



Pay Them in Water

Paying obligations in water (or sewer service, or natural gas or whatever it is that you sell) – is just the old barter system, right? Yes. But it is so much more. It will save or make your utility a lot of money, if done right.

When should you pay in water?

- ◆ When the city or system is sued and loses. Or, settlement is made out of court because that will cost less in attorney's fees, other costs and "hassle factor."
- ◆ When purchasing an expensive product or service locally.
- ◆ To pay a developer to build oversized lines and a pump station that will serve the development's needs plus the needs of future development in that area. Thus, the system will be able to sell that capacity at a profit while saving future developers money.

NOTE:

The author is not an advocate for making special "deals." They complicate rates and they cause most systems to lose money. However, sometimes that is the best course of action so when you do it, you should do it right. That is the focus of this article.

- ◆ When the system over-charged a customer or otherwise owes a big refund or payment.
- ◆ When the XYZ Corporation wants to set up shop in the system's service area and employ lots of local people if the company can just get free or cheap utility service.

Why not just stick with the tried and true, "Just write them a check" strategy? When the payout is small, that's exactly what you should do. But when the payout is big, giving free or cheap water can save the system money or make a profit. How can you pull this off?

Consider the example in Table 1. This is a simplified presentation of an actual lawsuit situation, with details changed to protect the litigants. A water customer of Wagon Trail City, let's call him "Mr. Gold Digger," sued the city for overcharging him. Mr. Digger had a solid case so the city settled out of court. Through shrewd negotiation Mr. Digger got the city to pay him \$50,000. The city convinced Mr. Digger to take that payment in the form of free water, charged at his regular unit rate. Table 1 shows how the average and marginal costs of production are calculated. The difference between the two types of costs determines the system's cost savings rate from paying in water.

The table shows the amount of each operating cost item as well as the part

of each cost that is considered fixed. Fixed costs are rarely related to the marginal cost of production. Therefore, these costs should be paid by customers in the minimum charge and not be considered in the marginal cost calculation.

After deducting the fixed costs (and disregarding a few others), variable costs remain. These go into the calculation of the average and marginal costs to produce water. Only part of the variable costs can reasonably be considered marginal costs.

As you can see in the table, in the column with the heading "Marginal Cost to Produce Percentage," the item called "Water Purchased" is considered

Average cost to produce:
The sum of all costs required to provide the total volume of service, divided by the total number of units of service provided.

Marginal cost to produce:
The sum of all costs required to provide marginally more units of service, divided by the total number of units of service provided.

Wagon Trail Water System Operating Costs						
Item	Cost	% of This Cost That is Fixed	Fixed Cost	Variable Cost	Marginal Cost to Produce Percentage	Marginal Cost to Produce
Administration Salaries, Benefits, etc.	\$15,720	100%	\$15,720	\$0	0%	\$0
Maintenance Salaries, Benefits, etc.	\$70,123	33%	\$23,141	\$46,983	0%	\$0
Water Purchased	\$3,336	0%	\$0	\$3,336	100%	\$3,336
Chemicals	\$14,850	0%	\$0	\$14,850	100%	\$14,850
Plant Maintenance-Supplies	\$52,896	0%	\$0	\$52,896	10%	\$5,290
Insurance & Bonds	\$11,067	100%	\$11,067	\$0	0%	\$0
Electric for Pumping Water	\$18,206	0%	\$0	\$18,206	100%	\$18,206
Telephone & Cell Phones	\$3,084	50%	\$1,542	\$1,542	0%	\$0
Annual Payment to Replacement Fund	\$82,763	0%	\$0	\$82,763	0%	\$0
Loan Payment	\$79,216	75%	\$59,412	\$19,804	0%	\$0
Grand Total All Costs	\$351,261		\$110,881	\$240,380		\$41,682

Per User and Per Unit Costs				
Number of Users on the System	Volume Used in Thousands	Fixed Cost/User/Month	Average Cost to Produce/1,000 Gallons	Marginal Cost to Produce/1,000 Gallons
550	30,000	\$16.80	\$8.01	\$1.39

to be a 100 percent marginal cost. That is because when the city pays its wholesale water supplier, it will have to pay just as much for water the city will give away as it will for water it will sell. If, however, the city produced its own water, some of the production costs may not be marginal costs.

