

Water Rates: Is It Time for a New Paradigm?



Many people are predicting that the biggest battle over resources, both in the United States and worldwide, in the next 25 to 50 years will be over water, not oil or energy.

Shortages and limitations in water supply already have surfaced. Some growing cities are facing the possibility that their water supplies may no longer sustain unlimited growth or even any growth. Aquifers are diminishing, rivers and lakes are shrinking and conflicts are arising between classes of water users such as agricultural irrigation versus residential or industrial use.

For example, even though the Chicago metropolitan area is adjacent to Lake Michigan, the source of water supply for much of the area, a water shortage by 2020 is predicted for a dozen faster growing townships in the region, according to a new report by the Northeastern Illinois Planning Commission.

Arguably, there are several ways to preserve or allocate water supply as a limited resource such as mandatory restrictions on use, imposition of limits on new real estate developments, manufacture of more efficient appliances and rationing. However, these objectives also may be fulfilled through the water pricing process if designed to recognize the resource value of water.

In addition to source of supply concerns, there are other pressures on water utilities arising from the need to replace aging infrastructure, the need to upgrade plants to meet more stringent standards and the need to satisfy growth in demand. Again, the ratemaking process may be appropriate to help resolve these issues.

What Is the Theory of Water Utility Ratemaking?

The theoretical model for water utility ratemaking for the past one hundred years has been cost of service. That is, rates should be set at levels that recover a utility's costs to serve the particular customer classes. Costs should be assigned to the "cost causers." For regulated water utilities, cost of service ratemaking generally requires rates sufficient to recover reasonable operating expenses and to yield a rate of return, measured as cost of capital, on rate base. Each of these factors—reasonable operating expenses, rate base and fair rate of return—are issues to be determined by the regulatory agency.

For unregulated utility systems, generally municipal-owned, cost of service theoretically is determined by using the regulated utility model or by using the cash basis. Under the cash basis, rates are to be sufficient to recover operating expense and debt service, issues generally adjudicated by the water utility itself.

What Is the Reality of Water Ratemaking?

In actuality, for regulated utilities, the ratemaking model often does not produce adequate revenue. Rate recovery of

some expenses may be disallowed by a commission for a variety of reasons such as "nonrecurring," "excessive" and "speculative." For example, it is not unusual to see quibbling over the number of employee vacancies in calculating labor expense. Portions of plant included in rate base may be disallowed because construction is not completed or the facility is deemed not used or useful, or the plant may be deemed to be contributed. Estimates of cost of equity, generally the component of cost of capital having the greatest impact and reflecting risk, may be depressed by various rationales designed to come up with a number lower than that proposed by the utility. The end result is that any allowed rate increase may be significantly less than actual revenue requirements by the time a rate order is entered.

In the case of unregulated municipal systems, rates often are based on political or perceived equity or affordability considerations with the purpose of keeping rates artificially low or minimizing rate increases. As a result, rates may not cover cost of service under any model and may be adjusted infrequently. In reality, some systems may have no idea what are their full costs of service.

Why Is New Thinking Needed?

When water rates do not fully recover all costs of service, several adverse consequences may arise.

- Someone other than ratepayers is subsidizing the ratepayers. It may be other taxpayers, future rate payers or other classes of current ratepayers. Insufficient rates are illusory rates because they unfairly shift cost burdens to someone else.
- Inadequate rates create the misperception that water is cheap and plentiful and can be wasted without significant consequence. They provide a disincentive to use water wisely.
- Unreasonably low rates can cause misallocation of water as a resource and premature depletion of the source of supply.
- Insufficient rates for unregulated municipal water systems can result in a dependence upon grants, which in reality are cross-subsidies by other taxpayers. While grant programs alleviate financing burdens for favored recipients, they can obliterate the incentive to be fiscally responsible by charging rates to anticipate and support necessary investments and financings.
- Insufficient revenue can frustrate necessary replacement of aging infrastructure. A recent study estimates that \$250 billion over 30 years may be required by water utilities in the United States just to replace old plants (*Reinvesting in Drinking Water Infrastructure*, AWWA [May 2001]). Who will pay the revenue requirements for such an investment? In addition, many water utilities have acquired plants through contributions in aid of construction. Generally,

regulatory agencies do not permit contributed plants to be included in the rate base. Thus, current rates may not produce revenues sufficient to enable utilities to replace contributed plants.

- Insufficient rates can deny a utility adequate resources to satisfy the increasingly more stringent Safe Drinking Water Act standards, treatment techniques and monitoring/reporting requirements. For example, many water utilities will face the need to install ultrafiltration or similar technology to meet enhanced treatment requirements. Will such utilities have in place rates sufficient to support such plant upgrades?
- Insufficient rates are inequitable and discriminatory in that they shift to future ratepayers the cost burden to finance replacement of the plant and supply being used by current ratepayers.
- Insufficient rates provide no recovery for depletion of aquifers and other sources of supply. In other words, the rates may not recognize the value of water as a limited resource.

What Innovative Ratemaking Adjustments May Be Available?

As a general proposition, to meet the challenges of this new century, the ratemaking process may have to be restructured to remove the historic bias for low rates and against full cost recovery rates. This bias is founded in the political thinking that water rates must be low and someone other than ratepayers should pay for capital improvements. The mold of thinking that water should be cheap or subsidized must be broken to enable water utilities to be viable in the future.

A second general concept will be to discard the notion that rates should be increased only infrequently. Since ratemaking is not retroactive, it makes no sense to tolerate inadequate rates on an ongoing basis based on a fear of antagonizing customers. Similarly, it is questionable to continue to use historic test years to develop revised rates. With all the rapid changes in the water industry, the only logical approach is to use a future test year.

More specifically, what changes could be made to the water utility ratemaking process? It would seem that the following should be considered.

- Water should be priced to recover fully all costs of service incurred for the benefit of current ratepayers, including all operating expenses and adequate return on rate base. It is important that the rate of return be set at levels that properly reflect the higher risks faced by water utilities rather than the historic misperception that water utilities have little risk.
- Revenue requirements recovered in rates should include an allowance for depreciation or reserve for replacement of infrastructure, including contributed plants. "Replacement" should recognize that a new plant will be priced higher than original cost of the old plant and may have to be upgraded.
- Revenue requirements also should include allowances to create reserves for source of supply depletion and alternative source of supply development, where appropriate; watershed protection; and other environmental impacts.
- Alternatives to general rate adjustments should be considered, including the use of automatic adjustment clauses for the cost of purchased water, energy or chemicals; surcharges to provide for reserves or recovery of specific capital costs; and single-tariff pricing for regional utilities.
- Utilities should consider use of a separate line item rate with an automatic adjustment provision for Safe Drinking Water Act compliance costs. This approach would enable customers to understand directly the impact of compliance requirements while permitting the utility more speedy cost recovery.
- Utilities should consider implementation of infrastructure maintenance surcharges to recover revenue requirements resulting from replacement of aging mains.

While water utility ratemaking may not require deregulation or a new paradigm, it would appear to deserve more realistic thinking, which will help to continue to assure both the financial health of the utilities and the quality of service to their customers. ■

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