Financial Management & Rate Structures

Financial management is the process of organizing, monitoring, planning, directing and controlling the monetary resources of an entity. When broken down into steps, the process becomes much easier to understand and can be a great benefit to any system that uses it.

NYWEA

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Chapter 3:
Financial Management and Rate Structures

The recession of 2008 began with the "housing bubble," bursting. It continued to bankrupt major businesses, financial institutions and governments causing financial stress in every sector of American society. To add to the stress, New York State has approximately 610 municipal wastewater treatment plants with over 22,000 miles of sewer piping. Most of these plants are now between 30 and 60 years old and are in need of upgrades and repairs. It is estimated that just to upgrade and maintain this existing infrastructure will require more than *$36 billion* over the next 20 years. New wastewater infrastructure to address economic development needs will cost even more. Increasingly, Americans are realizing that sewer and water services are not a right of citizenship and are raising concerns about how much they must pay for these services. In effect, citizens are questioning the financial health of their communities and the management capabilities of their leaders.

As a direct result of all these economic pressures, the federal government and New York State have made changes to the municipal reporting requirements at every level and division of government. These changes are designed to help financial analysts, borrowers, auditors and residents better evaluate the credit worthiness of a municipality. The goal of these reports is to gauge the financial health and managerial capability of each fund of a municipality and, thereby, the local government as a whole. In this review, it is extremely important that all financial and managerial actions be "transparent" (i.e., easily understood, easily explained and traceable) should questions arise.

For all governments, regardless of size, there must be an increased focus not only on the daily running of the sewer system, but also on financial management. While many people shrink from the task of analyzing or managing finances associated with local government funds, this does not have to be overly difficult or complex. By definition, financial management is simply the process of organizing, monitoring, planning, directing and controlling the monetary resources of an entity. When broken down into steps, the process becomes much easier to understand and analyze.

Tools for Financial Management

As with most things, the proper tool can make a job much easier, and financial management is no different. The tools here consist of data that can be used to answer the following basic questions:

Questions	Tools
What are the components that make up the system and how much are they worth?	Asset Inventory and Valuation
What are the costs to run the system and what are included in these costs?	Detailed Expenses- Operating and Maintenance Budget
How do I pay for normal, expected daily operating expenses?	Detailed Revenues- Operating and Maintenance Budget
How do I pay for an unexpected expenses, or something not planned for, such as an equipment or pipe break?	Reserves, Fund Balance, Contingency, Borrowing
How do I keep track of all of this information and how do I know what the current status is?	Budgets, Plans, Financial Statements

Asset Inventory and Valuation

In order to determine what is actually being managed, it is important to know what components make up the system and to have an inventory of the actual items or assets that belong to the system. A basic listing of the major components, along with their costs and a determination of how long they will last, will be a good start in developing an asset inventory.

Once the components of the wastewater system are known, the original cost of acquisition can be researched and estimates developed on the cost to repair or replace each specific element. Knowing the current condition of each piece of infrastructure will help decide if it is best to pursue a replacement, repair or upgrade. It will also help in determining how much useful life is left in each component and when money should be spent to maintain, improve or replace the asset—this year, next year or later. If the answer is later, an annual inflation factor (percentage) may be added to the current replacement or repair cost to arrive at a cost estimate for replacement at that future date.

Gathering and quantifying all of the above data into one spreadsheet creates a simple but effective asset

management plan. This plan is now a useful tool that defines the system and directs managers to where and when money can be best spent. Armed with this information, it is now possible to plan for upcoming expenses rather than just react to emergencies. The goal is to gradually build up funds so that much needed repairs, upgrades and replacements can be handled in a timely manner that will not over burden the users or the budget. *(For more detailed information on asset inventory and management, please see Chapter 2.)*

Operation and Maintenance Budget

An operation and maintenance (O&M) budget is a detailed estimate of the anticipated annual revenues and expenses of the wastewater system. Each water or sewer system should be self-sustaining and not dependent on interfund transfers or the previous years' fund balance to cover the cost of operation and maintenance. Revenues raised should fully cover the expenses of the system.

