

ADVANTAGES AND DISADVANTAGES

The following section provides a discussion of the benefits and detriments of uniform rates, including considerations of simplicity, equity, revenue stability, conservation, and implementation.

Simplicity

Simplicity is one of the chief advantages of uniform rates. Uniform rates are easily understood and implemented. Other utility functions, such as cost analysis, customer service, and regulatory proceedings, also are simplified with less complex rate forms.

Equity

Uniform rates usually are considered equitable because all customers pay the same unit price for general water service. Uniform rates also might be perceived as equitable during periods of rising costs. Political and public opposition might be less with uniform rates than with other rate structures. With uniform rates across all customer classes, the appearance of large-volume customers subsidizing small-volume customers, or vice versa, is avoided.

Uniform rates might not be perceived as equitable when variations in the cost of serving different customer groups are substantial. Large-volume customers, in particular, might believe that lower costs associated with more favorable demand patterns justify the use of uniform rates by customer class or an alternative rate form.

Revenue Stability

Uniform rates provide utilities with a degree of revenue stability in comparison to increasing block rates and other more complex rate forms. Barring adverse economic or other conditions causing usage to fluctuate widely, uniform rates provide a dependable revenue stream. The transition to a uniform rate can result in short-term revenue instability.

Conservation

A uniform rate facilitates conservation because customer bills vary with the level of water usage. Thus, uniform rates are considered superior to flat fees or charges. In general, uniform rates also provide a more conservation-oriented rate signal than declining block rates. The actual efficiency of the uniform rate depends on the circumstances of the individual utility.

Conservation advocates might believe that the conservation orientation of water prices could be enhanced by more complex rate forms. For example, seasonal or increasing block rates sometimes are favored because higher prices are charged for higher usage.

Implementation

With metered water service in place, uniform rates are easily implemented. Uniform rates across all customer classes avoids the expense of detailed cost allocation. Public education and customer service also may be somewhat easier with uniform rates.

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The following paragraphs discuss the pros and cons of declining block rates.

Simplicity

For the most part, the declining block rate structure is fairly easy for the customer to understand and for the utility to administer. Designing the rate does require information and analysis of customer usage patterns and capacity requirements, a portion of rate development that can be fairly complex. In addition, ensuring that the proposed rate design collects the appropriate level of revenues is an important test.

Equity

A declining block rate schedule is designed to recover, as a single rate schedule applicable to all retail customers of the utility, the costs of serving different classes of customers while maintaining reasonable equity between customer classes. As discussed previously, declining block rate structures are not designed to provide quantity discounts or lower rates simply because water is sold in large volumes. The declining block rate structure offers a mechanism to recover cost differences based on class water use and demand characteristics in a fair and equitable manner.

Utilities should carefully select the proper block sizes and associated rates, for each block can dramatically affect the equity of the rate design. In addition, as consumption patterns or the composition of the customer classes change over time, the equity of the rate structure may also change. Periodic reviews of the bill frequency analysis and customer demand characteristics should address this issue.

A major assumption in regard to declining block rate structures is that larger customers have lower demand factors, or a better relationship between peak demand and average annual demand, than do smaller customers. This may or may not be true depending on the specific usage characteristics of the utility's customers. Further, the declining block rate structure assumes a direct relationship between volumetric consumption and demand. In other words, the lowest-volume customer has the greatest demand factor, while in contrast, the highest-volume customer has the

The final issue in regard to equity is customer perception. While a declining block rate may be properly designed to be cost based and equitable, the customer may still perceive it to be inequitable. This is particularly true for the low-volume user being charged at the highest rate per consumption unit.

Revenue Stability

A properly designed declining block rate should be able to adequately meet target revenue levels of the design. As was noted previously, a declining block rate schedule should have the positive attribute of revenue stability.

Conservation

A declining block rate structure appears to conflict with the goals of efficient water use and resource conservation. Because declining block rates may be perceived as promoting consumption rather than conservation, they are often viewed negatively in regard to conservation. During periods of water scarcity or emergencies, the focus may be shifted away from a declining block rate structure to a rate structure perceived to be more conservation oriented (e.g., uniform rate or perhaps even an inverted block structure). A shift from a declining block structure may be implemented in phases to limit billing effects on particularly large-use customers.

Implementation

The declining block rate structure may be difficult to implement if the utility does not already have the rate structure in place. If conservation is a key factor in establishing rates and rate policy, perceptions regarding this rate structure, right or wrong, may make approval at the regulatory level challenging.

Implementing this particular rate structure also requires that the utility analyze its current metering billing

The following paragraphs analyze the benefits and detriments of increasing block rate structures.

Simplicity

Increasing block rates are not as simple to design or explain as many other rate forms. They require information on water sales by block of consumption. This information can be developed through a bill tabulation (see appendix C of this manual). They also require applying judgment and utility policy regarding the number of blocks, the point at which one block ends and the next begins, and the relative price levels of the blocks.

