

Rate Setting – It's Not So Easy!

When reviewing water rates, many people assume that fixed costs don't change so they go in the minimum charge. Variable costs do change so they go in the unit charge. Rate setting is easy.

Well, no, actually, it's not. Here's why.

So-called "fixed" costs actually change, at least over time and as the situation changes. Variable costs also change. And another category of charges – capacity costs, change too.

Put this in your memory bank: Fixed costs are related to the fact that the water system has customers.

Let's look at billing

In fact, take the stamp on the bill. The cost of that stamp is not fixed because it does not change; it actually does change. It is fixed because the water system has to put one stamp on each and every customer's utility bill to get the letter carrier to deliver it. It doesn't matter whether that customer was the highest volume or the lowest volume customer. Each customer's bill needs one stamp. That is a fixed cost, because each customer gets a bill.

Fixed costs are related to the fact that the water system has customers.

Now, apply that idea to other costs: the paper the bill is printed on, the printer that printed it, the computer and billing program that created it, the clerk who ran the billing program. And then there is the time spent by anyone to do general administration of the

utility. It goes on and on. These are all fixed costs that change, at least over time. But whatever they total up to right now, they should be parceled out to all customers equally. At least, in theory.

Variable costs change. Well, all costs change, but you already knew that.

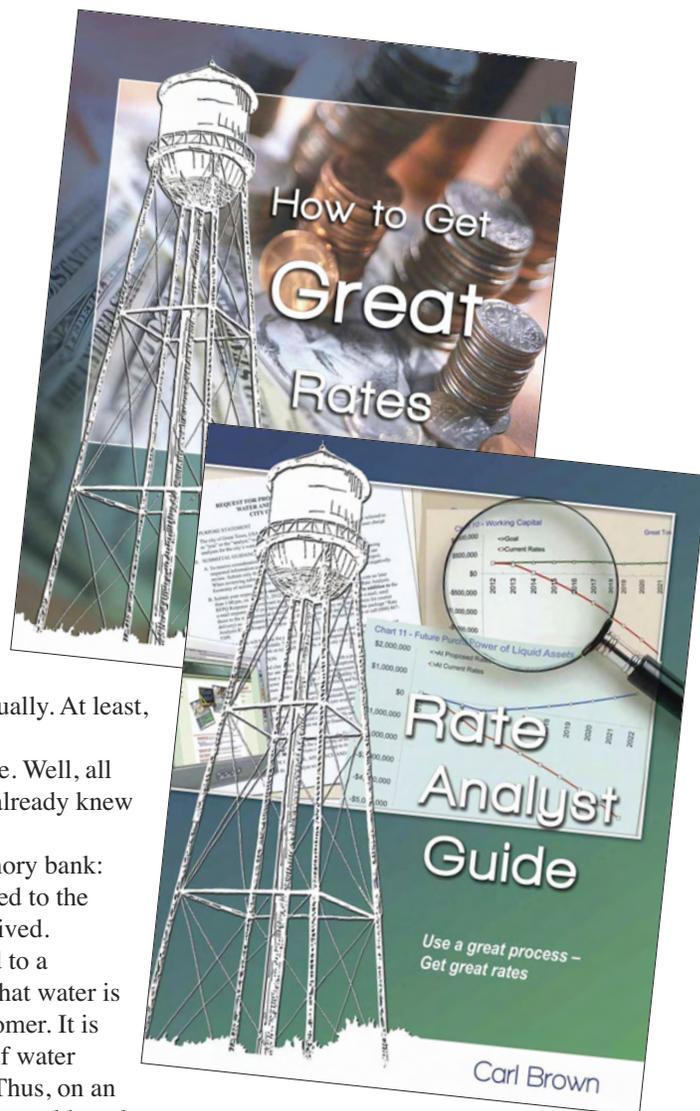
Put this in your memory bank: Variable costs are related to the volume of service received.

Take water delivered to a customer. The cost of that water is not related to that customer. It is related to the volume of water delivered to anybody. Thus, on an average cost basis, you would total up all variable costs during, say, one year, and divide by the total billable units of water delivered during that year.

