UNIT PRICING:

A Viable Option for MSW Managers

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After starting recycling, composting, and public education programs, are waste generation rates and MSW management costs still high? Give residents an economic incentive to reduce waste.

Let's say that each week your crews are collecting newspaper, glass, aluminum, steel, and plastics at the curbside for recycling. You're also collecting brush and leaves for composting. Households are doing their part, and the amount of waste you're disposing of is decreasing—but not as much as you'd like. Tipping fees are still high, and you're having a hard time covering the costs of providing service. What alternatives do you have?

One option is to consider a "unit pricing" program, also called "pay-as-you-throw" or "variable rate pricing." Unit pricing is a fee-for-service system in which residents pay for MSW management services per unit of waste collected rather than through taxes or a fixed fee. The system creates a direct economic incentive for people to prevent waste generation, to recycle, and to compost. With such a system some communities have seen significant decreases in waste disposal and increases in the amount of material recycled.

These advantages are only part of the story. In addition to helping achieve waste reductions (and cost savings), by encouraging residents to think about waste generation, unit pricing often leads to a greater understanding of environmental issues in general. Residents also tend to welcome unit pricing, viewing it as a more equitable way to pay for solid waste services than traditional flat fees, which, in effect, require households that reduce and recycle to subsidize their more wasteful neighbors.

All sizes and types of communities can realize benefits through unit pricing programs. These programs also work well whether solid waste services are carried out by municipal or private haulers.

Setting the Stage

The first step is to establish the groundwork for unit pricing. Adopting an effective program requires making a series of decisions about how to best offer a variable rate to residents. To be sure you are making the right decisions, organize a team or council that can determine the goals of your pro-

gram and how to achieve them.

Establish an advisory team. A unit pricing team typically consists of solid waste staff, interested elected officials, civic leaders, and representatives from affected businesses in the community. Including these individuals in the planning process gives the community a sense of program ownership. Team members can help other residents in the community understand the specifics of the program as it evolves, and can provide your agency with valuable input on residents' concerns about the program. In addition, members of the team can serve as a sounding board to help ensure strong community participation throughout the planning process.

Set goals. Determine the goals of the program based on a review of your community's needs and concerns. Specific goals can include encouraging waste prevention and recycling, raising sufficient revenue to cover MSW management costs, and subsidizing other community programs. Once you've come up with a list of preliminary goals, the team can help refine and prioritize them.

Consider legal/jurisdictional issues. Generally, states extend to local jurisdictions the authority to provide waste management services and to charge residents accordingly. Taking the time to determine if this is the case in your state, however, is better than risking discovery of it during implementation.

Involve and educate the public. The experiences of communities that have implemented unit pricing programs indicate that a good public relations program more than pays for itself. Public education can combat fears and myths about unit pricing (such as the fear of increased illegal dumping), and can help avoid or mitigate many potential implementation problems. It is critical to devise ways to involve and educate the community during the planning process, including holding public meetings, preparing briefing papers for elected officials, issuing press releases, and encouraging retailers to display posters and other information about the program.

To help organize some of these activities, consider developing a timeline or schedule. Planning for unit pricing should begin at least a year in advance of your targeted start date. Begin explaining the program and its goals to the community between 9 and 12 months before program implementation. Public education should continue throughout the months prior to the start of the program and, to some extent, after the program is under way. Identify the legal framework for the program at least six months before the start of the program.

Drafting a blueprint. The next step is to determine the features of your program. Designing a working program requires that you consider and decide on a range of specific issues. The process of selecting program components and service options can begin as much as nine months before the start of your program.

Volume-Based versus Weight-Based

One of the first decisions to be made when designing a unit pricing program is to determine how solid waste will be measured. Under volume-based systems, residents are charged for waste collection based on the number and size of waste containers that they use. Under weight-based systems, the hauler weighs at the curbside the waste that residents set out for collection. Households are then billed based on the pounds of trash generated. Weight-based systems offer a greater waste reduction incentive, since every pound of waste that residents prevent, recycle, or compost results in direct savings. Residents can easily understand this kind of system, and the system itself is more precise. In addition, under a weight-based program, residents are not tempted to compact their waste, which can occur with volume-based systems.

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On the other hand, weight-based systems typically are more expensive to implement and operate than volume-based systems. To operate a weight-based system, communities often need to use specialized collection trucks with on-board scales to weigh and record the weight of the waste from each household. A computerized system for charging residents also is needed, and more solid waste administrative agency personnel often are required to manage the billing system. Most of the unit pricing experience and data come from volume-based programs. Many of the design and implementation issues presented below, however, apply to both of these systems.

Containers, Rate Structures & Billing

Communities that decide to design a volume-based program must consider the type and size of waste collection containers on which to base their rate structure and billing system. A program can be based around large cans, small or variable cans, prepaid bags, or prepaid tags or stickers. Each system has its own specific advantages and disadvantages related to such issues as offering a system that residents view as equitable, creating as direct an economic incentive for waste reduction as possible, and assuring revenue stability for the agency.

Large cans. Households are provided with single, large cans, which are typically 50 to 60 gallons in capacity. Each household is then charged according to the number of cans it uses. The primary benefit of offering a single container size is revenue stability. The waste reduction incentive is somewhat diluted, however, since households pay the same amount whether they fill their container halfway or completely.

Small or variable cans. Communities also could provide households with graduated can sizes, typically ranging from 20 to 90 gal. in capacity. Such systems allow residents to realize savings from even modest reductions in waste generation. Tracking the amount of waste generated and charging households accordingly can be more complicated.

