

Rate Analysis Report

Water and Sewer Systems City of Cherryvale, Kansas

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This report is part of a package that includes the following

- A cover letter,
- This narrative report that details the findings and recommendations, and
- The analyses themselves which depict what will happen if you adjust rates in prescribed ways. I investigated numerous scenarios for you and I am submitting the most practical for you to consider.

This report and the analyses are intended mainly for use by city staff to help them prepare ordinance revisions for the council to consider and to guide them as they implement changes to the city's water and sewer rates and other issues regarding the water and sewer systems.

Principles

I use several guiding principles when I help systems set their utility rates, fees and policies. As you read this report and the analyses, keep in mind that my recommendations to you have been weighed against these principles.

1. Water, sewer and all other utilities are businesses, regardless of who owns them. Businesses must cash flow properly.
2. In addition to functioning in a business-like manner, a utility has a responsibility to its customers to nearly guarantee its long-term prosperity for their benefit. The customers expect the service to be there whenever they want to use it. Thus, a utility must err on the conservative side by maintaining strong reserves that will enable it to weather financial storms.
3. If a service costs the utility money, the utility should recover that cost from the most logical 'person' if that makes good business and community administration sense. For example, generally 'growth should pay for growth.' Developers should fairly pay for their consumption of utility capacity.
4. If adjusting a rate, fee or policy will turn currently 'good' customers into 'bad' customers, consider the necessity of the change carefully before making it. For example, while it may be warranted on a cost-to-serve basis, raising the minimum charge markedly may make it very difficult for fixed, low-income customers to pay their water bills. That may cause more of them to pay late or not pay at all. That may trigger the city's processes of having the city attorney, at high expense, write threatening letters to those customers and eventually require shutoff of service. Thus, in the attempt to generate more revenue by raising rates, net revenues may actually go down.

Summary

My analyses determined that your water system has adequate reserves and your sewer system has strong reserves. However, the expenses in both systems are now rising and they will continue to rise. Therefore, rates for both systems need to rise as well. In addition, the rate structures need modest adjustments. I have proposed rates that will address these issues.

The proposed rates for in-city users address fairness by billing customers based upon the fixed and variable costs that each causes the systems to incur. Out of city users' rates are set at 50 percent higher than in-city customers for several reasons. These include the fact that it costs more to provide service outside the city limits and out of city residents do not share in supporting city services and infrastructure as completely as in-city customers do.

The rate structure for each system is called "proportional to use." This structure is required by the federal Clean Water State Revolving Fund Loan Program and it is preferred by other loan and grant programs.

I made several assumptions and estimates where necessary for these analyses. Using sensitivity tests and my experience in performing over 120 rate analyses, I am confident these assumptions are adequate for your rate setting purposes at this time.

Notable assumptions and issues include these:

- These analyses use calendar year (and fiscal year) 2006 as the 'test year;' the one-year period from which actual cost, revenue, usage and other data were gathered. The test year is the starting point for the analyses. Costs, revenues and all other data will change in future years based upon inflation, growth, the proposed rates and fees and many other things. Essentially the analyses seek a 'best fit' rate to satisfy many issues facing the systems. Therefore, you cannot look at the analysis charts several years out and view financial predictions like they are accounting records. Future costs, revenues and other data are predictions and estimates only.
- I assumed that you will continue to bill on a monthly basis.
- I assumed that your growth rate will average about 0.4 percent per year. This is the rate the city has grown at recently.
- I assumed that most future operating costs will rise at varying inflation rates, as shown in Chart 1B of each analysis. Some costs, like electricity, will rise due to inflation and due to additional use caused by customer growth.
- Because the city has been growing, the number of user connections changes throughout each year. The number of customers shown at the top of Chart 1A for the test year is the average for that year based upon your billing data. For future years this average increases based upon your estimated rate of growth for each year.
- I set the working capital goal for your systems at 35 percent. To guard against serious financial upset, I recommend you build and maintain this reserve level to help you make it through unusual times without having to take drastic rate or operating cost measures.
- User rates will be increased (top of Chart 1A) on average five percent each year after 2008 to keep pace with anticipated rising operating costs and approaching capital improvement costs.

