

Adequate Water Rates Are Essential

Contrary to a common public misperception, water is not free, nor is water sold. Water utilities provide a service, for which they charge. They withdraw water from a source, they treat the water so that it is safe, and they deliver the water to their customers' premises.

However, water utilities, both municipal-owned and investor-owned, are experiencing intense financial pressures and increasing costs of service due to several causes.

Utilities need to replace aging infrastructure. According to a report by the Harvard School of Public Health, the maintenance and repair of water infrastructure has been severely neglected and will cost \$151 billion over the next 20 years to repair and replace pipes. The U.S. Environmental Protection Agency (EPA) puts the estimated cost of overall water infrastructure rehabilitation for the next twenty years at \$325 billion. In 2001, the Water Infrastructure Network estimated that \$24 billion per year for the next 20 years will be needed for drinking water infrastructure. Also in 2001, AWWA estimated such expenditures to be \$250 billion over 30 years, or an average pipe replacement cost of \$6,300 per household. If the replacement cost for treatment and pumping equipment is added, the cost rises to almost \$10,000 per household. In May 2002, the Congressional Budget Office reported to a U.S. House panel that the average annual infrastructure costs through 2019 could be anywhere from \$11.6 billion to \$20.1 billion for water systems and \$13.0 billion to \$20.9 billion for wastewater systems.

Utilities now must pay for replacement of plants that originally may have been contributed by developers. Moreover, construction costs for replacements will be significantly higher than original cost. In its recently released "Clean Water and Drinking Water Infrastructure Gap Analysis," EPA estimates that water utilities face an average infrastructure funding shortfall or gap under present rates of \$263 billion through 2019. However, it also estimates that the shortfall would reduce to \$45 billion if water utilities increased rates every year by 3 percent over the inflation rate. Assuming an inflation rate of 2 percent, infrastructure replacement spending alone would cause a doubling of rates in a 20 year period.

Water systems need to comply with increasingly more stringent drinking water standards under the Safe Drinking Water Act and related state laws, and they need to defend against more frequent litigation claims of liability for alleged injury from certain unregulated constituents. For example, confronting *Cryptosporidium* and viruses, arsenic, MTBE, perchlorates, THMs and the like will result in increased capital and operating costs.

Municipalities need to expand treatment facilities and mains to satisfy the demands of customer growth.

Utilities need to implement costly and ongoing enhanced security measures to protect sources of supply, water facilities and finished water. Security has become a permanent and large expenditure for water utilities.

Water systems need to respond to diminishing sources of supply due to drought, over-withdrawal or contamination. In many parts of the United States, surface waters have shrunk and aquifers have fallen as irrigation uses compete with expanding domestic uses.

Adequate and equitable rates for water service should alleviate these pressures. It is time for all water utilities realistically address an issue which many have ignored for years: the sufficiency of their rates. In real dollar terms, without timely rate adjustments or growth, rate revenues have declined in recent years due to the effects of inflation. According to a 2002 survey performed by the General Accounting Office, more than 25 percent of the nation's

water utilities and more than 40 percent of its wastewater utilities have revenues that do not cover the full cost of service.

In a study of small public water systems published by Southern Illinois University in 2000, the need to increase water rates was identified by 66 percent of the utilities surveyed as the most important management decision they will need to make in the next five years. However, 51 percent of the utilities reported that they had not had a rate increase in the past five years. Assuming an inflation rate of 2 percent, the real dollars of the revenue of those utilities actually declined in those five years. The study also found that 30 percent of the utilities surveyed did not have positive net revenue. One of the findings of the study was, "The topic of water rates dominated every component of

the study. System managers, technical assistance staff, and regulatory officials all commented on the problem of establishing full-cost pricing and the inability of many systems to raise adequate revenues. Survey respondents rated increasing rates and developing new rate structures as their most important future task."

