Water and Sewer Rate Analysis Report

City of Polson, Montana

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Purpose

This report and the accompanying analyses are intended to help City staff prepare proposed water and sewer rate and fee revisions and to help the Council to better understand the City's situation and what should be done about it.

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 and fees in the ways described.

Analysis results and recommendations for the water system will be discussed first, followed by general recommendations and observations. Then results and recommendations for the sewer system will be discussed. Most general issues concerning the water system also apply to the sewer system. Where they do not only those differences will be discussed.

Water System

Summary

Analysis determined that your water system has reserves that are strong now. However, without an initial increase and future increases, the system's current position[1] will drop. By 2016 the system will no longer be financially viable at the current rates and fees. Obviously, that cannot occur without the system borrowing, being subsidized by other funds or ceasing to function. Do not be alarmed by this description, it fits most systems. However, do prepare to make a modest increase to your rates and fees now and small increases on a regular basis to maintain a strong financial position.

More pressing than the need to generate more revenue is the need to make the rate and fee structures fairer and, if possible, bill more of the volume that is currently being given away. The proposed rates model those changes. User rates, surcharges and tap-on fees were all analyzed comprehensively. The results of those analyses are integrated and will be discussed as one consolidated whole.

The recommended user rates and fees are structured as follows:

- There will be a unit charge that is high enough to pay the system's variable costs at the beginning rate level. That rate will increase at three rate blocks of use to encourage water conservation[2].
- There will be no usage allowance for any users.
- The minimum charges will be made up of two parts.
    - One part is a flat minimum that all customers will pay. This part will pay the system's fixed costs and it is in direct proportion to the unit charge.
    - The second part of the minimum charge is a surcharge. The surcharge level for each user class is based upon the additional costs the system incurs to be able to pay extra costs of high flow capacity. Essentially, as a user's capacity to demand higher volumes of water goes up, which is essentially controlled by meter size, their minimum charge also goes up.
- In a similar way, connection fees were modeled to rise as meter size goes up, reflecting the higher costs of dedicating service capacity to larger diameter meters.

[1] Current position – All reserves and incomes net of costs and liabilities

[2] Based upon water usage data it appears the majority of the system's water volume is consumed, meaning it is not returned to the sewer system. In all likelihood, most of this consumption is for lawn irrigation.

Action Items

(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 "Polson, MT Keep Losing Water Scenario."

1. Effective on or near July 1, 2009:
    a. Set connection fees as shown in Chart 1C. Thus, the connection fee for a residential user with a meter size of one inch or smaller would be $3,623. That figure includes $300 in administration and field costs and the balance is impact fees. Commercial meters and larger residential meters cost more.
    b. Give no usage allowance with the minimum charge.
    c. Set the minimum charge for all in-City residential customers with 1 Inch or smaller water meters at $14.98, and commercial customers with ¾ Inch water meters at $17.55. Larger commercial water meter minimum charges graduate up as shown in the last column of Chart 2D.
    d. Set the unit charge for all in-City customers at $1.58/1,000 gallons for the initial rate block. Unit charges will go up at three additional rate blocks. These rates appear in the middle of Chart 3A.
2. Assuming financial performance was well predicted by the analysis, effective July 1, 2010 and every year thereafter until a new analysis determines otherwise, raise all rates and fees by 3.0 percent. This rate of increase is shown near the top of Chart 1A.
3. As you perform rate setting and related tasks, follow the guidance I give in my book, "How to Get Great Rates." You can purchase copies at http://www.gettinggreatrates.com/ggrn/store/products.asp?cat=13.

Description of the Scenarios

Two scenarios are presented:

- The "Polson, MT Bill All Water Scenario" assumes that you will install water meters at all water delivery points and start billing those users. It further assumes that your billable water volume will rise markedly to the point that your actual water loss rate will drop to 25 percent (from the current 60+ percent.) Your actual water loss rate should be well below 25 percent but this analysis uses 25 percent to be conservative. It appears the City is giving away perhaps one-third of its total water production. It is likely that most of this flow is going to landscape irrigation locations. Rates in this scenario are lower than in the other because you will be spreading the costs over more users. However, you cannot achieve this result immediately and it is unknown how many of these users can actually be billed. Thus, you need to start with the rates in the following scenario, meter and bill more users as soon as possible and work your way toward the rates in that scenario. The Bill All Water scenario analysis is included in this package but because you cannot immediately adopt these rates, that scenario will not be described any further.

