

Village of West Alexandria Utility Rate Analysis



Submitted by: Ohio RCAP

Administered by
GLCAP Community Action Commission, Inc.

The Ohio Rural Community Assistance Partnership (RCAP) was commissioned to prepare a rate analysis for the Water and Sewer Departments in the Village of West Alexandria, Ohio. This review was driven by USDA/RD project funding for a new WWTP. USDA/RD will reimburse the cost of the sewer rate study from loan/grant proceeds. The water rate study will be paid by the village directly.

The primary goal of this report is to provide the community with tools necessary to begin addressing the sustainability of their utility infrastructure. The rate study was completed using historical and projected data for operating and non-operating expenses, debt service, and capital expenditures. Most of the data used was obtained from the Village. Industry standards and rules of thumb developed by industry experts were applied where community specific information were not available.

A long term planning horizon was assumed with emphasis upon minimizing lifecycle asset cost. The cost of improved preventative maintenance and timely predictive maintenance was incorporated into the budget. The asset management objective of lowest possible life of asset cost can only be achieved if the equipment is maintained to maximize its economic lifespan. For a more in-depth explanation of the rate study methodology see Ohio RCAP's publication "***The Art and Science of Utility Rate Analysis and Structure***".

Water Findings

The water department has generated negative cash balance in four of the past five years. Water rates were raised on 2/1/2019 with breakeven operating results posted for that year. Additional increase will be necessary to implement newly enacted Asset Management regulations. A typical year operating deficit of (\$98,540) was projected.

No rate increases were enacted between 2/1/2008 and 2/1/2019. If you assume an inflationary rate of 3.5% annually during this 11 year period then revenues to the utility loss 46% of its purchasing power to inflation. The 10% rate increase implemented in FY 2019 wasn't adequate to overcome the negative impact of not raising rates for 11 years. The proposed 36% increases implemented over 3 years in reality only serves to overcome previous inflationary impacts.

Customer count has been stagnant. No growth in customer count was assumed in this analysis. Fortunately customer usage has also been stable. Stable usage is unusual in today's environment. Most communities report a decline in water usage driven by aging demographics and more water efficient appliances.

Maintenance has been deferred during this period of negative earnings. Several predictive maintenance projects were identified as necessary to protect the long-term viability of wells, tanks and valves. Water loss provides a general indication on condition of underground infrastructure. Water loss was calculated at 37.3% in 2019. This is the largest water loss percentage in any of 5 years reviewed. Water loss for a community based distribution system should never exceed 15%. Water loss of this magnitude is an indication of distribution system problems which if not addressed will only grow over time.

West Alexandria identified \$1.4 million in predictive maintenance. It is nearly impossible to get low interest loan and grant dollars for maintenance. Therefore, we recommend that West Alexandria start saving for the future rehabilitation and replacement of short lived assets. Predictive maintenance costs for the water department were estimated by the Village at \$53,467 annually. Saving for future capital needs is just as important as paying current operating expenses if the utility is to be sustainable.

Present accounting practices do not earmark funds for emergencies, debt service reserves and capital improvements. Your historical inability to save for future capital needs has made the community susceptible to large rate adjustments. Customers would benefit greatly from a series of smaller rate adjustments which can be more easily absorbed into their personal budget.

The recommended changes in accounting practices will force decision makers to be more responsive to changes in revenue needs of the department. The recommended changes in accounting practices force decision makers to be more responsive to changes in revenue needs of the department.

Water Rate Recommendations

Existing water rates are inadequate with a typical year budget deficit of (\$98,540). Historically, the community has deferred maintenance needs of the utility in an attempt to keep rates low. The passage of Asset Management regulations is Ohio EPA’s attempt to stop this practice. The proposed rate increase will provide the additional revenues necessary to support long-term needs of the water department as they are presently defined.

Because of the size of the necessary rate adjustment, it was phased in over three years to mitigate customer impact. Once revenues are stabilized, we recommend the implementation of a 2.0% automatic annual rate adjustment beginning on January 1, 2023 and each January 1 thereafter to compensate for inflation. The recommended rate will result in a typical in-town residential bill for 4,500 gallons of \$41.45 monthly or 1.0% MHI in FY 2022 (Final year of the multi-year rate adjustment).

Rate					
Effective Date	ASAP	1/1/2021	1/1/2022	1/1/2023	1/1/2024
Min Charge (3,500 Gal.)	29.68	33.24	37.23	37.98	38.73
Over 3,500 Gal.	3.36	3.76	4.21	4.30	4.39
4,500 Gal. Monthly	33.04	37.00	41.45	42.27	43.12
Affordability Index	0.8%	0.9%	1.0%	1.0%	1.0%

The MHI for West Alexandria based upon 2013-2017 American Community Survey – 5 year Estimate is \$49,567. The proposed rates at 1.0% MHI are below the minimum requirement for grant and low interest loan eligibility and should be viewed as affordable. Many of the funding agencies consider 1.5% of MHI based upon the American Fact Finder Census to be a minimum requirement for low interest loan and grant eligibility.