In order to effectively develop an O&M budget, the real cost of running the system must be determined. To do this, an evaluation of every expense of the system must be made to ensure that it is allocated to the appropriate fund. Many municipalities do not recognize that some expenses, such as the time the clerk or the public works superintendent spends on certain tasks, may need to be allocated to the water, sewer, highway and general fund budgets. It may also be necessary to talk to employees about what they really do and to track their time differently than in the past to capture this information. Another area to review is the coding of expenses. Actual invoices should be reviewed to ensure that they are classified properly into meaningful subcategories, such as electric, telephone, gas, water, chemicals, lab testing, billing, employee time for emergency repairs, and the like. The subcategories will vary among systems and should be divided into modes that are meaningful to the particular system.

In a similar way, a detailed review of all sources of revenue should take place to ensure that all revenues of the sewer system are assigned to the sewer fund and that they are correctly allocated into meaningful

Many communities will have to pay for old sewer system failures.

categories and subcategories. The majority of the revenue for the sewer system will be generated from user's rates and fees. A small portion of the revenue of the system may be from sources such as penalties, interest earnings and, in some cases, debt service charges that have been placed on the tax bill. It is helpful to determine when revenues should come in, and if they are one-time occurrences or regularly recurring, such as quarterly water charges. Knowing the cycle of these revenues will make it easier to predict cash flow and should highlight any issues that arise, such as a shortfall.

"New York State has approximately 610 municipal wastewater treatment plants and more than 22,000 miles of pipes. Just to upgrade and maintain this existing infrastructure could require more than $36 billion during the next 20 years. New wastewater infrastructure will cost even more. "

A spreadsheet may be used to track these expenses and revenues on a monthly basis. In many cases, the bookkeeper may already generate monthly reports that show the annual budget, revenues and expenses to date, and the budget remaining. This report may be sufficient, provided that it breaks down the expenses into the same meaningful subcategories that are being tracked.

To touch on something that often confuses those new to local government, every municipality develops its own annual budget to estimate the cost of operating and maintaining its government, including the water and sewer systems. These budgets often do not appear to allow the level of detail covered here. This is because New York State has developed a Uniform System of Accounts that all local governments must use when

preparing their budgets and for revenue and expenses accounts.

Generally speaking, each line of the budget is classified by fund and then function, such as Sewer Administration, Sewage Collecting System or Sewage Treatment and Disposal. The fund is designated by a letter classification, such as "G" for sewer fund or "S" for special district. Each function is given a four-digit account code. In addition, each function is further classified into the categories. For example, line 8110.1 of the Sewer Fund budget refers to personal services for sewer administration and could include the time spent on sewer administrative functions, such as billing and bookkeeping by the clerk, and meter reading by the operator.

Fund Name	Fund Letter	Function Name	Function Number	Category Number	Category Name
Sewer	G	Sewer Administration	8110	.1	Personal Service
				.3	Equipment/Capital Outlay
				.4	Contractual

While this system of classification is effective and promotes uniformity in reporting, it can be somewhat limited. It may not capture expenditures or categorize them into the desired groups to track unless adjustments are made to further define each category. The category numbers can be expanded to two or three digits to create a more detailed picture. In the previous example, the clerk and the sewer operator were both classified as 8110.1. Yet how much of the expense is attributable to the clerk and how much to the operator? In order to further define the categories, a second digit can be added. The clerk's personal service time can be classified as 8110.11, and the operator can be 8110.12 –the second digit indicating who performs the work. By expanding on this idea additional digits can be added to each category for an even more detailed picture. The clerk's time for working on sewer billing could be classified as 8110.111, and sewer bookkeeping could be 8110.113.

