, LOC may not renew at term	Note limited to 10%–15% of debt portfolio; used when interest rates are high and expected to drop
12.	CP	Promissory note with maximum 270-day term (average 30–45 days); rolled over continuously	Considerably lower interest costs to issuer; strong demand by funds and individual investors	Requires LOC to ensure liquidity; administration costly; LOC may not be renewed as rates rise	Note limited to 10%–15% of debt portfolio; used when interest rates are high and expected to drop



Chapter 4

Going to Market: The Process

External funding alternatives, including the use of debt, are discussed in chapters 2 and 3. This chapter focuses on the issuance of bonds. For the vast majority of government-owned utilities, the most common type of debt used is the tax-exempt bond.

Bond issuance is a potential next step in the implementation of a CIP and an overall strategic plan. Financing goals and objectives should be set within parameters that enhance a utility's operational effectiveness. At a minimum, goals relating to the following issues should be established at the start of the financing process:

Financing Issues to Address		
1	Financing Costs	A budget should be set for front-end financing costs. Annual debt service (principal and interest) may be included within an existing rate or financial planning study.
2	Flexibility	Bond covenants should not restrict the utility in financing future capital improvements, setting rates, or operating the system according to the CIP and the overall strategic plan.
3	Bond Term	The final maturity of the bonds should not exceed the estimated useful life of the project(s).
4	Integrity	The financing process should be carried out in a manner that protects the public trust in the utility.

Although the utility may have the assistance of various outside professionals throughout the financing process, the utility's governing body remains legally responsible for the actions taken and information provided to investors. Thus, it is important that utility management control the process and secure the most cost-effective results. Staff members who understand the overall financing process and can effectively manage the finance team, including outside professionals, will be more effective agents of the governing authority. This chapter discusses the financing process. The roles and responsibilities of each team member are discussed in chapter 5.

OBTAINING AUTHORITY

Before a government-owned utility can issue long-term debt, it must obtain authorization from its governing body, a city council or town governing body, a utility commission, or a regional body. To obtain approval, the utility should present

- The multiyear CIP
- The proposed CIP funding plan, and
- The long-range financing plan covering payment of debt and annual utility operations.

Often a financial plan or rate study is used to demonstrate to the governing body how effectively existing or new rates will support outstanding and additional bonds. In some cases, a cost-of-service study may be necessary to show financial impacts on customers served. Before the governing body approves the bond issuance and rate study, a public hearing may be required. At the hearing, the governing body provides ratepayers and other stakeholders the opportunity to speak for or against the utility's capital program and proposed rates. If debt is to be secured by the taxing power of the state or local community, some utilities must obtain approval by referendum of issuance on a local or statewide ballot.

Generally, the engagement of professionals, the bond resolution, and the bond purchase agreement (BPA) will need approval by the utility's governing body. The BPA is often adopted as part of an *award resolution* incorporating details of the financing terms.

In most (but not all) states, government-owned utilities do not have to file with the state's public utility or service commission. Investor-owned utilities must file with and obtain approval of the state agency and may be required to obtain SEC approval before issuance of the long-term debt.

ASSEMBLING THE FINANCE TEAM

After the governing body has approved the CIP (or refunding) and has instructed staff to assemble a finance team to implement the financing plan, the internal resources of the issuer should be evaluated. The staff should also evaluate the status of any outstanding commitments or contracts with outside professionals. It is not uncommon for issuers to engage a bond counsel, financial advisor, or both for a period of time, perhaps two years, rather than for a specific issue.

For the purpose of the following discussion, it is assumed that the issuer has no existing relationship with a bond counsel, financial advisor, or underwriter. However, it is also assumed that the project principals—consulting engineer and feasibility or rate consultant—have established working relationships with the utility.

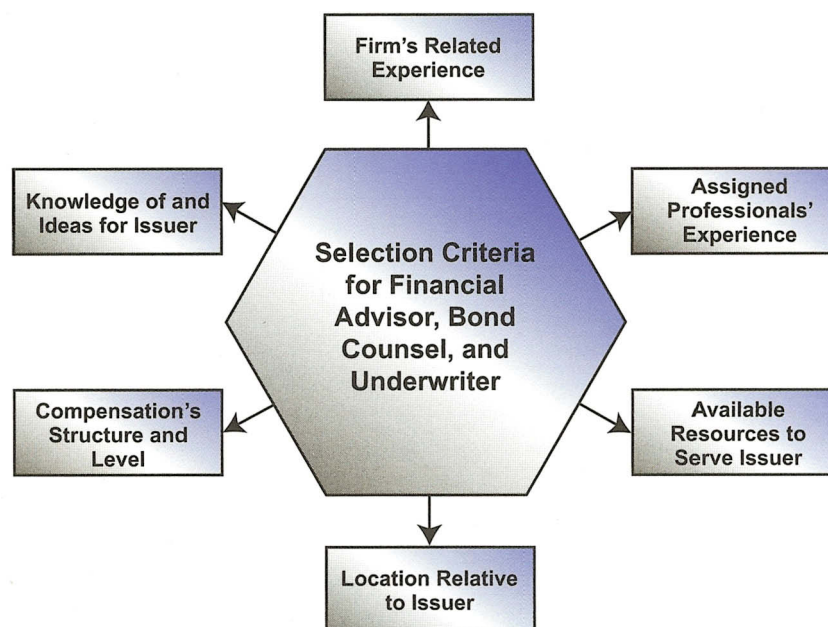


Figure 4-1 Finance team's selection criteria

Because the financial advisor serves the issuer in a fiduciary capacity, it may be prudent to select this professional first for guidance in choosing the bond counsel and underwriter. The selection of these professionals should be based on the results of an open, merit-based request for proposals, as well as a ranking system including the criteria in Figure 4-1.

The selection process may include a short list of three to five firms based on written responses to the request for proposals. After conducting formal interviews of the short-listed firms, the utility should compile a final ranking for approval by the governing body.

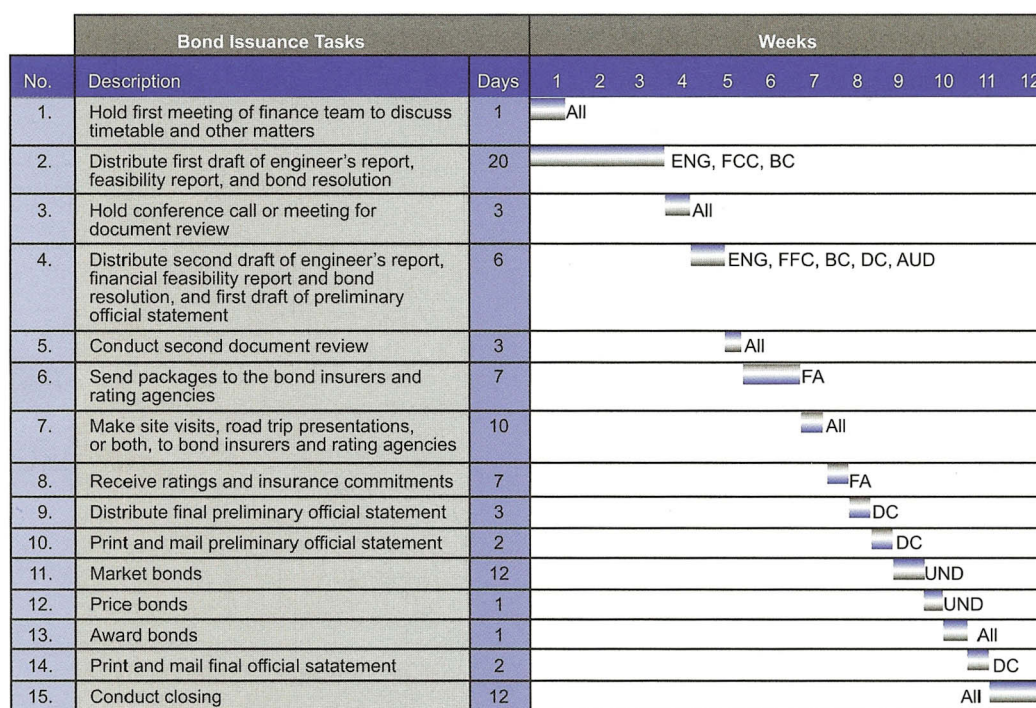
The structure of compensation may be more important than the level of compensation in selecting a financial advisor and bond counsel. Expertise and level of service can differ greatly among firms applying for these important positions on the finance team. The utility should compare the structure and level of compensation with those of similar transactions by other issuers.

Before selecting the underwriter, the finance team should determine the type of sale. An underwriter would need to be selected only if the issuer determines to sell the bonds by means of a negotiated sale. This subject is addressed later in this chapter.

TIMELINE

The issuer is responsible for assembling the finance team, which could take from 60 days to 6 months. This team, once it is assembled, should compile a timetable listing each task to be accomplished, the team members who are responsible, and a corresponding due date for each task through bond closing. A timetable, although it should be flexible, will help the individual finance team member's focus on their responsibilities and keep the process moving forward. An example of the process and time frame of issuing bonds is illustrated in Figure 4-2.

Before it works with rating agencies, bond insurers, and potential investors, the finance team may be required to have the following documents in substantially



LEGEND			
AUD	Auditor	FA	Financial Advisor
BC	Bond Counsel	FCC	Financial Feasibility Consultant
DC	Disclosure Counsel (Optional)	UND	Underwriter
ENG	Engineer		Task Schedule

Figure 4-2 Sample timeline for bond issuance

final form. (However, not all utilities are required to obtain an independent engineer's report or a financial feasibility report to issue bonds.)

- bond resolution
- engineer's report
- financial feasibility report
- preliminary official statement (POS)

The bond resolution, engineer's report, and financial feasibility report may be drafted concurrently. If a rate study has recently been completed, preparation of these documents may take from 3 to 12 weeks to update the findings based on the most recent utility experience, depending on a variety of factors, including the size of the utility and proposed capital funding requirements. However, if the rate study and financial plan are outdated, three to four times this length of preparation may be necessary.

Because the bond resolution, engineer's report, and financial feasibility report provide the basis for the POS, a working draft of the POS is usually the last document available for review. If the transaction is on a fast track, the documents may be sent to the rating agencies and bond insurers with some missing data, but they should contain no material inaccuracies.

After a package of documents is sent to the rating agencies and insurers, a formal response may take approximately 10 to 21 days. Utility management would be prudent to offer to meet with these entities and make a formal presentation of the package.

After the questions of rating and insurance are answered, the POS can be printed and mailed to investors. This action commences the marketing period of 3 to 14 days for the bond sale. Bond closing usually follows the sale by 7 to 14 days.

When soliciting competitive bids for new bond issues, many utilities use the Internet to expedite the transfer of official documents, minimize costs, and reach as many prospective bidders as possible.

On the date of the bond sale, the terms, interest rate, price, and amount of the transaction are agreed to by the issuer and the underwriter. The actual exchange of bonds for dollars takes place at the closing.

Many states have a validation process during which the issuer may file a validation complaint with the state court. This complaint will provide notice and a forum for interested parties to challenge the bond resolution and the issuance of bonds. Basically, this process provides the issuer protection from legal challenges subsequent to the issuance of bonds. Normally, the procedure takes 60 to 90 days and can run parallel to other tasks, except closing, once the resolution is available. The issue of validation should be discussed with the bond issuer's own counsel or bond counsel, or both.

PREPARING THE OFFICIAL STATEMENT

The official statement (OS) is the document that presents a utility to the underwriter and then to the ultimate investor in the bonds. It provides the information in Figure 4-3.

When prepared, the engineer's report, the bond resolution, and the financial feasibility report are the primary sources of information contained in the OS. The SEC has promulgated certain regulations requiring the issuer to certify that the OS, as of the date of its publication, does not contain any untrue or misleading remarks or misrepresentations of material facts and does not fail to state any material fact that may result in the other statements contained therein being misleading.

When bonds are sold through a competitive sale, the OS is put together by the issuer, financial advisor, consulting engineer, financial feasibility consultant, bond counsel, and the utility's independent auditor or accountant. Regardless of whether the bonds are sold through a competitive or negotiated sale, the financial team also has a legal responsibility for the quality of information in the OS and will conduct—usually with the assistance of an underwriter's counsel in a negotiated sale—a due diligence review of the disclosure information contained in the OS.

