Water Rate Study

Village of Yates City

April 23, 2024

IRWA
ILLINOIS RURAL WATER ASSOCIATION

Prepared by: Clark Cameron

Introduction:

IRWA was contacted by the Village of Yates City about performing a rate study for the Village. After reviewing the data provided by the Clerk, as well as the latest audit report posted on the Illinois Comptroller's website it appears that the Village is in no need of changes to the existing rates/gallons included in the Water and Sewer Departments. The purpose of this review and rate study was to develop examples of financial strategies and rates that:

- Provide adequate revenue to meet the operation and maintenance costs, capital improvement costs, debt service and emergency funding.
- Equitably determine and distribute costs among the various consumer types.
- Are relatively simple to understand and implement.
- Consistent with industry practices.

Per the request from all parties, Illinois Rural Water Association (IRWA) is pleased to present this rate study to the Village of Yates City for review. When conducting a rate study, the best results are based on the most accurate data obtained. After careful review of the written materials that were provided and discussions with Village representatives, some key points are necessary to mention in order to keep the same level of understanding; they are:

- Changes in necessary monies for capital improvement.
- Creation of a contingency fund for emergency purposes.
- Existing expenditures based on billing units' of 1000 gallons.

It is apparent that the existing water rates and billing methods currently being utilized by the Village are adequate to meet operational expenses of the Water Department. From the data provided to the IRWA, FY 2023 total annual expenses for the Water Department totaled $209,769.99, while the income totaled $251,361.15 resulting in a surplus of $66,123.96. This surplus indicates that rates are adequate to meet the expense needs and provide a surplus for any future upgrades and/or maintenance.

The Sewer Department is also in no need of adjustments based on the data provided showing annual expenses of $62,607.31, while income totaled $66,117.62 resulting in a very small surplus of $3,510.31. Based on this surplus some minor adjustments should be made to the sewer rates to provide necessary reserves for future use.

Additional contingency funds should also be considered in the annual water budgets to cover unexpected repair and replacement costs. A recommended contingency for emergencies need not be expended if not needed in a given fiscal year but rather allowed to accumulate over time. When setting rates, it is also important to create reserves for future loan payments, capital replacement, capital projects, and for major maintenance and repairs.

If you decide to implement or increase contingencies, ensure that your auditor reviews your intentions prior to implementation.

We utilized the information provided that is most pertinent when performing a rate study. The information includes the existing/adopted/proposed budget that consists of revenues necessary for O&M, personnel, contingency, capital outlay, loan debt service, and loan debt reserve fund if required. The system figures are based upon as close an estimate as could be determined from your existing records. The other pertinent information is as follows: approximately 313 in town water connections and 20 out-of-town water connections, 320 sewer connections; the Village bills on a monthly basis. Also, included in the calculation of rates is the master meter annual total of water produced of 21,382,000 gallons and 10,730,898 gallons of water sold or billed (FY 2023).

Illustration 1: Current Rate Information (Calculated on a Monthly Basis)

	Water In Town	**Water Out-of-Town**	**Sewer In Town**	
Service Connections	313	20	320	
Base Rate Amount	**Old** $36.00 **New** $45.50	**Old** $43.25 **New** $52.75	$9.50	

Rate structures vary from utility to utility, but generally include three elements. First, the consideration of the classifications of customers served (i.e., residential, commercial, etc.). Second, the charges or schedule of charges will be identified and assessed in this rate study. Third, that all customers have an established frequency in billing. Currently, the Village generates bills on a monthly basis.

It is typically suggested that the base rate covers 30% - 75% of annual expenditures allowing for the balance of revenues to be generated by what is termed as a consumption rate. The metered amount of water can be charged by a unit measurement in gallons or cubic feet. The Village's water is measured in gallons and for every one thousand gallons, a dollar amount can be charged per unit.

Bulk water sales (if applicable) were not discussed and consequently will not be considered in this rate study.

Illustration 2: Current Expenditures and Revenue Information

	Water	Sewer
Total Expenses:	$209,769.99	$62,607.31
Revenue Generated:	$251,361.15	$66,117.62
Annual Gain (Loss):	$66,123.96	$3,510.31

Illustration 2 reveals that there is sufficient revenue being generated in the Water Departments to cover the expenses being attributed to the Department and provides a surplus for future upgrades and maintenance. The Sewer Department revenue is sufficient to cover expenses but generates little surplus.