Prepaid bags. Standard-sized, distinctively marked trash bags, often 20 or 30 gal. in capacity, are used. Residents purchase the bags from the solid waste agency through such outlets as municipal offices and retail stores. Bag systems are less expensive to implement and maintain, since there is no tracking and billing required. Since residents might buy large numbers of bags and then none for an extended period, revenue fluctuations may occur.

Prepaid tags or stickers. Tags or stickers specifying certain bag sizes can be sold to residents through municipal offices or retail stores. These systems offer many of the same advantages as bag-based systems.

In addition to container choices, MSW planners need to decide on the rate or pricing structure. There are four basic rate structures: proportional (linear), variable container, two-tiered, and multi-tiered. Pricing and container choices are closely related. The types of containers selected often dictate the rate structure and billing system to

use. In other cases, an existing billing system that cannot be overhauled could govern container type and rate structure.

A proportional (linear) rate system, the simplest rate structure, entails charging households a flat price for each container of waste they place out for collection. A variable container rate can be used by communities interested in offering a greater waste reduction incentive to residents. Under this system, communities charge varying rates for different size containers.

Communities also might opt for a two-tiered rate structure under which households are assessed both a fixed fee and a per-container fee. The fixed fee helps ensure that revenues will never drop below a certain level, while the per-container fee provides a strong waste reduction incentive. This rate structure is the most complex and, therefore, is difficult to administer and bill.

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Designing a unit pricing program also requires that a community choose from among three types of billing systems: direct payment, subscription, and actual set-out systems. Direct payment systems typically are used with bag-, tag-, or sticker-based programs. Residents pay for MSW services by purchasing bags, tags, or stickers from the solid waste agency. They are then affixed to containerized waste placed out for collection. Under subscription systems, residents select in advance a specific subscription level (the number of containers they anticipate setting out each collection cycle). The customer is then billed on a regular basis for these containers. If customers are able to reduce the amount of waste they generate, they can select a lower subscription level and save money. Under an actual set-out system, the solid waste agency bills customers based on the actual number of containers set out for collection.

Choosing Important Services

The next step in planning a unit pricing program is to determine which solid waste services are most important to residents. A carefully selected and priced service array allows a community to offer the different waste collection services that residents feel are important, while generating sufficient revenues to support core services.

Some services can contribute significantly to the overall effectiveness of unit pricing. Recycling and collection of yard trimmings for composting enhance the program's waste reduction goals. Linking recycling and composting with unit pricing provides residents with an environmentally responsible way to manage waste. In addition, since the cost of these programs can be built into unit pricing fees, communities can recover these expenses without creating economic disincentives to recycle.

Other services are viewed as important conveniences, or even necessities, by some residents. Incorporating them can add to enthusiasm for your new program. For example, backyard collection of waste and/or recyclables can be an important service for elderly or disabled residents. Backyard collections also can be offered to other residents at a higher cost to reflect the added service resources required.

Special Collection Needs

One of the biggest challenges facing communities implementing unit pricing is how to include multi-family (five units or more) residential structures in the program. Because waste often is collected from residents of multi-family structures on a per building rather than per unit basis, offering these residents a direct economic incentive to reduce waste with unit pricing may be difficult. One way to resolve multi-family challenges is to have the building manager sell bags or tags to each resident. Another approach is to modify the system of setting out waste for collection in multi-family buildings so that only waste that has been paid for can be left for collection. Systems that employ technological solutions, such as using magnetic cards to open garbage chutes, usually are expensive.

Many communities considering unit pricing are concerned about ensuring that the waste reduction incentives of unit pricing can be brought to residents living on fixed or low incomes. Communities may wish to consider providing assistance to residents with special financial needs by reducing the per-household waste collection charges by a set amount, offering a percentage discount, or providing a credit on the overall bill. Assistance also can be offered through existing low-income programs, particularly other utilities' efforts.

Launching the Program

There are two distinct schools of thought about the timing of implementation. One maintains that unit pricing should be implemented within a brief period of time. The other believes that households respond better when asked to make changes in small, manageable increments over time.

Regardless of your schedule of implementation, a number of tasks need to be performed. They include educating the public about the new program and organizing your solid waste agency to be able to effectively administer the new program. Other common tasks include establishing legal authority for charging a direct variable fee for waste collection services, procuring containers, designing and launching complementary programs, and ensuring enforcement (including developing ways of preventing illegal dumping).

Once your program is under way, begin the process of monitoring and data collection. Data collecting will help you determine how successful the program is. Just as it will take some time for residents to get used to paying a variable rate for their trash, your program itself will necessarily go through an adjustment period. Staying on top of its problems and progress will allow you to make needed changes quickly, helping to ensure an effective program. **MSW**

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Getting Some Help

More and more communities are trying to find new and better ways to manage their MSW in response to factors such as increasing waste generation and tipping fees. EPA recognizes that in this climate waste prevention will play an increasingly important role. For some communities, charging a variable rate for waste collection can be a wise strategy.

To help communities learn whether unit pricing might work for them, EPA organized the Unit Pricing Roundtable, a gathering of experts and representatives from communities with variable rate programs in place. EPA then organized the wealth of information resulting from the meeting's discussions into a 90-page guide.

Pay-As-You-Throw: Lessons Learned About Unit Pricing (EPA530-R-94-004) provides detailed technical information on unit pricing based on the experiences of communities with variable rate programs in place. The free manual can be ordered directly from EPA by calling the RCRA Hotline at (800) 424-9346 or by writing to USEPA, RCRA Information Center (5305), 401 M Street S.W., Washington, DC 20460.