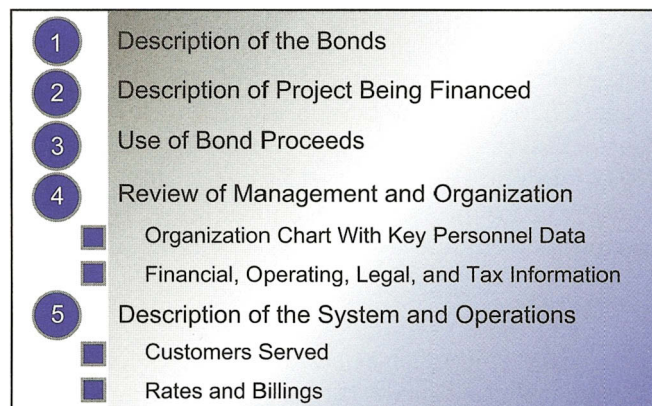


Figure 4-3 Official statement's general information

The OS is prepared in two phases. Most of the work is done in the first stage and results in a POS. This POS, usually printed, is distributed to rating agencies, insurance companies, prospective buyers, and underwriters who, in the case of a competitive sale, are the prospective bidders on the bonds. Rating agencies and insurance companies will typically have the most questions for the issuer to address about the POS. Once the bonds are awarded to an underwriter, the POS is updated with prices received from the sale, including interest rates and yields for each serial and term bond, cost of issuance of the bonds (including cost for the underwriting), debt service information, and any other material information that was not a part of the POS. The final OS is then printed. The issuer bears the cost of printing and mailing the POS and the final OS.

METHOD OF SALE

Issuers have three methods available for selling bonds.

1. Private placement
2. Negotiated sale
3. Competitive sale

An issuer should review each method in light of financing costs (including interest), level of service, and political considerations.

Private Placement

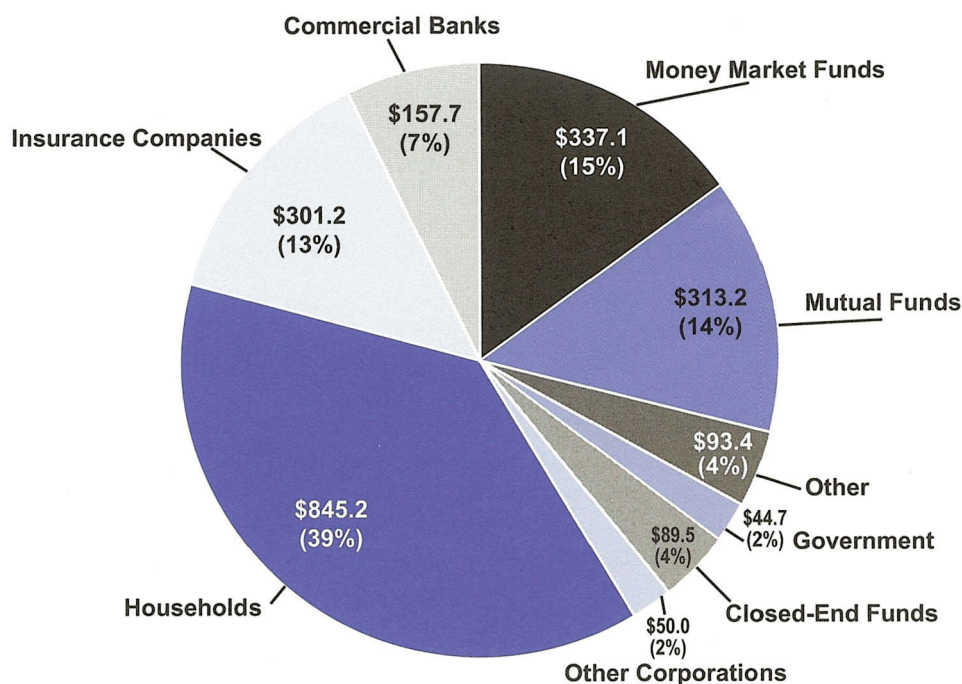
In a private placement, the issuer sells bonds directly to a small number of sophisticated investors who have the ability to perform their own assessments of the issuer's credit. If the issuer's credit should be deemed as noninvestment grade by a rating agency, the issuer might find it beneficial under certain circumstances to consider a private placement.

Because bonds sold through private placement are often not liquid to the investor (i.e., the investor is restricted from selling them or is often unable to sell them), the transaction inherently results in a higher effective interest cost. Historically, only a small percentage of the total dollar amount of tax-exempt bonds each year are privately placed. The competitive and negotiated methods of sale are emphasized in this chapter.

Bonds sold on a competitive or negotiated basis are publicly offered to a variety potential investors. To the issuer, a bond issue appears to be a large debt obligation with a specific interest rate. However, publicly offered bonds are traditionally sold in \$5,000 denominations with different interest rates for each maturity to appeal to various investor groups. Therefore, each bond issue is typically purchased by numerous investors. The Federal Reserve System reported that approximately \$2.2 trillion of tax-exempt bonds were outstanding in the United States in 2005. The percentages of ownership for different investor groups summarized in Figure 4-4 can vary by up to 6 percent over time, depending on changes in market conditions affecting other investment options.

Negotiated Sale

A negotiated sale involves selecting the underwriting firm or firms in advance of the sale. In a negotiated sale, the underwriters and other professionals assist the issuer in structuring the debt obligation. The issuer negotiates the price for the issue with the underwriters at the time of sale. Before the sale of bonds is negotiated, the justification for choosing the negotiated form of sale over the competitive sale should be developed. For a complex credit, a negotiated issue can be justified based on reasons that include



NOTE: All amounts in billion \$US.

Source: Federal Reserve System 2005.

Figure 4-4 Investor groups' holdings of municipal securities

- A volatile market
- An unusual bond structure
- A refunding of bonds
- An issuer that is in the market infrequently

A financial advisor who has a feel for the market can be helpful to the issuer in identifying facts that could provide justification for a negotiated sale. With a negotiated sale, the underwriter often assists in preparing the OS and other bond documents used to market the bonds. A disadvantage of a negotiated sale is that the process of establishing the price and interest rates for the bonds is not as straightforward as in the competitive form of sale. An issuer must evaluate the price and interest rates offered by comparing the issue against other equivalent issues offered just before the sale of bonds. A financial advisor is often needed to help the issuer evaluate the terms and conditions of the underwriter's offer. Table 4-1 provides a comparison of conditions favoring either negotiated or competitive sales.

Competitive Sale

The competitive form of sale is the easiest and most straightforward method to sell a municipal debt obligation. It differs from the negotiated sale in that the issuer does not select the underwriting team but rather publishes (1) a notice of sale that specifies, among other things, how bids are evaluated (usually on the basis of net interest cost or true interest cost), and (2) a bid form that is mailed with the POS to all prospective underwriters. Frequently, the Internet is used for this purpose to reduce costs and reach more prospective bidders.

The underwriters form underwriting teams and submit bids on the bid form at the time and place specified in the notice of sale. The issuer opens the bids at the prescribed time and, after compiling the results, awards the sale to the underwriting team that submits the lowest interest cost as specified in the notice of sale. A competitive sale is often used for the following reasons or circumstances:

- The market is stable.
- The bond structure is a traditional one.
- The issuer is recognized in the marketplace.
- The issuer is legally required to hold a competitive sale.

Using this method, an issuer is assured a competitive or market rate on the bonds. In a competitive sale, the bidder has the option of obtaining credit enhancement by purchasing bond insurance. The cost of this insurance can be borne by the underwriter or the issuer as specified in the notice of sale. The underwriting team will use bond insurance if it believes that a lower bid can be produced as a result. Also, some investors are interested in purchasing only bonds of a high credit rating, and bond insurance provides such a rating.

UNDERWRITER CONSIDERATIONS ---

Underwriters enter the bond process in two ways. In a competitive sale, they bid on the bonds at the time of sale. The bid that produces the lowest net or true interest cost, as specified in the notice of sale, determines who the underwriter will be for the issue. In a negotiated transaction, the issuer actively selects the underwriter for the issue.

Depending on the size of the issue—small, medium, or large—the issuer decides along with the senior underwriter, if the issue needs co-managers. A senior manager negotiates the terms and conditions for the bonds directly with the issuer and assists in establishing the best time to sell the issue. The senior manager keeps the books and allocates the bonds to the various managers. The issuer, along with the financial advisor, oversees this activity.

The use of co-managers helps in gaining access to various segments of the market that might not be thoroughly covered by the senior manager. Some underwriting firms have the sales strength to access institutional markets, whereas others have access to retail markets. The markets that the issuer is trying to reach often determine the choice of co-managers. In some cases—for example, for large offerings or during difficult market conditions—a selling group will be established to provide an additional level of access to the market.

Selling group members usually assume none of the underwriting risk and do not cost the issuer any additional money. The selling group members are paid from the management fee or underwriting risk component of the spread, if applicable, that is paid to the managers.

SALE AND CLOSING ---

The sale or pricing is the most important event in the financing process. This is when interest rates and other terms of the transaction are determined. The underwriter will offer rates and terms that are supported by offers from potential investors. Because the investors hold offers open for only a short period of time, the issuer's staff, with the financial advisor's assistance, should be prepared to give a "verbal award" within minutes after bids are taken in the case of a competitive sale or on conclusion of discussions in a negotiated transaction. Formal approval of the governing body generally takes place within 24 hours of the verbal award.

Table 4-1 Summary of conditions favoring a method of sale

Debt Structure	Conditions Favoring Competitive Sale	Conditions Favoring Negotiated Sale
Security Characteristics		
Pledged revenues	General obligation or strong system revenue	Project-supported revenues
Security structure (for revenue bonds)	Conventional resolution and cash flow; rate covenant and coverage	Unusual or weak covenants; subordinated debt
Debt instrument	Traditional serial and term, full-coupon bonds	Innovative structuring; derivative products; targeted specific investors
Credit Quality		
Rating level	A or better	Below Single A
Rating outlook	Stable, A or better	Weak, but improving; or under stress
Issuer Characteristics		
Type of organization	Broad-based, general-purpose borrower	Special-purpose, independent authority
Frequency of issuance	Regular borrower in public market	New or infrequent issuer
Market awareness	Active, informed issuer staff	Issuer with significant financial, legal, or other problems
Investor comfort	Well-known, stable issuer	Issuer with significant financial, legal, or other problems
Market Conditions		
Current trend	Stable, predictable, strong market	Volatile or declining market
Interest rates	Good investor demand; good liquidity	Oversold market; heavy issue supply
Supply and demand	Light issue supply; good investor demand	Oversold market; heavy issue supply
Policy Considerations		
Participation in sale of bonds	Desire to have broad market participation for sale of bonds	Desire to direct business to disadvantaged businesses or to local or regional firms
Stimulation of investor interest	Desire to have broad market participation for purchase of bonds	Desire to direct business to local or regional investors

A period of time is negotiated during which all the documents of sale—including legal and tax documents, plus those required by the governing resolution—must be completed. On the prearranged date, these documents are executed and the sale is finalized. To avoid last minute problems, most documents are executed in a preclosing held before the actual date of closing. On the date of closing, the underwriter usually transfers the net bond proceeds to the appropriate bank or trust company designated by the issuer, and the issuer simultaneously delivers the bonds to the underwriter.

POSTSALE CONSIDERATIONS

After the sale is completed, the finance team should evaluate the success of the sale in relation to the goals and objectives set in the initial stages of financing. For example, the team should answer the questions in Figure 4-5.

By documenting the answers to these and other questions, an issuer can enhance the success of future financings. Many issuers also find it helpful to have the finance team continue to meet on a periodic basis to improve communication and to better manage the capital improvement funding process. This communication also improves the issuer's ability to monitor the outstanding debt for possible refunding opportunities.

The public offering carried out by the issuer is not the last time the bonds are sold. Initial investors frequently sell bonds to other investors in the secondary market. To protect all investors, the SEC adopted continuing disclosure requirements that were effective July 1995. These requirements call for issuers to update material information contained in the OS on an annual basis and to provide notice of any of the following 11 material events. The financial advisor should be able to tell whether these apply.