- While the city is anticipating doing capital improvements such as line replacements on an annual basis, I modeled several capital improvements to be paid with combinations of loans and system reserves. This strategy will be a more cost-effective method of accomplishing the same amount of capital improvements.
- Notice that the project costs in Chart 2 have been inflated by four percent per year to account for inflation. Also notice that I grouped the water and sewer capital improvements into 2010 so you will have a better opportunity to bid the combined projects and get cheaper bids on the larger project.
- While water loss and inflow and infiltration (I&I) are significant costs to the systems (see the bottom of Chart 16), I assumed these costs would continue to be borne by all ratepayers in their regular rates.

Action Items for the Water System

(Use the following as a checklist of rate setting 'to-do' tasks)

The following actions are required to achieve the results predicted by the analysis called Cherryvale, KS, Proposed Water Rates Scenario 4. Execution of most of these actions is beyond the scope of my rate analysis project. However, if you desire help implementing any of these actions I would be glad to provide it as a follow-up service.

1. Adjust or establish, as appropriate, water user rates as follows:
 - a. Starting January 1, 2008, set the minimum charge at \$9.69/monthly bill for all in-city customers and \$14.63 for all out of city customers. The minimum charge should include no usage allowance.
 - b. Starting January 1, 2008, set unit charges at \$7.25/1,000 gallons for all volume used by in-city customers and \$10.88 for all out of city customers.
 - c. Starting January 1, 2008 increase the average tap fee (currently at \$125) to \$1,000.
2. Starting January 1, 2009 and every year thereafter, increase all rates and fees by five percent.

Action Items for the Sewer System

(Use the following as a checklist of rate setting 'to-do' tasks)

The following actions are required to achieve the results predicted by the analysis called Cherryvale, KS, Proposed Sewer Rates Scenario 1. Execution of most of these actions is beyond the scope of my rate analysis project. However, if you desire help implementing any of these actions I would be glad to provide it as a follow-up service.

3. Adjust or establish, as appropriate, sewer user rates as follows:
 - a. Starting January 1, 2008, set the minimum charge at \$7.95/monthly bill for all in-city customers and \$11.93 for all out of city customers. The minimum charge should include no usage allowance.
 - b. Starting January 1, 2008, set unit charges at \$3.38/1,000 gallons for all volume used by in-city customers and \$5.06 for all out of city customers.
 - c. Starting January 1, 2008 increase the average tap fee (currently at \$125) to \$1,000.
4. Starting January 1, 2009 and every year thereafter, increase all rates and fees by five percent.

Action Items That Apply to Both the Sewer and Water Systems

(Use the following as a checklist of over-all rate setting 'to-do' tasks)

1. If your current late payment penalties are not at least \$10.00 or 10 percent of the outstanding balance each month, whichever is greater, set them at these rates to give potential late payers more incentive to pay on time.
2. I recommend you word your rate ordinances so combined payments for water and sewer services will be applied first to the sewer bill and then to the water bill. In that way if someone makes insufficient payment they will be delinquent on the water bill. That situation is easier for the city to deal with than insufficient sewer bill payment.
3. Before you officially propose or adopt new rate language, you may mail or e-mail the rate chart or ordinance to me and, as a part of this project, I will verify that your language will effectuate the intended rate adjustments.
4. Determine how long, on average, it takes to perform the various services you provide in the field, such as after-hours service, meter disconnects and reconnects, special meter readings, etc. Be sure to include all the time you actually pay staff for performing these services. Then determine how much it costs the city per hour, on average, to have staff perform these services. This includes benefits, taxes, use of city vehicles, tools and minor equipment, etc. It should also include a fair amount to cover the time that office staff devotes to working on these services to track them, bill for them, etc. This should be the hourly rate you will charge for these services. In addition, set a minimum that you will charge for showing up, whether the service takes an hour to perform or 10 minutes. In essence, set your fees in the same way plumbers and similar technicians do – a set fee for showing up, which buys the customer a set amount of time, usually one hour, and an hourly rate if the job takes longer than the show up charge will cover. While accounting for time and other investments in the various functions is important, do not make the process burdensome. For many functions you likely can just estimate your time occasionally.
5. City utility staff performs services for developers and others. This may include review and approval of water system expansion plans and connection permit applications and performing field inspections of systems under construction. For all such services you should determine their full costs and set permit fees and other fees and charges to fully recover those costs. Those funds should be deposited into the utility fund and used to pay the personnel and other expenses incurred by the utility for providing these services. If these costs are not funded with permit and similar fees they should be funded with general revenues to prevent regular ratepayers, especially those that would have difficulty paying higher rates, from subsidizing the costs of growth.
6. Retain required funds in interest bearing debt service and debt reserve accounts when required by your lender(s). Endeavor to build the balances shown as "Capital Improvement Fund Balance" at the bottom of Chart 2 of these analyses, or the amounts your lender requires, whichever is greater.
7. Your equipment replacement schedules were developed to support this analysis project. Therefore, you should flesh these schedules out as soon as practical. You should maintain and improve these schedules through time so you will continue to have good projections of what items will need replacement at what estimated costs during which years.

