General information on utility finances and rates

Financial Plan

The objective of developing a financial plan for a water system is to determine cash needs, revenue requirements and anticipated timing of utility costs to ensure that adequate funds are available to meet operational and maintenance needs as they occur. Financial planning for a small water system normally includes an examination of:

- Operating revenues;
- Operation and maintenance (O&M) expenses;
- Debt service (principal and interest payments) on borrowed funds, and
- Reserve requirements.

The financial plan calculates the minimum revenues necessary to maintain viable and self-sustaining enterprises.

Operating Revenues

Revenues are the main sources of income to a utility and are typical thought of as operating and non-operating. Operating revenue is the stable and reliable income that comes from customer rates or user charges. Non-operating revenue such as interest on checking and reserve accounts, meter deposits, connection fees, and late payments, penalties and reconnection fees may also be considered operating revenue if they are stable and dependable revenue sources. For example, a water system with consistent growth that is expected to continue may consider connection fees as an operating revenue source.

Operating Expenses

This is the first cost category that is considered when developing a financial plan. Operating and maintenance costs include the day to day expenses of getting drinking water to and removing wastewater (sewer) from customers. Expenses include labor, insurance, materials, electricity, and chemicals.

System Reserves

Reserves are an accepted way to stabilize and support a utility financial management. Small systems usually fund the operating expenses but don't consider putting money for a specific upcoming financial need or project or for an amount that can be used to provide rate stabilization in years when revenues are unusually low or expenditures are unusually high. The rationale for maintaining adequate reserve levels is twofold. First, it helps to assure that the utility will have adequate funds available to meet its financial obligations in times of varying needs. Secondly, it provides a framework around which financial decisions can be made to determine when reserve balances are inadequate or excessive and what specific actions need to be taken to remedy the situation.

Utility reserve levels can be thought of as a savings account. Reserve balances are funds that are set aside for a specific cash flow requirement, financial need, project, task, or legal covenant. Common reserve balances are established around the following four areas: operating reserve, capital improvement, emergency, and debt service reserve. These balances are maintained in order to meet short-term cash flow requirements, and at the same time, minimize the risk

associated with meeting financial obligations and continued operational needs under adverse conditions.

Debt Service Reserve

Water utilities that have issued debt to pay for capital assets will often have required reserves that are specifically defined to meet the legal covenants of the debt. Normally, debt service reserve represents an amount equal to one full annual loan payment and can be accumulated to this level over a period of five to ten years.

Operating Reserve

Operating reserves are established to provide the utility with the ability to withstand short term cash-flow fluctuations. There can be a significant length of time between when a system provides a service and when a customer pays for that service. In addition, a system's cash flow can be affected by weather and seasonal demand patterns. A 45-day operating reserve is a frequently used industry norm. Because of potential delays in collecting payment many utilities attempt to keep an amount of cash equal to at least 45 days or one-eighth of their annual cash O&M expenses in an operating reserve to mitigate potential cash flow problems.

Emergency Reserve

In addition to operating reserves, emergency reserves are an important tool for financial sustainability. Emergency reserves are intended to help utilities deal with short term emergencies which arise from time to time such as main breaks or pump failures. The appropriate amount of emergency reserves will vary greatly with the size of the utilities and should depend on major infrastructure assets. An emergency reserve is intended to fund the immediate replacement or reconstruction of the system's single most critical asset; an asset whose failure will result in an immediate water outage or threat to public safety. For example, given that the largest single asset for a small rural utility may be the primary pump, the cost of replacing that pump in the case of a failure would be a good amount to save in emergency reserves.

Capital Improvement Reserve

A capital improvement reserve (also called a repair and replacement reserve) is intended to be used for replacing system assets that have become worn out or obsolete. Annual depreciation is frequently used to estimate the minimum level of funding for this capital reserve but it's important to understand that depreciation expense is an accounting concept for estimating the decline in useful life of an asset and does not represent the current replacement cost of that asset. As an example, a brand new system with a construction cost of $1 million and a service life of 100 years should (in theory) be setting aside $10,000 per year to fully capitalize the replacement cost of the infrastructure as it wears out. Many smaller systems find this to be impossible because of the effect on rates which explains the large number of small systems that are falling into disrepair.

To initiate a capital improvement plan (CIP), a small water or sewer system will start with a list of assets that includes the remaining service life, theoretical replacement costs in today's dollars and the remaining service life. It then calculates the monthly and annual reserve that must be collected from each customer to fully capitalize the

replacement cost of each asset. In reality, the assets will fail and be replaced gradually, but the replacement cost of water system assets is often a shock to small systems who are struggling to keep rates reasonable.

An alternative method is to set aside an annual amount equal to l% to 2% of the total original cost asset value of the utility's property. Larger systems often have sufficient non-operating revenue to fund these reserve levels without affecting rates, but smaller systems often do not, leaving them to fund their CIP reserves from rates alone.

Deposits to reserve accounts may be broken into reduced annual installments to minimize the overall impact on rates. Once the target reserve has been met, the contributions can be redirected to capital improvement reserves and/or any other reserve fund. Operating reserve levels should be adjusted on a regular basis to reflect current costs.

Rate Structures

The following are types of rates structures common to drinking water systems:

- **Uniform Flat Rate -** Customers pay the same amount regardless of the quantity of water used. This type of rate is easiest to administer; however, it is not fair to the lowest water users and can promote high consumption which then may cost the utility more to provide that water.

- **Single or Uniform Block Rate -** Customers are charged a constant price per volume regardless of the amount of water used. The cost per block of water is often added to a minimum charge for having service available. This rate tends to be more equitable to customers as the cost to customer is in direct proportion to the amount use.

- **Inclining or Increasing Block Rate -** Designed to promote water use efficiency, the price of water increases as the amount used increases.

Wastewater utilities typically charge a flat rate or a block rate based on either winter water use (residential) or monthly water use.