1. Principal and interest payments delinquencies
2. Defaults for reasons other than nonpayment of interest or principal
3. Unscheduled draws on debt service reserves reflecting financial difficulties
4. Unscheduled draws on credit enhancements reflecting financial difficulties
5. Substitution of credit or liquidity providers, or the failure of these providers to perform
6. Adverse tax opinions or events affecting the tax-exempt status of the security
7. Modifications to the rights of security holders
8. Optional or unscheduled bond calls
9. Defeasance
10. Release, substitution, or sale of property securing repayment of the securities
11. Rating changes

The required information has to be filed with a Nationally Recognized Municipal Securities Information Repository (NRMSIR), or specified alternative, to ensure its availability to all potential investors. The full finance team should identify compliance issues pertaining to SEC's continuing disclosure requirements early in the process, with the objective of providing ongoing adequate disclosure while not unduly burdening the issuer subsequent to the bond closing.

After the transaction has been completed, bond counsel usually provides each finance team member a transcript containing copies of the bond documents associated with the transaction. This serves as an easy reference tool throughout the life of the bond issue.

1	Do the true interest costs and debt amortization conform to the criteria identified in the reports used to inform the governing body and public?
2	Did the issuer retain the flexibility to easily finance future utility capital improvements?
3	Did financing costs stay within estimates and bids?
4	Were credit ratings of the issuer retained, downgraded, or enhanced?
5	Did the process enhance relations between the issuer and investors?
6	Did each team member perform as promised?
7	Did the team work well together?
8	How can the process be improved?

Figure 4-5 Postsale questions to address

SUMMARY

Bond issuance is one step in a CIP. It involves obtaining the authority to issue a bond, assembling a finance team, and compiling a timeline to schedule the tasks. The official statement is prepared by the finance team, depending on the method of sale—private placement, negotiated sale, or competitive sale. During the sale, interest rates and other terms of the transaction are determined, making the sale the most important event of the financing process. After the sale is completed and the documents executed, the finance team should evaluate the sale in relation to the issuer's goals and objectives established at the beginning of the process.



Chapter 5

Going to Market: The Players

Because so many participants can be involved in the financing of a utility, this chapter is dedicated to providing a broad explanation of the roles these individuals can play. It is beyond the scope of this manual to detail specific responsibilities of each member of the finance team. The descriptions that follow identify the participants in the process and offer a synopsis of the responsibilities of each participant as a member of the finance team, the organizational role for each participant, and how the team member may be compensated.

ISSUER PRINCIPALS

The financing staff of the issuing entity should have the responsibility for the bond-financing program. Regardless of how many outside consultants are retained, the issuer is responsible for all aspects of the program. The lead finance staff is responsible for all financial information, rates and revenues data, and all statistical data (e.g., concerning population growth and economic issues). Because most of the OS is technical in nature, the inclusion of issuer personnel responsible for operating and engineering areas is critical. After the expertise for the financing team is determined, outside consultants should be selected. Potential team members are listed in Table 5-1.

Typically, successful financing is the result of cooperative efforts of the issuer's professional staff working in conjunction with consultants representing the legal, financial, and engineering disciplines. This group forms the finance team—the individuals charged with the responsibility to develop and implement bond financing programs.

The finance team may take different forms depending on the nature of the financing. A bond financing, for example, is the most complicated financing process, particularly when compared to a bank loan. It requires the collective expertise of professionals from many different areas. In the form of a public offering, it necessitates extensive legal documentation, preparation of disclosure

Table 5-1 Potential finance team members

Team Member	Role Description
Issuer	Determines need for bonding; selects financing team; finance director may be required to develop coverage test(s)
Legal Principals	
Bond counsel	Provides expertise in securities law; represents interests of future purchasers
Issuer's counsel	Reviews local legal matters for inclusion in OS
Disclosure counsel	Conducts due diligence; may draft the OS; provides guidance for ongoing disclosure responsibilities
Underwriter's counsel	Reviews all documents; may prepare OS and other documents of concern to the underwriter
Financial Principals	
Financial advisor	Provides financial analysis and assistance with the issue; represents issuer
Underwriter	Purchases the bond and resells to investors
Commercial bank	May offer tax-exempt loans or credit facilities to issuers
Project Principals	
Financial feasibility consultant	Develops a financial feasibility analysis of the utility and/or project(s)
Consulting Engineer	Insures the bonds or provides an LOC to back the bonds
Credit Evaluation Principals	
Rating agency	Rates creditworthiness of entity for investors
Credit Enhancer	Insures the bonds or provides an LOC to back the bonds
Trustee	Holds funds and is responsible for protecting investors' rights
Auditor/certified public accountant	Provides most recent audited financial statements and may provide escrow verification
Other Participants	
Financial printer	Prints OS, notice of sale, or other requested items
Registrar	Maintains records of bond ownership
Paying agent	Disperses principal and interest payments of bondholders

materials, selection of an underwriter, and meetings with the rating agencies and bond insurers. Bank loans, on the other hand, are based on proprietary credit evaluation and can be completed on standardized loan documents. Both types of financing are important and require the organization of a finance team to ensure a successful closing.

The composition of the finance team is based on the financing requirements. It is incumbent on the issuer and consultants to mobilize the resources necessary to organize an efficient finance team.

LEGAL PRINCIPALS

Legal counsel will fulfill a number of diverse roles in the course of any financing program. Documentation and legal opinions are required on myriad issues ranging from the legal organization of the borrowing entity to the legality of an investor in another state purchasing bonds. Generally, there are three or four attorneys involved in a bond issue, depending on the complexity of the transaction. For example, if an

LOC is used to provide additional security to bondholders, bank counsel represents the bank's interests.

Bond Counsel

A bond counsel is an attorney or firm of attorneys with specific expertise in securities law. Bond counsel is retained by the issuer and charged with the responsibility to issue an approving opinion that the debt obligation is valid, legal, and binding. To do this, bond counsel prepares documentation authorizing the issuance of debt and determines any conditions with which the issuer must comply. Bond counsel may be involved with various documents, including a bond referendum, state legislation, and notices to bondholders, among others.

Perhaps the most important role for bond counsel is to provide an opinion regarding the tax status of bonds. The primary concern is whether interest paid on the borrowing is exempt from state taxes, federal taxes, or both. Federal law governs the issuance of tax-exempt bonds and provides specific direction concerning the types of projects eligible for tax-exempt financing, as well as refunding (refinancing) limitations. State laws generally focus on a narrower set of issues, such as the purpose of borrowing. It is incumbent on bond counsel to determine the extent of state and federal tax exemption, if any, for governmental borrowings.

Bond counsel's responsibilities continue after the transaction is completed. Because underlying documentation can be complex, bond counsel is frequently called on to provide interpretations and clarifications. This is an important resource when an issuer is monitoring compliance with covenants or conducting an audit.

Issuer's Counsel

The bond counsel works closely with the issuer's counsel, an attorney who may be an in-house staff member or may be retained on a contractual basis. In the course of a debt financing, the primary focus of the issuer's counsel is on administrative and procedural matters. Typical opinions provided by issuer's counsel relate to the legality of organization, the validity of meetings, the process by which bond issuance authorization is obtained, and proper adoption of required documentation, among others. Additionally, the issuer's counsel works closely with bond counsel to review documents and ensure that they are operable.

Disclosure Counsel

With additional regulations pertaining to disclosure by issuers of tax-exempt debt, a new role of legal counsel has evolved. Disclosure counsel is retained by the issuer and is primarily responsible for conducting due diligence, drafting the OS, and providing guidance with respect to ongoing disclosure responsibilities. Often the task of drafting the OS is delegated to the underwriter's counsel (see the next subsection). However, some of the larger issuers are moving toward the use of a disclosure counsel in response to continuing disclosure regulations recently promulgated by the SEC. Bond issuers have recognized that the OS is their disclosure document and want to have their legal counsel oversee its preparation. Notwithstanding this position, underwriter's counsel still may be delegated the responsibility of preparing the OS.

Underwriter's Counsel

Much has already been said about the duties of underwriter's counsel, and it is important to acknowledge that this type of attorney represents the interests of the underwriter. In this capacity, underwriter's counsel has certain document preparation

responsibilities and reviews all documents and opinions prepared by other counsels involved in the transaction. In addition to the OS, underwriter's counsel prepares a purchase contract between the issuer and the underwriter, as well as various underwriting documents and securities filings that are of concern only to the underwriter. Underwriter's counsel is retained by the underwriter, although many issuers may want the opportunity to approve the underwriter's selection.

FINANCIAL PRINCIPALS

An issuer may call on several financial experts to provide assistance in the course of a financing program. Many of these experts possess the same level of financial skills but are distinguished by the role in which they serve the issuer. Financing professionals frequently serve as leaders for the finance team because they coordinate much of the work among attorneys, rating agencies, and bond insurers.

Financial Advisor

A financial advisor may be involved in any type of debt-financing transaction, whether it consists of issuing bonds or undertaking a loan. The financial advisor serves the issuer in a fiduciary capacity and should be retained with a formal contract establishing specific responsibilities. This contract is significant because the issuer frequently acts on recommendations from the financial advisor, and there should be no questions about whose interests the financial advisor represents.

Two different types of financial advisors counsel governmental entities on financial matters (Figure 5-1).

Issuers can use a financial advisor's services on a broad range of projects. Within the context of this manual, however, the focus is on the development and implementation of efficient financing strategies. To provide these services, the financial advisor helps the issuer to evaluate the creditworthiness of alternative revenue scenarios and covenants. Frequently, this involves preliminary discussions with rating agencies and bond insurers to assess risk issues. This assessment helps the issuer understand the ramifications of various structural alternatives and supports the decision-making process.

The financial advisor is capable of assisting an issuer with negotiation and evaluation of various fees and costs, as well as interest rate proposals for notes, bonds, or loan products. An experienced financial advisor is knowledgeable about qualified vendors for such specialty areas as financial printing; trustee, paying agent, or registrar services; and escrow verification.

Compensation for the financial advisor can be determined on an hourly basis, through a transaction fee based on the amount of debt, on an annual retainer, or through a combination of these methods. The issuer should select the compensation method that provides greatest value from both financial and political standpoints.

1	Traditional investment banks that provide underwriting and financial advisory services
2	Independent financial advisor firms that provide financial advisory services only and do not underwrite issues

Figure 5-1 Types of financial advisors

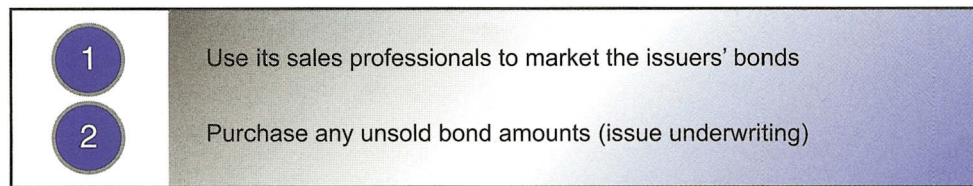


Figure 5-2 Underwriter's responsibilities

Underwriter

An underwriter has a different business relationship with the issuer. The underwriter is not contractually bound to act in a manner that serves the interest of the issuer. The issuer must look for ways to ensure that its own interests are protected while also maintaining a good working relationship with the underwriter.

An underwriter provides virtually the same analytical capabilities as a financial advisor. Beyond this similarity, the underwriter acts as an intermediary for an issuer to access capital markets. This market access provides the mechanism for the issuer to raise capital through the bond market by marketing debt securities (generally bonds) to institutional and retail investors. The underwriter negotiates the terms of sale with the issuer based on the following understanding (Figure 5-2).

Underwriters generally work on a contingency fee basis, gaining compensation only through the successful sale of bonds. They derive remuneration by purchasing bonds from the issuer at a discount and reoffering such obligations to the public at a higher price. There is rarely a need for an underwriter to invoice an issuer because the underwriter's discount should provide sufficient amounts for professional services, sales commissions to market the bonds, reimbursement of out-of-pocket expenses, and underwriting risk, if any.

Commercial Bank

A commercial bank may also be part of a finance team, depending on the nature of a borrowing. Bond issuance can be an expensive undertaking; for smaller borrowings, securing funds through a bank loan may be more cost-effective. When a commercial bank evaluates a loan application, it reviews many of the same factors considered by a rating agency or bond insurer (see the discussion of credit evaluation principals later in this chapter). However, the one intangible factor for a local bank is knowledge of the local community, including familiarity with development plans.