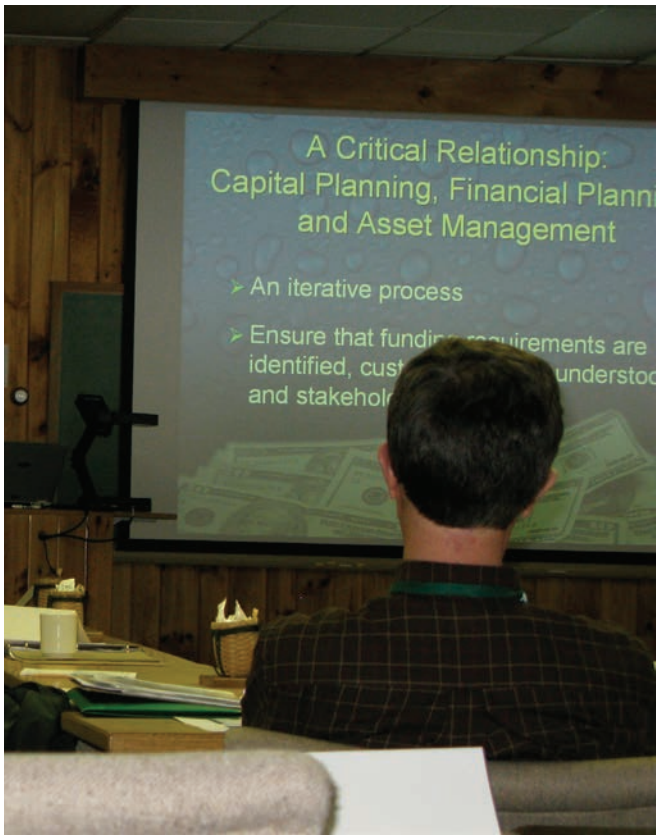
It should be noted that in expanding the expense categories in the budget, the clerk and bookkeeper may need assistance in correctly allocating invoices to each new category. It may be useful to have sewer department personnel assist in coding each invoice to the appropriate category to help ensure that reports are accurate. *(For more information on the Uniform System of Accounts, see the Accounting and Reporting Manual published by the New York State Comptroller's Office, January 2009 and revised January 2011.)*

Reserves, Fund Balance, Contingency and Borrowing

The operating and maintenance (O&M) budget should cover the daily operation of the sewer system. But what happens when there is an unexpected expense —a leak, a broken part or staff time for a repair? The easiest way to deal with small unplanned expenses is to establish a contingency line in the O&M budget. While many municipal boards are resistant to this concept, it is a necessary budget line since no one can predict the expenses and revenues of a system to the exact penny. The New York State Comptroller's Office recognizes the need for contingency funds and has established maximum contingency amounts for many funds, including special (water and sewer) districts. The recommended contingency is 10 percent of the amount estimated as necessary to meet the expense of maintaining the district, excluding debt service. *(See the Office of the State Comptroller's (OSC) Local Management Guide: Understanding the Budget Process, for more details.)*

What if the unplanned expense is a substantial one —a major repair or unplanned replacement—and the contingency line of the O&M budget will not be large enough to handle the expense? If there is sufficient unreserved fund balance in the sewer operating fund, it may be accessed to cover this expense. If there is not sufficient unreserved fund balance, or if using that fund balance would leave the operating fund with no fund balance and no cash flow to handle daily expenses, then it may be wise to see if reserve funds exist that could be used to pay all or a portion of the unplanned expenses.

If an equipment, capital or repair reserve fund has been established, funds from it may be used to cover the expense; however, before spending reserve funds, it is important to understand how and why the fund was originally established. Was the fund established for a specific purpose like repairing a generator, or for a much broader use, such as general sewer plant upgrades? Was a permissive referendum or vote held when the fund was established and is this now required to access



Continued training, and a comprehensive approach to financing and management provide managers with the tools they need.

the fund? Since these issues can be complicated, it is best to seek the advice of the municipal attorney and/or financial advisor, before spending these reserve funds.

If the unexpected expense cannot be covered by contingency, fund balance or reserve funds, then it is time to look at borrowing. By borrowing, the repayment of the repair can be spread over a period of time. Before borrowing, consider the work that needs to be done and if other work should also be included. A realistic budget, which includes the cost of all work to be done as well as the cost of any engineering, legal, fiscal advisory services, along with a contingency line, should be developed. This budget, called a capital project budget, can become the basis for the resolutions needed to authorize the borrowing. The budget can also be used by the fiscal advisor to develop repayment (maturity) schedules to show what the annual debt payment may look like.

Planning and Policy Making

Once a basic asset inventory/asset management plan and an operation and maintenance budget are completed, the basic tools will have been created to determine the current status as well as the "big picture" or overall goal. Depending on the breadth of overall needs, it may take several years to reach an objective. Establishing smaller, more realistic milestones will make it easier to stay on track and to reach the final goal.