“Chemicals” and “Electric for Pumping Water” costs are also directly linked to the volume produced. However, the item called “Plant Maintenance-Supplies” is estimated as a ten percent marginal cost item. That means that to produce the give-away water the city will incur a small unit cost for this item.

Notice the item called, “Maintenance Salaries, Benefits, etc.” This is the cost of operations staff; it is a large, variable cost for the city. But none of this cost is considered to be a marginal cost in this case. That is because the marginal volume to be produced and given away is small enough that the operations staff will not have to do any extra work to produce the extra volume.

It should be clear that different systems have different types and levels of marginal costs. Even the same

system’s marginal costs change with time and production level so it is a moving target.

Back to the calculations. The marginal cost per 1,000 gallons is calculated by totaling the amounts in the right-most column of the table and then dividing that by the total billable units of volume used for the year. The marginal cost for Wagon Trail City is \$1.39 per 1,000 gallons as compared to an average cost to produce of \$8.01. In other words, the marginal cost is only seventeen percent as much as the average cost. This cost difference is a big cost savings or even a profit opportunity for the city.

The last step is to calculate the out-of-pocket cost to the city, and to its ratepayers, for giving Mr. Digger \$50,000 worth of water for free. That is shown in Table 2.

If the settlement was paid out in cash and all users’ rates had to go up for one year to cover that cost, the unit charge would have to increase by \$2.10 per 1,000 gallons. That would make lots of customers angry.

However, by paying the settlement in free water at a marginal cost rate of

\$1.39 per 1,000 gallons, user rates would only have to increase by \$0.36 per 1,000 gallons. By paying with water, the system will save \$41,330 of the \$50,000 settlement. That’s a huge savings!

Unless Mr. Digger is a large water user, he cannot use 6,240,000 gallons of water in one year. Therefore, this payout will probably stretch out over several years. If, for example, it took five years to use this volume, the unit charge hit would go down to about \$0.07 per 1,000 gallons. Even if Mr. Digger could use six million gallons of water in one year, the city still may want to stretch out the free water settlement for five years just to reduce the price increase to the system’s users or the hit to the system’s reserves if rates are not increased.

Now, let’s consider a different situation where you can use the same strategy to make a profit. The XYZ Corporation will move to town if it can buy water at a steep discount. If XYZ’s hotshot negotiator talked the city into a \$2.00 per 1,000 gallons unit charge the company would save \$6.01 per 1,000 gallons on a retail cost basis. The

negotiator would probably get a big bonus from XYZ and the company would consider it a big coup to move to your town. If the timeframe of the deal was short enough and the company's water use was low enough, the city would still make a profit of \$0.61 per 1,000 gallons on a marginal cost basis (\$2.00/1,000 rate minus \$1.39/1,000 marginal cost). And, the other ratepayers would not be impacted because the costs of providing service to XYZ would all be covered by the \$2.00 unit charge the company would pay. Everyone wins!

Now that you have seen how easy it is to make or save money by giving away free or cheap water, you are probably thinking, "OK, what's the 'catch?'"

Actually, there are several "catches" and some could haunt you if you are not careful:

- ◆ Any time you are presented with the opportunity to pay out a substantial settlement or debt with free water, or sell at a discount, there are legal implications. You need a good water law attorney to advise you. Legal fees add to the marginal costs of doing the deal so at some fee level; there just is not enough money to be made or saved.
- ◆ The financial calculations will be more complex than were illustrated here so you need a good rate analyst. If you are not a rate analyst, get one. An analyst's fees have the same effect as legal fees.
- ◆ Giving away free or cheap water is a slippery slope. Do it once without clear and hard policy limits on the practice and lots of others will line up for an even better deal. Should