Bank loans can be offered on a tax-exempt basis to traditional municipal issuers. Additionally, certain loans to governmental entities that issue less than \$10 million per year can be designated as bank qualified. This is important because it allows a bank to write off a portion of the funding costs, making it possible for the bank to extend a lower interest rate.

Loans are not the only debt product commercial banks offer to municipal borrowers. While such banks traditionally underwrite certain types of debt (e.g., GO bonds), they are also becoming more active in providing credit facilities. These facilities range from an LOC securing a bond to an LOC providing a source of funds on which to draw for construction expenditures.

PROJECT PRINCIPALS

Some utility financing may be considered to be project financing. This means that the cash flow produced by a given project is sufficient to meet operational and debt service obligations. To ensure that the project can and will continue to be self-supporting, the financial community requires independent professional studies pertaining to the technical and financial aspects of the project. These services are available through the consultants described in this section.

Financial Feasibility Consultant

A financial feasibility consultant develops a multiyear financial plan for a utility. A feasibility study is intended to project a utility's cash flow based both on historical performance and on expected performance after the project improvements are put into service. The financial community has a vested interest in understanding a utility's ability to meet operational and debt obligations from pledged revenues.

A utility may choose among different types of professionals to prepare a financial feasibility report. For the most part, these consultants fit into one of two categories (Figure 5-3).

An issuer can select either of these two consultant types as long as they possess the necessary credentials and experience. For the most part, there are no formal professional standards for the preparation of financial feasibility documents by general consulting and professional engineering firms. The financial feasibility study mostly forecasts revenue and costs into the future. It should describe the assumptions used in revenue projections (such as growth, rate increases, and interest rate used for earnings) and assumptions used for O&M costs (such as inflation, new facility cost, and variances). However, when bond covenants require a certified public accountant's (CPA) seal on the financial feasibility study, the CPA must follow specific guidelines promulgated by the American Institute of Certified Public Accountants. The underwriter and any applicable state oversight body may be able to assist the utility in determining the appropriate party to provide the financial feasibility service. Depending on the nature of the service provided, the financial feasibility consultant may report through the utility's finance director.

A financial feasibility study is actually a compilation of information. The financial feasibility consultant reviews information to confirm that it is reasonable but requires most, if not all, of the data to be provided by the utility or others on the finance team. Generally, the consultant also assesses the reasonableness of the utility's projections of system growth, water sales, cost trends, and so on. This assessment pertains to operations and construction cost estimates, the service demand forecast, interest rate assumptions for bonds, and other costs. Depending on how the financial feasibility consultant is retained, the consultant may or may not be involved in developing projected rates or charges for the utility.

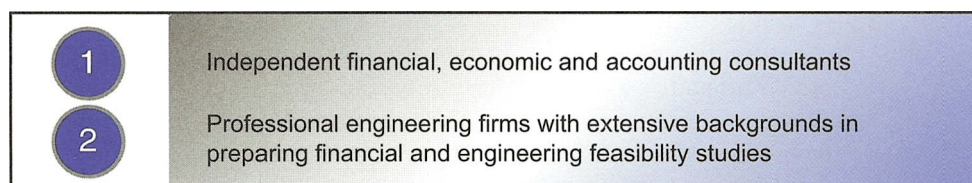


Figure 5-3 Types of financial feasibility consultants

The financial feasibility report usually contains

1. A detailed summary of existing rates,
2. A description of any proposed rate changes and their impact in terms of dollars and percentages, and
3. The consideration of any alternative rate structures in light of customer concerns or utility objectives (e.g., affordability, water conservation).

A utility's historical rates, current rates, and trend lines for historical rate increases are often compared with those of other utilities on a local, statewide, or national basis. The impact on and ability to use projected system development charges, a one-time revenue source, to satisfy debt service coverage requirements may be evaluated.

The primary role of the financial feasibility consultant is to prepare projections that illustrate the impact that the proposed capital projects and associated debt service will have on the financial position of the utility. This is generally measured by calculating debt service coverage ratios and projecting net cash or fund balance for a multiyear period, typically five years.

The financial feasibility consultant may also provide the utility with other, ongoing services required by the bond resolution, including annual determinations of net revenue. Through the issuance of a separate report or certificate, frequently referred to as an *additional bonds* or *parity certificate*, the financial feasibility consultant may be responsible for confirming compliance with bond covenants that test the issuing entity's ability to make future debt service payments. The certificate's resulting opinion is based on management's future plans and representations pertaining to estimates and assumptions.

Engineering Feasibility Consultant

Most financial participants to a bond issue, including the underwriter, credit analyst, and investor, conduct extensive due diligence for each project. This normally begins with an objective assessment of the particular utility by a qualified engineering firm to confirm that the utility is effectively operating and maintaining the system. Such a report is prepared by an engineering feasibility consultant with recognized expertise in the water industry. An engineer's report is an integral part of the disclosure document and is generally included as an appendix in the OS (Figure 5-4).

1	Assurances that the system is meeting all federal, state, and local regulations by describing in detail existing and future regulations, how the system is complying, and steps being taken to comply in the future
2	Assurances to the financial community that the utility system is in good condition, that the project improvements are necessary and cost estimates reasonable, that the construction timetable is appropriate, and that permits have been or can be obtained
3	Providing cash flow projections of future revenues and operating expenses showing that the utility can meet its projected financial obligations under bond covenants

Figure 5-4 Engineering feasibility consultant's responsibilities

An engineering feasibility consultant's report ultimately evolves as a compilation of the many detailed reports that the utility's consulting engineer submits to the issuer concerning the development of the project. Local officials and utility managers have often used information reported at relatively early stages by a consulting engineer to make decisions on whether to proceed with capital improvement projects. A formal consulting engineer's report describes the plan selected for implementation and how such improvements will benefit the utility.

A formal report analyzes and draws conclusions relating to the utility's current and future operations. These results typically include an evaluation of the following aspects of the utility system:

- The age, condition, capacity, and adequacy of water supply sources and water treatment and distribution facilities,
- An analysis of historical and projected water demand,
- An evaluation of water supply contracts (i.e., what percentage of the system's total supply a given contract represents and whether the contract term extends beyond the bond issue term),
- Future capital improvements and construction schedules and whether the construction plan is implementable and affordable, and
- How current and future water supply, treatment, and distribution facilities may impact the utility's service area.

During the bond-issuing process, the engineering feasibility consultant reports to the utility's management and board of directors. The utility is responsible for soliciting and retaining the engineering feasibility consultant's services. Additionally, the engineering feasibility consultant or consulting engineer may be required through the bond resolution to issue periodic reports or certificates regarding the condition and operations of the utility after the bonds are issued.

CREDIT EVALUATION PRINCIPALS ---

The complexity of the bond market renders traditional methods of credit assessment used by investors nearly impossible. By simplifying the credit rating and ranking of bonds, independent rating agencies have become an essential part of the process investors use in making bond purchase decisions.

Rating Agencies

Rating agencies have developed easily recognized grading systems that measure, on a single scale, bonds from municipal issuers ranging from large state agencies to smaller water districts. If a bond issue has high ratings from an independent rating agency, the investor's willingness to buy increases and the market for the bond broadens, reducing the cost associated with the bond issue. The resulting exposure to a wider segment of the bond market could reduce the bond interest the issuer pays.

Standard & Poor's Corporation (S&P), Moody's Investors Services, Inc. (Moody's), and Fitch Investors Service, Inc. are well-known independent rating agencies with widely used systems of ratings for municipal bonds. Although all independent rating agencies use many similar factors, a particular agency may put more weight on one factor in its analysis than another. The issuer should be aware of these differences when selecting an agency.

The rating agency's ratings of a given bond is established as the bond is issued. Subsequently, the agency periodically reviews its ratings until the bond is paid off.

The rating expresses the quality of the bond and its credit risk. Key factors used to determine a bond rating are discussed in appendix A.

Trustee

A trustee has several roles in the bonding process and subsequent activities. As a signatory to the bond resolution, the trustee, along with the issuer, has ongoing responsibilities with respect to the bonds. The primary role of the trustee is to act as a fiduciary on behalf of bondholders, that is, to protect the financial interests of the bondholders. The trustee does not get involved with developing the bond structure but does substantially review final documentation to confirm that the document's provisions are administratively feasible. In addition, the trustee's legal counsel reviews and comments on the bond resolution and documents to make sure they meet requirements of the bond resolution, along with applicable legal and tax requirements.

At the day of closing, the trustee releases the bonds issued after verifying that the bond proceeds have been transferred to specified accounts. After the closing date, the trustee collects, holds, and disburses bond proceeds in accordance with the bond resolution. The trustee also collects, holds, and disburses debt funds.

The trustee's responsibilities extend to ensuring that the issuer meets all requirements of the bond resolution during the life of the bonds. A trustee is generally required for revenue bonds or COPs but may not be required for a general obligation bond issue.

Accountant

For most bonds issued, an independent auditor or accountant provides a copy of the most recent audited financial statements, which are incorporated as an appendix to the OS. Summaries of this audited financial information are generally included in the body of the OS. The accountant may review the OS to ensure that all historical information is accurately presented, is referenced to the audited financial statements, and is evaluated in light of supporting schedules and footnotes.

The issuing entity's accountant or external auditors often (but not always) play a role in monitoring ongoing compliance with bond covenants as it relates to satisfaction of debt service coverage requirements. Depending on the exact wording of the bond ordinance or covenants, a certified public accounting firm other than the utility external auditor may fulfill this responsibility.

When an escrow is established, as is the case when bonds are refunded, an accountant is engaged to perform the escrow verification. While the issuing entity's external auditing firm may provide this service, a separate firm is often engaged. The accountant may report to the finance director, or the underwriter may select the verification agent.

SUMMARY

This chapter has discussed the roles participants generally play in capital financing, and Table 5-1 provides a summary of potential team members, including general descriptions of their contributions. Regardless of the participants in the financing and the form that the finance team may take, it is important to remember that the issuer remains responsible for all aspects of the program.



Chapter 6

Special Considerations for Investor-Owned Utilities

Capital-financing considerations for investor-owned utilities differ from those of government-owned utilities. When choosing a capital-financing plan, investor-owned utilities must consider the availability of equity—both common and preferred—in a generally more rigid regulatory environment, as well as the impact of income and property taxes.

Investor-owned utilities, unlike government-owned utilities, have the ability to attract equity capital in a competitive marketplace. In addition, regulation of investor-owned utilities is normally standardized for similar service utilities within a jurisdiction, which may place restraints on the extent to which a company can use each alternative source of capital.

Tax laws that make certain financing alternatives attractive to government-owned utilities do not always offer a similar advantage for investor-owned utilities. However, investor-owned utilities may use tax-exempt financing (private activity bonds) for water facilities if the state in which they operate is willing to designate some of its capital allocation to the utility.

BUDGETING, PLANNING, AND FORECASTING

Comprehensive forecasts of revenues, expenses, and capital costs assist management with decisions regarding the timing of rate increases and effects on customer bills. An effective planning process is fundamental to positive public relations with customers and regulatory agencies.

As discussed in chapter 1, good financing plans begin with

- A multiyear capital expenditure budget detailing all major construction projects and routine replacements of mains, services, meters, hydrants, and purchase of equipment, and
- An operating budget for the same time frame.

These combined comprehensive long-range budgets provide the basis for determining

- Cash requirements
- Targeted capital structure ratios
- Appropriate and timely rate increases
- Capital-financing options

GENERATION OF FUNDS

Capital expenditures funds are derived from two primary sources: internal and external. Internal funds or cash flows are defined as net income plus deferred taxes, depreciation, and amortization, less dividends. External funds, as the name suggests, are funds raised from external sources, such as the debt and equity markets and contributions-in-aid-of-construction or customer advances.

Internal Sources of Capital

Utility revenues and the resulting income are obvious internal sources of capital. Other sources of funds available within an investor-owned utility are shown in Figure 6-1.

