Conservation Rates

By Carl Brown
Conservation Rates in Minnesota Law - Part 1

Editor’s Note: This article is Part 1 of a 3 part series. Be sure and watch for Part 2 and Part 3 which will be printed in the Summer 2009 and Fall 2009 Today magazine respectively.


Sorry, it’s not that easy.

This article will discuss the water conservation issue briefly and conservation rates in some detail. This is an important and current issue since the state of Minnesota recently enacted a law that requires water systems to adopt conservation rates.

Water conservation is indeed a good thing in situations like these:
• The water supply is limited relative to demand, which is the case for more and more systems,
• Environmental, wildlife, plant life and other resources would suffer degradation at unchecked water usage levels,
• Costs to produce potable water would rise markedly to satisfy high levels of demand, especially for those who are least able to pay high costs, and
• Some communities want to keep out large water users, which may be code for dirty industries. (This may be a sneaky way to zone without passing zoning ordinances.)

Water conservation is generally a good thing but it is still just one among many good things. Water conservation is not such a good thing when the situations listed above are not at issue, especially when water is relatively plentiful and would support beneficial uses like economic development and agriculture. Really now, we need to plant food. Is it better to do it in the State of Nevada, where water has to be piped in, or in southern Minnesota where water and soils are great for farming? We need to use resources in the places where it makes most sense to use them.

The statement “water conservation is a good thing” is indeed usually true. It can follow that “conservation rates are a good thing” because they encourage water conservation. When such rates actually cause conservation to occur that is often a good thing. Even when conservation rates don’t cause conservation it can still be a good thing.

Or, conservation rates can be a bad thing. It all depends.

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Conservation rates can be an especially good thing where some water customers “waste” water and those wasters are financially able to pay higher rates for the privilege of being wasters. The following story will illustrate this situation:

The property owners in the “Aspenwood Club” subdivision all have million dollar homes on one-acre lots with in-ground lawn irrigation systems that soak each of those lawns daily to the tune of 200,000 gallons per month every spring, summer and fall. The Club members all revel in their lawns that look like the 18th green at the Augusta National Golf Club.

Meanwhile, the elderly “Clapboard Village” homeowners, all of whom grow gardens out back so they can supplement their food supply, scrimp on 2,000 gallons per month in the winter and carefully apply another 2,000 gallons per month to their gardens in the summer.

Because the Aspenwood Club homeowners are using up all the water the city will soon need to sink two new wells and build two new 500,000 gallon water towers to supply their demand. The Aspenwood Club homeowners say, “Let’s do it.” But the Clapboard Village homeowners say, “But, that will will raise everyone’s rates by 50 percent. Why don’t we just conserve water?”

Is it fair for the Aspenwood Club members to run the system out of water? Most would say it is not. Enter conservation rates.

Conservation rates collect incrementally more money from those who use more water. Those people are commonly able to pay more, too. Conservation rates might also cause water wasters to waste less, although the savings will probably be far less than you would think. Many of those water wasters are affluent and they love their beautiful green lawns so much that you could triple their water bill and it still wouldn’t dent their income. Thus, even if conservation rates don’t cause conservation, they will end up collecting more money from those who generally can afford to pay more. That will lower the rate revenues the water system will need to collect from all other users, like the Clapboard Village residents.

Those of you who make decisions for and manage a water system must balance rate setting value judgments like these against this reality: your water system is a business. All businesses must cash flow properly or they will soon be out of business. Then, no one will get any benefits. Viewed in this light, conservation rates can do some nice things for your system.

Everyone intuitively understands that water conservation is one of the things we need to do to live sustainably, but it is good to get these issues out in the open.

Consider this general advice before you enact any rate structure. You should analyze your rate setting needs and calculate what your cost to produce water is. Rarely should you sell any volume of water below your cost to produce. If you do, you should maintain very strong reserves. (Actually, you should maintain strong reserves anyway.)

It is doubly important to have very strong reserves if you adopt aggressive conservation rates. That is because your rate revenues are extra sensitive to sales fluctuations, especially those high-volume sales. Your conservation rates may actually cause users to conserve in a big way. Or it just might rain a lot next year. Either way your sales volume and especially your sales receipts will go down and that could break your system unless you have sufficient reserves to weather the downturn. There are some Wall Street investment banking firms that did this very thing and we all know where that got us!

Following, in shaded text boxes, is the Minnesota Department of Natural Resources’ (MDNR) guidance document on conservation rates. The document includes recitals of the law. The author’s comments are included in unshaded text.

Please note: The author is not an attorney and these comments should not be taken as legal advice. For that you need to consult your attorney. The author is a rate analyst so these comments go to the practical and rate effects of the law and MDNR’s guidance.