- The "Polson, MT Keep Losing Water Scenario" assumes that your current rate of water loss and unbilled-for use will continue. This water loss rate is high and needs to be cut down. However, because you cannot immediately prevent these losses or start billing currently unbilled users, you need to adopt the rates in the Keep Losing Water scenario.

Principles

I use several guiding principles when I help systems set their utility rates, fees and policies. As you read this report and the analysis, 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, raising the minimum charge markedly to your residential customers 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's attorney write threatening letters to those customers and eventually require shutoff of service. Thus, in the attempt to generate more net revenue by raising rates, net revenues may actually go down.

Discussion of Significant Issues

Account Records

Volume used and rates charged are currently tracked in the system's billing program by associating this data with an actual person or business rather than associating the data with the meter or connection involved. This should be changed as soon as possible. It was very difficult developing volume usage data because of how this data is tracked now. This tracking scheme also makes it very difficult for the system to use metered volume to determine usage through each meter, potential water leaks and the like. The preferred tracking method is to associate usage, by meter reading, with each meter. Then customers can be associated with the meters for billing purposes.

Water Loss

Estimated water loss, shown near the bottom of Chart 18 at 25 percent, is misleading. A 25 percent water loss rate is high, however, your unaccounted-for water rate is actually over 60 percent. After discussing this loss rate with your Public Works Director it appears a large part of this "loss" is actually water that is provided to customers or locations at no charge and that flow is not even metered. You need to do at least one and preferably both of the following:

- Install meters at all distribution locations so you can determine how much water is actually being lost.
- If a distribution location is billable, bill it.

I understand that some of these "users" are locations like the city golf course and landscaped areas on a highway. The golf course should be billed. However, you may well want to continue to give water away where it generally benefits the public and is a worthwhile expenditure of funds. You should at least meter this flow so you can calculate the cost of this given away water, which must be made up by higher rates to the paying users. In that way you can make these "investment" decisions with full knowledge of their costs.

Concerning actual water loss, if you discover a significant single-point leak that you can repair fairly cheaply that will pay substantially in reduced production costs. However, replacement of whole runs of water lines because numerous joints leak just a little will not cash-flow such a project in cost savings. If you want help performing a return on investment analysis on any such project, call me to discuss it.

Growth Rate and Tap-on Fees

Water connections in the City grew robustly during the test year (primarily last year). This happened to be the last year before the recent mortgage "meltdown." The growth rate projected for this year is far less. To be conservative this lower growth rate was assumed for future years, as well. These rates can be found at the top of Chart 1A.

The City is fortunate to have strong growth from which it can fund significant growth-related and other expenses through tap-on fees. However, be aware that this presents risks, as well. As seen in the recent mortgage meltdown, growth can dry up, at least for a time. If the City does not maintain very strong reserves it runs the risk of hitting such a downturn and generating insufficient revenues with which to pay debt and other expenses. As protection against such an event, user fees in this analysis were modeled at higher rates than they otherwise would be and connection fees at lower than the full cost of paying for all growth-related expenses. Thus, the rates and fees are modeled to reduce the risk of generating too little revenue. If the future plays out as modeled, you should generate strong reserves in a few years. Be sure to monitor reserve levels over the next several years and compare them to the analysis results. If reserves fall significantly short or long, call me to discuss the situation.

Tap-on fees were modeled so that each new customer will pay a large portion of the costs they cause the system to incur in infrastructure construction. The structure is actually simple, logical and defensible because it is based upon meter size. For all normal or regular new connections; meaning there are no unusual complications, simply charge a new customer the fee associated with their meter size. However, if an installation is complicated or expensive, or that customer will not produce other benefits desired by the City, reserve the right to assess those costs to the new connection so the City will not lose money on such connections.

Tap-on fees were structured so that new users will pay fees based largely upon the capacity of their meter to accommodate water flow. This criterion is almost directly linked to the costs to build capacity to serve new customers. Thus, the larger the meter, the higher will be the tap-on fee. Two modifications were made to this strategy.

- One modification was done to greatly simplify fee calculation – all residential meters one inch and smaller are assumed to exert the same capacity demand and will, therefore, be charged the same connection fee.
- The other modification reduces the rate at which commercial tap-on fees rise. There are numerous good reasons to do this, most having to do with economic development and job creation. However, I propose this reduction mainly because only 20 percent or so of your new taps this year were for commercial customers and few if any of those were for meter sizes larger than typical residential meters. That approximates the current mix of customers in the City. Thus, you can charge high fees or low fees to large meter customers but if there are relatively few of them tapping on, it will not affect your tap-on fee bottom line very much. Please note: This is a change from your current policy of charging fees to large commercial meters that are markedly higher than residential taps.