Insufficient rates can cause misallocation of water as a resource; create a misconception that water is plentiful and cheap and may be wasted without significant consequences; prematurely deplete sources of supply; cause discriminatory cross-subsidies; frustrate replacement and addition of infrastructure; impede compliance with drinking water standards and efficient operations; and limit implementation of enhanced security measures. Most important, insufficient rates can preclude financings necessary to enable water utilities to satisfy the pressures that they face. Water utilities will have to increase expenditures to maintain compliance requirements, to replace infrastructure and

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to satisfy the other pressures. If rate increases do not keep pace with these increased expenditures, the financial ratios used to measure creditworthiness will deteriorate. This will make it more difficult and costly to raise necessary capital. If, instead, a utility defers such expenditures, it creates a present or future liability for both itself and its customers, and passes a current obligation to future customers. In the case of municipal-owned water utilities, under Government Accounting Standards Board Statement No. 34, such deferrals are reportable to financial markets and can impair a utility's credit rating and efforts to raise capital. In other words, insufficient rates are a self-defeating spiral.

Water rates should be set at levels that are designed to fully recover all costs of service. Revenue requirements to be recovered in rates are the costs of service. The rates are to be designed to recover those costs from the different classes of customers who cause the costs. Many water utilities have been reluctant to raise rates so as to recover all their costs of service, whether for political expediency, for inattention to fiscal responsibility, for assumptions about affordability or simply to avoid customer complaints.

However, in today's environment, there is no rational basis for a water utility to avoid frequent regular review of its costs of service and to increase rates whenever necessary to recover these costs.

Costs of service can be measured in either of two ways. If rates are determined under the "regulated utility basis," costs of service include operation and maintenance expense, depreciation and a reasonable return on investment, called "rate base." Under the "cash basis" of ratemaking, the costs of service are measured by operation and maintenance expense, and annual bond debt service and reserves funding.

Under either methodology, costs of service may also include special rate provisions such as funding reserves for infrastructure replacement or for depletion of sources of supply. Unusual or extraordinary costs such as for security or replacement of facilities that are incurred between rate reviews should be recorded in deferral accounts and amortized in rates over future periods.

Sound ratemaking management suggests that water rates should be reviewed and adjusted every two or three years, even in periods of low inflation such as we currently are experiencing. Otherwise, delay results in more painful larger rate increases or inadequate increases that perpetuate revenue shortfalls.

In addition to adjustments to base rates, water systems should consider adoption of rate riders and surcharges to more effectively recover certain costs. A rider is intended to recover a unique cost component that is excluded from base rates. It allows a pass-through of actual cost without any mark-up. Further, such a rider

generally will include a true-up mechanism. For example, automatic rate adjustment riders can recover changes in the cost of purchased water, electricity or chemicals without the necessity for a new rate case. If a water utility purchases a wholesale water supply for its retail distribution, the cost of the supply can vary year to year due to changes in the wholesale rate. It makes sense for the retail utility to separate its cost of purchased water from base rates and to recover such cost by means of a "purchased water" rider. Under the rider, the utility's rate will float, automatically adjusting to the wholesale cost of water. The rider rate should be a separate line item in the retail customers' bill so that they appreciate that base rates have not changed. Such a rider avoids the stress of a general rate case that otherwise likely would be required every time the cost of wholesale water changes. Annually, there would be a reconciliation of revenues collected under the rider with costs, with refund credits or additional charges to adjust for any over or under collection.

Surcharges commonly are an addition to full service base rates. They typically do not have a true-up and often are used to control

customer usage. One example is an infrastructure maintenance surcharge, also called a Distribution System Improvement Charge (DISC) to fund a main replacement program.

Free or discounted water service to public buildings or for public uses or for units of local government or favored customers cannot be justified based on cost-of-service ratemaking principles. If one class of customers receives service at less than full cost, then other customers likely are subsidizing the costs to serve them or the utility is experiencing a revenue shortfall.

Rate structure also can be designed to alleviate pressures on water utilities. For example, to encourage conservation, utilities could impose a surcharge when monthly usage exceeds a certain amount or could adopt inverse rate blocks. Or, utilities could

offer rebates or credits for installation of appliances or programs that facilitate more efficient water use.

In addition to base rates, riders and surcharges for water service, ancillary charges should be imposed to shift risks and revenue requirements of new developments away from the utility and its current customers and to the developers who cause such risks and costs. Such ancillary charges can include connection fees, capacity expansion fees, capacity reservation fees, payments in lieu of revenue and availability charges. Such fees should be related reasonably to the risks and costs incurred.

Adequate water rates should enable utilities to meet their financial challenges, to provide safe and adequate service, and to protect the nation's water resources from risks and misuse. However, the public will need to be educated as to the growing costs of water. The true price of water may give the public a rude awakening. 🐼