Sewer Findings

A typical year operating deficit of (\$93,638) was projected after taking into account increased revenue from the 2/1/2019 rate adjustment. Reasons for the deficiency are outlined below.

West Alexandria is in the final stages of construction on capital upgrades at the wastewater treatment plant and main lift station. Prior to construction of the new WWTP the utility had no debt. Debt payments on the two USDA loans were calculated at \$189,941 annually. The rate increase enacted on 2/1/2019 and 6/1/2019 generated approximately \$150,000 in additional revenue. Therefore rate adjustments enacted to date aren't enough to make the debt payments.

USDA regulations require and we highly recommend that communities set-aside 10% of the annual debt payment for the first 10 years in a debt service reserve escrow. These rainy day fund money can be used for unforeseen emergencies and economic disasters with agency authorization. You will need to increase revenues by \$58,935 to just cover the debt service requirements of the USDA loans.

The new plant is larger and more complex requiring additional manpower, electric and chemicals to operate. The project engineer provided a detailed cost estimate for O&M at the facility. With construction nearly completed, operating cost at the new facility were projected at \$200,716. This figure was incorporated into the typical year operating budget. O&M Cost estimates for the new WWTP have increased significantly since project planning.

For comparison, annual operating, maintenance and replacement cost for an Oxidation Ditch Treatment Plant were estimated at \$86,222 annually at planning (see Page 33 of the Preliminary Engineering Report dated March 2018). Operating and maintenance cost often increase during project design and construction. While very substantial, the scope of this increase is (unfortunately) not unusual.

As it ages, the collection system corrodes, erodes, clogs, collapses, and ultimately deteriorates. Collection system problems develop slowly over an extended period of time, but without ongoing program to monitor asset condition and performance there is no way to evaluate efficiency of wastewater collection. Sewer collection is a critical factor in successful operation of the wastewater treatment plant. I&I in the collection system is dangerously high. Over half of the effluent treated is unbilled. Additional spending will be necessary to keep flow rates in line with treatment capacity. Inflow and infiltration problems never get better on their own.

Presently the problem is manageable thanks to treatment plant upgrades, however the condition of underground infrastructure only deteriorates with age. We recommend that you begin working on implementing an improved maintenance program using industry recognized best maintenance practices. Recommended improved maintenance activities include manhole inspection, sewer line cleaning, CCTV pipeline inspections and internal sanitary sewer evaluation studies to better understand the cause of clear water intrusion into the sanitary sewer system. Implementing these activities will require an estimated \$40,950 annually of which \$21,400 is labor. In addition, we recommend that you set aside \$18,375 annually for budgeted predictive maintenance items.

No rate adjustments were enacted between 2/1/2008 and 2/1/2019. If you assume an inflationary rate of 3.5% annually during this 11-year period, then revenues to the utility loss 46% of their purchasing power to inflation. Thankfully historical sewer rates were adequate to serve operating needs of the utility as evidenced by good cash balances at inception of the WWTP project despite a lengthy time period without any rate adjustments.

Present accounting practices do not earmark funds for emergencies, debt service reserves and capital improvements. Your historical inability to save for future capital needs has made the community susceptible to large rate adjustments. Customers would benefit greatly from a series of smaller rate adjustments which can be more easily absorbed into their personal budget.

The recommended changes in accounting practices force decision makers to be more responsive to changes in revenue needs of the department. Large escrow balances which are not justified by long term planning are difficult to defend against criticism by customers and auditors. Without detailed planning documents to safeguard cash reserves you run the risk that future decision makers will spend working capital and capital improvement money on unintended expenditures.

Sewer Rate Recommendations

While the recommended sewer rates are higher than you expected, I believe at this point they are unavoidable. Cost for improved collection system maintenance and predictive escrow were phased in to reduce customer impact. I normally try to phase increases in over three years as shown for water but the new debt payment and increased operating cost for the treatment plant prevent this option if you want to maintain sewer funds availability at or near current levels.

I worked to maintain existing cash reserves so that you would have the resources necessary to address collection system problems as they are identified. This is important because your ability to borrow additional money for collection system repairs / renovations has been compromised by debt on the new WWTP. A sewer rate increase should be enacted to generate the revenues necessary to provide for ongoing operation and improve sustainability of the sewer department.

The proposed rate increase will provide the additional revenues necessary to support long-term needs of the department as they are currently defined. Once revenues are stabilized, we recommend that a 2.85% automatic annual rate adjustment be enacted beginning on January 1, 2022 and each January 1 thereafter to compensate for inflation. The recommended rate will result in a typical in-town residential bill for 4,500 gallons of \$78.93 monthly or 1.9% MHI in FY 2021 (Final year of the multi-year rate adjustment).