These two modifications will markedly simplify your connection fee schedule which is currently too complex.

Depreciation and Capital Improvements

Depreciation is a real event. Built facilities wear out with use and age with time, reducing and eventually eliminating their value and function. However, that wear out and aging process does not occur in a straight line as most depreciation schedules depict. Facilities usually function well for the first 75 percent or more of their useful lives and then they start a rapid decline. In addition, depreciation is “backwards looking” in that it considers the value of the system when it was initially built rather than considering the future cost to build a new system that would serve users as they desire in the future plus satisfy additional functions required by tighter environmental and health standards.

Water utilities are made up of core components, such as wells, treatment plants, towers and lines. These components wear and age slowly. Their useful lives define the maximum useful life of the utility as a whole.

Water utilities are also made up of secondary components that age and especially wear out with use more rapidly. These include pumps, motors and other mechanical parts that move. All of these parts are replaceable or can be refurbished to extend the useful life of the system as a whole.

Depreciation financially models the aging and breakdown process. It is a useful concept and it is even required to adhere to generally accepted accounting principles. However, almost never is depreciation actually funded by placing those funds into an account to be available to pay for a new system when it is needed. Thus, it has limited value for rate setting.

Core components are generally funded as capital improvements, paid for initially with loan and perhaps grant proceeds, with loans retired in subsequent years by debt payments. This process works well because it generally has users pay for facilities dedicated to them during the time they get benefit from them. Paying for such components over time also generally works well because rarely do such components unexpectedly break down and need immediate replacement. Core components and other capital improvements to be paid for with water system rates and fees have been scheduled in a capital improvements plan, which is a part of this analysis.

Equipment Replacement

Secondary components wear out. That process is fairly predictable over a long period of time but unpredictable in the short term. Pumps, motors and other moving parts can fail one year earlier than expected and require immediate replacement to keep the system functioning. Problems may result if the system does not have reserves to pay for replacements. For this reason it is prudent to schedule equipment replacements, refurbishments and the like and set aside funds ahead of time to pay for these expenses when they occur.

You already have substantial reserves that can be used for equipment replacement. You should maintain that level of reserve going into the future in future value dollars. Prudence is a cost of doing business so it makes sense for ratepayers to pay rates that are high enough to enable the utility to carry these reserves. That is the basic notion behind the replacement schedule in the analysis. In that schedule I modeled building a reserve that pays your expected replacement costs and still maintains your current purchasing power 20 years from now.

Rate Structure

The rate structure proposed starts with a proportional to use rate structure, as defined in the "Terms Used in This Report..." document. This structure is thought by many to be the fairest of the simple rate structures. However, the proposed rate structure adds higher unit charges for higher volumes of use to encourage water conservation. That is actually a very important issue for the City because most of the City's water is used for irrigation.

One more rate structure difference is a minimum charge that goes up as water meter size goes up. The basic notion is to charge large capacity users higher fees because they caused the City to invest in more expensive infrastructure to have the capacity to serve them.

Proposed rate structure details can be viewed in charts 1C, 2D and 3A. The total minimum charges shown in the last column of Chart 2D will be the minimum charges you should adopt.

Basic and Policy Action Items

(Use the following as a checklist of "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 late payers more incentive to pay on time.
2. Before you officially propose or adopt new rate language, you may mail or e-mail the rate chart, ordinance or agreement to me and, as a part of this project, I will verify that your language will effectuate the intended rate adjustments.