Depreciation accruals and retained earnings. Actual sources of funds for a specific project depend on a variety of financial circumstances and timing. Funds for routine replacements and renewals are normally generated internally from depreciation accruals and retained earnings when possible. Because these expenditures do not usually constitute substantial investments, they do not warrant external funding. They typically include replacement of service lines, meters, and hydrants and purchase of minor equipment items, office furniture, and tools.

Depreciation. Depreciation reflects the amount by which the value of property is not restored by current maintenance. This loss in value is primarily caused by wear and tear, decay, inadequacy, obsolescence, changes in demand for service, and requirements of public authorities. For one or more of these reasons, each element of utility property must ultimately be retired and, if necessary, replaced.

Investor-owned utilities are permitted to include in revenue requirements an allowance, or provision, for annual depreciation. The operational life of a utility plant and the resulting depreciation rates are approved by utility commissions at levels that permit systematic amortization of the original cost of investment in various components of utility properties over these components' useful lives. Cash generated by recognition of depreciation charges is available for use to retire debt or to finance capital expenditures.

While such expenditures preserve the overall original investment in properties, annual depreciation based on original costs may not provide adequate capital to replace the investment in times of inflation. Except for fully depreciated property, annual depreciation is generated from all assets in service. However, all investment is not replaced in any single year. As investment is replaced, a new original cost value is included in the determination of annual depreciation. If annual depreciation allowances are not retained and reinvested, the original investment may be gradually

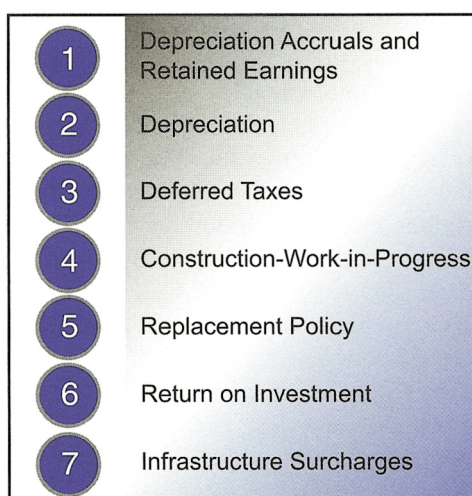


Figure 6-1 Internal sources of capital

dissipated. In this case, external financing requirements will be greater than otherwise anticipated. It is advisable that investor-owned utilities maintain their investment in utility fixed assets as close to current value as practicable.

Deferred taxes. Taxes that are charged against current operating results, recovered in rates, and are not currently payable to the government are known as deferred taxes. Cash generated by deferring taxes is also a source of funding for capital improvements.

Construction-work-in-progress. Another source of internal funding in certain jurisdictions is construction-work-in-progress (CWIP). A major concern of investor-owned utilities today is the methodology that regulatory agencies use to recognize the carrying costs associated with CWIP. Some regulatory agencies exclude CWIP from the rate base on which utilities are permitted to earn a return until that property is placed in service. In such instances, an allowance for funds used during construction (AFUDC), is considered a part of the cost of the property and is capitalized, at which time it becomes a part of the rate base. In such instances, it is important for the utility to delay debt repayments until the CWIP is completed and accounted for in the rate base.

Because of the unpredictable and erratic nature of inflation rates and interest costs, investor-owned utilities have sought relief from the administrative burden of charging interest during construction by requesting the inclusion of CWIP in their rate base. This permits earnings at the overall allowed rate of return. Many regulatory agencies now include at least some CWIP (for a certain period beyond the end of the test year or that which is nonrevenue producing) in the rate base and permit the utility to earn a return on this work-in-progress.

On very large projects, an investor-owned utility may work with outside investors, or venture capitalists, who will provide a turn-key constructed facility. The investor-owned utility specifies its needs and buys the completed facility from the outside investors when it is placed in service. The utility can immediately place the asset on its books and earn a return. This approach may cost the utility a little more for the asset than if it constructed the asset itself. However, the utility's funds are not tied-up in CWIP without the ability for the utility to include such costs in its rate base.

Replacement policy. Management should pursue a replacement policy that minimizes total costs and is consistent with rendering safe, adequate, and reliable water service. Detailed cost and performance records may not always be available for evaluation.

Consequently, awareness of the total cost-control objective on the part of operating personnel and the financial manager is beneficial for planning purposes. The annual cost for normal replacements should be incorporated into capital budgets and cash-flow projections. Because of the long life of a water system plant and equipment, facilities are replaced infrequently; however, delayed replacement can become an additional problem when costs for maintaining an aged plant become excessive.

Provisions for replacements of major facilities must also be incorporated into the financial planning process. Projects that constitute a significant commitment of financial resources generally require funding from external sources.

Return on investment. Total return on investment for an investor-owned utility must be sufficient to cover the cost of using various sources of external funding. Total costs of capital include the interest and issuance cost of indebtedness; dividends and issuance costs of preferred stock; and the cost, including issuance cost, of common equity. The first two components are established contractually and are easily determined from utility records. The cost of equity capital is frequently a controversial subject for the utility, consumer, and regulatory agency. Ideally, the cost of equity capital is equal to the return that investors will require on their market-valued commitments to continue to commit their capital resources to an enterprise. Because investors have different views and expectations about the return to be realized on their common stock investments, determining the market rate of return to attract capital is difficult and typically subject to special studies, including expert testimony, that recognize market conditions.

Infrastructure surcharges. Some state regulatory commissions (for example, Pennsylvania, Ohio, Indiana, Illinois, Delaware, New York, Missouri, California, and Idaho) have approved the use of infrastructure surcharges by investor-owned utilities, which permit recovery of a return on and depreciation of certain qualifying plant between rate cases. Although the details of each surcharge vary from state to state, all permit the recovery of return and depreciation, which is applied as a percentage to metered customers' bills. Certification that a company is not earning in excess of its last allowed rate of return is a prerequisite to implementation of the surcharge. The surcharge is capped from 5 percent and 9 percent between rate cases (some states have annual caps, as well) and surcharge revenue is rolled into existing rate revenue in the company's next rate case, at which time the surcharge is reset to zero. A typical infrastructure surcharge formula is shown in Figure 6-2.

External Sources of Capital

Typically, major capital projects cannot be funded from funds generated in normal annual operations because of the magnitude of expenditures associated with these projects. For major construction projects, external sources of capital (debt and equity issues) must be secured (Figure 6-3).

$$\text{Infrastructure Surcharge Percentage} = \frac{(\text{Rate of Return} \times \text{Qualifying Plant}) + \text{Depreciation}}{\text{Revenue}}$$

Figure 6-2 Example infrastructure surcharge formula



Figure 6-3 External sources of capital

Debt. Bonded indebtedness is normally secured by a mortgage or lien on the utility's property. It has the highest lien, or call, on the utility's assets. That is, interest payments on bonded indebtedness must customarily be paid before dividends can be paid on preferred and common stock. In case of liquidation, bonded indebtedness principal is repaid before refunding of stock. From a bond investor's viewpoint, bonded indebtedness is the most secure and least risky form of capital investment in an investor-owned utility. Interest on debt is also deducted for income tax purposes. Accordingly, the cost of this debt is lower than that for preferred or common stock. If the company is financially healthy, unsecured notes may also be issued to fund capital expenditures. Unsecured debt has secondary priority to debt secured by a mortgage. Most state regulatory commissions require that any long-term (greater than 12 months) securities issuance receive approval prior to issuance.

Long-term debt. Long-term debt can be taxable or tax-exempt. In most cases, taxable debt is privately placed with an insurance company or other large institutional investor. From time to time, utilities may prefer to issue debt by means of a public offering to maintain relations with retail investors. Another option for raising taxable debt is to set up a medium-term note (MTN) program. MTNs allow companies to vary the size and maturity of an issue just days before pricing; in that way, they are very flexible. Because of the substantial setup costs, MTNs are suitable only for larger issuers (i.e., issues of \$75 million or more). MTNs also have the added advantage of prior approval of the program by the regulatory agency, thus avoiding the often time-consuming process for each individual debt issue.

Investor-owned water utilities in most states also have access to tax-exempt financing. Investor-owned utilities are eligible to apply for SRFs, another source of low interest financing that combines state and federal funds for projects that improve water quality. Funding is dependent on a priority ranking and the number of other public and private applicants competing for the funds each year. On average, the cost of a long-term (i.e., 30-year) tax-exempt issue is approximately 2.0 percent lower than that of a comparable taxable issue. Many utility commissions and rate-case intervenors (large users and public advocates) encourage this method of financing because of the substantial cost savings over taxable debt. An investor-owned utility is subject to rules promulgated by the local regulatory body, as well as to previous indenture language, corporate resolutions, and language in the utility's by-laws.

Tax-exempt bonds are generally secured by a first mortgage, although some utilities that do not have a large amount of secured debt have successfully issued debentures. Most long-term fixed-rate issues have been marketed with bond insurance, which can further decrease the cost of financing. Issuance costs for tax-exempt debt are much higher than for a private placement reflecting underwriters' fees and additional

counsel to represent underwriters and to opine on the tax-exempt status of the debt.

Short-term debt. Typically in the form of variable-rate bank lines of credit, short-term debt is used to finance capital projects during construction. Water utilities usually replace these short-term lines with long-term, fixed-rate debt, or equity, or both, as soon as the completed projects are ready to be placed in service.

Equity. Equity may be provided by issuing common or preferred stock.

Common stock. Two primary objectives of water companies for issuing common stock to raise capital are to (1) avoid diluting earnings per share and (2) have funds available to pay common dividends.

To offset the dilutive effect of issuing new shares, most common stock issues occur in conjunction with an acquisition or a rate case that increases earnings. Many companies also have dividend reinvestment plans or customer stock purchase plans, or both, that can satisfy moderate capital requirements throughout the year.

Preferred stock. Preferred stock is the second least-risky type of investment. Its dividends and, in case of liquidation, its principal are payable before such payments are made to holders of common stock. This hybrid of debt and equity is generally considered comparable on a risk basis to a junior lien. Thus, its cost is higher to the utility than debt but not as high as common stock.

Contributions-in-aid-of-construction. In certain cases, external funding for construction is obtained by direct contributions from those customers who benefit from the construction. For example, developers usually pay for main extensions to housing developments; these payments must be accounted for in the form of contributions-in-aid-of-construction (CIAC) or as customer-advances-for-construction (CAC), which will be deducted from rate base.

CIACs represent any cash, services, or property permanently contributed by customers for construction purposes. CACs also represent contributions from customers; however, the utility and customer enter into an agreement that the utility will refund part or all of the construction cost to the customer over a specified time period as customers are connected to the system. Any unrefunded balance remaining at the end of the term of the agreement period is transferred to the CIAC account.

Although it is possible for an investor-owned utility to benefit in the short term from customer growth (via operating revenues) while not directly financing any significant additional capital investment, this is normally not the case for the long term. Also, for rate-making purposes, a contributed plant is normally excluded from the rate base. In such cases, the utility cannot recover an annual return on those dollars. Furthermore, regulators do not usually allow recovery of depreciation expense on the contributed plant.

Regulators do not want investor-owned utilities to benefit from the return of contributed capital to the utilities through depreciation or from earning a return on undepreciated contributed assets. Investor-owned utilities can only receive a return of their invested capital and earn a return on their outstanding depreciated investment. Over time, the utility is confronted with replacing the contributed plant and may need to increase water rates to reflect the need for additional capital investment requirements during long-term financial planning.

ATTRACTING CAPITAL

The primary objective of investor-owned water companies is to attract capital at the most cost-effective rates to minimize the impact on the customers' water service rates. To attract capital, regulated utilities must maintain vigilance of their revenue needs and file for rate relief as frequently as necessary through evaluating long-range budgets. A utility that shows itself to be progressive in maintaining adequate rates and

return on capital will be more successful in the capital marketplace. To attract capital at minimum cost, the utility must also use a balanced capital structure. The most balanced and efficient capital structure combines debt and equity capital.

Appropriate Capital Structure

Investor-owned utilities' capital structures reflect their mix of funding from debt and equity. Each company's capital structure is influenced by its individual circumstances, such as the size and intensity of its CIP, the regulatory environment, the magnitude of CIAC and CAC, and the impact of financing alternatives on customers' water service rates. An example of average capitalization ranges for large investor-owned water utilities in the United States is shown in Table 6-1.