But, then, that is variable cost on an average cost basis. There is also variable cost on a marginal cost basis. The calculation of marginal variable cost is the same as that for the average variable cost except that you discount some of those costs by percentages appropriate to the situation. Generally, marginal variable costs are lower for higher volumes (economy of scale), but not always.

You guessed it. If there are marginal variable costs then for sure there are marginal fixed costs. These behave like

Variable costs are related to the volume of service received.



the variable kind; they vary. You might need to use marginal costs for rate setting. Then, again, you might not. It just depends.

Isn't rate setting easy? But wait, there's more.

There is another kind of marginal cost that varies but it is often thought of as fixed. That is capacity cost.

Put this in your memory bank: Capacity costs are those incurred so that the utility will be able to serve customers throughout the range of the demand that they may likely place on the utility.

This is what it cost to build the facilities large enough and complex enough to be able to serve customers that use an unusually high volume of the commodity or they have high peaks in their use. Or, maybe they just have a really large meter.

Capacity costs enable the utility to serve customers.

Thus, “big” customers cause more capacity cost than do “small” customers. If you don’t charge those costs off to the big customers, they get passed on to the small customers. Now, that’s not fair, is it?

Thus, “big” customers cause more capacity cost than do “small” customers. If you don’t charge those costs off to the big customers, they get passed on to the small customers.

Capacity costs come in a couple of varieties – debt service for new facilities and wear-out of all facilities.

Now, you’re thinking, “Debt service doesn’t change so it should go on the minimum charge.” Don’t back slide.

Granted, some of your debt service should go on the minimum charge. But, it’s not because it doesn’t change – it does. It’s because it is related to the fact that your water system has customers. To make it even more interesting, sometimes lenders require

debt service to go on the minimum charge. In that case, the lender has arbitrarily declared debt service to be a fixed cost.

Realistically, a large part of the cost of facilities, debt or wear-out, is actually a fixed and evenly-sharable cost. After all, it costs a certain minimum amount to build a system that will just serve the lowest volume demand ever placed on the system. This part of capacity costs should go to all customers equally, on the minimum charge.

But to be able to satisfy higher demands requires larger pipelines and more complex facilities. Those are the capacity costs that should, instead, be assessed as a surcharge to the minimum based on some measure that parcels those costs out fairly. Water meter size is such a measure. Specifically, the American Water Works Association (AWWA) factors for the ability of different water meter sizes to sustainably pass flow is a good way to parcel out these costs. For example, using the AWWA factors, a five-eighths inch meter would be assigned one “share” of these costs. A two-inch meter would be assigned 16 shares. And a four-inch meter would be assigned 75 shares.

So, this part of capacity costs, divvied out over a long time, would go on each customer’s minimum charge based upon their meter size. But not always.

Capacity costs can be and at least part of them should be recovered from customers as they are connected to the system – at the time of the service is installed. The same AWWA factor calculation would be done to calculate those fees but instead of recovering these costs over time, they would be recovered all at once, up front.

More likely, you should do a combination of the two.

And then there are the costs of disconnecting customers for non-payment, and reconnecting them after they pay a fee for that service. And, there is the cost of keeping service available for “snow birds” so they can resume using the service when they return. I didn’t even mention the need to build up responsible reserves or even what constitutes “responsible” reserves. Or the need to present new rates in a way that will bring ratepayers on-board. But now it seems like just piling on.

What has turned into a long story can be made short like this.

Rate setting is not easy. If you are to arrive at rates that are adequate, fairly structured and appropriately simple or complex, somebody has got to do some serious math and they need to know if, when and how to apply that math. If you can do that: wonderful. But if you can’t and you try anyway, you run the risk of bad things happening, including saddling some of your ratepayers with unfairly structured rates.

Moral of the story: Get rate setting help. You and your ratepayers will be glad you did.

How to get rate setting help:

- **Call the Kansas Rural Water Association. If they can help with your situation, they will. If they can’t, they know people who can and will.**
- **Call other utilities that have already gone through your situation and see how they handled it.**
- **Visit the author’s Web site to download rates-related guides and other tools. If you need a rate analyst, be sure to download the author’s free guide called, what else, the “Rate Analyst Guide.” You cannot go wrong having more information.**

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