3. 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.
4. City staff performs services for developers and others. This may include review and approval of water system expansion plans and connection applications. For all such services you should determine their full costs and set fees and charges to fully recover those costs. Those funds should be deposited into the general system fund and used to pay the personnel and other expenses incurred by the utility for providing these services.
5. 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 "CIP/Impact Fee Fund" at the bottom of Chart 2, or the amounts your lender requires, whichever is greater.
6. Your equipment replacement and capital improvement planning are currently done together. It makes sense to plan for these things comprehensively. However, the two types of expenses will usually be funded differently. Equipment replacement should generally be funded from operating revenues on a "saved ahead of time" basis. Capital improvements are usually paid for with grant and loan proceeds and then paid for over time after the improvements have been built. Therefore, you should plan for each type of expense using separate schedules as soon as practical. Use charts 2 and 17 as models for these tasks.
7. I believe you do not have a formal equipment replacement (savings) account and you should start one. Set aside replacement reserves in the amounts specified to pay for those expenses and use those reserves only for those purposes. The analysis includes the documents, Chart 17A – Equipment Replacement Details Chart, and Chart 17, Replacement Schedule. The last chart shows total estimated amounts to be paid into and paid from this account during the next 20 years on an estimated basis. You may "bank" these reserves in a replacement account held separate from all other funds or mingle these funds with others. Just be sure to track them separately. You might find my equipment replacement schedule useful for replacement scheduling. Visit http://carlbrownconsulting.com/resources/toolshed.asp and register for the Tool Shed to download this schedule in Microsoft Excel.

8. Have me conduct a full rate analysis when your actual financial performance and my projections diverge significantly, but not longer than five years from now to make sure your rates remain adequate for the system and fair to your ratepayers. In addition, before embarking on capital improvements and funding acquisition, have me study your options in depth so you can maximize your funding success and minimize your costs.

Discussion of the Analysis Output

Charts 1A and 1B cover projected incomes and costs at a fair level of detail. Rates and fees have been modeled at levels that will maintain strong working capital reserves.

Chart 2 covers capital improvement projects, new debt service and the like. At the bottom of this chart is the running balance for this reserve. Capital improvement costs will vary dramatically over the next 10 years.

Chart 3 covers rate adjustments. It shows the proposed rates and average connection fees.

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. Working capital, capital improvement and current position balances will vary, generally growing. The last line on this chart is the most useful balance for you to track. This line shows the inflation-adjusted purchasing power of your reserves, not including equipment replacement reserves.
I set your initial rate adjustments and future inflationary adjustments so the resulting "Working Capital + CIP Balances Discounted for Inflation" amount in the last year will be about the same as your current amount. In other words, my goal was to give you as much purchasing power in 10 years in inflated dollars as you have now. While that may seem ambitious, remember that tap-on fees are a significant contributor and if those fees lag longer or deeper than I expect, your current position will not be nearly so strong.

The line graph charts 5 through 11 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 8 depicts the affordability of your current and the proposed rates. Your current affordability index is low, meaning your rates are cheap. (The national average is around 1.0 percent.) My proposed rates are higher but still lower than the national average and dropping over time.

Chart 13 depicts your rates before and after the adjustments. This chart depicts the more important changes brought about by rate adjustments.

If you copy only one chart as a handout for the public attending your rate setting meeting, Chart 13 is the most useful chart for them to view.

Action Items not Related to the Results of the Analysis

(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 lines. Such water provided by the City should be metered if practical and paid for at the same or higher 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.
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 your case. 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. Tap-on fees should fully pay the costs of assuring proper connection to the system and the costs of "signing up" new customers. In addition to recovering these costs the tap-on fee should be set to recover some percentage (that percentage is up to you) of the 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 proposed fee structure raises those fees slightly and structures them so they collect revenue from new connections on the basis of the costs they cause the system to incur.
4. If you do not already do so, 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 six inches in diameter. In that case you and the initial developer would determine the additional cost of installing the six inch line and the City would reimburse the developer for that portion of the cost. (The incrementally higher cost of installing a larger line is small but the value of having that line in place and ready for use when needed is very large.) That reimbursement may be in the form of a discount on the developer's connection fees.
    - Later, when other developments use the six 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, and I suggest that you do, charge an 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.

- Be careful about how this cost sharing may affect your cash flow. I strongly suggest you set up a separate fund to which you will deposit connection 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 50 percent.

5. 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. When planning new capital improvements, consider delineating the costs of those improvements between the distribution, transportation and production/treatment cost categories, to make future rate setting (especially connection fee setting) easier. If you do this you should also do basic time and cost accounting so you can better estimate the costs to serve each customer class and to facilitate new connections.
6. 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/resources/toolshed.asp. There are other tools and resources at this link you may find useful, as well.
7. Check with your attorney for language and legality of all charges and issues discussed.

General Background

I made several assumptions and estimates where necessary for the analysis. Using sensitivity tests and my experience in performing over 140 rate analyses, I am confident these assumptions are adequate for your rate setting purposes at this time.