Table 2
Cash Outlay for Water Given in Settlement

Settlement Amount	\$50,000
Average Cost to Produce/1,000 Gallons	\$8.01
Volume, in Thousands, This Amount Will Buy \$50,000 / \$8.01	6,240
Marginal Cost to Produce/1,000 Gallons	\$1.39
Total Cost of Water at Marginal Cost to Produce 6,240 Units * \$1.39	\$8,670
Unit Charge Increase Needed if Settlement is Paid in Cash \$50,000 / (30,000 - 6,240 Units)	\$2.10
Unit Charge Increase Needed if Settlement is Paid in Free Water \$8,670 / (30,000 - 6,240 Units)	\$0.36

you go one step further and sell water below the marginal cost to produce? Doing so might be warranted (economic development, increase taxable property) but the payback better be substantial, measurable and sure.

- ◆ If your system purchases water and the cost of that water is relatively high, the marginal cost will be relatively high, too. That will markedly reduce your savings potential when giving free or cheap water. The same is true for all other costs that are directly linked to production.
- ◆ If your system has plenty of capacity to produce and distribute free water you can safely do so at a cost basis above the marginal cost to produce. However, if during the time you will give away water you will have to build extra capacity, the math will change completely. Span this event and you could end up losing serious money if the marginal costs jump up more than the price you settled upon.
- ◆ If a settlement that includes free water will go on for several years, inflation will also be a factor. Inflated costs will eat into the initial

savings or profit margin. If cost increases are great enough and the free water deal stretches out long enough, it would actually be cheaper to pay the settlement in cash on the front end unless you have a cost basis adjustment factor built into the deal. Therefore, your cost calculations need to look forward, not backwards.

- ◆ If you are facing a lawsuit you will incur legal and other costs as a result, regardless of how the issue is resolved. Those costs will be a blend of fixed, variable and marginal costs. Therefore, you will need to add these costs into your cost mix to calculate the average and marginal costs before arriving at a settlement amount. Otherwise, you could end up giving away more than you intend.

Paying in water can be complex and risky. But it is well worth looking into because it can make or save tens of thousands of dollars for small systems and hundreds of thousands for large utilities. It is also likely that your other customers would prefer you pay someone off with free water rather than write them a big check.

Within the next five years – maybe next month, your city or water system will probably face a Mr. Digger or XYZ Corporation situation. If the dollar amount is small, just "pay the man" and be done with it. But if the amount is large enough and the conditions are right, you could pay with water, give the other party what they want and pass big savings or even a profit onto your ratepayers. Wouldn't that be a nice change of pace?

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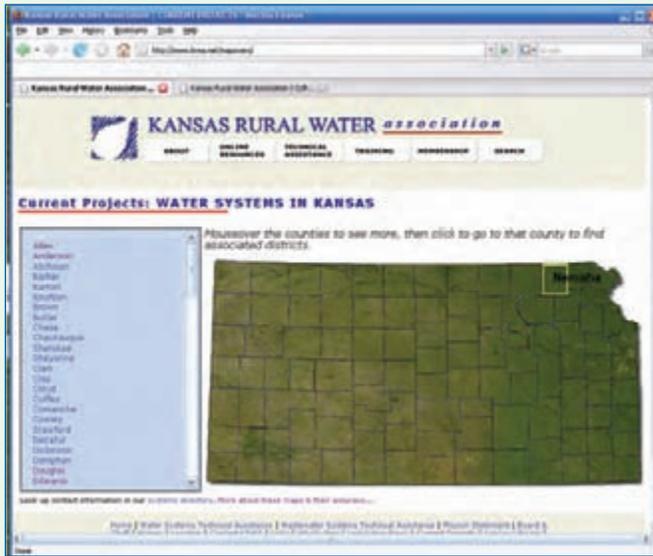
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County RWD Maps

WATER SYSTEMS IN KANSAS

High resolution maps can now be accessed at www.krwa.net/mapovers to be used for planning or general reference purposes.

This dataset includes boundaries for most public water supply systems and infrastructure data for rural water districts and public wholesale water supply districts.



Infrastructure includes the general location of:

- the main pipelines in the distribution system
- the source water wells and surface water intakes
- facilities (storage tanks, pump stations and surface water treatment plants)
- interconnections between PWS systems for wholesale water distribution