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Basic Provisions of the Law

Conservation Rates

Minnesota Statutes, section 103G.291, was amended in 2008 to include a requirement for public water suppliers serving more than 1,000 people to adopt a water rate structure that encourages conservation:

Minnesota Statutes, section 103G.291, subd. 4. Conservation rate structure required. (a) For the purposes of this section, "conservation rate structure" means a rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. The rate structure must consider each residential unit as an individual user in multiple-family dwellings.

(b) To encourage conservation, a public water supplier serving more than 1,000 people in the metropolitan area, as defined in section 473.121, subdivision 2, shall use a conservation rate structure by January 1, 2010. All remaining public water suppliers serving more than 1,000 people shall use a conservation rate structure by January 1, 2013.

(c) A public water supplier without the proper measuring equipment to track the amount of water used by its users, as of the effective date of this act, is exempt from this subdivision and the conservation rate structure requirement under subdivision 3, paragraph (c).

This law will apply to systems serving over 1,000 people. Next January those in the Minneapolis/St. Paul metropolitan area must comply. Systems located elsewhere must comply in 2013. The law does not apply to smaller systems.

If your system is unmetered, the law does not apply to you.

Having conservation rates alone will not satisfy your compliance responsibilities. You must also at least consider and use, as appropriate, other demand reduction measures. That might include educating the public in how to conserve water. In fact, you should show the public that you are not just trying to get more of their money by increasing rates. You should also educate them in how to use your service more conservatively. That education itself is a service that can bring value to the remaining years of their lives. There is a wise principle that flows through philosophies and religions in various sayings like this: “Give a man a fish, feed him for a day. Teach a man to fish, feed him for a lifetime.” That principle applies here, too. You are not just in the water sales business. You are in the water education business, too.

All laws need enforcement triggers. It appears the enforcement triggers for the conservation rates law will be making a request to drill a new well or requesting an increase in your water appropriation. Do either of these and the State will require you to have approved conservation rates in place.

If you apply for a State sponsored grant or loan, get into compliance trouble or find some other way to get on the State’s “radar screen,” the author thinks you will be required to comply with this law as well.

Allowed Conservation Rates That are Practical for Most Systems

Examples of Conservation Rates:

Below are examples of rate structures that encourage conservation. Many variations and combinations of these examples are possible.

NOTE: Rate structures often include a service charge (base rate) and a volume based charge. Service charges may cover fixed costs (capital improvements) and the volume charge is often for operation and maintenance costs. Volume charges usually use units of 1,000 gallons or 100 cubic feet (748 gallons).

In addition, Minnesota Statutes, section 103G.291, was further amended to read:

Subd. 3. Water supply plans; demand reduction. (c) Public water suppliers serving more than 1,000 people must employ water use demand reduction measures, including a conservation rate structure, as defined in subdivision 4, paragraph (a), unless exempted under subdivision 4, paragraph (c), before requesting approval from the commissioner of health under section 144.383, paragraph (a), to construct a public water supply well or requesting an increase in the authorized volume of appropriation. Demand reduction measures must include evaluation of conservation rate structures and a public education program that may include a toilet and showerhead retrofit program.

Public water suppliers serving more than 1,000 residents will need to adopt a conservation rate structure before requesting well construction approval for a public water supply well or before requesting an increase in permitted volume for their water appropriation permit.

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Hopefully the statement that “Service charges may cover fixed costs (capital improvements)...” does not prevent the service charge, commonly also called a minimum charge, from covering other fixed costs, as well. For example, the costs of calculating and mailing bills are fixed. Most administration costs are fixed. Many other costs are fixed or are at least partially fixed.

For more coverage of this issue read Chapter 4 of the book, “How to Get Great Rates” available at http://www.gettinggreatrates.com/.

Increasing block rates encourage conservation all the time by all those affected by the higher rates. They are a blunt instrument in that they tag the high-end users all the time, not just during the peak water use season when you really need conservation the most.

**Increasing Block Rates:** Cost per unit increases as water use increases within specified “blocks” or volumes. The increase in cost between each block should be significant enough (25% or more and 50% between the last two steps) to encourage conservation.

Example: 0-6,000 gallons = $2.50/1000 gallons. 6,000-12,000 gallons = $3.15/1000 gallons. 12,000-24,000 gallons = $4.00/1000 gallons. Above 24,000 gallons = $6.00/1000 gallons.

To illustrate, consider these two types of users. The grocery store uses lots of water all the time. Thus, the grocery store raises the base flow of the system, not the peak flow. However, those folks in the Aspenwood Club subdivision who want to maintain a world-class lawn in the summertime – they are the real water conservation problem. They use lots of water during peak water use season. Turn them around and you’ve really made some progress.