Notable asumptions and issues include these:

- The analysis uses the test year of July 1, 2007 through June 30, 2008. This is the one-year period from which actual cost, revenue, usage and other data were gathered. The test year is the starting point for the analysis. 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 analysis seeks “best fit” rates to satisfy many issues facing the system. 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 (top of Chart 1A) will dip far below what it was during the test year and stay low. The revenues you receive from new connections is a fairly significant percentage of your total revenues so this assumption should estimate your connection fee revenues on the conservative side.
- I assumed that future operating costs will rise at varying inflation rates, as shown in Chart 1B. 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 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 system, shown at the bottom of Chart 1B, at 50 percent. To guard against serious financial upset, I recommend you maintain at least this reserve level to help you make it through unusual times without having to take drastic rate or operating cost measures. Your test year reserves exceeded this level; thus, this is not an issue now but you should guard against falling into a weaker position in the future.

Closing

Your current rates are projected to keep the water system solvent for several years. However, by 2016 your current position will be at zero without rate increases. In addition, your rates are not as fair as they should be. Thus, your rates need to be raised moderately and restructured. Your tap-on fees also need to be raised and restructured to be fairer to new and existing customers. These rates and fees should be increased annually in the future to maintain adequate reserves.

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

Sewer System

Summary

This section of the report will discuss only those things that are unique to the sewer system. All other discussion, assumptions and recommendations from the water system section that are relevant to the sewer system, too will not be rehashed.

Analysis determined that your sewer system has reserves that are strong now and they would stay strong well into the future even under the current rates. However, the rate and fee structures need to be adjusted to make them fairer.

The recommended user rates and fees are structured as "proportional to use" as follows:

- There will be a unit charge that is high enough to pay the system's variable costs. There will be no increasing rate blocks because few customers use high volumes of sewer service and there is limited opportunity to encourage conservation.
- There will be no usage allowance for any users. The current usage allowance of 5,000 gallons/month is higher than the average residential monthly usage. Thus, most residential customers are now only paying the minimum charge.
- There will be a uniform minimum charge.
- Similar to the way water connection fees were modeled, sewer connection fees were modeled to rise as service line size goes up, reflecting the higher costs of dedicating service capacity to larger diameter service lines. This will also greatly simplify the connection fee schedule because there are only two or three line diameters commonly used for service lines.

Action Items

(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 "Polson, MT Proposed Sewer Rates Scenario 2."

4. Effective on or near July 1, 2009:
    a. Set connection fees as shown in Chart 1C. Thus, the connection fee for a four inch diameter or smaller service line would be $1,827. That figure includes $316 in administration and field costs and the balance is impact fees. Larger service line sizes cost more.
    b. Give no usage allowance with the minimum charge.
    c. Set the minimum charge for all in-City customers at $6.43.
    d. Set the unit charge for all in-City customers at $2.79/1,000 gallons. These rates appear in the middle of Chart 3A.
    e. Charge each customer on a winter average basis.
5. Assuming financial performance was well predicted by the analysis, effective July 1, 2010 and every year thereafter until a new analysis determines otherwise, raise all rates and fees by 1.5 percent. This rate of increase is shown near the top of Chart 1A. This future rate if increase is lower than for the water system primarily because the sewer system needs to spend much less for future capital improvements.
6. As you perform rate setting and related tasks, follow the guidance I give in my book, "How to Get Great Rates." You can purchase copies at http://www.gettinggreatrates.com/ggrn/store/products.asp?cat=13.

Description of the Scenario

Many scenarios and sub-scenarios were investigated. However, one was found to be far superior to all others. This scenario, the "Polson, MT Proposed Sewer Rates Scenario 2" assumes that you will change the rate and fee structures from what are now very complex to fairly simple structures to reflect the relative simplicity of the sewer system.

Rates will be set using the "proportional to use" model which essentially has users pay user rates in accordance with the costs they cause the system to incur. This structure has several strong features:

- It is widely considered to be the most fair of the simple rate structures,
- It is preferred by most funding agencies, and

- It is required by federal statute for those systems that ever received Clean Water State Revolving Fund loans or funding from that program's predecessor, the Construction Grants Program. Most sewer system in the U.S. received or will eventually receive such funding and it is almost certain that Polson's initial sewer system was built with such funding.

The net effect of adopting proportional to use rates will be lower rates to low volume users and higher rates to high volume users, as shown in Chart 13. Overall rates will actually go up by only 2.3 percent, as shown near the top of Chart 1A.