Rating Agency Considerations

A utility's size and magnitude of its capital plan often determine the prudence of obtaining a corporate credit rating or a debt rating from one or several rating agencies. Seeking a rating from all the rating agencies, or even just one, is time-consuming and can be costly. Frequently, the utility's investment banking firm will provide advice on the economics and the prudence of obtaining one or more ratings. When debt is privately placed with an insurance company, the issue is rated by the National Association of Insurance Companies (NAIC). See appendix A for further details on rating agencies.

Regulatory Approvals

Investor-owned utilities must file with, and obtain approval from, the state agency and may be required to obtain SEC approval before issuing long-term debt. Primary financing documents, such as the bond or note purchase agreement and the supplemental indenture, board of directors' resolutions and supporting financial exhibits justifying the purpose and selection of the particular financing, are required to be filed with the governing regulatory state agency (public service or utility commission) for approval before the actual financing. The financing's prudence, purpose, and impact on the utility's capital structure must be demonstrated and justified to the regulatory agency to gain the needed support. Many regulatory agencies have their own guidelines for what they consider an appropriate capital structure for companies under their jurisdiction.

Regulatory Lag

A major hurdle in keeping a water utility attractive to potential investors is *regulatory lag*—the lag between the time when a rate case is filed and the time when the regulatory commission grants rate relief. While state regulatory agencies have done much in

Table 6-1 Large investor-owned utilities capitalization example

Type of Capital	Maximum %	Average %	Minimum %
Long-term debt	60	50	33
Preferred stock	4	2	0
Common stock (plus retained earnings)	65	48	35

Source: AUS Utility Reports.

recent years to accelerate consideration of rate relief requests and to alleviate the impact of lag, a degree of lag cannot be practically avoided. Therefore, regulated utilities must maintain vigilance over their revenue needs and file for rate relief as frequently as necessary. A utility that shows itself to be progressive in maintaining adequate rates will be more successful in the capital marketplace.

To determine revenue needs, most regulatory agencies require a rate filing to be based on statistics that show historical test year expenditures but do allow for modifications for known and measurable changes. Some commissions provide for fully projected test years. Capital markets, however, consider the future likelihood of repayment. From the perspective of innovative financing, projected test years can allow a utility to be better prepared to develop a financial plan that will be meaningful to both regulators and capital providers.

OTHER CONSIDERATIONS

Other factors determining the attractiveness of a water utility's stock are the dividend yield, the company's record of earnings and dividend increases, the dividend payout ratio (which indicates the future growth potential of the dividend), and potential earnings growth of the utility.

Balancing Investor and Customer Requirements

The interests of stock and bond investors must be balanced with the interests of a utility's customers. Investors need to feel secure that the utility has a sound financial position and that a reasonable return will be earned on their investment commensurate with the risk associated with that investment. Customers, however, are interested in receiving safe, adequate, and reliable service at reasonable rates. Customers must be informed that the utility's ability to continue to provide such service depends on its maintenance of both a sound financial position and a reliable physical plant, which are also necessary to attract needed capital at reasonable rates.

Investor Relations Program

One of the most carefully monitored items among water companies is the price of a company's stock. An active investor relations program is integral in maintaining a fair stock price relative to industry peers. Individual or retail investors own approximately 80 percent of a typical water utility's common stock. Primary reasons for investing include attractive current income from dividends, dividend safety (timing and size), and good prospects of future dividend increases to protect purchasing power over time.

The most successful type of investor relations program provides timely information to the financial community and potential investors so that they are able to make informed investing decisions. Potential stock and bond investors use a number of financial and operating ratios and indexes when analyzing the financial soundness of an investor-owned utility. These tools include projections of future rates of return, earnings coverage of interest costs and preferred stock dividends, and various ratios of operating expenses and revenues to each other and to plant investment.

SUMMARY

Options available for financing differ between government-owned and investor-owned utilities. This chapter has discussed considerations specific to investor-owned utilities, including the planning process, internal and external sources of capital, attracting capital, and balancing the interests of both customers and investors.

Glossary

- accelerated depreciation** Use of depreciation methods that amortize the cost of an asset at a faster rate than under the straight-line method. The three principal methods of accelerated depreciation are (1) sum of the year's digits, (2) double declining balance, and (3) units of production.
- accountant** A financial professional who specializes in accounting. In connection with a bond issue, an accountant often provides the most recent audited financial statements and may provide escrow verification.
- accrual basis** A basis of accounting in which revenues are recognized when earned and expenses are recognized when they become liabilities for benefits received. Receipt of revenue or payment of the expenditure may take place, in whole or in part, in another accounting period.
- additional bonds test** A requirement in an indenture that additional bonds not be issued unless historical and projected revenues indicate there is sufficient revenue to avoid dilution of coverage on outstanding bonds.
- ad valorem tax** A state or local tax based on the assessed value of real or personal property.
- advance for construction** An advance that may be refundable either wholly or in part and that is made to the utility in order to fund construction. When all potential claims for refunds have been settled, the balance, if any, is treated as a contribution-in-aid-of-construction, under generally accepted accounting principles.
- advance refunding bonds** Bonds issued to replace an outstanding bond issue before the date on which the outstanding bonds become due or callable. Proceeds of the advance refunding bonds are deposited in escrow with a fiduciary, invested in US Treasury bonds or other authorized securities, and used to redeem the underlying bonds at maturity or on the call date and to pay interest on the bonds being refunded or on the advance refunding bonds.
- AFUDC** Allowance for funds used during construction.
- ancillary charge** A separate charge for ancillary services that is not included in costs for general water service. In providing water service, a utility must often perform these types of services, which often benefit only the individual customer using the services and have no systemwide benefit. Such services might include: account activation, connect and disconnect activities, meter testing, etc.
- authority bonds** Bonds payable from the revenues of a specific authority, such as a water or sewer authority. Because authorities usually have no revenues other than charges for services, their bonds are ordinarily revenue bonds.
- availability charge** A limited-use charge made by a water utility to a property owner between the time when water service is made available to the property and the time when the property connects to the utility's facilities and starts using the service.
- BAN** Bond-anticipation notes.
- betterment** An addition or change that is made to a fixed asset and is expected to prolong that asset's life or to increase its efficiency to an extent greater than normal maintenance would accomplish. The cost of the betterment is added to the book value of the asset.

bond A written promise to pay a specified sum of money, called the face value or principal amount, at a specified date or dates in the future, called the maturity date(s), together with periodic interest at a specified rate.

bond counsel An attorney who provides expertise in securities law.

bond discount The amount of the face value of a bond in excess of the price for which the bond is acquired or sold. The price does not include accrued interest at the date of acquisition or sale.

bond indenture A document that specifies the legal obligation of the bond issuer. Typically, such an instrument contains pledges to bondholders regarding payment of principal and interest, operation, flow of funds, further debt issuance, what will constitute a default, and remedy available in the event of default.

bond ordinance *See* bond indenture.

bond premium The amount by which a bond is acquired or sold in excess of its face value. The price does not include accrued interest at the date of acquisition or sale.

bond resolution *See* bond indenture.

bonded debt That portion of indebtedness represented by outstanding bonds. *See also* net bonded debt.

BPA Bond purchase agreement.

CAB Capital appreciation bond.

CAC Customer-advance-for-construction.

call (1) The process of redeeming a bond or preferred stock issue before its normal maturity. (2) An option to buy (or call) a share of stock at a specified price within a specified period.

capital budget A plan that covers all major additions, replacements, and repairs greater than a maintenance expenditure to the existing utility plant.

certificate of participation A security evidencing an interest in rental payments made according to a lease arrangement. In most cases the lessee (the local government) determines the lease provisions subject only to market acceptance and rating agency approval because the lessor is an entity created by the lessee to sell the securities.

CIAC Contributions-in-aid-of-construction.

CIP Capital improvement program.

commercial bank A financial institution that accepts deposits and offers loans. Commercial banks may offer tax-exempt loans or credit facilities to traditional municipal issuers.

competitive sale A form of bond sale in which the issuer publishes a notice of sale that specifies, among other things, when bids are due and how they will be evaluated.

connection charge A fee assessed by a utility to recover the cost of connecting a customer's service line to the utility's facilities.

construction-work-in-progress (CWIP) A utility's investment in facilities that are under construction but are not yet dedicated to service. Until that property is placed in service, some regulatory agencies exclude this investment from the rate base on which utilities are permitted to earn a return.

consulting engineer A professional engineer who is engaged for a specific purpose. With respect to a debt issue, a consulting engineer generally reviews the operations and capital plans and provides a report that is included in the official statement.

contributions-in-aid-of-construction An amount of money, services, or property that is received by a water utility from any person, governmental agency, or other entity and that is provided at no cost to the utility. It represents an addition or transfer to the capital of the utility and is used to offset the acquisition, improvement, or construction costs of the utility's property, facilities, or equipment used in providing utility services to the public. It includes amounts transferred from advances for construction representing any unrefunded balances of expired refund contracts or discounts resulting from termination of refund contracts. Contributions received from governmental agencies and others for relocation of water mains or other plant facilities are also included.

COP Certificate of participation.

CP Commercial paper.

CPA Certified public accountant.

CWIP Construction-work-in-progress.

credit enhancer An entity that insures bonds or provides a letter of credit to back bonds.

debt service reserve fund A fund established to cover debt service for some period of time in the event of a revenue shortage, often one-year's debt service.

deferred taxes Taxes that are charged against current operating results or reflected in the income statement and that are not currently payable to the government. Cash generated by deferring taxes is a source of funding for capital improvements.

depreciation An indication of the amount of service value not restored by current maintenance of depreciable utility plant facilities. Among the causes of this loss in value are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in demand, and requirements of public authorities.

disclosure counsel An attorney retained by the issuer to conduct due diligence, draft the official statement, and provide guidance with respect to ongoing disclosure responsibilities.

double-barrel bonds Revenue bonds backed by a specific source of revenues to which the government adds a general obligation pledge. These bonds are sometimes called *combination bonds*.

financial feasibility consultant A financial professional engaged to issue a report with respect to the financial feasibility of either the utility as a whole or a specific project.

floating-rate monthly demand note A note sold with no scheduled principal amortization before maturity and subject to optional redemption at par by the borrower at any monthly interest payment date.

financial printer A printer that specializes in the printing of official statements, notices of sale, and other items of a financial nature.

GAN Grant-anticipation note.

GASB Governmental Accounting Standard Board.

general obligation (GO) bonds A debt obligation issued by a government entity, such as a state or municipality, and backed by a pledge of the entity's full faith and credit, including its taxing authority.

GO bond General obligation bond.

integrated resource planning (IRP) A process that maximizes available resources by considering a wide range of supply-side and demand-side resources.

investor-owned water utility A utility owned by an individual, partnership, corporation, or other qualified entity, with the equity provided by shareholders. Investor-owned utilities are generally subject to some form of regulation.

IOSCO International Organization of Securities Commissions.

IRP Intergrated resource planning.

issuer A borrower; in this manual, generally the water utility. This entity determines the need for bonding and selects the financing team.

issuer's counsel An attorney who represents the issuer and who reviews local legal matters for inclusion in the official statement.

lease An agreement in which the owner of property (lessor) permits another party (lessee) to use the property in exchange for an agreed-on payment.

letter of credit (LOC) An agreement by a bank to make a payment to the beneficiary if certain documents are presented to the bank. When the agreement obligates the bank to make principal and interest payments on bonds if the issuer is in default, a letter of credit can allow the issuer to obtain a higher credit rating.

leveraged lease A lease in which the lessor borrows the funds to acquire the property under lease and the lease payments are used to retire the debt.

line of credit An arrangement between a lender, usually a bank, and a borrower to make funds available as needed.

LOC Letter of credit.

long-term debt For financial statement purposes, debt having a maturity in excess of 1 year. Debt with a maturity of 2 to 10 years is often called *medium-term debt*.

MTN Medium-term note.

NAIC National Association of Insurance Companies.

negotiated sale A bond sale in which the issuer negotiates a price directly with the underwriter rather than selling the bonds on the market.

net bonded debt Bonded debt less any cash or other assets that are available and earmarked for that debt's retirement.

NRMSIR Nationally Recognized Municipal Securities Information Repository.