Rate					
Effective Date	ASAP	1/1/2021	1/1/2022	1/1/2023	1/1/2024
Min Charge (3,500 Gal.)	41.76	45.10	46.39	47.71	49.07
Over 3,500 Gallons	6.96	7.52	7.73	7.95	8.18
4,500 Gal. Monthly	73.08	78.93	81.18	83.49	85.87
Affordability Index	1.8%	1.9%	2.0%	2.0%	2.1%

Many of the funding agencies consider 1.5% of MHI based upon the American Fact Finder Census to be a minimum requirement for low interest loan and grant eligibility. The MHI for West Alexandria based upon 2013-2017 American Community Survey – 5 year Estimate is \$49,567. The proposed rates at 1.0% MHI are below the minimum requirement for grant and low interest loan eligibility and should be viewed as affordable.

Other Policy Recommendations (Applicable to both Water and Sewer)

The current practice of keeping the majority of utility department funds in the appropriate operating account is dangerous as it provides a false sense of financial security. RCAP recommended that separate accounts be established for an Emergency Fund, Debt Service Reserves and Utility Improvement Escrow for both utilities. The recommended rate increases will provide revenues necessary to fund these accounts:

1. The community should maintain a minimum **Operating Account** balance of 12.5% of annual operating expenses excluding debt service. This amount represents 45 days of operating expenditures. The recommended operating account fund balance is necessary to satisfy financial obligations as cash flow fluctuates throughout the year. **Any unnecessary money should be transferred to an appropriate escrow account at the first available opportunity.**

An effective preventative maintenance program will save the community money by extending the useful life of the infrastructure. Improved preventative maintenance costs were projected into the proposed operating budgets. These additional expenses will be used for leak detection, valve exercise, cathodic protection in the water distribution system and smoke testing, flow monitoring, sewer line cleaning, CCTV inspections and pump station maintenance in the wastewater collection system.

Often the biggest obstacle to an effective preventative maintenance program is manpower. You need to make sure that adequate manpower is available to perform preventative maintenance task in a timely manner. A good CMMS (maintenance scheduling and work order system) is invaluable in monitoring the completion of preventative maintenance task and documenting maintenance history on utility system infrastructure. It is recommended that the Village inquire into a maintenance work order system.

2. Financial resources of the water department can be exhausted very rapidly when emergencies occur. To the extent possible, **Emergency Funds** should be established immediately using money from the respective operating accounts. The Village should maintain 12.5% annual operating expenses excluding debt service or an additional 45 days working capital in an emergency fund.

The emergency fund should only be utilized to resolve an operational emergency or financial crisis. If used, emergency reserves should be replenished as soon as financially feasible. **The emergency fund combined with Operating Accounts should provide for 90 days or 3 months of operating expenses.**

3. The **Debt Service Reserve** account should be established as a financial rainy day fund. Debt service reserve funds should be deposited at the rate of 10% of the annual debt service payment each year until one annual payment on all debt service has been accumulated.

These funds should only be used to pay debt obligations and emergency repairs in excess of the amount available in the emergency fund. When expended, debt service reserve funds should be replaced at the rate of 10% of the annual debt service payment each year until the recommended escrow amount has been re-established.

4. A **Capital Improvement Escrow** account should be established to safeguard money for predictive maintenance, rehabilitation / replacement of utility system infrastructure as well as new capital projects such as line extensions and treatment plant upgrades. These funds are critical to the preventative and predictive maintenance practices necessary to maximize useful life of utility department equipment.

Predictable maintenance refers to the timely rehabilitation and replacement of short lived components of long lived assets. Examples would include roof replacement, application of protective coatings and equipment overhauls. Predictive maintenance needs are calculated by dividing rehabilitation cost by the assets remaining useful life. Your capital improvement escrow account goal should be the accumulation of sufficient cash to pay 100% of predictable maintenance needs of the utility department.

Despite your best efforts to maintain equipment, everything wears out eventually. This account should also be used to accumulate money for the eventual replacement of utility department assets. We typically recommend that utilities endeavor to accumulate at least 10 to 15% of the estimated asset replacement cost over the remaining useful life of an asset. This money should be safeguarded for planning, design and environmental cost necessary to achieve the shovel ready project status necessary to compete for low interest loans and grants.

An asset management plan should be developed at the first available opportunity to better document the long-term capital needs of the utility systems. It is important to plan for capital upgrades. Early planning will allow the community to save toward these investments with minimal customer impact. You should begin saving money for capital upgrades as soon as the proposed project has been identified. The more you are able to save back for this purpose the easier you will find it to arrange financing for the balance of your capital needs.

Disclaimer:

While Ohio RCAP has taken reasonable measures to insure accuracy of these recommendations, the final responsibility for expense and revenue projections and resulting utility rates lies with the community. Rate recommendations are only as good as the information they are based upon. In order to minimize errors, the community was asked to review rate analysis format and preliminary findings in draft format in advance of their public release.