It is a good practice to set aside time each month to compare the O&M budget and the assets management plan in place to what is actually happening. This will provide a good idea of where the system is today and if there needs to be any adjustments to keep on course. At least once a year, as part of a municipality's overall budget process, all plans should be reviewed, updated and re-evaluated. This is a good time for the Board and the operators to discuss the status of the system, the goals that were set and where they are in relation to these goals. An evaluation should also be made to determine what has changed in the community since the previous year and does or will it impact the plans and budgets now in place? Remember, plans are not absolute–they should change and adapt to fit the system's needs.

It may also be helpful to put policies in place that will help guide future budgets, plans and decision making. A policy is basically a written plan of action adopted by the Board that sets forth principles to govern actions that may be taken in the future. These actions can include: when to use fund balance, how much contingency should be budgeted for each fund, when to replace an asset rather than repair it, etc. A policy does not have to be overly elaborate or cumbersome to be effective. A concise statement of a principle, or situation that may arise, and the action to be taken is all that is required. The purpose is to establish a uniform way of dealing with an issue so that everyone handles it the same way. It promotes transparency of action and understanding of the municipality's goals, principles and ideals.

Basic Steps in Rate Setting

The following are steps that should be taken when formulating and employing user rates for water and sewer services.

1. Determine the full cost of running the system
2. Determine current revenues
3. Assess repair and capital needs for the next one to 10 years, or longer
4. Evaluate/design appropriate rate structures
5. Implement the rate structure

6. Assess the effectiveness of the rate structure and change it, if needed.

Definition: A rate structure is a set of fees (rates) a water or sewer system charges customers for use of the system. The purpose of rate structures is to generate sufficient revenue to cover the full cost of operating and maintaining the water or sewer system.

1. Determine the full cost of running the system

As discussed in the O&M portion of this chapter, the full cost of operating and maintaining a water or sewer system includes the collection or production, treatment, storage, distribution, regulatory compliance costs, administrative costs, repair and maintenance costs and debt service. In order to forecast these expenses, it is helpful to predict when they will happen—one time during the year, or at regular or irregular intervals.

Collection/production, treatment and storage costs include operator and staff time spent working in each of these functions, as well as the cost of chemicals, power, etc. Regulatory compliance costs can include expenses for permits, testing, operator certification, training and regular reporting to various agencies. Administrative costs include expenses for accounting, meter reading, preparation of bills, postage for bills, collection of fees, budget preparation and review, mailing of notices to users, cell phones, copiers, computer technical support, office supplies, etc. Debt service is simply any annual principal or interest payment due that is related to the sewer system. Repair and maintenance costs include planned repairs of the system, as well as general maintenance items that must be carried out on a regular schedule.

To cover small unplanned repairs or maintenance (including staff time or overtime) a small contingency should be built into the budget for up to 10 percent of the overall operating budget outside of debt service. This number does not have to be particularly large, just realistic for the particular community. The amount of contingency needed may also be determined by calculating the amount spent on unanticipated expenses in the previous five to 10 years and then taking the average. Unexpected expenses will often show in the operating budget as transfers from other funds, transfers from reserves or use of fund balance on the year-end operating budget. Board meeting minutes may also shed light on the purpose of any transfers that may have taken place. If the contingency is not used at the end of the year, it can remain in fund balance or could be transferred to a repair or capital reserve for later use. The unused contingency could be re-allocated (transferred) the following year to cover contingency again so that additional revenue would not have to be raised for this item. If left in fund balance indefinitely and not included in the operating budget as contingency, it could be forgotten and may have been used for other purposes or may be less than expected and not sufficient to cover the unplanned expense.

It is important when determining the full cost of running a system, that all costs of the municipality be reviewed to make sure they are being properly coded and captured in the sewer operating and maintenance fund. It is rare that a clerk would work only on general fund related tasks and a public works superintendent serve exactly half the time on sewer and half the time on water. Because salaries, wages and benefits for these and other workers may be arbitrarily split between the water, sewer and general fund or lumped into one fund for convenience, it warrants some research. A discussion with these key people and a review of the actual time spent on work for each fund may reveal that adjustments need to be made to better align their salaries, wages and benefits to where the work is actually performed. The goal is to capture and charge the actual cost of running the system to the appropriate fund.