NRSRO Nationally Recognized Statistical Rating Organizations.

official statement A document that contains all information that a potential investor is expected to need about a security and the issuer. The preliminary official statement is issued before the sale; the final official statement is issued within 10 days after the sale and includes the prices at which the securities were offered to the public.

OID bond Original-issue discount bond.

OS Official statement.

original-issue discount (OID) bonds Long-term bonds sold at a price below par because they have an interest rate substantially lower than prevailing market rates.

paying agent An entity, often a bank trust department, that is engaged by an issuer to disperse principal and interest to bondholders.

POS Preliminary official statement.

preliminary official statement (POS) A document issued before the sale that contains all information that a potential investor is expected to need about a security and the issuer, except the prices. *See* official statement.

private placement A method of sale in which the issuer sells bonds directly to a small number of sophisticated investors.

publicly owned utility A water utility created by legislative action of a state or other government agency. A government-owned water utility may be part of a municipal government operation, a county agency, or a regional authority, or it may take such other forms as are appropriate for its service area.

put The right of an investor to require an issuer to repurchase bonds at a predetermined time and price.

RAN Revenue-anticipation note.

rate base The value of a water utility's property as computed under any applicable laws or regulatory policies of the agency setting rates for the utility.

rate covenant A requirement stating that an issuer must pledge in a bond document to set rates sufficient to meet all operating costs and some multiple of debt service.

rating agency An independent organization that publishes, in the form of a rating, its opinion about the creditworthiness of a security.

registrar An organization, often a bank trust department, engaged by the issuer to maintain records of bond ownership.

revenue bonds A bond secured by and payable exclusively from revenues received from system operations or from the project being financed.

revenue pledge An obligation to use specified revenues for debt service.

SCADA Supervisory control and data acquisition.

SDC System development charge.

SEC Securities and Exchange Commission.

S&P Standard & Poor's Corporation.

State revolving fund (SRF) A program typically administered by a state department of environmental quality or health to provide loans to water utilities for capital improvements at interest rates at or below market rates.

system development charge A contribution of capital required from new utility customers or existing customers requesting enlarged or expanded services and applied toward existing or planned plant facilities necessary to meet the service needs of those customers. These charges are intended to provide funds to be used to finance all or part of capital improvements necessary to serve new customers. These charges may also be called *impact fees*, *plant investment fees*, and *capital recovery charges*.

TAN Tax-anticipation note.

tax-exempt commercial paper (TECP) A short-term promissory note with an average maturity of 30 to 45 days. Such notes, which have a maximum maturity of 270 days, are intended to be refinanced (rolled over) continuously for periods that may exceed 1 year.

TECP Tax-exempt commercial paper.

tender-option bonds Long-term bonds that provide the investor with the option of requiring the issuer to repurchase the bonds, generally at par, at a specified date or dates in advance of the stated maturity. Often called *put bonds*.

trustee An organization, generally a bank trust department, that holds funds and is responsible for protecting investors' rights.

underwriter An entity, generally an investment banking firm, that purchases bonds from an issuer and resells them to investors.

underwriter's counsel An attorney who represents the interests of the underwriter and is responsible for document preparation and review. Underwriter's counsel prepares a purchase contract between the issuer and the underwriter, as well as various underwriting documents and securities filings that are of concern only to the underwriter. He/she may also prepare the official statement.

user charges Fees or rates or both that are paid by customers of the system for water service.

zero-coupon bonds Long-term bonds that pay no interest before maturity. They are originally sold at a substantial discount from par.

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Appendix **A**

Rating Agency Requirements

This appendix discusses the purpose of credit-rating agencies, how rating agencies are compensated, why to obtain a rating, and the rating process. It also examines what a water utility can expect if it decides to request a rating on its debt. Throughout this appendix, the water utility is referred to as the issuer. The issuer's financial advisor is frequently a key player in coordinating activities surrounding the rating process (see chapters 4 and 5).

WHAT IS A RATING AGENCY?

Rating agencies are organizations that evaluate and publish opinions with respect to the investment quality of securities (financial obligations). In the United States, Nationally Recognized Statistical Rating Organizations (NRSRO)—Fitch Investors Service, Moody's, and Standard & Poor's—are overseen by the Securities and Exchange Commission (SEC). Their ratings have traditionally focused on the creditworthiness (the likelihood of timely repayment of principal and interest) by the issuer with respect to specific financial obligations. Recovery, in case of default, is generally not considered in the rating—only the likelihood a default may occur.

Ratings are based on information supplied by the issuer and information obtained by the rating agency from other sources it considers reliable. Rating agencies do not audit the financial or other information provided to them, and they do not express any opinion as to the appropriateness of any security for any particular investor. All these organizations have adopted policies and procedures established in the Code of Conduct Fundamentals for Credit Rating Agencies issued by the International Organization of Securities Commissions (IOSCO). Although these organizations have no official authority, each has earned the trust of the public through many years of operation in the credit evaluation arena. Their opinions are generally viewed as independent and objective assessments of the relative creditworthiness of the security being rated.

Table A-1 Fitches Investors Services' rating definitions*

Rating		Description
Investment Grade	AAA	Highest credit quality; reliable and stable. Exceptionally strong ability to pay interest and repay principal. Highly unlikely to be affected by reasonably foreseeable events.
	AA	Very high credit quality and very low credit risk. Ability to pay interest and repay principal is strong.
	A	High credit quality and low credit risk. Ability to pay interest and repay principal is strong, but may be vulnerable to adverse changes in economic conditions and circumstances.
	BBB	Good credit quality and current expectation of low credit risk. Ability to pay interest and repay principal is considered adequate. Adverse changes in economic conditions and circumstances are more likely to have adverse impact on these bonds and, therefore, impair timely payment. Likelihood that the ratings of these bonds will fall beneath investment grade is higher than for bonds with higher ratings.
Noninvestment Grade	BB	Considered speculative with possible credit risk developing. Ability to pay interest and repay principal may be affected over time by adverse economic changed, but business and financial alternatives can be identified that could assist in satisfying the bond's debt service requirements.
	B	Highly speculative and significant credit risk is present, but a limited margin of safety remains. Currently meeting debt service requirements, but the probability of continued timely payment of principal and interest is contingent on a sustained, favorable business and economic environment throughout the life of the issue.
	CCC	Identifiable characteristics that may lead to default. Ability to meet obligations is solely reliant on sustained, favorable business and economic conditions.
	CC	Minimal protection. Default in payment of interest, principal, or both, seems probable over time.
	C	Imminent danger of default in payment of interest or repayment of principal.
	RD/ SD	Indicates a failure to make payment of interest or principal (within the applicable grace period) on some, but not all, financial obligations, but continues to honor other classes of obligations
	D	In default on interest payments, principal repayments, or both, on all obligations. Extremely speculative. Should be valued on the basis of ultimate recovery value in liquidation or reorganization of the obligor.

* Plus (+) or minus (-) may modify the ratings from AA to CCC to show relative standings within the major ratings categories.

A rating agency's opinion is expressed in a report that discusses the issuer and the security being rated. The opinion is also summarized symbolically by one or more letters, such as AAA or B. The rating symbol assigned to the security usually appears on the cover of the final official statement and is widely communicated verbally by sellers of the security and in the financial press. Each agency standardizes its opinions so that comparisons can be made of the relative creditworthiness of other securities it has rated. However, while the ratings assigned by different rating agencies are often very similar, they are not identical. Just as people's opinions often differ, so do rating agency opinions.

Table A-2 Moody's Investors Services' rating definitions*

Rating		Description
Investment Grade	Aaa	Highest credit quality; reliable and stable. Exceptionally strong ability to pay interest and repay principal. Highly unlikely to be affected by reasonably foreseeable events.
	Aa	Very high credit quality and very low credit risk. Ability to pay interest and repay principal is strong.
	A	High credit quality and low credit risk. Ability to pay interest and repay principal is strong, but may be vulnerable to adverse changes in economic conditions and circumstances.
	Baa	Good credit quality and current expectation of low credit risk. Ability to pay interest and repay principal is considered adequate. Adverse changes in economic conditions and circumstances are more likely to have adverse impact on these bonds and, therefore, impair timely payment. Likelihood that the ratings of these bonds will fall beneath investment grade is higher than for bonds with higher ratings.
Noninvestment Grade	Ba	Considered speculative with possible credit risk developing. Ability to pay interest and repay principal may be affected over time by adverse economic changes, but business and financial alternatives can be identified that could assist in satisfying the bond's debt service requirements.
	B	Highly speculative and significant credit risk is present, but a limited margin of safety remains. Currently meeting debt service requirements, but the probability of continued timely payment of principal and interest is contingent on a sustained, favorable business and economic environment throughout the life of the issue.
	Caa	Identifiable characteristics that may lead to default. Ability to meet obligations is solely reliant on sustained, favorable business and economic conditions.
	Ca	Minimal protection. Default in payment of interest, principal, or both, seems probable over time.
	C	Imminent danger of default in payment of interest or repayment of principal.

* Moody's applies numerical modifiers 1, 2, 3, in each generic rating classification from Aa to Caa. The modifier 1 indicates that the issue ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates the issue ranks in the low end of its generic category.

Definitions of long-term debt ratings used by the three organizations appear in Tables A-1, A-2, and A-3.

Different ratings may be caused by different assessments of risks (disclosed or undisclosed contingencies that could adversely affect the issuer's liquidity), the placement of more or less emphasis on various factors, or different opinions about the future impact of probable events. A financial advisor should be aware of and be able to explain any differences between the philosophies and analytical processes of the major agencies.

Credit ratings generally are grouped into two broad categories: investment grade and speculative grade. Neither category is meant to indicate which securities are worthy of investment. Only the investor's particular risk preference can determine where that investor will put their money. Many investors, such as state and local governments, are permitted to purchase only investment-grade securities.

In addition to the ratings shown, an agency may place a plus (+) or minus (–) sign or a number (e.g., 1 or 2) with the rating symbol to further distinguish the relative position of

Table A-3 Standard & Poor's rating definitions*

Rating		Description
Investment Grade	AAA	Highest credit quality; reliable and stable. Exceptionally strong ability to pay interest and repay principal. Highly unlikely to be affected by reasonably foreseeable events.
	AA	Very high credit quality and very low credit risk. Ability to pay interest and repay principal is strong.
	A	High credit quality and low credit risk. Ability to pay interest and repay principal is strong, but may be vulnerable to adverse changes in economic conditions and circumstances.
	BBB	Good credit quality and current expectation of low credit risk. Ability to pay interest and repay principal is considered adequate. Adverse changes in economic conditions and circumstances are more likely to have adverse impact on these bonds and, therefore, impair timely payment. Likelihood that the ratings of these bonds will fall beneath investment grade is higher than for bonds with higher ratings.
Noninvestment Grade	BB	Considered speculative with possible credit risk developing. Ability to pay interest and repay principal may be affected over time by adverse economic changes, but business and financial alternatives can be identified that could assist in satisfying the bond's debt service requirements.
	B	Highly speculative and significant credit risk is present, but a limited margin of safety remains. Currently meeting debt service requirements, but the probability of continued timely payment of principal and interest is contingent on a sustained, favorable business and economic environment throughout the life of the issue.
	CCC	Identifiable characteristics that may lead to default. Ability to meet obligations is solely reliant on sustained, favorable business and economic conditions.
	CC	Minimal protection. Default in payment of interest, principal, or both, seems probable over time.
	C	Imminent danger of default in payment of interest or repayment of principal.
	D	In default on interest payments, principal repayments, or both, on all obligations. Extremely speculative. Should be valued on the basis of ultimate recovery value in liquidation or reorganization of the obligor.

* Plus (+) or minus (–) may modify the ratings from AA to CCC to show relative standings within the major ratings categories.

a credit within the rating category. In addition, the agency usually assigns an outlook to the rating—positive, negative, stable, or developing; the outlook provides further insight as to any potential or expected changes in the rating. Some agencies may also indicate that the rating is conditional. A conditional rating is generally used when the opinion of credit quality is based on a repayment source that depends on the completion of some act or the fulfillment of some conditions—for example, bonds secured by earnings or rentals from a project under construction. Agencies may, from time to time, indicate that they are reviewing a rating; they may also indicate whether they anticipate that a rating may be raised or lowered as a result of the review. If an issuer fails to provide sufficient information, ratings may be suspended or withdrawn. Because all ratings are security specific, ratings are withdrawn when an issue matures, is called, or is refinanced.