Connection fees will be based upon service line size so capital costs will be closely tied to the actual costs to build capacity – the potential flow from each customer. This will also make the connection fees schedule very simple because few line sizes are used in Polson's system.

Winter Average Billing

I modeled your sewer user fees to be billed based upon winter average use for residential customers and all-year use for commercial customers. The following will tell you how to do winter averaging and help you decide if that is how you want to bill. While the following procedure may sound like lots of work, by exporting usage data from your billing program into a spreadsheet, you can automate the calculations and then import the resulting bills back into your billing program.

Note: If you decide not to do winter average billing and you adopt the rates as proposed, your rate revenue generation will almost certainly be higher than modeled here. That is because your residential winter average use is lower than residential use year-round.

Winter averaging is just what it sounds like. For each customer you will tally up their winter use for several billing periods, divide that by the number of billing periods you added and that is the average billing period use for that customer. Then, you will calculate the total user charge for that volume of use according to your rate chart and that will be what you charge that customer EVERY billing period. Do this for every customer, or preferably your residential customers only and you've got your rates set. You also can now calculate pretty exactly the total sewer revenue you can expect during the next year from your winter average customers. You simply add up all their billing period bills and multiply that by the number of billing periods in a year. This can really simplify your budgeting.

As with all things that seem too simple to be true, winter averaging is not appropriate for some kinds of users. Seasonal users that use more water in the summer than winter and they put that water back down the sewer should not be winter averaged or you will under collect rates from them. A snow ski resort that makes artificial snow will over-pay on its rates if winter averaged. Likewise, any business that operates in the winter but not in the summer will be over charged with winter average billing. The reverse is also true. A "snowbird" that leaves Polson and goes to Texas in the winter will under pay on their averaged rates in Polson but over pay on their rates in Texas. Thus, you need to consider whether winter averaging is reasonable for all users and make allowances for those where it is not. One of the easiest ways to do this is simply to winter average for residential customers but charge commercial and industrial users for all metered use for every billing period.

Before you embark on winter averaging, you need to think hard about fairness and convenience. It may be mathematically fairer to winter average but it does take extra work to calculate everyone's bill and especially to work out the problem accounts. And, it is generally true that high-volume users, especially those who irrigate lawns and fill swimming pools, are financially more capable of paying than low volume users. You might want to NOT winter average so the high volume users' bills will remain higher and the low volume users' bills will remain lower. Before making a snap judgment, crunch your numbers a bit to see what the effects of winter averaging would be on your system and your users.

Discussion of the Analysis Output

Chart 4 covers financial indicators and fund balances. Note that near the bottom of the chart there are several fund balances shown. The last line on this chart is the most useful balance for you to track. This line shows the inflation-adjusted purchasing power of your reserves, not including equipment replacement reserves. I set your initial rate adjustments and future inflationary adjustments so the resulting "Working Capital + CIP Balances Discounted for Inflation" amount in the last year will be stronger than your current amount. In other words, my goal was to give you more purchasing power in 10 years in inflated dollars than you have now. My reasoning was this. I think your projected capital improvement needs over the next 10 years are low and I want you to have stronger reserves in case I am right. If I am wrong you can raise rates in the future at a lower rate than I modeled to hit the same future reserve targets.

The line graph charts 5 through 11 depict financial health indicators under the proposed rates and make it easier to spot trends. In particular, Chart 8 depicts the affordability of your current and the proposed rates. Your current affordability index is lower than the national average of around 1.0 percent and your future rates will be even lower. Also, in these charts you should notice that the charts that depict balances show those balances rising for a few years and dropping after that. I modeled rates that will rise slightly now (on average) and rise slightly less in future years. Those future increases should be lower than the future rate of inflation, thus, inflation will lower your reserves as a result back down to what will still be strong reserve levels.

Chart 13 depicts your rates before and after the adjustments. This chart depicts the more important changes brought about by rate adjustments.

If you copy only one chart as a handout for the public attending your rate setting meeting, this is the most useful chart for them to view.

Closing

Your current rates are projected to keep the sewer system in a strong financial position for the foreseeable future. Unfortunately, those rates are not fairly structured. Thus, while your rates do not need to be raised much, they need to be restructured markedly. Your tap-on fees also need to be restructured to be simpler and fairer to new and existing customers. These rates and fees should be increased annually in the future to maintain adequate reserves.

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