Another good exercise while looking at all of the sewer or water system expenses is to determine if they are broken down into meaningful budget categories for tracking. Does the current budget and bookkeeping system provide enough detail about expenses to differentiate utility costs so that phone, electric, gas or fuel oil, and internet costs are known? What about for testing—does it show which are chemicals or lab tests, and which are done in-house and which are completed by an outside professional? What about administrative costs? How much is charged for billing, for collecting service charges, and for producing newsletters or required informational mailings?

Answers to these questions could mean that budgeted expenses need to be broken down into more "trackable" categories. By understanding what current needs for a particular item are, it may be possible to anticipate or avoid cost increases in certain areas, such as gas or electric, by shopping for services that provide the most value for each dollar. Additionally, it could be

determined that the system no longer needs certain items or that further budgeting is needed for others. In short, the information captured will have new meaning because it will now become easier to compare and track.

One thing to note is that when changing the way invoices have been coded, it is a good idea to have the sewer or water department assist the clerk, treasurer and bookkeeper in coding the bills. Often these bills, while self-explanatory to a sewer or water operator, may not be understood by those coding the bills. To ensure that the tracking system remains useful, continue to check that all invoices are properly coded, and this may be the best opportunity to do so. (If there is difficulty reconciling New York State's accounting system with the level of detail that is needed for a meaningful budget, refer to the section under Operation and Maintenance Budget earlier in this chapter for clarification.)

2. Determine current revenues

Just as all invoices are reviewed to ensure they were properly allocated to the sewer fund, the same inspection should be made of all revenues. It is helpful to determine when the revenues come in—all at once, or throughout the year. Are they one-time occurrences or do they arrive at regular intervals? Municipalities derive most of their revenues from taxes and user fees. The user fees may be for water, sewer or even electric services. These user fees may be collected monthly, quarterly or another regular schedule—the key here being that they are collected at several times throughout the year. Taxes, on the other hand, only come in once a year. Some municipalities may have placed the debt service charges for a particular project or district on the tax levy. This does not mean they are a tax, but rather that they are assessable improvements and, as such, can be charged annually to the users along with their taxes.

Just as expenditures must be scrutinized to determine if they are properly classified, revenues too must be reviewed and reallocated where necessary. Particular attention needs to be paid to interfund transfers. What was the purpose of the transfer? Was it a temporary transfer or permanent? Does it have to be repaid and, if so, over what period of time? Is there a pattern of fund balance being used annually to balance the budget? The answers to these questions will help determine if the water or sewer fund is truly self-sufficient or if that is a goal to work toward.

Good fiscal management of your system requires a collaborative, team approach.

3. Assess repair and capital needs for a future period of time

The best tool to assess a system's current repair and capital needs is an asset management plan. The asset management plan is designed to evaluate a particular sewer or water system and to help plan for minor repairs and major upgrades. Upgrades and replacements may be due to age or wear, but also could be necessary because of changes in technology and/or upcoming changes to current regulatory requirements. As major capital replacements or upgrades become necessary, capital improvement plans can help communities determine when major projects will need to be undertaken and what the effects will be on system finances. When used properly, these plans provide needed time to develop financial strategies to pay for improvements.

While the terms asset management and capital plans may bring to mind reams of spreadsheets, complicated formulas and endless hours of work, they really do not have to be overly complex to be useful. At its most basic, the asset management plan should include a listing of the major components of the water or sewer system, a determination of how long they will last and an estimate of their cost. The capital plan should be based on the asset management plan's assessment of when major components of the system need to be

replaced or upgraded. Both plans should be written down so that everyone is working from the same information concerning the assets of the system and their conditions. Both plans should be reviewed and updated on a regular basis as part of the budgeting process of the municipality. In this way, the plans become useful tools that provide solid information for decision making by those responsible for preparing the budget and for public discussion.

4. Evaluate/design appropriate rate structures

There are several factors in evaluating which rate structure to use: rate stability, rate predictability, number and type of customers, usage and ease of billing. Rate stability refers to how stable the rate is throughout the fiscal year. Are the payments the same or similar, and are they spaced evenly throughout the year? Most users prefer to make the same payment at regular intervals during the year. Closely related to rate stability is rate predictability which refers to the municipality's ability to accurately predict when annual revenues will be received. It is important from a cash flow stand point to know when revenues will come in and how much they will be.