Illustration 3: 2023 Water/Sewer Produced/Treated and Billed

	Water	Sewer
Produced/Treated	21,382,000	*12,000,000*
Billed	10,730,898	9,228,658
Difference	10,651,102	*2,771,342*

***Denotes estimated numbers.**

When reviewing Illustration 3, one will notice that there is a 10,651,102-gallon difference in the amount of water being treated versus the amount being billed. On the water side, this difference is referred to as "non-revenue" or "unaccounted for water" and may have several causes. Those causes can be from one or any combination of: hydrant flushing, inaccurate meters, non-billed services, theft, leaks, etc. On the sewer side this difference can be attributed to many factors including storm water. This difference is referred to as infiltration.

Illustration 4: Cost of Production

	Water	Sewer
Operating Expense:	$185,237.19	$62,607.31
Total Gallons:	21,382,000	*12,000,000*
Cost per 1000 Gallons:	$8.66	$5.22

Illustration 4 shows that the cost to produce one unit (1000 gallons) of water is currently $8.66 and to treat 1000 gallons of sewage is $5.22. This cost is calculated by dividing the total operating costs by the total gallons of water introduced into the distribution system. It is vital that the consumption rates for water be set at a level to offset the difference in the amount of revenue generated through the base rate and total expenses.

Illustration 5: Cost of Debt Retirement

	Water	Sewer
Debt Expense:	$24,532.80	N/A
Total Gallons Produced:	21,382,000	N/A
Cost per 1000 Gallons:	$1.15	N/A

Illustration 5 shows that there is no debt retirement for the sewer departments at this time. The cost of debt retirement for the Water Department is currently $1.15.

When determining cost for utilities, equity centered on consumption must be applied across the board, (size and classification of the connection) and this is accomplished by means of determining the price per unit and the amount of consumption per month.

There are various scenarios that can be used to reach an acceptable result to meet budgetary requirements. One size fits all does not normally work from community to community. The cost associated with providing water to the consumer's tap usually varies from one water system to another. The variables associated with other water systems sometimes cannot apply to the Village of Yates City. A new water system completed without any debt owed is rarely seen. The age of a water system plays a bigger role in cost since rebuilding is often more expensive than new development.

The importance of looking at the future regarding system growth, repair, or replacement of aging components, determining an evaluation of costs can at times be difficult. Proposed costs are usually lower than actual costs due to a delay in timelines towards completion. Communicating proposed costs, even though not actual, can educate all personnel and keep everyone on a single page of understanding in the process of operating a system.

Keep in mind that when rates increase the consumer has a tendency to use less water, but as time passes normal consumption level raises to what past records have shown. Determining the consumption rate on a conservative measure means this factor has already been equated into the anticipated revenues.

The times when consumers are heard from most is during a rate increase; so, as the raising of rates come to realization, it is important for public relations and communications to be increased.

With numerous concerns and decisions being calculated with this rate study, it is the goal of Illinois Rural Water Association to assist the Village of Yates City towards a rate sufficient to meet the needs of their systems, provide fair and equitable rates for all consumers and to ensure the Village continues to meet the financial, managerial, and technical requirements of their utility departments.

Findings/Recommendations

After consulting with the Village of Yates City representatives the following findings and recommendations are being respectfully submitted to the Village's administration for their consideration.

1. In reviewing the Yates City water and sewer rates, the following observations were made:

    a. Revenue generated by the water department is adequate to meet the day-to-day operating expenses of the utility and provides for reserve funds to be utilized in future upgrades or major breakdowns. No adjustments to the rates are needed.

    b. The revenue generated by the sewer department is adequate to meet expense needs, however changes are needed to provide a surplus for future upgrades and repairs.
    IRWA included a rate change page based on changes that the Village had already implemented that provides a small surplus for future needs.

    c. Water loss of 10%-12% is generally accepted as normal in a water system. This takes into account hydrant flushing, firefighting, non-working meters, and leaks. Water loss was 10,651,102 or 49.81%. This loss is well above the norm and needs to be addressed.
    IRWA recommends repairing all leaks and inoperable meters as quickly as safety allows.

    d. It is always a recommendation in all IRWA rate studies that the Village consider adopting an automatic increase of 3% to cover annual inflation costs. As stated earlier, customers very rarely comment on their water rates unless there is a sizable rate increase. Very few categorize a 3% increase as being extreme but if the system waits ten years and institutes a 20 – 30 percent increase then everyone notices. If, in the future, the Village Board decides a 3% increase was not warranted then they could vote not to have the increase for that year only.

2. Please do not hesitate to contact me if you have any questions or would like additional scenarios calculated. Thank you for the opportunity to develop this report and if my schedule allows, I would also make myself available to present this report to the Village Board at one of its regularly scheduled meetings.

Notes of Understanding

The Village had already implemented rate changes effective 2/8/23 and 1/10/24. These changes were sufficient and IRWA had no need to recommend changes above those already in place.