8. Set aside replacement reserves in the amounts specified in these analyses to pay for those expenses and use those reserves only for those purposes. These analyses include the document, "Chart 15, Replacement Schedule" that shows total estimated amounts to be paid into and paid from these accounts during the next 20 years. You may 'bank' these reserves in replacement accounts held separate from all other fund accounts or mingle these funds with others. Just be sure to track them separately.
9. Have me conduct a full rate analysis when your actual financial performance and my projections diverge significantly, but not longer than four years from now to make sure your rates remain adequate and fair to your ratepayers. Before embarking on capital improvements and funding acquisition, have me study your options in depth so you can maximize your funding success.

Discussion of the Water and Sewer Rate Analyses

Chart 1 covers projected incomes and costs at a fair level of detail. Rates and fees have been modeled at levels that will build and then maintain adequate working capital reserves. In later years revenues will be sufficient to start adding modestly to capital improvement reserves.

Chart 2 covers capital improvement projects, new debt service and the like.

Chart 3 covers rate adjustments. It shows the proposed rates.

Chart 4 covers financial indicators and fund balances. (Find definitions for these accounts in the document called, "Terms Used in This Report....") Note that near the bottom of the chart there are several fund balances shown.

The line graph charts depict financial health indicators under the proposed rates and make it easier to spot trends. (See the definitions page to learn what each of the indicators tells you.) In particular, Chart 11 depicts the affordability of your current and the proposed rates. Your current affordability indices are moderate for water and sewer (rates are fairly affordable). Following rate increases water will become somewhat less affordable.

Please note, for the analyses I used estimated current median household income. However, if you seek grants and state or federal loans, affordability will be based on the 2000 income level, which is lower. For comparison, the national average affordability index is approximately 1.0 for water and 1.0 for sewer rates and that is considered affordable. Generally, grant agencies target an affordability index of 2.0 before they will offer a grant to a city.

Chart 12 depicts your rates before and after the adjustments shown in this scenario. This chart depicts the more important changes brought about by these rate adjustments. Relative to your current rates, the proposed rate increases are modest for your average in-city residential user and less so for out of city users.

**Action Items not Related to the Results of These analyses
(Use the following as a checklist of general 'to-do' tasks)**

Consider these recommendations regardless of how you may adjust your rates:

1. Water is used in the home and business construction process and in the process of constructing water and sewer lines. Such water provided by the city should be metered if practical and paid for at the same rates paid by others. Metering will enable utility staff to better track water use and water leakage. If such water is given away for no charge or little charge, the costs of that water are simply transferred to existing customers. In essence, those customers are then required to subsidize growth. All fees paid for construction water should be deposited into the utility fund.
2. Start adopting management strategies that are included in what is most commonly called, 'advanced asset management.' These strategies can yield better service and reduced costs for water and sewer systems, especially those looking to build new facilities or replace existing facilities soon as is the case for Cherryvale. Visit my Web site at <http://carlbrownconsulting.com/> for more information on asset management or call me to discuss how the city might move into asset management.
3. Continue to track your volume usage, incomes and expenses on a regular basis so the data and information you generate will continue to support future rate adjustments as well as they did this one.
4. Consider reformatting your financial statements so they include calculations for operating and coverage ratios. This will make it very easy for decision-makers to quickly gauge the financial health of the system. You may want to use the financial statements template available at <http://carlbrownconsulting.com/Tools.htm> as a guide to do this. There are other tools and resources at this link you may find useful.
5. Water and sewer connection (tap) fees should fully pay the costs of assuring proper connection to the systems and the costs of 'signing up' new customers. In addition to recovering these costs the base water and sewer tap fees should be set to recover some percentage (that percentage is up to you) of each system's capital costs of providing service capacity for the various customer classes. In essence, when you tap on a new customer, you are committing a certain capacity to deliver service to that customer. That commitment of capacity cost money to purchase. Thus, the customer should pay for that capacity. There is no one right way to do this; how you do it depends on your situation. The tap fees I recommended are not sufficient to pay all costs of making a tap. I simply raised those fees as much as I thought your development community could handle in one increase. As a reference, for most water systems now, the real cost of each tap exceeds \$5,000. Many sewer systems exceed \$10,000. If you would like for me to give you guidance on setting proper tap fees, call me.

6. Consider 'paying' developers to install over-sized lines and other equipment when such installations would facilitate future development more economically. To illustrate, you may have a developer who would need to install a four inch distribution line to serve the needs of their development. However, other properties in the area that would use that same line when developed later may require it to be eight inches in diameter. In that case you and the initial developer would determine the additional cost of installing the eight inch line and the city would reimburse the developer for that portion of the cost. That reimbursement may be in the form of a discount on the developer's tap fees. Later, when other developments use the eight inch line you would charge those developer(s) their proportionate share of the cost to make that line available for their use. In addition, you may charge some additional amount or percentage to serve as reimbursement for the city's expenses to finance the upsizing and to cover risk. These costs are substantial. In that way, lines and other systems would be built in the most economical fashion possible. Plus, the city could recoup its investment in up-sized lines and facilities, and cover its risks of loss. However, be careful about how this may affect your cash flow. I strongly suggest you set up a separate fund to which you will deposit tap and developer fees and from which you will pay for system upsizing. Manage this fund so it will fully cash flow itself and maintain a reserve over expected disbursements of at least 35 percent.
7. Check with your attorney for language and legality of all charges and issues discussed.

Discussion of Capital Improvement Funding Alternatives

The city needs to build several water and sewer system upgrades. They will be expensive and require outside funding. There are several alternative funding sources like Community Development Block Grants, USDA Rural Development grants and loans, and State Revolving Fund loans. The state of Kansas may also have state grants. Grants – free money – seem like a better deal than loans but that is not always true. If the city has to wait two or more years for anything less than a substantial (35 percent of project cost) grant to subsidize a project and inflation in the cost of the project during that time eats up the grant, waiting for the grant would actually be a step backwards, financially. Literally, a couple of years waiting for a grant during recent years when inflation in construction costs have skyrocketed has been a bad move for some communities. In the current inflation climate in water and sewer system construction costs, building sooner rather than later is generally the better financial strategy, even when that requires 100 percent loan financing.

The analyses considered this issue generally. However, when you are ready to consider when and how to fund the capital improvement projects, give me a call about your options and their costs.

Proportional to Use Rates

While the proposed rates for each system are structured as 'proportional to use,' the rate levels were set based on smoothed trend lines for income and expenses. The Kansas Clean Water State Revolving Fund loan program staff may not allow calculation of rates based upon such trend lines. Therefore, the proposed rates may be rejected by that agency if submitted as-is. If you apply for a Clean Water SRF loan, I suggest you engage me to develop your rate submittal materials to assure acceptance.

Closing

Your current rates are insufficient to enable the water and sewer systems to be sustainable and the rate structures are unfair to the ratepayers. Rates need to be raised and restructured as proposed. Rates should also be increased annually in the future to build and maintain adequate reserves.

You now should do those things listed in the Action Items sections above.