Municipal water or sewer customers may be residential or commercial, industrial or agricultural-type users. Each of these user classes tends to process differing amounts of water or sewage annually—they may be seasonal users or have peak demands at different times throughout the year. Knowing the number and type of customers and their particular usage needs can help determine how best to set a water or sewer rate.

As important as the customers are in setting water or sewer rates, it is imperative that the billing structure be easy to understand, to apply and to invoice Complicated formulas or rate structures generally mean more billing errors will be made, which will have to be researched and corrected. Simpler structures tend to have less billing errors.

There are several rate structures, or methods of setting water or sewer rates that are commonly used to bill customers:

Fixed Fee: All customers, regardless of type of user or the amount used, pay the same amount. This type of structure may make sense for very small systems where all the customers have the same or nearly the same usage. It does mean that some customers will be subsidizing others, if some use more than others. Water metering is not required for this structure to work. (Please note that sewer usage is often based on water consumption as captured by individual water meters.) This type of structure is very easy to bill and it is very easy to predict annual revenues. Revenue shortfalls could arise with this structure if there are unplanned periods of higher than normal usage.

Flat Rate: All customers are charged a uniform rate regardless of the user type (class) to which they belong and regardless of the amount they use. For example, all customers are charged $2.50 per 1,000 gallons of water consumption. This includes residential, small business and large industrial users. Water meters are required to successfully use this structure. This method encourages water conservation, since charges are directly related to actual use. Water usage can be expressed in equivalent dwelling units (EDU), gallons or cubic feet, if desired. It is very easy to bill and to predict annual revenues using this type of structure.

Block Rate: Customers are charged based on block of water consumption. For example, users can pay $2.50 for zero to 5,000 gallons, and $3.00 for 5,001 to 10,000 gallons. These blocks can be in increasing or decreasing increments. Water meters are required to accurately bill this structure. This method can be very useful when there are large differences in the amount

Appropriate fees to fund our water infrastructure today, provide for clean water in the future.

of water each class of customer uses. However, a large number of blocks can be confusing to users and can be difficult to bill.

Combination of Rates: This means two common rate structures are combined, such as fixed fee and block rate or fixed fee and flat rate. In these cases, the fixed fee is used to cover fixed expenses of the system. Fixed expenses are ones that will occur regardless of the volume of water or sewer used. They include items such as debt service, salaries and benefits, etc. The block rate or flat fee portion of the rate structure covers the variable costs of the system and includes items such as chemicals, testing, phone usage, etc.

5. Implement the rate structure

By reviewing the rate structures, it usually becomes apparent which will work for your community, and which will not. Once a structure is decided, the amount of revenue to be raised must be determined. To determine what is needed, take the current operating budget expenses and add the capital and repair reserve needs and subtract any non-user based revenues and any transfers from reserves, fund balance or other funds.

6. Assess the effectiveness of the rate structure and if change is needed

After rates have been chosen and are in use, it is a good idea to assess the effectiveness of the rates and the rate structure. Should it be necessary to adjust rates during a fiscal year, it is a good idea to check the local laws to know if there are any rules governing when a rate change can be made and what requirements, if any, there are to notify the public of the change. It is imperative that rates be re-examined annually during the budget process. At this time, it may be necessary to make adjustments to account for more water conservation than expected, more use than expected, the opening or failure of a business, or even to make billing easier. Questions to consider include: was enough raised to cover expenses? How easy was the billing process? Was the expected amount of revenue accurate and were there unforeseen complications? What can be improved next year?

In closing, it is good to remember that rate setting is as much an art as it is a science. There will always be more than one way to calculate the rate and each way will be correct. The main objective in rate setting is to fully cover the cost of operating the system with the revenues generated from the rate structure. So the "correct" rate may be $20 for 5,000 gallons per quarter plus $2.50 for every thousand gallons after that; or it may be $30 per quarter for all users regardless of amount used. To be correct, the rate structure and the rate itself must make sense for the sewer system it was designed for.

This Chapter prepared by Mary Chappell, Vice President, Municipal Solutions, Inc.