RATING ECONOMICS

Rating agencies are for-profit organizations generating fees through issuers and investors. They rate securities, generally at the request of the issuer, for the benefit of the issuer and the investment community. Some agencies may occasionally issue a rating without having been requested to do so. While this practice may be controversial, agencies will say they only issue an opinion when there is adequate information available to form a credible opinion.

Full rating reports are available to investors by subscription. Rating agencies compete for subscriptions on the basis of quality of analysis, access to information, and price. Because investors may not have either the time or the in-house capability to perform a thorough credit analysis, they frequently base their investment decisions on rating agency evaluations. Rating agencies are often organized by specialty or industry, with designated groups of analysts covering such areas as public finance, industrials, financial companies, and sovereign credits. Within this structure, there will probably be another level of specialization. It may be by type of issuer (e.g., airports, utilities, housing, banking) or by geographic region. Because the quality of the analysis varies with the skill and experience of the rating agent assigned, investors often have a preference for a certain organization's ratings in a particular specialty area. Most investors do not subscribe to all the rating agency services.

When it requests a rating, an issuer is charged a fee by the agency and may also be assessed an annual fee while the securities are outstanding. The issuer must evaluate the economics of whether to obtain a rating based on the anticipated cost of financing with and without a rating. Issuers seek credit ratings to improve the marketability or pricing of the financial obligation. Because many investors buy only rated securities, having a rating broadens the potential pool of buyers. A broader base of buyers should increase demand for the security, thereby lowering the overall cost of financing. For issues of a very small dollar amount, however, the cost of the rating may be greater than the interest savings, especially if there are local investors who are familiar with the issuer.

In deciding whether to get one or more ratings and in choosing which agencies to engage, the issuer often looks at two factors. One factor is which rating agencies are most frequently used by probable buyers of the security. The other factor is the probability of getting the desired rating from a particular agency given the differences in the credit factors emphasized by the various agencies.

THE PROCESS

The issuer must apply to the agency for a rating and must provide information the agency needs to form an opinion about the credit quality of the debt to be sold. The rating agency will also obtain information from other sources it considers reliable.

Documentation

To answer the questions that arise when evaluating the security, the rating agency should review various types of information, both financial and nonfinancial. The most commonly requested documents are listed in Table A-4. Some of the documents are provided only the first time an issuer obtains a rating; others are provided or updated annually. Still others are only available a few weeks before the sale. The issuer's financial advisor should help determine which documents are relevant and when they will be needed. Some advisors also provide assistance with gathering information.

Table A-4 Rating agencies' frequently requested documents

Information Category	Documentation Requested
General	Description of the Security
	Preliminary official statement
	Bond ordinance, resolution, indenture, plus supplemental documents
	Bond counsel opinion
	Flow of funds
	Utility description and capacity (historic and projected)
	System map
	Organization structure
	Description of facilities
	Average and peak demands/water loss
	Redundancy and security
	Growth of service area
	Customer information
	Service contracts with wholesale customers
Financial	Largest customers by revenue and consumption
	Revenue and consumption by customer class
	Service area economics and demographics
	Population/income trends
	Employment data/unemployment rates
	Tax base trends/building permits
	Largest employers
	Labor relations history and labor contract summaries
	Regulatory compliance status and strategies
	Engineering report, feasibility study, or rate study
	Capital improvement program
	Anticipated capital and financial plans or proforma projections
	Water rates and comparison to rates in surrounding communities
	History of rate increases
	Accounts receivable/collections
	Current year budget/budget process
	Audited financial reports for 3 to 5 years
	Financial ratios

Evaluation

The rating request is entered on a calendar and assigned a priority based on the anticipated sale date. The application is then assigned to an analyst. The analyst reviews the material submitted, becomes familiar with the issuer and the security structure, calculates various financial ratios, and may, if necessary or helpful, meet with the issuer to clarify information. The analyst's evaluation and rating recommendation are condensed into a report presented to the analyst's

manager for review. The analyst and manager then present their conclusions to a rating committee. The rating committee's role is to assign a rating that reflects the creditworthiness of the security relative to all other securities rated by the agency. This requires familiarity with issues and concerns that cross industries.

As part of the rating process, the issuer generally agrees to provide continuing information to the rating agency. Based on its evaluation of the information provided and other generally available information, the rating agency may from time to time confirm or change the rating on outstanding securities. Changes are communicated to subscribers and are often reported in the financial press.

Relevant Questions

When evaluating a debt issue, the rating agency is most concerned with the long-term likelihood of timely repayment of principal and payment of interest. It will ask the same questions any lender would consider. These key questions are also referred to as the three Cs of credit: character, capacity, and collateral. Detailed questions are listed in Table A-5.

Rating Opinion

The committee's rating opinion is released first to the issuer and then, at the discretion of the issuer, to the public. The release is followed shortly by distribution of the full credit report. The issuer generally has an opportunity to review the report before its release. Because the issuer is paying for the rating, there may be times that the issuer does not wish the report to be released to the public—for example, the issuer only chooses to go with one rating. The assignment of the rating needs to be closely coordinated with the issuer's calendar, especially in the case of a competitive sale.

COMMUNICATING WITH THE RATING AGENCY

It is essential that a small, first-time, or infrequent issuer discuss the rating process with its financial advisor. The financial advisor should be able to provide insight into which agencies would be the best fit for the issuer and to help assess what rating will probably be assigned and under what circumstances. The financial advisor may already know the industry analyst at each of several rating agencies. Although it is common for the financial advisor to make initial contacts with appropriate analysts, a large, frequent issuer may feel comfortable performing these tasks in-house.

Communication with the rating agency takes multiple forms. The first is through documents that the issuer provides to the agency. The second is via an informal question-and-answer process as the analyst reviews the documents. The financial advisor handles a great deal of this communication. It is essential for the advisor to know the organization well or at least to have access to the appropriate issuer staff to obtain timely and accurate clarification of points arising during the document review process. The more unusual or complicated a security, the more time the rating agency will need to review materials, and the more likely it is that questions will arise during the review. More time and clarification will also be required to review materials from first-time or infrequent issuers than from an issuer with whom the analyst is familiar.

A third form of communication with the rating agency is the formal meeting. Meetings give the analyst the opportunity to assess management's competency, philosophy, and character. A meeting also gives management a chance to present its history and to explain complex issues and strategies. Top-level financial and operating managers of the issuer should be involved in the presentation, as should the financial advisor. The meeting can be structured as a phone conference, or it can be an in-person

Table A-5 Three Cs of credit applied to the water industry

Category	Relevant Questions
Character: Willingness to Pay	Is this a reputable issuer? Does it have a history of meeting its obligations when due?
	Is its management reliable?
	What is the purpose of the borrowing? Is the project(s) being financed essential or nonessential to the operation of the organization?
Capacity: Ability to Pay	Will the cash flows from the project or the net operating revenues of the organization be sufficient to service the debt? Are they legally available to service the debt? Can additional debt be issued? If so, is there any limitations on the amount or any preference for holders of this issue? How will additional debt affect the organization's ability to make timely payment of principal and interest on this security? What intergovernmental relationships are in place? How reliant are the various government units on intergovernmental transfers?
	Is management competent? Do key personnel have the experience needed to operate the organization in an efficient manner? How long have the key players been in their positions? Is the organization stable or in chaos? Is past performance likely to be representative of future performance?
	Is the water supply adequate? What population growth is projected in the service area? What is the condition of the physical plant? Are there any regulatory compliance issues that will require major capital expenditures? How large is the capital improvement plan during the next 5 to 10 years? How does the organization plan to finance its capital investments?
	What rate structure is in place? What is the rate-setting philosophy and process? How easy is it to obtain rate increases? Who has control and who can make decisions? What is the organizations relationship with any rate regulatory authorities? What are the service area demographics? What is happening with employment and income in the service area? Can the population afford rate increases?
Collateral: Security	Have revenues been pledged to this issue? Is there a commitment to raise rates as necessary to service the debt? If revenues are insufficient, are property taxes available for debt service? What constitutes a default? what are the bond covenants there a mortgage lien?
	What legal protections do security holders have? What commitments have been made with respect to disclosure of the future information that may affect the security?

visit held either at the rating agency's office or at the issuer's facility. A meeting at the issuer's facility has several advantages.

- More of the issuer's staff can be involved—it is important to convince the analyst that the organization is well run and that competency and depth exists throughout the organization.
- A facility tour can be used to demonstrate good operating practices, show assets previous debt issues have funded, new or unique treatment processes, etc.
- Local officials who may be unable to commit the time to travel to out-of-town meetings may be able to participate for a portion of the meeting.

A site visit does require more of the analyst's time, however, so it may not be reasonable to expect every rating to involve an in-person meeting at the issuer's facility.

In preparing for a meeting, the issuer should focus on presenting its best side, but

it must also be open and forthright in addressing any potential issues or concerns the analyst may have. Because one of the purposes of the meeting is to give the analyst an opportunity to assess the character and integrity of management, trying to hide problems is counterproductive. The meeting will often be structured with an issuer presentation followed by a period during which the analyst asks questions. If the answer to a question is not known, advise the analyst that the answer will be found. One person (usually the financial advisor) in the meeting should be assigned to documenting any issues requiring additional information or clarification. Color charts, graphs, booklets, and summaries that the analyst can retain from the meeting are often useful. Be prepared to talk about the following issues:

- Overview of the utility
- Major issues currently facing the utility and those for the next five years
- Economic and demographic conditions in the service area (stability, population trends, customer profile and usage trends, top customers, etc.)
- Current operating statistics (system capacity, average day, maximum day, minimum day, water loss, water rights, aquifer depletion, etc.)
- Capital improvement plan (what will the funds received be used for?)
- The organization's audited financial statements (past three to five years)
- Water rates (compared to neighboring utilities, compared to similar systems, customer affordability, rate-setting process, etc.)
- Pro forma financial projections (usually five years), assumptions, and future strategies
- Legal provisions (rate covenants, coverage levels, security, additional bonds tests, flow of funds, reserve funds, etc.)
- Plan of finance (when will the rating be needed, date of sale, etc.)

It is also helpful for the issuer and the rating agency representatives to agree on a meeting agenda in advance. The agency representatives will want to be sure that adequate time will be allotted for their questions during or after the issuer's presentation so that no essential information will be missed because of time constraints.

An effective communication strategy will involve continued contact after a rating has been issued. Future ratings applications will be less traumatic if the analyst is familiar with the organization and has respect for its management. Material changes in the organization should be communicated to the analyst between scheduled rating visits, and the rating agency will also want to receive regular financial reports. Some analysts also like to receive the organization's news releases and other public communications. An issuer should discuss with the financial advisor and the rating agency analyst the preferred level of communication between rating meetings.

ADDITIONAL INFORMATION

Each of the rating agencies has materials prepared to help issuers and investors understand the role of the rating agency, the agency's rating systems, and its financial analysis process. Those materials can be obtained directly from the rating agency, their websites, or they should be available from the issuer's financial advisor. Other organizations, such as the Government Finance Officers Association and the Treasury Management Association, have also published material that may be useful to those who need to know more about the rating process. A listing of current publications can

be obtained directly from those organizations. Many of the larger underwriters and financial advisory firms also publish booklets that contain useful information.

SUMMARY

A water utility, like other organizations that issue debt, may want to have a major credit rating agency publish an opinion about the credit quality of its debt and enhance the marketability of the issue. Investors often base their investment decisions on a rating agency's opinion regarding the likelihood an issuer will repay its financial obligation. A utility that decides to obtain a rating will also need to decide, possibly with the assistance of its financial advisor, which agency is most appropriate for the organization and whether to obtain more than one rating.

The utility should be prepared to provide information to the rating agency about the security to be sold. In addition, the rating agency will want to receive information about the utility including its legal structure, its financial status, its operations, and the economic environment in which it operates. After the security is sold, the utility is expected to provide certain updated information as long as the security remains outstanding.

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NOTE: *f.* indicates a figure; *t.* indicates table.

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