On the up side, increasing block rates are simple to understand and fairly easy to calculate.

As to the percentages you should increase rates by and the number of blocks you should set up, there are some practical limits. If, for example, you set the first block at 1,000 gallons of use and the rate for that block at $2.50, and you raise the rate 25 percent over the previous rate every 1,000 gallons, the resulting unit charge bills will come out as summarized in Table 1.

Now, you may not like those awful water wasters but you can’t get away with charging them an average rate that is 42 times higher that the 1,000 gallon user.

A reasonable approach would be to set rates for blocks of about 5,000 to 10,000 gallons of use, depending upon how your ratepayers actually use water. Stop the increases by about 40,000 gallons of use/month for residential users, higher for large users like the industrial class. In this case using the same rate escalations shown above, except having each new rate take effect every 5,000 gallons, your rates would be as shown in Table 2.

<table>
<thead>
<tr>
<th>Use in Thousands</th>
<th>Unit Charge per 1000 Gallons</th>
<th>Total Bill for This Volume</th>
<th>Average Unit Charge for This Level of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>5.0</td>
<td>$6.10</td>
<td>$20.52</td>
<td>$4.10</td>
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<tr>
<td>10.0</td>
<td>$18.63</td>
<td>$83.13</td>
<td>$8.31</td>
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<td>15.0</td>
<td>$56.84</td>
<td>$274.22</td>
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<tr>
<td>20.0</td>
<td>$173.47</td>
<td>$857.36</td>
<td>$42.87</td>
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<tr>
<td>25.0</td>
<td>$529.40</td>
<td>$2,636.98</td>
<td>$105.48</td>
</tr>
</tbody>
</table>

With rate increases at every 5,000 gallons you will still pull revenue from a water waster at four times the average unit charge rate as compared to the 1,000 gallon user. That is still a pretty exorbitant rate and you probably can’t get it passed but you are getting closer to the right ballpark.

For practical reasons you normally shouldn’t have more than four rate blocks for each user class. Three is better. Each of those blocks should start at a natural break point in use. For example, you should find the average use of the “little old lady, widowed, retired, living alone on Social Security” in her Clapboard Village home. She probably uses about 2,000 gallons/month except in the summer when she’s growing a garden and flowers. Then she still doesn’t exceed 5,000 gallons/month. It is logical and defensible to set the first rate block from zero to perhaps 3,000 or 5,000 gallons/month to protect this user from exorbitant rates. After all, she is already conserving water and she really can’t afford to pay much more.

<table>
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<th>Use in Thousands</th>
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<th>Total Bill for This Volume</th>
<th>Average Unit Charge for This Level of Use</th>
</tr>
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<tbody>
<tr>
<td>1.0</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>5.0</td>
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<tr>
<td>25.0</td>
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<td>$259.21</td>
<td>$10.37</td>
</tr>
</tbody>
</table>
The next natural rate block would take in the stereotypical family of four that uses 5,000 to 10,000 gallons/month unless they irrigate their lawn.

Then you set a usage block to capture the reasonable lawn irrigators.

Finally, you set a rate block to penalize the real water wasters.

A word of warning for setting conservation rates: Unless you do or get a comprehensive rate analysis done you can set rates all day long but you won’t really have a clue about how the revenues will come in until you go live. That is no way to run a utility so get the analysis to reduce your risk of making a huge mistake. You can count on this. When the public sees that you are just shooting in the dark (without a rate analysis to base rates upon), they will hang you out to dry.

Seasonal Rates: The rate per unit increases in the summer to encourage the efficient use of water during peak demand periods caused by outdoor water uses. Seasonal rates can take the form of a surcharge added to the normal rate or a separate fee schedule for winter and summer periods.

Example: Surcharge method - $1.00/1000 gallons is added on top of the regular fee schedule for all water use between May 1 and October 1.

This style of conservation rate is like the previous except that the escalating rates only apply during the heavy water use season. That is the summer in the north and the winter in some southern communities (like the Pinewood Links Club near Miami where the Aspenwood Club homeowners go to avoid your harsh winters). This structure gets at the heart of the problem for most communities.

Editor’s Note: Now it is time to act and get your rates set properly. To learn how to do that we invite you to attend a rate setting workshop to be conducted by Mr. Brown and sponsored by Minnesota Rural Water Association on October 27, 2009, in St. Cloud. If you are an elected city, water district or sewer district official, or if you are the manager, finance director, clerk or you hold a similar position, you should attend. Visit www.mrwa.com to register.

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