Equity

As with any rate design, overly simple or poorly designed increasing block rate structures run the risk of being inequitable. Increasing block rates can provide the flexibility to address various definitions of equity, while permitting full cost recovery and the use of additional pricing strategies for water utilities.

Revenue Stability

Increasing block rate structures tend to result in more revenue volatility than other rate structures (i.e., decreasing and uniform block rates). This revenue volatility is because an increasing block rate anticipates recovering a proportionately greater percentage of the customer class's revenue requirement at higher levels of consumption. These higher levels of consumption tend to be more subject to variations in seasonal weather and, when coupled with a higher unit pricing, customers tend to curtail consumption in these higher consumption blocks. As a result, a utility implementing an increasing block rate structure is advised to have a good understanding of the distribution of water demand by customer class and of price elasticity of demand. Over the long term, increasing block rate structures can give utilities and rate analysts flexibility with which to achieve predictable cost recovery.

A utility concerned about adverse revenue effects resulting from an increasing block rate design might consider developing a reserve, often referred to as a *stabilization fund*. A stabilization fund allows a utility to draw on the fund balance during revenue shortfalls that result from lower than expected consumption.

Conservation

Increasing block rate structures are usually considered to be conservation-oriented. The most conservation-oriented rate structure maximizes the consistency of the price signal. No customer within a given class and using similar amounts of water should be rewarded more or less than another customer for saving a gallon of water. If properly designed, increasing block rates can send an appropriate conservation signal to certain customer classes. But, care should be taken when determining whether or not increasing block rates apply to a particular class of customers that includes large-volume and master meter customers.

Implementation

The flexibility advantage of increasing block rate structures is accompanied by some disadvantages, including the following:

- These rates are more difficult to design for predictable revenue streams.
- Definitions of rate blocks can be based on more than one rationale.
- The rate structure can be more difficult to communicate to customers.

Water systems requiring more flexibility from a rate structure may find the higher implementation cost of increasing block rate structures to be justified.

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Simplicity

There are two perspectives regarding the simplicity of implementing a seasonal rate. From the customer's perspective, seasonal rates need to be understandable in order to be effective. From the utility's perspective, seasonal rates may not be simple to administer. The utility should be sure that their billing system is capable of dealing with seasonal rates. In particular, the billing system needs to address issues associated with a customer's billed consumption, including consumption before and after the change of seasons.

One approach is to prorate the customer's consumption during the transition period for the seasons and bill the customer based on the number of days in each season during the transition billing period. This approach requires a sophisticated billing program capable of dealing with the proration issue. An alternative approach is to have a stated policy that all bills dated after, or meters read after, a specific date will be computed at the higher, peak-season rate levels. Additionally, customer awareness of the change in rates due to the change in seasons is important and may require an extensive education program.

Equity

A seasonal rate structure may be equitable from a cost-of-service perspective because the customers responsible for the higher peak-demand-related costs are charged for such costs.

Revenue Stability

Implementing seasonal rates can place revenue stability at risk, depending on the differential in the peak-season rate and customer response to the higher rate. Variations in metered revenue levels are typically associated with the swings of peak-season consumption, given wet or dry conditions. Since the peak-use period charge is, by definition, the highest rate under the seasonal rate approach, changes in peak-season consumption can potentially have a large impact on revenue.

A utility concerned about the adverse seasonal revenue effects resulting from a seasonal rate design might consider establishing a reserve fund, often referred to as a *stabilization fund*. A stabilization fund allows a utility to draw on the fund balance during revenue shortfalls that result from lower than expected customer consumption.

Effect on Customers

Seasonal rates can have a negative effect on those customers that exhibit relatively high peak-to-average demand characteristics. Customers who exhibit relatively low peak-to-average demand characteristics during the peak season may see a reduction in their water bills.

In the long run, a seasonal rate may reduce the cost of water to all customers. If customers reduce peak demands in response to seasonal rates, the utility may be able to delay or avoid construction of additional supply projects that would have otherwise been required. Even if demand is not reduced, customers contributing to peak demands pay the costs associated with that demand.

Implementation

The implementation of a seasonal rate structure requires identifying peak system consumption periods, determining associated costs, providing accurate and frequent (monthly is preferred) meter readings and billings, and educating and notifying customers. As discussed previously, the administrative issue of the change in billing

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periods is an important consideration. Ideally, meter readings should be scheduled to coincide as closely as possible with the beginning and end of the peak season. Under the excess-use method, base-period water use must be accurately determined. In addition, for new customers, the issue of determining base-period use must be resolved. Residential customers are usually assumed to be typical of the class and the residential class base-period average is used until customer-specific data are collected. Average usage by meter size may be a means of establishing base period use for new nonresidential customers.

The utility should communicate with all customers before each peak season to increase customers' awareness of the intent of seasonal rates and the impending higher rates.